



United States  
Department of  
Agriculture



Natural  
Resources  
Conservation  
Service

In cooperation with  
Virginia Polytechnic  
Institute and State  
University, New River Soil  
and Water Conservation  
District, Grayson County  
Board of Commissioners,  
and Virginia Department of  
Conservation and  
Recreation, Division of Soil  
and Water Conservation

# Soil Survey of Grayson County, Virginia





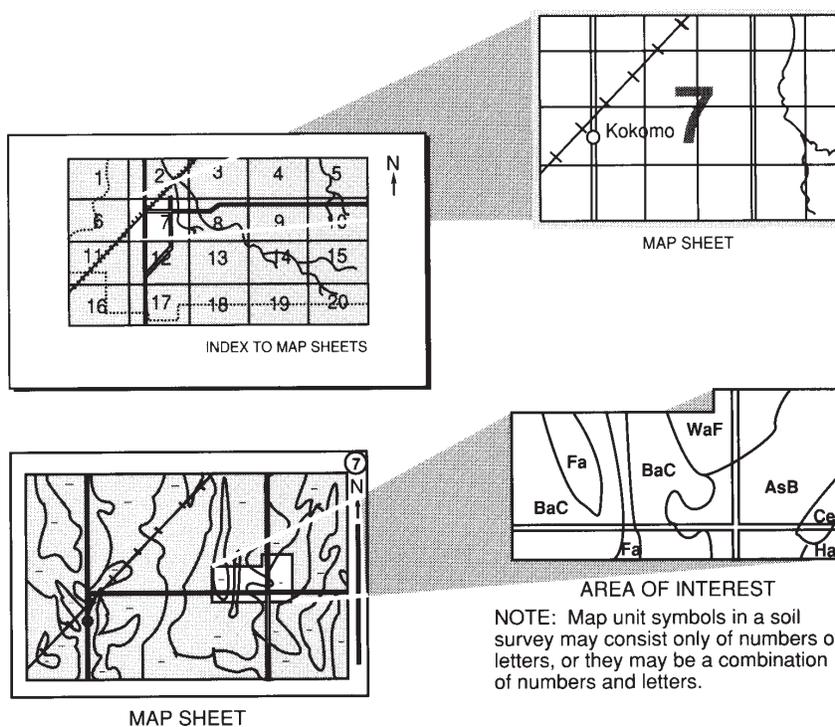
# How To Use This Soil Survey

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and go to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Go to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



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This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service, the Virginia Polytechnic Institute and State University, the New River Soil and Water Conservation District, the Grayson County Board of Commissioners, and the Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation. The survey is part of the technical assistance furnished to the New River Soil and Water Conservation District. The Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, and the Grayson County Board of Commissioners provided financial assistance for the survey.

Major fieldwork for this soil survey was completed in 1997. Soil names and descriptions were approved in 1998. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1998. The most current official data are available at <http://websoilsurvey.nrcs.usda.gov/app/>.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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**Cover:** A view of the low mountains and foothills (which occur at elevations of less than 4,000 feet) in the central part of Grayson County, looking northeast from the Grayson Highlands State Park (at a elevation of about 5,000 feet). The highest mountains in Virginia are located here.

*Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at <http://www.nrcs.usda.gov>.*

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Issued 2008

# Foreword

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Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

John A. Bricker  
State Conservationist  
Natural Resources Conservation Service



# Soil Survey of Grayson County, Virginia

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By Robert K. Conner, Natural Resources Conservation Service

Fieldwork by Robert K. Conner, Jaime Valentin Gonzalez, and Timothy T. Anders,  
Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,  
in cooperation with  
Virginia Polytechnic Institute and State University, New River Soil and Water  
Conservation District, Grayson County Board of Commissioners, and Virginia  
Department of Conservation and Recreation, Division of Soil and Water Conservation

GRAYSON COUNTY is in the southwestern part of Virginia, about 90 miles southwest of Roanoke, Virginia (fig. 1). Grayson County has a total of 252,900 acres, or 395 square miles.

This soil survey updates the previous survey of Grayson County (18). It provides additional information and an aerial photography base for the maps.

In 2000, the population of the survey area was 17,917 (19). Independence, which is near the center of the county, is the county seat.

Farming and forestry are the major land uses in the county. The survey area is about 60 percent woodland and 40 percent farmland. Most of the farms produce beef cattle, dairy products, corn, hay, and burley tobacco. Wood products and textiles are the major manufactured goods. Fraser firs, which are sold as Christmas trees, are grown extensively in parts of the county, especially in the central and western sections.

## General Nature of the Survey Area

This section provides general information about the survey area. It describes early history; water resources; transportation; physiography, relief, and drainage; and climate.

## Early History

Prior to the first settlements of Europeans in the 1760's, the survey area was part of the hunting grounds of various eastern Native American tribes. Most of the early European settlers were Scotch-Irish, German, or English. Many had traveled southwest on the "Old Buffalo Trail" or "Great Road" through the Valley of Virginia from Pennsylvania, in search of farmland. A significant number of settlers also came north from North Carolina to settle in the upper New River Valley.

Grayson County was formed on November 7, 1792, from the southern section of Wythe County. The county was named for William Grayson, one of Virginia's first two United States Senators. Elk Creek was one of the first sections of the county to be

## Soil Survey of Grayson County, Virginia

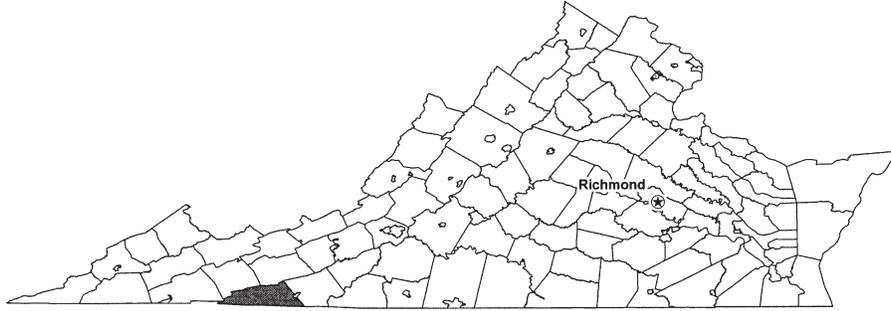


Figure 1.—Location of Grayson County in Virginia.

permanently settled. The first court was held on May 21, 1793, in a barn owned by William Bourne, a resident of Elk Creek. The first church in the county was known as the Hale Meeting House; it was also located in Elk Creek.

In 1850, Independence was established as the county seat.

### Water Resources

The New River and its tributaries—Chestnut Creek, Elk Creek, Fox Creek, Little River, and Wilson Creek—are the major streams in the county (fig. 2). Two dams have been constructed on the New River. One is located near the town of Fries and the other is located near Mouth of Wilson.

### Transportation

Four major highways serve the area. U.S. Route 58 provides access to points east and west through the county. U.S. Route 21 crosses the central part of the county and provides access to points north and south. State Route 16 crosses the western end of the county and provides access to points north and south. The Blue Ridge Parkway crosses the southeastern tip of the county, south of Galax, and is accessed via State Route 89.

### Physiography, Relief, and Drainage

Grayson County is entirely within the Blue Ridge Major Land Resource Area. The county is largely mountainous, especially in the western section and along the northern rim (fig. 3). The central and eastern parts of the county are characterized by intermingled valleys, surrounded by rolling hills, knobs, and isolated mountain ridges. The mountains in the western part of the county are mainly volcanic in origin and formed in residuum and colluvium from rhyolite. The mountains along the northern rim of the county mainly formed in residuum from metasandstone, quartzite, and phyllite. The rolling upland and valley areas in the central and eastern parts of the county dominantly formed in residuum from quartz monzonite, gneiss, granite, and schist and in colluvium from the surrounding ridges and knobs.

The Tennessee Valley Divide, in the southwest corner and northwest edge of the survey area, breaks the drainage systems in the county into two sections. The larger portion of the county southeast of the divide drains into the New River. The small portion of the county northwest of the divide drains into the South Fork of the Holston River (in Smyth County). Hounshell Branch, Parks Creek, Buckeye Branch, High Trestle Branch, and Horseshoe Bend Branch are the principle streams which flow northwestwardly out of the county into the South Fork of the Holston River.



**Figure 2.—The New River is a principle waterway in Grayson County. The confluence of New River is near the southern border of the county.**

The elevation of the survey area ranges from 2,130 feet above sea level, where New River flows into Carroll County, Virginia, to 5,100 feet on Wilburn Ridge in the Grayson Highlands State Park. Mt. Rogers, which is in the Jefferson National Forest area of the county, has the highest elevation in Virginia, 5,729 feet.

## **Climate**

Table 1 gives data on temperature and precipitation for the survey area as recorded at Transou, North Carolina, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 33.3 degrees F and the average daily minimum temperature is 22.4 degrees. The lowest temperature on record, which occurred at Transou on January 21, 1985, is -24 degrees. In summer, the average temperature is 66.6 degrees and the average daily maximum temperature is 78.3 degrees. The highest temperature, which occurred at Transou on July 14, 1954, is 94 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 54.75 inches. Of this, 24.12 inches, or about 44 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 7.54 inches, recorded at Transou on August 13, 1996. Thunderstorms occur on about 44 days each year, and most occur in July.



**Figure 3.—The mountainous topography of Grayson County.**

The average seasonal snowfall is 26.1 inches. The greatest snow depth at any one time during the period of record was 35 inches, recorded on March 11, 1960. On an average, 21 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 24 inches, recorded on January 7, 1996.

The average relative humidity in mid-afternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 86 percent. The sun shines 58 percent of the time possible in summer and 57 percent in winter. The prevailing wind is from the west-southwest. Average windspeed is highest, 11.0 miles per hour, in March.

## **How This Survey Was Made**

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a

## Soil Survey of Grayson County, Virginia

considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.



# Detailed Soil Map Units

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The map units delineated on the detailed soil maps represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase

commonly indicates a feature that affects use or management. For example, Hayesville loam, 2 to 7 percent slopes, is a phase of the Hayesville series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Sylco-Sylvatus complex, 7 to 15 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, quarries, is an example.

Table 4 lists the map units in this survey area. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

## **1C—Balsam cobbly loam, 2 to 15 percent slopes, very bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles; on high mountains (fig. 4)

*Position on the landform:* Footslopes and toeslopes

*Size of areas:* 5 to 65 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Balsam soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 10 inches—very dark gray cobbly loam (very dark grayish brown, dry)

10 to 19 inches—dark brown cobbly loam (brown, dry)

*Subsoil:*

19 to 35 inches—yellowish brown very cobbly loam

35 to 48 inches—yellowish brown extremely cobbly loam

*Substratum:*

48 to 62 inches—yellowish brown extremely cobbly sandy loam

### **Minor Components**

*Dissimilar components:*

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Balsam soil; in similar landform positions
- Bloodyhorse soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Soils that have fewer rock fragments and more clay in the subsoil than the Balsam soil; in similar landform positions
- Areas with rubbly surfaces in landform positions similar to those of the Balsam soil

*Similar components:*

- Balsam soils that have fewer boulders or stones on the surface



**Figure 4.—An area of Balsam cobbly loam, 2 to 15 percent slopes, very bouldery. Northern hardwoods (dominantly sugar maple and yellow birch) are growing on this site.**

- Mt Rogers soils on summits, shoulders, and backslopes
- Buzzrock soils, which are deep to hard bedrock; on summits, shoulders, and backslopes

#### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.5 inches)  
*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)  
*Depth class:* Very deep (more than 60 inches)  
*Depth to root-restrictive feature:* More than 60 inches  
*Drainage class:* Well drained  
*Depth to seasonal water saturation:* More than 6 feet  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Shrink-swell potential:* Low

## Soil Survey of Grayson County, Virginia

*Runoff class:* Low

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Colluvium derived from rhyolite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

#### Christmas trees

- This soil is well suited to Christmas trees.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of rock fragments, excavation is difficult and cutbanks are unstable.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* GG

*Hydric soil:* No

## 1D—Balsam cobbly loam, 15 to 35 percent slopes, very bouldery

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)



Figure 5.—Fraser fir and red spruce growing on a backslope in an area of Balsam cobbly loam, 15 to 35 percent slopes, very bouldery.

*Landform:* Coves, benches, and saddles; on high mountains

*Position on the landform:* Footslopes, toeslopes, and lower backslopes (fig. 5)

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

#### Map Unit Composition

Balsam soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

#### Typical Profile

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 10 inches—very dark gray cobbly loam (very dark grayish brown, dry)

10 to 19 inches—dark brown cobbly loam (brown, dry)

*Subsoil:*

19 to 35 inches—yellowish brown very cobbly loam

35 to 48 inches—yellowish brown extremely cobbly loam

*Substratum:*

48 to 62 inches—yellowish brown extremely cobbly sandy loam

#### Minor Components

*Dissimilar components:*

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Balsam soil; in similar landform positions

## Soil Survey of Grayson County, Virginia

- Bloodyhorse soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Soils that have fewer rock fragments and more clay in the subsoil than the Balsam soil; in similar landform positions
- Areas with rubbly surfaces; in similar landform positions

### *Similar components:*

- Balsam soils that have fewer boulders or stones on the surface
- Mt Rogers soils on summits, shoulders, and backslopes
- Buzzrock soils, which are deep to hard bedrock; on summits, shoulders, and backslopes

## **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.5 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Colluvium derived from rhyolite

## **Use and Management Considerations**

### **Cropland**

- This soil is unsuited to cropland.

### **Pastureland**

- This soil is unsuited to pastureland.

### **Woodland**

*Suitability:* Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

**Christmas trees**

- This soil is well suited to Christmas trees.

**Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of rock fragments, excavation is difficult and cutbanks are unstable.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

**Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* GG

*Hydric soil:* No

**1E—Balsam cobbly loam, 35 to 55 percent slopes, very bouldery**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles; on high mountains

*Position on the landform:* Footslopes and lower backslopes

*Size of areas:* 5 to 450 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Balsam soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

**Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 10 inches—very dark gray cobbly loam (very dark grayish brown, dry)

10 to 19 inches—dark brown cobbly loam (brown, dry)

*Subsoil:*

19 to 35 inches—yellowish brown very cobbly loam

35 to 48 inches—yellowish brown extremely cobbly loam

*Substratum:*

48 to 62 inches—yellowish brown extremely cobbly sandy loam

**Minor Components**

*Dissimilar components:*

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Balsam soil; in similar landform positions

## Soil Survey of Grayson County, Virginia

- Bloodyhorse soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Soils that have fewer rock fragments and more clay in the subsoil than the Balsam soil; in similar landform positions
- Areas with rubbly surfaces in landform positions similar to those of the Balsam soil

### *Similar components:*

- Balsam soils that have fewer boulders or stones on the surface
- Mt Rogers soils on summits, shoulders, and backslopes
- Buzzrock soils, which are deep to hard bedrock; on summits, shoulders, and backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.5 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Colluvium derived from rhyolite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

**Christmas trees**

- This soil is well suited to Christmas trees.

**Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of rock fragments, excavation is difficult and cutbanks are unstable.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

**Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* GG

*Hydric soil:* No

**2D—Balsam-Nopan complex, 15 to 35 percent slopes,  
very bouldery**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles; on high mountains

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 125 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Balsam soil and similar inclusions: Typically 70 percent, ranging from about 60 to 75 percent

Nopan soil and similar inclusions: Typically 20 percent, ranging from about 15 to 25 percent

**Typical Profile**

**Balsam**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 10 inches—very dark gray cobbly loam (very dark grayish brown, dry)

10 to 19 inches—dark brown cobbly loam (brown, dry)

*Subsoil:*

19 to 35 inches—yellowish brown very cobbly loam

35 to 48 inches—yellowish brown extremely cobbly loam

*Substratum:*

48 to 62 inches—yellowish brown extremely cobbly sandy loam

## **Nopan**

### *Surface layer:*

0 to 6 inches—very dark gray loam

### *Subsoil:*

6 to 17 inches—gray loam

17 to 33 inches—grayish brown loamy sand; yellowish brown masses of oxidized iron

33 to 44 inches—brown sandy loam

44 to 50 inches—black and dark brown sandy loam

### *Substratum:*

50 to 62 inches—yellowish brown sandy loam; yellowish brown masses of oxidized iron

## **Minor Components**

### *Dissimilar components:*

- Bloodyhorse soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Soils that have fewer rock fragments and more clay in the subsoil than the Balsam and Nopan soils; in similar landform positions
- Areas with rubbly surfaces in landform positions similar to those of the Balsam and Nopan soils

### *Similar components:*

- Balsam soils that have fewer boulders or stones on the surface
- Mt Rogers soils, which are similar to the Balsam soil; on summits, shoulders, and backslopes
- Buzzrock soils, which are similar to the Balsam soil and deep to hard bedrock; on summits, shoulders, and backslopes
- Nopan soils that have fewer boulders or stones on the surface

## **Soil Properties and Qualities**

*Available water capacity:* Balsam—moderate (about 8.5 inches); Nopan—moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Balsam—high (about 1.98 in/hr); Nopan—low (about 0.00 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Balsam—well drained; Nopan—poorly drained

*Depth to seasonal water saturation:* Balsam—more than 6 feet; Nopan—about 0 to 6 inches

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Balsam—medium; Nopan—very high

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Colluvium derived from rhyolite

## **Use and Management Considerations**

### **Cropland**

- These soils are unsuited to cropland.

### **Pastureland**

- These soils are unsuited to pastureland.

### **Woodland**

*Suitability:* Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- Areas of the Balsam soil are well suited to Christmas trees; trees should not be planted in areas of the Nopan soil.

### **Building sites**

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Because of rock fragments, excavation is difficult and cutbanks are unstable.
- Because of the low soil strength, these soils are unfavorable for supporting heavy loads.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

### **Septic tank absorption fields**

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

### **Local roads and streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the slope, designing local roads and streets is difficult.

## **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* Balsam—GG; Nopan—NN

*Hydric soils:* Balsam—no; Nopan—yes

## **2E—Balsam-Nopan complex, 35 to 55 percent slopes, very bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles; on high mountains

*Position on the landform:* Foothills and lower backslopes

*Size of areas:* 5 to 125 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Balsam soil and similar inclusions: Typically 70 percent, ranging from about 60 to 75 percent

Nopan soil and similar inclusions: Typically 20 percent, ranging from about 15 to 25 percent

### **Typical Profile**

#### **Balsam**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 10 inches—very dark gray cobbly loam (very dark grayish brown, dry)

10 to 19 inches—dark brown cobbly loam (brown, dry)

*Subsoil:*

19 to 35 inches—yellowish brown very cobbly loam

35 to 48 inches—yellowish brown extremely cobbly loam

*Substratum:*

48 to 62 inches—yellowish brown extremely cobbly sandy loam

#### **Nopan**

*Surface layer:*

0 to 6 inches—very dark gray loam

*Subsoil:*

6 to 17 inches—gray loam

17 to 33 inches—grayish brown loamy sand; yellowish brown masses of oxidized iron

33 to 44 inches—brown sandy loam

44 to 50 inches—black and dark brown sandy loam

*Substratum:*

50 to 62 inches—yellowish brown sandy loam; yellowish brown masses of oxidized iron

### **Minor Components**

*Dissimilar components:*

- Bloodyhorse soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Soils that have fewer rock fragments and more clay in the subsoil than the Balsam and Nopan soils; in similar landform positions
- Areas with rubbly surfaces in landform positions similar to those of the Balsam and Nopan soils

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Balsam soils that have fewer boulders or stones on the surface
- Mt Rogers soils, which are similar to the Balsam soil; on summits, shoulders, and backslopes
- Buzzrock soils, which are similar to the Balsam soil and are deep to hard bedrock; on summits, shoulders, and backslopes
- Nopan soils that have fewer boulders or stones on the surface

### **Soil Properties and Qualities**

*Available water capacity:* Balsam—moderate (about 8.5 inches); Nopan—moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Balsam—high (about 1.98 in/hr); Nopan—low (about 0.00 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Balsam—well drained; Nopan—poorly drained

*Depth to seasonal water saturation:* Balsam—more than 6 feet; Nopan—about 0 to 6 inches

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Balsam—medium; Nopan—very high

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Colluvium derived from rhyolite

### **Use and Management Considerations**

#### **Cropland**

- These soils are unsuited to cropland.

#### **Pastureland**

- These soils are unsuited to pastureland.

#### **Woodland**

*Suitability:* Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

## Soil Survey of Grayson County, Virginia

- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- Areas of the Balsam soil are well suited to Christmas trees; trees should not be planted in areas of the Nopan soil.

### **Building sites**

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Because of rock fragments, excavation is difficult and cutbanks are unstable.
- Because of the low soil strength, these soils are unfavorable for supporting heavy loads.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

### **Septic tank absorption fields**

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

### **Local roads and streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* Balsam—GG; Nopan—NN

*Hydric soils:* Balsam—no; Nopan—yes

## **3D—Bloodyhorse gravelly loam, 7 to 35 percent slopes, very bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on high mountains

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Bloodyhorse soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### **Typical Profile**

*Surface layer:*

0 to 12 inches—dark brown gravelly loam (dark yellowish brown, dry)

*Subsoil:*

12 to 28 inches—yellowish brown very gravelly loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

28 to 37 inches—yellowish brown extremely gravelly loam

### *Hard bedrock:*

37 inches—granite bedrock

### **Minor Components**

#### *Dissimilar components:*

- Mt Rogers soils, which are very deep to bedrock; on broad summits
- Soils that have more clay and fewer rock fragments in the subsoil than the Bloodyhorse soil; in similar landform positions
- Soils that are moderately well drained and very deep to bedrock; on concave footslopes and toeslopes
- Rock outcrops in landform positions similar to those of the Bloodyhorse soil

#### *Similar components:*

- Bloodyhorse soils that have fewer boulders or stones on the surface
- Buzzrock soils, which are deep to hard bedrock; in landform positions similar to those of the Bloodyhorse soil
- Burton soils, which have fewer rock fragments in the subsoil than the Bloodyhorse soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Bloodyhorse soil; in similar landform positions
- Soils that have a dark surface layer that is thicker than that of the Bloodyhorse soil; in similar landform positions
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Bloodyhorse soil

### **Soil Properties and Qualities**

*Available water capacity:* Low (about 3.3 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Creep deposits over residuum weathered from rhyolite, granite, and gneiss

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

## Soil Survey of Grayson County, Virginia

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* JJ

*Hydric soil:* No

## **4F—Bloodyhorse gravelly loam, 35 to 80 percent slopes, extremely bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on high mountains

*Position on the landform:* Backslopes and very steep shoulders and summits

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### Map Unit Composition

Bloodyhorse soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### Typical Profile

*Surface layer:*

0 to 12 inches—dark brown gravelly loam (dark yellowish brown, dry)

*Subsoil:*

12 to 28 inches—yellowish brown very gravelly loam

*Substratum:*

28 to 37 inches—yellowish brown extremely gravelly loam

*Hard bedrock:*

37 inches—granite bedrock

### Minor Components

*Dissimilar components:*

- Soils that have more clay and fewer rock fragments in the subsoil than the Bloodyhorse soil; in similar landform positions
- Soils that are moderately well drained and very deep to bedrock; on concave footslopes and toeslopes
- Mt Rogers soils, which are very deep to bedrock; on broad summits
- Rock outcrops in landform positions similar to those of the Bloodyhorse soil

*Similar components:*

- Bloodyhorse soils that have fewer boulders or stones on the surface
- Buzzrock soils, which are deep to hard bedrock; in landform positions similar to those of the Bloodyhorse soil
- Burton soils, which have fewer rock fragments in the subsoil than the Bloodyhorse soil; in similar landform positions
- Soils that have a thinner dark surface layer than the Bloodyhorse soil; in similar landform positions
- Soils that have a thicker dark surface layer than the Bloodyhorse soil; in similar landform positions
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Bloodyhorse soil

### Soil Properties and Qualities

*Available water capacity:* Low (about 3.3 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 3.00 to 15.00 percent subangular boulders

*Parent material:* Creep deposits over residuum weathered from rhyolite, granite, and gneiss

## Use and Management Considerations

### Cropland

- This soil is unsuited to cropland.

### Pastureland

- This soil is unsuited to pastureland.

### Woodland

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Because of the high content of surface rock fragments, this soil is unsuited to mechanical site preparation for planting and seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

### Christmas trees

- This soil is well suited to Christmas trees.

### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

## Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* JJ

*Hydric soil:* No

## 5B—Braddock loam, 2 to 7 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces, coves, and benches on foothills

*Position on the landform:* Risers and treads on stream terraces; footslopes and toeslopes in coves and on benches

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### Map Unit Composition

Braddock soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 8 inches—brown loam

*Subsoil:*

8 to 15 inches—strong brown clay loam

15 to 51 inches—red clay

51 to 62 inches—red clay loam

### Minor Components

*Dissimilar components:*

- Braddock soils that have cobbly surface horizons
- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Braddock soil; on summits, shoulders, and backslopes
- Areas with stony surfaces; in landform positions similar to those of the Braddock soil
- Rock outcrops in landform positions similar to those of the Braddock soil

*Similar components:*

- Tate soils, which have less clay in the subsoil than the Braddock soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Braddock soil
- Soils that have a browner subsoil than the Braddock soil; in similar landform positions
- Soils that have a clayey subsoil extending to below a depth of 60 inches; in landform positions similar to those of the Braddock soil

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Moderate

*Runoff class:* Medium

*Surface fragments:* None

## Soil Survey of Grayson County, Virginia

*Parent material:* Alluvium and/or colluvium derived from igneous rock and/or metamorphic rock

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Well suited to northern red oak and eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

- This soil is unsuited to Christmas trees.

#### Building sites

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

#### Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

#### Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

### Interpretive Groups

*Prime farmland:* All areas are prime farmland

*Land capability class:* 2e

*Virginia soil management group:* O

*Hydric soil:* No

## 5C—Braddock loam, 7 to 15 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces, coves, and benches on foothills

## Soil Survey of Grayson County, Virginia

*Position on the landform:* Risers and treads on stream terraces; footslopes and toeslopes in coves and on benches

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

### Map Unit Composition

Braddock soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 8 inches—brown loam

*Subsoil:*

8 to 15 inches—strong brown clay loam

15 to 51 inches—red clay

51 to 62 inches—red clay loam

### Minor Components

*Dissimilar components:*

- Braddock soils that have cobbly surface horizons
- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Braddock soil; on summits, shoulders, and backslopes
- Rock outcrops in landform positions similar to those of the Braddock soil
- Areas with stony surfaces; in landform positions similar to those of the Braddock soil

*Similar components:*

- Tate soils, which have less clay in the subsoil than the Braddock soil; in similar landform positions
- Delanco soils which are moderately well drained; in landform positions similar to those of the Braddock soil
- Soils that have a brown subsoil; in landform positions similar to those of the Braddock soil
- Soils that have a clayey subsoil extending to below a depth of 60 inches; in landform positions similar to those of the Braddock soil

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Moderate

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Alluvium and/or colluvium derived from igneous rock and/or metamorphic rock

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

## Soil Survey of Grayson County, Virginia

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

### **Woodland**

*Suitability:* Well suited to northern red oak and white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

### **Christmas trees**

- This soil is unsuited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* O

*Hydric soil:* No

## **5D—Braddock loam, 15 to 25 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces, coves, and benches on foothills

*Position on the landform:* Risers and treads on stream terraces; footslopes, toeslopes, and lower backslopes in coves and on benches

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### Map Unit Composition

Braddock soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 8 inches—brown loam

*Subsoil:*

8 to 15 inches—strong brown clay loam

15 to 51 inches—red clay

51 to 62 inches—red clay loam

### Minor Components

*Dissimilar components:*

- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Braddock soil; on summits, shoulders, and backslopes
- Rock outcrops in landform positions similar to those of the Braddock soil

*Similar components:*

- Braddock soils that have cobbly or stony surfaces
- Tate soils, which have less clay in the subsoil than the Braddock soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Braddock soil
- Soils that have a browner subsoil than the Braddock soil; in similar landform positions
- Soils that have a clayey subsoil extending to below a depth of 60 inches; in landform positions similar to those of the Braddock soil

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Moderate

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Alluvium and/or colluvium derived from igneous rock and/or metamorphic rock

### Use and Management Considerations

#### Cropland

*Suitability:* Moderately suited to corn, grass-legume hay, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

### **Woodland**

*Suitability:* Well suited to northern red oak and eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

### **Christmas trees**

- This soil is unsuited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 4e

*Virginia soil management group:* O

*Hydric soil:* No

## **6E—Braddock cobbly loam, 25 to 35 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces, coves, and benches on foothills

## Soil Survey of Grayson County, Virginia

*Position on the landform:* Risers and treads on stream terraces; footslopes, toeslopes, and lower backslopes in coves and on benches

*Size of areas:* 5 to 125 acres

*Shape of areas:* Irregular

### Map Unit Composition

Braddock soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 8 inches—brown cobbly loam

*Subsoil:*

8 to 15 inches—strong brown cobbly clay loam

15 to 51 inches—red clay

51 to 62 inches—red clay loam

### Minor Components

*Dissimilar components:*

- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Braddock soil; on summits, shoulders, and backslopes
- Rock outcrops in landform positions similar to those of the Braddock soil

*Similar components:*

- Braddock soils that have fewer cobbles in the surface horizon
- Tate soils, which have less clay in the subsoil than the Braddock soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Braddock soil
- Soils that have a brown subsoil; in landform positions similar to those of the Braddock soil
- Soils that have a clayey subsoil extending to below a depth of 60 inches; in landform positions similar to those of the Braddock soil
- Areas with stony surfaces in landform positions similar to those of the Braddock soil
- Steeper areas of Braddock soils

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Moderate

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Alluvium and/or colluvium derived from igneous rock and/or metamorphic rock

## Use and Management Considerations

### Cropland

- This soil is unsuited to cropland.

### Pastureland

- This soil is unsuited to pastureland.

### Woodland

*Suitability:* Well suited to northern red oak and eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

### Christmas trees

- This soil is unsuited to Christmas trees.

### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

### Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

## Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* O

*Hydric soil:* No

## **7D—Brevard-Greenlee complex, 8 to 25 percent slopes, very bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves and benches on low mountains and foothills

*Position on the landform:* Foothills, toeslopes, and moderately steep lower backslopes

*Size of areas:* About 20 acres

*Shape of areas:* Crescent to fan shaped or elongated

### **Map Unit Composition**

Brevard soil and similar inclusions: Typically 50 percent, ranging from about 45 to 55 percent

Greenlee soil and similar inclusions: Typically 35 percent, ranging from about 30 to 40 percent

### **Typical Profile**

#### **Brevard**

*Surface layer:*

0 to 8 inches—dark brown gravelly fine sandy loam

*Subsoil:*

8 to 12 inches—strong brown gravelly sandy clay loam

12 to 17 inches—yellowish red gravelly sandy clay loam

17 to 33 inches—red gravelly sandy clay loam

33 to 48 inches—yellowish red gravelly sandy clay loam

*Substratum:*

48 to 60 inches—yellowish red very gravelly fine sandy loam

#### **Greenlee**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 7 inches—dark brown very cobbly loam

*Subsurface layer:*

7 to 14 inches—dark yellowish brown very cobbly sandy loam

*Subsoil:*

14 to 53 inches—yellowish brown very cobbly sandy loam

*Substratum:*

53 to 62 inches—yellowish brown extremely cobbly sandy loam

### **Minor Components**

*Dissimilar components:*

- Cowee soils, which are moderately deep to soft bedrock; on summits, shoulders, and backslopes
- Tuckasegee soils, which have a thicker dark surface layer and fewer rock fragments in the subsoil than the Brevard and Greenlee soils; in similar landform positions
- Areas with rubbly surfaces in landform positions similar to those of the Brevard and Greenlee soils

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Soils that have a dark surface layer that is thicker than that of the Brevard soil; in similar landform positions
- Soils that have more rock fragments in the subsoil than the Brevard soil; in similar landform positions
- Evard soils, which are similar to the Brevard soil; on summits, shoulders, and backslopes
- Brevard soils that have fewer boulders or stones on the surface
- Soils that are similar to the Greenlee soil and have a thicker dark surface layer; in similar landform positions
- Greenlee soils that have fewer boulders or stones on the surface

### **Soil Properties and Qualities**

*Available water capacity:* Brevard—moderate (about 7.6 inches); Greenlee—low (about 5.5 inches)

*Slowest saturated hydraulic conductivity:* Brevard—moderately high (about 0.57 in/hr); Greenlee—high (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Brevard—medium; Greenlee—low

*Surface fragments:* About 0.10 to 3.00 percent subrounded boulders

*Parent material:* Brevard—colluvium derived from igneous rock and/or metamorphic rock; Greenlee—colluvium and/or local alluvium derived from metamorphic rock and/or igneous rock

### **Use and Management Considerations**

#### **Cropland**

- These soils are unsuited to cropland.

#### **Pastureland**

- These soils are unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.

## Soil Survey of Grayson County, Virginia

- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying or depressional areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* Brevard—B; Greenlee—CC

*Hydric soils:* No

## **8C—Burton loam, 7 to 15 percent slopes, stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Broad ridges on high mountains

*Position on the landform:* Summits and shoulders

*Size of areas:* About 15 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Burton soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 13 inches—very dark grayish brown loam (brown, dry)

*Subsoil:*

13 to 21 inches—yellowish brown loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

21 to 26 inches—yellowish brown very gravelly sandy loam

### *Soft bedrock:*

26 to 31 inches—bedrock

### *Hard bedrock:*

31 inches—bedrock

## Minor Components

### *Dissimilar components:*

- Soils that have more clay in the subsoil than the Burton soil; in similar landform positions
- Soils that are very deep to bedrock; in landform positions similar to those of the Burton soil
- Soils that are shallow to hard bedrock and have more rock fragments in the subsoil than the Burton soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Burton soil

### *Similar components:*

- Burton soils that have fewer stones or cobbles on the surface
- Soils that have a thinner or lighter colored surface layer; in landform positions similar to those of the Burton soil

## Soil Properties and Qualities

*Available water capacity:* Low (about 4.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.01 to 0.10 percent subangular stones

*Parent material:* Residuum weathered from metagraywacke, metasandstone, and phyllite

## Use and Management Considerations

### **Cropland**

*Suitability:* Poorly suited to grass-legume hay; not suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Rock fragments on the surface may restrict the operation of farm machinery and interfere with the emergence of seedlings.
- The limited available water capacity may cause plants to suffer from moisture stress.

### **Pastureland**

*Suitability:* Poorly suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.
- Rock fragments on the surface may restrict the operation of farm machinery.

### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland  
*Land capability class:* 4s  
*Virginia soil management group:* FF  
*Hydric soil:* No

## **9D—Burton loam, 15 to 35 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Broad ridges on high mountains  
*Position on the landform:* Summits, shoulders, and moderately steep backslopes  
*Size of areas:* 5 to 30 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Burton soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*  
0 to 2 inches—moderately decomposed plant material

## Soil Survey of Grayson County, Virginia

### *Surface layer:*

2 to 13 inches—very dark grayish brown loam (brown, dry)

### *Subsoil:*

13 to 21 inches—yellowish brown loam

### *Substratum:*

21 to 26 inches—yellowish brown very gravelly sandy loam

### *Soft bedrock:*

26 to 31 inches—bedrock

### *Hard bedrock:*

31 inches—bedrock

## Minor Components

### *Dissimilar components:*

- Soils that have more clay in the subsoil than the Burton soil; in similar landform positions
- Soils that are very deep to bedrock; in landform positions similar to those of the Burton soil
- Soils that are shallow to hard bedrock and have more rock fragments in the subsoil than the Burton soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Burton soil

### *Similar components:*

- Burton soils that have fewer stones or boulders on the surface
- Soils that have a surface layer that is thinner or lighter colored than that of the Burton soil; in similar landform positions

## Soil Properties and Qualities

*Available water capacity:* Low (about 4.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent subangular stones

*Parent material:* Residuum weathered from metagraywacke, metasandstone, and phyllite

## Use and Management Considerations

### **Cropland**

- This soil is unsuited to cropland.

### **Pastureland**

- This soil is unsuited to pastureland.

### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

## Soil Survey of Grayson County, Virginia

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland  
*Land capability class:* 7s  
*Virginia soil management group:* FF  
*Hydric soil:* No

## **9E—Burton loam, 35 to 55 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Broad ridges on high mountains  
*Position on the landform:* Backslopes and steep shoulders and summits  
*Size of areas:* 5 to 100 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Burton soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*  
0 to 2 inches—moderately decomposed plant material

## Soil Survey of Grayson County, Virginia

### *Surface layer:*

2 to 13 inches—very dark grayish brown loam (brown, dry)

### *Subsoil:*

13 to 21 inches—yellowish brown loam

### *Substratum:*

21 to 26 inches—yellowish brown very gravelly sandy loam

### *Soft bedrock:*

26 to 31 inches—bedrock

### *Hard bedrock:*

31 inches—bedrock

## Minor Components

### *Dissimilar components:*

- Soils that have more clay in the subsoil than the Burton soil; in similar landform positions
- Soils that are very deep to bedrock; in landform positions similar to those of the Burton soil
- Soils that are shallow to hard bedrock and have more rock fragments in the subsoil than the Burton soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Burton soil

### *Similar components:*

- Burton soils that have fewer stones or cobbles on the surface
- Soils that have a surface layer that is thinner or lighter colored than that of the Burton soil; in similar landform positions

## Soil Properties and Qualities

*Available water capacity:* Low (about 4.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent subangular stones

*Parent material:* Residuum weathered from metagraywacke, metasandstone, and phyllite

## Use and Management Considerations

### **Cropland**

- This soil is unsuited to cropland.

### **Pastureland**

- This soil is unsuited to pastureland.

### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber

## Soil Survey of Grayson County, Virginia

harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* FF

*Hydric soil:* No

## **10D—Chestnut-Peaks complex, 8 to 25 percent slopes, very rocky**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep upper backslopes

*Size of areas:* 5 to 25 acres

*Shape of areas:* Irregular

*Note:* 2 to 10 percent of the surface is covered with outcrops of hard gneiss bedrock

### **Map Unit Composition**

Chestnut soil and similar inclusions: Typically 65 percent, ranging from about 60 to 70 percent

Peaks soil and similar inclusions: Typically 20 percent, ranging from about 15 to 25 percent

### Typical Profile

#### Chestnut

*Surface layer:*

0 to 3 inches—very dark grayish brown gravelly fine sandy loam

*Subsoil:*

3 to 8 inches—dark yellowish brown gravelly fine sandy loam; few brown and common yellowish brown mottles

8 to 21 inches—light olive brown gravelly fine sandy loam; common yellowish brown mottles

*Substratum:*

21 to 29 inches—light olive brown gravelly fine sandy loam; common yellowish brown mottles

*Soft bedrock:*

29 to 45 inches—bedrock

*Hard bedrock:*

45 inches—bedrock

#### Peaks

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

32 inches—gneiss bedrock

### Minor Components

*Dissimilar components:*

- Rock outcrops in landform positions similar to those of the Chestnut and Peaks soils

*Similar components:*

- Cowee soils, which have more clay and redder colors in the subsoil than the Chestnut soil; in similar landform positions
- Soils that are similar to the Chestnut soil and have a brown subsoil; in similar landform positions
- Soils that have more rock fragments in the subsoil than the Chestnut soil; in similar landform positions
- Soils that are similar to the Chestnut soil and are moderately deep to hard bedrock; in similar landform positions
- Soils that have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Soils that are similar to the Peaks soil and are shallow to hard bedrock; on convex summits, shoulders, and upper backslopes

### Soil Properties and Qualities

*Available water capacity:* Chestnut—low (about 3.8 inches); Peaks—very low (about 1.6 inches)  
*Slowest saturated hydraulic conductivity:* Chestnut—high (about 1.98 in/hr); Peaks—high (about 5.95 in/hr)  
*Depth class:* Moderately deep (20 to 40 inches)  
*Depth to root-restrictive feature:* Chestnut—20 to 40 inches to bedrock (paralithic); Peaks—20 to 40 inches to bedrock (lithic)  
*Drainage class:* Chestnut—well drained; Peaks—somewhat excessively drained  
*Depth to seasonal water saturation:* More than 6 feet  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Shrink-swell potential:* Low  
*Runoff class:* Very high  
*Surface fragments:* Chestnut—about 0.01 to 0.09 percent subangular stones; Peaks—none  
*Parent material:* Residuum weathered from granite and/or gneiss and/or schist

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Rock fragments on the surface may restrict the operation of farm machinery.
- Rock outcrops may limit machinery operations.

#### Woodland

*Suitability:* Well suited to northern red oak and chestnut oak; moderately suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

**Christmas trees**

- These soils are well suited to Christmas trees.

**Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

**Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

**Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6s

*Virginia soil management group:* Chestnut—GG; Peaks—JJ

*Hydric soils:* No

**10E—Chestnut-Peaks complex, 25 to 45 percent slopes,  
very rocky**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 100 acres

*Shape of areas:* Irregular

*Note:* 2 to 10 percent of the surface is covered with outcrops of hard gneiss bedrock

**Map Unit Composition**

Chestnut soil and similar inclusions: Typically 65 percent, ranging from about 60 to 70 percent

Peaks soil and similar inclusions: Typically 20 percent, ranging from about 15 to 25 percent

**Typical Profile**

**Chestnut**

*Surface layer:*

0 to 3 inches—very dark grayish brown gravelly fine sandy loam

## Soil Survey of Grayson County, Virginia

### *Subsoil:*

3 to 8 inches—dark yellowish brown gravelly fine sandy loam; few brown and common yellowish brown mottles

8 to 21 inches—light olive brown gravelly fine sandy loam; common yellowish brown mottles

### *Substratum:*

21 to 29 inches—light olive brown gravelly fine sandy loam; common yellowish brown mottles

### *Soft bedrock:*

29 to 45 inches—bedrock

### *Hard bedrock:*

45 inches—bedrock

## **Peaks**

### *Organic layer:*

0 to 1 inch—moderately decomposed plant material

### *Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

### *Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

### *Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

### *Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

### *Hard bedrock:*

32 inches—gneiss bedrock

## **Minor Components**

### *Dissimilar components:*

- Rock outcrops in landform positions similar to those of the Chestnut and Peaks soils

### *Similar components:*

- Cowee soils, which have more clay and redder colors in the subsoil than the Chestnut soil; in similar landform positions
- Soils that are similar to the Chestnut soil and have a brown subsoil; in similar landform positions
- Soils that have more rock fragments in the subsoil than the Chestnut soil; in similar landform positions
- Soils that are similar to the Chestnut soil and are moderately deep to hard bedrock; in similar landform positions
- Soils that have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Soils that are similar to the Peaks soil and are shallow to hard bedrock; on convex summits, shoulders, and upper backslopes

## **Soil Properties and Qualities**

*Available water capacity:* Chestnut—low (about 3.8 inches); Peaks—very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* Chestnut—high (about 1.98 in/hr); Peaks—high (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

## Soil Survey of Grayson County, Virginia

*Depth to root-restrictive feature:* Chestnut—20 to 40 inches to bedrock (paralithic);

Peaks—20 to 40 inches to bedrock (lithic)

*Drainage class:* Chestnut—well drained; Peaks—somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* Chestnut—about 0.01 to 0.09 percent subangular stones; Peaks—none

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

- These soils are unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to northern red oak and chestnut oak; moderately suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

#### Christmas trees

- These soils are well suited to Christmas trees.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

#### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

## Soil Survey of Grayson County, Virginia

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* Chestnut—GG; Peaks—JJ

*Hydric soils:* No

## 11F—Chestnut-Peaks-Tuckasegee complex, 45 to 90 percent slopes, very rocky

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Chestnut and Peaks—upper backslopes and very steep shoulders and summits; Tuckasegee—footslopes and lower backslopes

*Size of areas:* 5 to 50 acres

*Shape of areas:* Irregular

*Note:* 2 to 10 percent of the surface is covered with outcrops of hard gneiss bedrock

### Map Unit Composition

Chestnut soil and similar inclusions: Typically 40 percent, ranging from about 35 to 45 percent

Peaks soil and similar inclusions: Typically 25 percent, ranging from about 20 to 30 percent

Tuckasegee soil and similar inclusions: Typically 20 percent, ranging from about 15 to 25 percent

### Typical Profile

#### Chestnut

*Surface layer:*

0 to 3 inches—very dark grayish brown gravelly fine sandy loam

*Subsoil:*

3 to 8 inches—dark yellowish brown gravelly fine sandy loam; few brown and common yellowish brown mottles

8 to 21 inches—light olive brown gravelly fine sandy loam; common yellowish brown mottles

*Substratum:*

21 to 29 inches—light olive brown gravelly fine sandy loam; common yellowish brown mottles

*Soft bedrock:*

29 to 45 inches—bedrock

## Soil Survey of Grayson County, Virginia

### *Hard bedrock:*

45 inches—bedrock

### **Peaks**

#### *Organic layer:*

0 to 1 inch—moderately decomposed plant material

#### *Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

#### *Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

#### *Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

#### *Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

### *Hard bedrock:*

32 inches—gneiss bedrock

### **Tuckasegee**

#### *Surface layer:*

0 to 8 inches—very dark brown gravelly loam (brown, dry)

#### *Surface layer:*

8 to 13 inches—very dark grayish brown gravelly loam (dark yellowish brown, dry)

#### *Subsoil:*

13 to 28 inches—brown gravelly loam

28 to 47 inches—strong brown gravelly loam

47 to 79 inches—strong brown very gravelly loam

### **Minor Components**

#### *Dissimilar components:*

- Rock outcrops in landform positions similar to those of the major soils

#### *Similar components:*

- Soils that are similar to the Chestnut soil and have a brown subsoil; in similar landform positions
- Soils that are similar to the Peaks soil and are shallow to hard bedrock; on convex summits, shoulders, and upper backslopes
- Cullasaja and Greenlee soils, which have more rock fragments in the subsoil than the Tuckasegee soil; in similar landform positions
- Brevard soils, which have more clay and redder colors in the subsoil than the Tuckasegee soil; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Chestnut—low (about 3.8 inches); Peaks—very low (about 1.6 inches); Tuckasegee—high (about 9.9 inches)

*Slowest saturated hydraulic conductivity:* Chestnut and Tuckasegee—high (about 1.98 in/hr); Peaks—high (about 5.95 in/hr)

*Depth class:* Chestnut and Peaks—moderately deep (20 to 40 inches); Tuckasegee—very deep (more than 60 inches)

*Depth to root-restrictive feature:* Chestnut—20 to 40 inches to bedrock (paralithic); Peaks—20 to 40 inches to bedrock (lithic); Tuckasegee—more than 60 inches

## Soil Survey of Grayson County, Virginia

*Drainage class:* Chestnut and Tuckasegee—well drained; Peaks—somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Chestnut and Peaks—very high; Tuckasegee—medium

*Surface fragments:* About 0.01 to 0.09 percent subangular stones

*Parent material:* Chestnut and Peaks—residuum weathered from granite, gneiss, and/or schist; Tuckasegee—colluvium derived from igneous and metamorphic rock

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

- These soils are unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to northern red oak and chestnut oak; moderately suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* Chestnut—GG; Peaks—JJ; Tuckasegee—G

*Hydric soils:* No

## **12A—Codorus loam, 0 to 3 percent slopes, frequently flooded**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Flood plains in valleys

*Position on the landform:* Steps and channels

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Codorus soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 7 inches—brown loam

*Subsoil:*

7 to 12 inches—brown loam

12 to 19 inches—brown loam; yellowish brown masses of oxidized iron

19 to 37 inches—yellowish brown loam; gray iron depletions

*Substratum:*

37 to 49 inches—yellowish brown gravelly sandy loam; gray iron depletions

49 to 62 inches—yellowish brown very gravelly sandy loam; gray iron depletions

### **Minor Components**

*Dissimilar components:*

- Elsinboro soils, which are well drained and have more clay in the subsoil than the Codorus soil; on treads
- Delanco soils, which are moderately well drained and have more clay in the subsoil than the Codorus soil; on treads, footslopes, and toeslopes

## Soil Survey of Grayson County, Virginia

- Craigsville soils, which are well drained and have more rock fragments in the subsoil than the Codorus soil; in similar landform positions
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Codorus soil; on treads

### *Similar components:*

- Codorus soils that have cobbly or stony surfaces
- Hatboro soils, which are poorly drained; in landform positions similar to those of the Codorus soil
- Soils that have a dark surface layer; in landform positions similar to those of the Codorus soil

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.8 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Somewhat poorly drained

*Depth to seasonal water saturation:* About 12 to 24 inches

*Water table kind:* Apparent

*Flooding hazard:* Frequent

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Well suited

- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Frost action may damage the root systems of plants.

#### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

#### **Building sites**

- Flooding is a limitation affecting building site development.

- The seasonal high water table may restrict the period when excavations can be made.

#### **Septic tank absorption fields**

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

#### **Local roads and streets**

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6w

*Virginia soil management group:* A

*Hydric soil:* No

## **13A—Comus fine sandy loam, 0 to 3 percent slopes, frequently flooded**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Flood plains in valleys

*Position on the landform:* Steps and channels

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Comus soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 9 inches—dark yellowish brown fine sandy loam

*Subsoil:*

9 to 31 inches—dark yellowish brown fine sandy loam

*Substratum:*

31 to 53 inches—brown fine sandy loam; few yellowish brown mottles

53 to 62 inches—brown gravelly loamy sand

#### **Minor Components**

*Dissimilar components:*

- Elsinboro soils, which have more clay in the subsoil than the Comus soil; on treads
- Delanco soils, which are moderately well drained and have more clay in the subsoil than the Comus soil; on treads on stream terraces, footslopes, and toeslopes
- Codorus soils, which are somewhat poorly drained; in landform positions similar to those of the Comus soil

## Soil Survey of Grayson County, Virginia

- Hatboro soils, which are poorly drained; in landform positions similar to those of the Comus soil
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Comus soil; on treads

### *Similar components:*

- Soils that have a dark surface layer; in landform positions similar to those of the Comus soil
- Comus soils that have cobbly or stony surfaces
- Craigsville soils, which have more rock fragments in the subsoil than the Comus soil; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* High (about 9.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* Frequent

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Low

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to corn, grass-legume hay, and alfalfa hay

- Frequent flooding restricts the use of winter grain crops.
- Flooding may damage crops.

#### **Pastureland**

*Suitability:* Well suited

- Flooding may damage pastures.

#### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

#### **Building sites**

- Flooding is a limitation affecting building site development.

### **Septic tank absorption fields**

- Flooding is a limitation affecting septic tank absorption fields.

### **Local roads and streets**

- Flooding may damage local roads and streets.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 2w

*Virginia soil management group:* A

*Hydric soil:* No

## **14C—Cowee loam, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Cowee soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 6 inches—brown loam

*Subsoil:*

6 to 27 inches—yellowish red clay loam

*Substratum:*

27 to 39 inches—multicolored gravelly sandy loam

*Soft bedrock:*

39 to 45 inches—bedrock

### **Minor Components**

*Dissimilar components:*

- Cowee soils that have cobbly surface horizons
- Glenelg soils, which are very deep to bedrock; in landform positions similar to those of the Cowee soil
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Peaks soils, which have more rock fragments and less clay in the subsoil than the Cowee soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Cowee soil
- Rock outcrops in landform positions similar to those of the Cowee soil

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Soils that have a yellowish brown subsoil; in landform positions similar to those of the Cowee soil

### **Soil Properties and Qualities**

*Available water capacity:* Low (about 4.3 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from schist and/or gneiss

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to chestnut oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is

reduced and the difficulty of constructing foundations and installing utilities is increased.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* N

*Hydric soil:* No

## **14D—Cowee loam, 15 to 35 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Cowee soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 6 inches—brown loam

*Subsoil:*

6 to 27 inches—yellowish red clay loam

*Substratum:*

27 to 39 inches—multicolored gravelly sandy loam

*Soft bedrock:*

39 to 45 inches—bedrock

#### **Minor Components**

*Dissimilar components:*

- Glenelg soils, which are very deep to bedrock; in landform positions similar to those of the Cowee soil

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- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Peaks soils, which have more rock fragments and less clay in the subsoil than the Cowee soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Cowee soil

### *Similar components:*

- Cowee soils that have cobbly or stony surfaces
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the Cowee soil

### **Soil Properties and Qualities**

*Available water capacity:* Low (about 4.3 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from schist and/or gneiss

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to chestnut oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* N

*Hydric soil:* No

## **14E—Cowee loam, 35 to 55 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 500 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Cowee soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 6 inches—brown loam

*Subsoil:*

6 to 27 inches—yellowish red clay loam

*Substratum:*

27 to 39 inches—multicolored gravelly sandy loam

*Soft bedrock:*

39 to 45 inches—bedrock

### Minor Components

*Dissimilar components:*

- Glenelg soils, which are very deep to bedrock; in landform positions similar to those of the Cowee soil
- Tate soils, which are very deep to bedrock; on footslopes and toeslopes
- Peaks soils, which have more rock fragments and less clay in the subsoil than the Cowee soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Cowee soil

*Similar components:*

- Cowee soils that have cobbly or stony surfaces
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the Cowee soil

### Soil Properties and Qualities

*Available water capacity:* Low (about 4.3 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from schist and/or gneiss

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to eastern white pine; moderately suited to chestnut oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland  
*Land capability class:* 7e  
*Virginia soil management group:* N  
*Hydric soil:* No

## **15D—Cowee gravelly loam, 7 to 35 percent slopes, stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Summits, shoulders, and moderately steep backslopes  
*Size of areas:* 5 to 300 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Cowee soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*  
0 to 2 inches—moderately decomposed plant material

*Surface layer:*  
2 to 6 inches—brown gravelly loam

*Subsoil:*  
6 to 27 inches—yellowish red gravelly clay loam

*Substratum:*  
27 to 39 inches—multicolored gravelly sandy loam

*Soft bedrock:*  
39 to 45 inches—bedrock

### Minor Components

*Dissimilar components:*

- Glenelg soils, which are very deep to bedrock; in landform positions similar to those of the Cowee soil
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Peaks soils, which have more rock fragments and less clay in the subsoil than the Cowee soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Cowee soil

*Similar components:*

- Cowee soils that have fewer stones or cobbles on the surface
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the Cowee soil

### Soil Properties and Qualities

*Available water capacity:* Low (about 3.4 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.01 to 0.10 percent stones

*Parent material:* Residuum weathered from schist and/or gneiss

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to eastern white pine; moderately suited to chestnut oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* N

*Hydric soil:* No

## **15E—Cowee gravelly loam, 35 to 55 percent slopes, stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 500 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Cowee soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 6 inches—brown gravelly loam

*Subsoil:*

6 to 27 inches—yellowish red gravelly clay loam

*Substratum:*

27 to 39 inches—multicolored gravelly sandy loam

*Soft bedrock:*

39 to 45 inches—bedrock

### Minor Components

*Dissimilar components:*

- Glenelg soils, which are very deep to bedrock; in landform positions similar to those of the Cowee soil
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Peaks soils, which have more rock fragments and less clay in the subsoil than the Cowee soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Cowee soil

*Similar components:*

- Cowee soils that have fewer stones or cobbles on the surface
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the Cowee soil

### Soil Properties and Qualities

*Available water capacity:* Low (about 3.4 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.01 to 0.10 percent stones

*Parent material:* Residuum weathered from schist and/or gneiss

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to eastern white pine; moderately suited to chestnut oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* N

*Hydric soil:* No

## **16D—Cowee-Rock outcrop complex, 7 to 35 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 25 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Cowee soil and similar inclusions: Typically 60 percent, ranging from about 55 to 65 percent

Rock outcrop: Typically 35 percent, ranging from about 30 to 35 percent

### **Typical Profile**

#### **Cowee**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 6 inches—brown loam

*Subsoil:*

6 to 27 inches—yellowish red clay loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

27 to 39 inches—multicolored gravelly sandy loam

### *Soft bedrock:*

39 to 45 inches—bedrock

### **Rock outcrop**

This part of the map unit consists of outcrops of mica schist and mica gneiss that are about 10 to 200 feet apart.

### **Minor Components**

#### *Dissimilar components:*

- Peaks soils, which have less clay and more rock fragments in the subsoil than the Cowee soil; in similar landform positions
- Glenelg soils, which are very deep to bedrock; in landform positions similar to those of the Cowee soil
- Hayesville soils, which are very deep to soft bedrock and have more clay in the subsoil than the Cowee soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes

#### *Similar components:*

- Cowee soils that have cobbly or stony surfaces
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the Cowee soil
- Areas with rock outcrops that are spaced more than 200 feet apart; in landform positions similar to those of the Cowee soil

### **Properties and Qualities of the Cowee Soil**

*Available water capacity:* Low (about 4.3 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from schist and/or gneiss

### **Use and Management Considerations**

#### **Cropland**

- This map unit is unsuited to cropland.

#### **Pastureland**

- This map unit is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to chestnut oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

#### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Cowee—7s; Rock outcrop—8

*Virginia soil management group:* Cowee—N; Rock outcrop—none assigned

*Hydric soils:* Cowee—no; Rock outcrop—not rated

## **16E—Cowee-Rock outcrop complex, 35 to 55 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

## Soil Survey of Grayson County, Virginia

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

### Map Unit Composition

Cowee soil and similar inclusions: Typically 60 percent, ranging from about 55 to 65 percent

Rock outcrop: Typically 35 percent, ranging from about 30 to 35 percent

### Typical Profile

#### Cowee

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 6 inches—brown loam

*Subsoil:*

6 to 27 inches—yellowish red clay loam

*Substratum:*

27 to 39 inches—multicolored gravelly sandy loam

*Soft bedrock:*

39 to 45 inches—bedrock

#### Rock outcrop

This part of the map unit consists of outcrops of mica schist and mica gneiss that are about 10 to 200 feet apart.

### Minor Components

*Dissimilar components:*

- Peaks soils, which have less clay and more rock fragments in the subsoil than the Cowee soil; in similar landform positions
- Glenelg soils, which are very deep to bedrock; in landform positions similar to those of the Cowee soil
- Hayesville soils, which are very deep to soft bedrock and have more clay in the subsoil than the Cowee soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes

*Similar components:*

- Cowee soils that have cobbly or stony surfaces
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the Cowee soil
- Areas with rock outcrops that are spaced more than 200 feet apart; in landform positions similar to those of the Cowee soil

### Properties and Qualities of the Cowee Soil

*Available water capacity:* Low (about 4.3 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from schist and/or gneiss

### **Use and Management Considerations**

#### **Cropland**

- This map unit is unsuited to cropland.

#### **Pastureland**

- This map unit is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to chestnut oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

#### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* Cowee—7s; Rock outcrop—8

*Virginia soil management group:* Cowee—N; Rock outcrop—none assigned

*Hydric soils:* Cowee—no; Rock outcrop—not rated

## 17A—Craigsville cobbly sandy loam, 0 to 3 percent slopes, frequently flooded

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Flood plains in valleys

*Position on the landform:* Steps and channels

*Size of areas:* 5 to 50 acres

*Shape of areas:* Irregular

### Map Unit Composition

Craigsville soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### Typical Profile

*Surface layer:*

0 to 6 inches—brown cobbly sandy loam

*Subsoil:*

6 to 32 inches—yellowish brown very cobbly sandy loam

*Substratum:*

32 to 62 inches—yellowish brown extremely cobbly loamy sand

### Minor Components

*Dissimilar components:*

- Elsinboro soils, which have fewer rock fragments and more clay in the subsoil than the Craigsville soil; on stream terraces
- Codorus soils, which have fewer rock fragments in the subsoil than the Craigsville soil and are somewhat poorly drained; in similar landform positions
- Kinkora soils, which have fewer rock fragments in the subsoil than the Craigsville soil and are poorly drained; on stream terraces
- Hatboro soils, which have fewer rock fragments in the subsoil than the Craigsville soil and are poorly drained; in similar landform positions
- Delanco soils, which have fewer rock fragments in the subsoil than the Craigsville soil and are moderately well drained; on stream terraces

*Similar components:*

- Comus soils, which have fewer rock fragments in the subsoil than the Craigsville soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Low (about 3.8 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

## Soil Survey of Grayson County, Virginia

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* Frequent

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very low

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay

- The limited available water capacity may cause plants to suffer from moisture stress.
- Frequent flooding restricts the use of winter grain crops.
- Flooding may damage crops.

#### **Pastureland**

*Suitability:* Moderately suited

- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.
- Flooding may damage pastures.

#### **Woodland**

*Suitability:* Well suited to northern red oak and eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

#### **Building sites**

- Flooding is a limitation affecting building site development.

#### **Septic tank absorption fields**

- Flooding is a limitation affecting septic tank absorption fields.

#### **Local roads and streets**

- Flooding may damage local roads and streets.

### Interpretive Groups

*Prime farmland:* Not prime farmland  
*Land capability class:* 2w  
*Virginia soil management group:* CC  
*Hydric soil:* No

## 18C—Cullasaja cobbly loam, 7 to 15 percent slopes, very stony

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Benches, coves, and saddles on low mountains and foothills  
*Position on the landform:* Footslopes and toeslopes  
*Size of areas:* About 3 acres  
*Shape of areas:* Irregular

### Map Unit Composition

Cullasaja soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### Typical Profile

*Organic layer:*  
0 to 2 inches—moderately decomposed plant material

*Surface layer:*  
2 to 6 inches—very dark brown cobbly loam (brown, dry)  
6 to 15 inches—very dark grayish brown very cobbly loam (brown, dry)  
15 to 21 inches—dark brown very cobbly loam (dark yellowish brown, dry)

*Subsoil:*  
21 to 34 inches—brown very cobbly loam  
34 to 42 inches—dark yellowish brown very cobbly loam  
42 to 62 inches—dark yellowish brown extremely cobbly sandy loam

### Minor Components

*Dissimilar components:*

- Edneyville soils, which have fewer rock fragments in the subsoil than the Cullasaja soil; on summits, shoulders, and backslopes
- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay and fewer rock fragments in the subsoil than the Cullasaja soil; on summits, shoulders, and backslopes
- Peaks soils, which are moderately deep to hard bedrock; on summits, shoulders, and upper backslopes
- Tate soils, which have fewer rock fragments and more clay in the subsoil than the Cullasaja soil and have a thinner or lighter colored surface layer; in similar landform positions at lower elevations
- Areas with rubbly surfaces; in landform positions similar to those of the Cullasaja soil

*Similar components:*

- Cullasaja soils that have bouldery surfaces
- Cullasaja soils that have fewer stones or cobbles on the surface
- Thunder soils, which have more clay in the subsoil than the Cullasaja soil; in similar landform positions

## Soil Survey of Grayson County, Virginia

- Soils that have a dark surface layer that is thicker than that of the Cullasaja soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Cullasaja soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.1 inches)  
*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)  
*Depth class:* Very deep (more than 60 inches)  
*Depth to root-restrictive feature:* More than 60 inches  
*Drainage class:* Well drained  
*Depth to seasonal water saturation:* More than 6 feet  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Shrink-swell potential:* Low  
*Runoff class:* Low  
*Surface fragments:* About 0.10 to 3.00 percent subangular stones  
*Parent material:* Colluvium derived from rhyolite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

#### Woodland

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying concave areas, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6s

*Virginia soil management group:* FF

*Hydric soil:* No

## **18D—Cullasaja cobbly loam, 15 to 35 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* About 1 acre

*Shape of areas:* Irregular

### **Map Unit Composition**

Cullasaja soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 6 inches—very dark brown cobbly loam (brown, dry)

6 to 15 inches—very dark grayish brown very cobbly loam (brown, dry)

15 to 21 inches—dark brown very cobbly loam (dark yellowish brown, dry)

*Subsoil:*

21 to 34 inches—brown very cobbly loam

34 to 42 inches—dark yellowish brown very cobbly loam

42 to 62 inches—dark yellowish brown extremely cobbly sandy loam

### **Minor Components**

*Dissimilar components:*

- Edneyville soils, which have fewer rock fragments in the subsoil than the Cullasaja soil; on summits, shoulders, and backslopes
- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay and fewer rock fragments in the subsoil than the Cullasaja soil; on summits, shoulders, and backslopes
- Peaks soils, which are moderately deep to hard bedrock; on summits, shoulders, and upper backslopes
- Tate soils, which have fewer rock fragments and more clay in the subsoil than the Cullasaja soil and have a thinner or lighter colored surface layer; in similar landform positions at lower elevations
- Areas with rubbly surfaces in landform positions similar to those of the Cullasaja soil

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Cullasaja soils that have bouldery surfaces
- Cullasaja soils that have fewer stones or cobbles on the surface
- Thunder soils, which have more clay in the subsoil than the Cullasaja soil; in similar landform positions
- Soils that have a dark surface layer that is thicker than that of the Cullasaja soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Cullasaja soil; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.1 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent subangular stones

*Parent material:* Colluvium derived from rhyolite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* FF

*Hydric soil:* No

## **19A—Delanco fine sandy loam, 0 to 2 percent slopes, rarely flooded**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces and alluvial fans in valleys; coves in foothills

*Position on the landform:* Treads on stream terraces; footslopes and toeslopes on alluvial fans and in coves

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Delanco soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 10 inches—dark yellowish brown fine sandy loam

*Subsurface layer:*

10 to 16 inches—yellowish brown fine sandy loam

*Subsoil:*

16 to 41 inches—yellowish brown sandy clay loam; light brownish gray iron depletions

41 to 47 inches—yellowish brown loam; light brownish gray iron depletions

*Substratum:*

47 to 62 inches—yellowish brown sandy loam; light brownish gray iron depletions

### **Minor Components**

*Dissimilar components:*

- Delanco soils that have cobbly surface horizons
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Delanco soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Delanco soil; on flood plains

## Soil Survey of Grayson County, Virginia

- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Delanco soil; on flood plains
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Delanco soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Delanco soil

### *Similar components:*

- Elsinboro soils, which are well drained; in landform positions similar to those of the Delanco soil

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.20 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Moderately well drained

*Depth to seasonal water saturation:* About 12 to 30 inches

*Water table kind:* Apparent

*Flooding hazard:* Rare

*Ponding hazard:* None

*Shrink-swell potential:* Moderate

*Runoff class:* Low

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- Frost action may damage the root system of winter grain crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

#### **Pastureland**

*Suitability:* Well suited

- Frost action may damage the root systems of plants.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings and to equipment operations.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

#### **Building sites**

- Flooding is a limitation affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

#### **Septic tank absorption fields**

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

**Local roads and streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.

**Interpretive Groups**

*Prime farmland:* Prime farmland if drained

*Land capability class:* 2w

*Virginia soil management group:* B

*Hydric soil:* No

**19B—Delanco fine sandy loam, 2 to 7 percent slopes,  
rarely flooded**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces and alluvial fans in valleys; coves in foothills

*Position on the landform:* Treads on stream terraces; toeslopes and footslopes on alluvial fans and in coves

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Delanco soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

**Typical Profile**

*Surface layer:*

0 to 10 inches—dark yellowish brown fine sandy loam

*Subsurface layer:*

10 to 16 inches—yellowish brown fine sandy loam

*Subsoil:*

16 to 41 inches—yellowish brown sandy clay loam; light brownish gray iron depletions

41 to 47 inches—yellowish brown loam; light brownish gray iron depletions

*Substratum:*

47 to 62 inches—yellowish brown sandy loam; light brownish gray iron depletions

**Minor Components**

*Dissimilar components:*

- Delanco soils that have cobbly surface horizons
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Delanco soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Delanco soil; on flood plains
- Craigsville soils which have more rock fragments and less clay in the subsoil than the Delanco soil; on flood plains

## Soil Survey of Grayson County, Virginia

- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Delanco soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Delanco soil

### *Similar components:*

- Elsinboro soils, which are well drained; in landform positions similar to those of the Delanco soil

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.20 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Moderately well drained

*Depth to seasonal water saturation:* About 12 to 30 inches

*Water table kind:* Apparent

*Flooding hazard:* Rare

*Ponding hazard:* None

*Shrink-swell potential:* Moderate

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

#### **Building sites**

- Flooding is a limitation affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

### **Septic tank absorption fields**

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

### **Local roads and streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.

### **Interpretive Groups**

*Prime farmland:* Prime farmland if drained

*Land capability class:* 2e

*Virginia soil management group:* B

*Hydric soil:* No

## **20C—Delanco fine sandy loam, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces and alluvial fans in valleys; coves in foothills

*Position on the landform:* Treads on stream terraces; footslopes and toeslopes on alluvial fans and in coves

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Delanco soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 10 inches—dark yellowish brown fine sandy loam

*Subsurface layer:*

10 to 16 inches—yellowish brown fine sandy loam

*Subsoil:*

16 to 41 inches—yellowish brown sandy clay loam; light brownish gray iron depletions

41 to 47 inches—yellowish brown loam; light brownish gray iron depletions

*Substratum:*

47 to 62 inches—yellowish brown sandy loam; light brownish gray iron depletions

### **Minor Components**

*Dissimilar components:*

- Delanco soils that have cobbly surface horizons
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Delanco soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Delanco soil; on flood plains

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- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Delanco soil; on flood plains
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Delanco soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Delanco soil

### *Similar components:*

- Elsinboro soils, which are well drained; in landform positions similar to those of the Delanco soil

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.20 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Moderately well drained

*Depth to seasonal water saturation:* About 12 to 30 inches

*Water table kind:* Apparent

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Moderate

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

### **Building sites**

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland  
*Land capability class:* 3e  
*Virginia soil management group:* B  
*Hydric soil:* No

## **21B—Edneytown loam, 2 to 7 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Summits  
*Size of areas:* 5 to 175 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Edneytown soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*  
0 to 4 inches—brown loam

*Subsurface layer:*  
4 to 7 inches—yellowish brown loam

*Subsoil:*  
7 to 20 inches—strong brown sandy clay loam  
20 to 27 inches—strong brown sandy loam

*Substratum:*  
27 to 62 inches—brownish yellow loamy sand

### Minor Components

*Dissimilar components:*

- Edneytown soils that have cobbly surface horizons
- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Edneytown soil; in similar landform positions
- Pigeonroost soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Edneytown soil
- Areas with stony surfaces in landform positions similar to those of the Edneytown soil
- Rock outcrops in landform positions similar to those of the Edneytown soil

*Similar components:*

- Hayesville soils, which have more clay in the subsoil than the Edneytown soil; in similar landform positions
- Edneyville soils, which have less clay in the subsoil than the Edneytown soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneytown soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a red subsoil; in landform positions similar to those of the Edneytown soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.
- This soil is well suited to haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### **Building sites**

- The high content of sand or gravel in the soil increases sloughing and causes cutbanks to be more susceptible to caving.

#### **Septic tank absorption fields**

- Because the excessive permeability limits the proper treatment of the effluent from conventional septic systems, the water table may become polluted.
- This soil is well suited to septic tank absorption fields.

#### **Local roads and streets**

- This soil is well suited to local roads and streets.

#### **Interpretive Groups**

*Prime farmland:* All areas are prime farmland

*Land capability class:* 2e

*Virginia soil management group:* L

*Hydric soil:* No

## **21C—Edneytown loam, 7 to 15 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Edneytown soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 4 inches—brown loam

*Subsurface layer:*

4 to 7 inches—yellowish brown loam

*Subsoil:*

7 to 20 inches—strong brown sandy clay loam

20 to 27 inches—strong brown sandy loam

*Substratum:*

27 to 62 inches—brownish yellow loamy sand

### Minor Components

*Dissimilar components:*

- Edneytown soils that have cobbly surface horizons
- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Edneytown soil; in similar landform positions
- Pigeonroost soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Edneytown soil
- Areas with stony surfaces in landform positions similar to those of the Edneytown soil
- Rock outcrops in landform positions similar to those of the Edneytown soil

*Similar components:*

- Hayesville soils, which have more clay in the subsoil than the Edneytown soil; in similar landform positions
- Edneyville soils, which have less clay in the subsoil than the Edneytown soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneytown soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a red subsoil; in landform positions similar to those of the Edneytown soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of sand or gravel in the soil increases sloughing and causes cutbanks to be more susceptible to caving.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* L

*Hydric soil:* No

## **21D—Edneytown loam, 15 to 25 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Edneytown soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 4 inches—brown loam

*Subsurface layer:*

4 to 7 inches—yellowish brown loam

*Subsoil:*

7 to 20 inches—strong brown sandy clay loam

20 to 27 inches—strong brown sandy loam

*Substratum:*

27 to 62 inches—brownish yellow loamy sand

### Minor Components

#### *Dissimilar components:*

- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Edneytown soil; in similar landform positions
- Pigeonroost soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Edneytown soil
- Rock outcrops in landform positions similar to those of the Edneytown soil

#### *Similar components:*

- Edneytown soils that have cobbly or stony surfaces
- Hayesville soils, which have more clay in the subsoil than the Edneytown soil; in similar landform positions
- Edneyville soils, which have less clay in the subsoil than the Edneytown soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneytown soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a red subsoil; in landform positions similar to those of the Edneytown soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

### Use and Management Considerations

#### **Cropland**

*Suitability:* Moderately suited to corn, grass-legume hay, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

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- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of sand or gravel in the soil increases sloughing and causes cutbanks to be more susceptible to caving.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 4e

*Virginia soil management group:* L

*Hydric soil:* No

## **21E—Edneytown loam, 25 to 35 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 500 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Edneytown soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 4 inches—brown loam

*Subsurface layer:*

4 to 7 inches—yellowish brown loam

*Subsoil:*

7 to 20 inches—strong brown sandy clay loam

20 to 27 inches—strong brown sandy loam

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### *Substratum:*

27 to 62 inches—brownish yellow loamy sand

### **Minor Components**

#### *Dissimilar components:*

- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Edneytown soil; in similar landform positions
- Pigeonroost soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Edneytown soil
- Rock outcrops in landform positions similar to those of the Edneytown soil

#### *Similar components:*

- Edneytown soils that have cobbly or stony surfaces
- Hayesville soils, which have more clay in the subsoil than the Edneytown soil; in similar landform positions
- Edneyville soils, which have less clay in the subsoil than the Edneytown soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneytown soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a red subsoil; in landform positions similar to those of the Edneytown soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber

harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of sand or gravel in the soil increases sloughing and causes cutbanks to be more susceptible to caving.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* L

*Hydric soil:* No

## **21F—Edneytown loam, 35 to 55 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and very steep shoulders and summits

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Edneytown soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 4 inches—brown loam

*Subsurface layer:*

4 to 7 inches—yellowish brown loam

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### *Subsoil:*

7 to 20 inches—strong brown sandy clay loam

20 to 27 inches—strong brown sandy loam

### *Substratum:*

27 to 62 inches—brownish yellow loamy sand

### **Minor Components**

#### *Dissimilar components:*

- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Edneytown soil; in similar landform positions
- Pigeonroost soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Edneytown soil
- Rock outcrops in landform positions similar to those of the Edneytown soil

#### *Similar components:*

- Edneytown soils that have cobbly or stony surfaces
- Hayesville soils, which have more clay in the subsoil than the Edneytown soil; in similar landform positions
- Edneyville soils, which have less clay in the subsoil than the Edneytown soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneytown soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a red subsoil; in landform positions similar to those of the Edneytown soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber

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harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of sand or gravel in the soil increases sloughing and causes cutbanks to be more susceptible to caving.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* L

*Hydric soil:* No

## **22C—Edneytown-Urban land complex, 0 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 400 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Edneytown soil and similar inclusions: Typically 60 percent, ranging from about 55 to 65 percent

Urban land: Typically 35 percent, ranging from about 30 to 35 percent

### **Typical Profile**

#### **Edneytown**

*Surface layer:*

0 to 4 inches—brown loam

*Subsurface layer:*

4 to 7 inches—yellowish brown loam

*Subsoil:*

7 to 20 inches—strong brown sandy clay loam

*Subsoil:*

20 to 27 inches—strong brown sandy loam

*Substratum:*

27 to 62 inches—brownish yellow loamy sand

**Urban land**

Urban land consists of areas covered by highways, streets, parking lots, buildings, and other impervious surfaces.

**Minor Components**

*Dissimilar components:*

- Edneytown soils that have cobbly surface horizons
- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Edneytown soil; in similar landform positions
- Pigeonroost soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Edneytown soil
- Areas with stony surfaces in landform positions similar to those of the Edneytown soil
- Rock outcrops in landform positions similar to those of the Edneytown soil

*Similar components:*

- Hayesville soils, which have more clay in the subsoil than the Edneytown soil; in similar landform positions
- Edneyville soils, which have less clay in the subsoil than the Edneytown soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneytown soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a red subsoil; in landform positions similar to those of the Edneytown soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

**Properties and Qualities of the Edneytown Soil**

*Available water capacity:* Moderate (about 7.2 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

**Use and Management Considerations for Areas of Native Soil**

**Building sites**

- The slope influences the use of machinery and the amount of excavation required.

- The high content of sand or gravel in the soil increases sloughing and causes cutbanks to be more susceptible to caving.

**Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Edneytown—3e; Urban land—8

*Virginia soil management group:* Edneytown—L; Urban land—none assigned

*Hydric soils:* Edneytown—no; Urban land—not rated

**23C—Edneyville loam, 7 to 15 percent slopes**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Edneyville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

**Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsurface layer:*

5 to 11 inches—yellowish brown loam

*Subsoil:*

11 to 34 inches—yellowish brown sandy loam

*Substratum:*

34 to 62 inches—brownish yellow sandy loam

**Minor Components**

*Dissimilar components:*

- Edneyville soils that have cobbly surface horizons
- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Hayesville soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Edneyville soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Edneyville soil
- Rock outcrops in landform positions similar to those of the Edneyville soil

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Edneytown soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneyville soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Low

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine; moderately suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

- This soil is well suited to Christmas trees.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* GG

*Hydric soil:* No

## **23D—Edneyville loam, 15 to 35 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Edneyville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsurface layer:*

5 to 11 inches—yellowish brown loam

*Subsoil:*

11 to 34 inches—yellowish brown sandy loam

*Substratum:*

34 to 62 inches—brownish yellow sandy loam

### **Minor Components**

*Dissimilar components:*

- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Hayesville soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Edneyville soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Edneyville soil

*Similar components:*

- Edneyville soils that have cobbly or stony surfaces
- Edneytown soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneyville soil; on footslopes, toeslopes, and lower backslopes

## Soil Survey of Grayson County, Virginia

- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine; moderately suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

- This soil is well suited to Christmas trees.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland  
*Land capability class:* 6e  
*Virginia soil management group:* GG  
*Hydric soil:* No

## 23E—Edneyville loam, 35 to 55 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Backslopes and steep shoulders and summits  
*Size of areas:* 5 to 500 acres  
*Shape of areas:* Irregular

### Map Unit Composition

Edneyville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*  
0 to 5 inches—dark yellowish brown loam

*Subsurface layer:*  
5 to 11 inches—yellowish brown loam

*Subsoil:*  
11 to 34 inches—yellowish brown sandy loam

*Substratum:*  
34 to 62 inches—brownish yellow sandy loam

### Minor Components

*Dissimilar components:*

- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Hayesville soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Edneyville soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Edneyville soil

*Similar components:*

- Edneyville soils that have cobbly or stony surfaces
- Edneytown soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneyville soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 8.0 inches)

## Soil Survey of Grayson County, Virginia

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine; moderately suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* GG

*Hydric soil:* No

## 24D—Edneyville loam, 15 to 35 percent slopes, very stony

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### Map Unit Composition

Edneyville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsurface layer:*

5 to 11 inches—yellowish brown loam

*Subsoil:*

11 to 34 inches—yellowish brown sandy loam

*Substratum:*

34 to 62 inches—brownish yellow sandy loam

### Minor Components

*Dissimilar components:*

- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Hayesville soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Edneyville soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Edneyville soil

*Similar components:*

- Edneyville soils that have fewer stones or cobbles on the surface
- Edneytown soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneyville soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

## Soil Survey of Grayson County, Virginia

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine; moderately suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

- This soil is well suited to Christmas trees.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* GG

*Hydric soil:* No

## 24E—Edneyville loam, 35 to 55 percent slopes, very stony

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 500 acres

*Shape of areas:* Irregular

### Map Unit Composition

Edneyville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsurface layer:*

5 to 11 inches—yellowish brown loam

*Subsoil:*

11 to 34 inches—yellowish brown sandy loam

*Substratum:*

34 to 62 inches—brownish yellow sandy loam

### Minor Components

*Dissimilar components:*

- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Hayesville soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Edneyville soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Edneyville soil

*Similar components:*

- Edneyville soils that have fewer stones or cobbles on the surface
- Edneytown soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Tate soils, which have a solum that is thicker than that of the Edneyville soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

### **Pastureland**

- This soil is unsuited to pastureland.

### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine; moderately suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* GG

*Hydric soil:* No

## **24F—Edneyville loam, 55 to 80 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and very steep shoulders and summits

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Edneyville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

## Soil Survey of Grayson County, Virginia

### *Subsurface layer:*

5 to 11 inches—yellowish brown loam

### *Subsoil:*

11 to 34 inches—yellowish brown sandy loam

### *Substratum:*

34 to 62 inches—brownish yellow sandy loam

### **Minor Components**

#### *Dissimilar components:*

- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Hayesville soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Edneyville soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Edneyville soil

#### *Similar components:*

- Edneyville soils that have fewer stones or cobbles on the surface
- Edneytown soils, which have more clay in the subsoil than the Edneyville soil; in similar landform positions
- Tate soils, which have a thicker solum than the Edneyville soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine; moderately suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber

harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* GG

*Hydric soil:* No

## **25B—Elsinboro fine sandy loam, 2 to 7 percent slopes, rarely flooded**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces in valleys (fig. 6)

*Position on the landform:* Treads

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Elsinboro soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 10 inches—dark yellowish brown fine sandy loam

*Subsurface layer:*

10 to 18 inches—brown fine sandy loam

*Subsoil:*

18 to 45 inches—strong brown clay loam



Figure 6.—Gently sloping terraces along the New River are in the foreground. Elsinboro fine sandy loam, 2 to 7 percent slopes, rarely flooded, occurs on the terrace; Peaks very gravelly loam, 55 to 80 percent slopes, extremely stony, is in the woodland in the background on the ridge.

*Substratum:*

45 to 62 inches—strong brown cobbly sandy loam

**Minor Components**

*Dissimilar components:*

- Elsinboro soils that have cobbly surface horizons
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Elsinboro soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Elsinboro soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Elsinboro soil; on flood plains
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Elsinboro soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Elsinboro soil

*Similar components:*

- Delanco soils, which are moderately well drained; in landform positions similar to those of the Elsinboro soil
- Comus soils, which have more sand and less clay in the subsoil than the Elsinboro soil; on flood plains
- Tate soils on footslopes, toeslopes, and lower backslopes

**Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

## Soil Survey of Grayson County, Virginia

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* Rare

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings and to equipment operations.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depression areas.

#### Building sites

- Flooding is a limitation affecting building site development.

#### Septic tank absorption fields

- Because the excessive permeability limits the proper treatment of the effluent from conventional septic systems, the water table may become polluted.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.

### Interpretive Groups

*Prime farmland:* All areas are prime farmland

*Land capability class:* 2e

*Virginia soil management group:* L

*Hydric soil:* No



Figure 7.—An area of Elsinboro-Urban land complex, 0 to 7 percent slopes, rarely flooded, on a terrace near Galax. Flooding is a limiting feature in areas of this map unit.

## 26B—Elsinboro-Urban land complex, 0 to 7 percent slopes, rarely flooded

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces in valleys (fig. 7)

*Position on the landform:* Treads

*Size of areas:* 5 to 100 acres

*Shape of areas:* Irregular

### Map Unit Composition

Elsinboro soil and similar inclusions: Typically 60 percent, ranging from about 55 to 65 percent

Urban land: Typically 35 percent, ranging from about 30 to 35 percent

### Typical Profile

#### Elsinboro

*Surface layer:*

0 to 10 inches—dark yellowish brown fine sandy loam

*Subsurface layer:*

10 to 18 inches—brown fine sandy loam

*Subsoil:*

18 to 45 inches—strong brown clay loam

*Substratum:*

45 to 62 inches—strong brown cobbly sandy loam

## Urban land

Urban land consists of areas covered by highways, streets, parking lots, buildings, and other impervious surfaces.

### Minor Components

#### *Dissimilar components:*

- Elsinboro soils that have cobbly surface horizons
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Elsinboro soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Elsinboro soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Elsinboro soil; on flood plains
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Elsinboro soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Elsinboro soil

#### *Similar components:*

- Delanco soils, which are moderately well drained; in landform positions similar to those of the Elsinboro soil
- Comus soils, which have more sand and less clay in the subsoil than the Elsinboro soil; on flood plains
- Tate soils on footslopes, toeslopes, and lower backslopes

### Properties and Qualities of the Elsinboro Soil

*Available water capacity:* Moderate (about 7.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* Rare

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Low

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### Use and Management Considerations for Areas of Native Soil

#### Building sites

- Flooding is a limitation affecting building site development.

#### Septic tank absorption fields

- Because the excessive permeability limits the proper treatment of the effluent from conventional septic systems, the water table may become polluted.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* Elsinboro—2e; Urban land—8  
*Virginia soil management group:* Elsinboro—L; Urban land—none assigned  
*Hydric soils:* Elsinboro—no; Urban land—not rated

## **27D—Evard-Cowee complex, 15 to 25 percent slopes, stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Summits and shoulders  
*Size of areas:* About 5 to 10 acres  
*Shape of areas:* Banded and elongated

### **Map Unit Composition**

Evard soil and similar inclusions: Typically 50 percent, ranging from about 45 to 55 percent  
Cowee soil and similar inclusions: Typically 35 percent, ranging from about 30 to 40 percent

### **Typical Profile**

#### **Evard**

*Surface layer:*  
0 to 5 inches—dark yellowish brown gravelly fine sandy loam  
*Subsurface layer:*  
5 to 8 inches—yellowish brown gravelly fine sandy loam  
*Subsoil:*  
8 to 13 inches—yellowish red sandy clay loam  
13 to 29 inches—red clay loam  
29 to 35 inches—yellowish red sandy clay loam  
*Substratum:*  
35 to 45 inches—strong brown loamy fine sand  
45 to 55 inches—yellowish red channery fine sandy loam  
55 to 60 inches—yellowish brown channery loamy fine sand

#### **Cowee**

*Organic layer:*  
0 to 2 inches—moderately decomposed plant material  
*Surface layer:*  
2 to 6 inches—brown gravelly loam  
*Subsoil:*  
6 to 27 inches—yellowish red gravelly clay loam  
*Substratum:*  
27 to 39 inches—multicolored gravelly sandy loam  
*Soft bedrock:*  
39 to 45 inches—bedrock

### Minor Components

*Dissimilar components:*

- Rock outcrops in landform positions similar to those of the Evard and Cowee soils

*Similar components:*

- Hayesville soils, which are very deep to bedrock and have more clay in the subsoil than the Evard soil; in similar landform positions
- Chestnut soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Cowee soil; on convex summits, shoulders, and backslopes
- Soils that have a yellower subsoil than the Cowee soil; in similar landform positions
- Soils that have more clay in the subsoil than the Cowee soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Evard—moderate (about 8.6 inches); Cowee—low (about 3.4 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Evard—very deep (more than 60 inches); Cowee—moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* Evard—more than 60 inches; Cowee—20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Evard—high; Cowee—very high

*Surface fragments:* About 0.01 to 0.10 percent subangular stones

*Parent material:* Evard—creep deposits over residuum weathered from schist and/or gneiss; Cowee—residuum weathered from schist and/or gneiss

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Rock fragments on the surface may restrict the operation of farm machinery.

#### Woodland

*Suitability:* Well suited to eastern white pine; moderately suited to southern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.

## Soil Survey of Grayson County, Virginia

- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6s

*Virginia soil management group:* Evard—L; Cowee—N

*Hydric soils:* No

## **28B—Glenelg loam, 2 to 7 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits

*Size of areas:* 5 to 75 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 4 inches—dark grayish brown loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

### **Minor Components**

#### *Dissimilar components:*

- Glenelg soils that have cobbly surface horizons
- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Glenelg soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Glenelg soil
- Rock outcrops in landform positions similar to those of the Glenelg soil

#### *Similar components:*

- Hayesville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a solum that is thicker than that of the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.

## Soil Survey of Grayson County, Virginia

- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- This soil is well suited to building sites.

### **Septic tank absorption fields**

- This soil is well suited to septic tank absorption fields.

### **Local roads and streets**

- This soil is well suited to local roads and streets.

### **Interpretive Groups**

*Prime farmland:* All areas are prime farmland

*Land capability class:* 2e

*Virginia soil management group:* N

*Hydric soil:* No

## **28C—Glenelg loam, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 4 inches—dark grayish brown loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

*Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

### **Minor Components**

*Dissimilar components:*

- Glenelg soils that have cobbly surface horizons
- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Glenelg soil; in similar landform positions

## Soil Survey of Grayson County, Virginia

- Rock outcrops in landform positions similar to those of the Glenelg soil
- Areas with stony surfaces

### *Similar components:*

- Hayessville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a thicker solum than the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* N

*Hydric soil:* No

## **28D—Glenelg loam, 15 to 25 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 450 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 4 inches—dark grayish brown loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

*Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

### **Minor Components**

*Dissimilar components:*

- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Glenelg soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Glenelg soil

*Similar components:*

- Glenelg soils that have cobbly or stony surfaces
- Hayesville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a solum that is thicker than that of the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

## Soil Survey of Grayson County, Virginia

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### Use and Management Considerations

#### Cropland

*Suitability:* Moderately suited to corn, grass-legume hay, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 4e  
*Virginia soil management group:* N  
*Hydric soil:* No

## **28E—Glenelg loam, 25 to 35 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Backslopes and steep shoulders and summits  
*Size of areas:* 5 to 500 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*  
0 to 4 inches—dark grayish brown loam

*Subsoil:*  
4 to 24 inches—strong brown clay loam

*Substratum:*  
24 to 45 inches—yellowish brown fine sandy loam  
45 to 62 inches—dark yellowish brown fine sandy loam

### **Minor Components**

*Dissimilar components:*

- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Glenelg soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Glenelg soil

*Similar components:*

- Glenelg soils that have cobbly or stony surfaces
- Hayesville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a thicker solum than the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.0 inches)  
*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)  
*Depth class:* Very deep (more than 60 inches)  
*Depth to root-restrictive feature:* More than 60 inches  
*Drainage class:* Well drained  
*Depth to seasonal water saturation:* More than 6 feet  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Shrink-swell potential:* Low  
*Runoff class:* High

## Soil Survey of Grayson County, Virginia

*Surface fragments:* None

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

#### Woodland

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* N

*Hydric soil:* No

## 28F—Glenelg loam, 35 to 55 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

## Soil Survey of Grayson County, Virginia

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and very steep shoulders and summits

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### Map Unit Composition

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 4 inches—dark grayish brown loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

*Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

### Minor Components

*Dissimilar components:*

- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Glenelg soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Glenelg soil

*Similar components:*

- Glenelg soils that have cobbly or stony surfaces
- Hayesville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a thicker solum than the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* N

*Hydric soil:* No

## **29C—Glenelg gravelly loam, 7 to 15 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 4 inches—dark grayish brown gravelly loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

### **Minor Components**

#### *Dissimilar components:*

- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments and less clay in the subsoil than the Glenelg soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Glenelg soil

#### *Similar components:*

- Glenelg soils that have fewer stones or cobbles on the surface
- Hayessville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a solum that is thicker than that of the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

**Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

**Building sites**

- The slope influences the use of machinery and the amount of excavation required.

**Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6s

*Virginia soil management group:* N

*Hydric soil:* No

**29D—Glenelg gravelly loam, 15 to 35 percent slopes, very stony**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

**Typical Profile**

*Surface layer:*

0 to 4 inches—dark grayish brown gravelly loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

*Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

**Minor Components**

*Dissimilar components:*

- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments and less clay in the subsoil than the Glenelg soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Glenelg soil

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Glenelg soils that have fewer stones or cobbles on the surface
- Hayesville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a solum that is thicker than that of the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* N

*Hydric soil:* No

## 29E—Glenelg gravelly loam, 35 to 55 percent slopes, very stony

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

### Map Unit Composition

Glenelg soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 4 inches—dark grayish brown gravelly loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

*Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

### Minor Components

*Dissimilar components:*

- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments and less clay in the subsoil than the Glenelg soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Glenelg soil

*Similar components:*

- Glenelg soils that have fewer stones or cobbles on the surface
- Hayesville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a thicker solum than the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

## Soil Survey of Grayson County, Virginia

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to eastern white pine; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* N

*Hydric soil:* No

## 30C—Glenelg-Urban land complex, 0 to 15 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 425 acres

*Shape of areas:* Irregular

### Map Unit Composition

Glenelg soil and similar inclusions: Typically 60 percent, ranging from about 55 to 65 percent

Urban land: Typically 35 percent, ranging from about 30 to 35 percent

### Typical Profile

#### Glenelg

*Surface layer:*

0 to 4 inches—dark grayish brown loam

*Subsoil:*

4 to 24 inches—strong brown clay loam

*Substratum:*

24 to 45 inches—yellowish brown fine sandy loam

45 to 62 inches—dark yellowish brown fine sandy loam

#### Urban land

Urban land consists of areas covered by highways, streets, parking lots, buildings, and other impervious surfaces.

### Minor Components

*Dissimilar components:*

- Glenelg soils that have cobbly surface horizons
- Cowee soils, which are moderately deep to soft bedrock; in landform positions similar to those of the Glenelg soil
- Rock outcrops in landform positions similar to those of the Glenelg soil
- Areas with stony surfaces in landform positions similar to those of the Glenelg soil

*Similar components:*

- Hayesville soils, which have more clay in the subsoil than the Glenelg soil; in similar landform positions
- Tate soils, which have a thicker solum than the Glenelg soil; on footslopes, toeslopes, and lower backslopes

### Properties and Qualities of the Glenelg Soil

*Available water capacity:* Moderate (about 8.0 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from mica schist and/or mica gneiss

### **Use and Management Considerations for Areas of Native Soil**

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Glenelg—3e; Urban land—8

*Virginia soil management group:* Glenelg—N; Urban land—none assigned

*Hydric soils:* Glenelg—no; Urban land—not rated

## **31D—Greenlee very cobbly loam, 15 to 35 percent slopes, very stony**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Greenlee soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 7 inches—dark brown very cobbly loam

*Subsurface layer:*

7 to 14 inches—dark yellowish brown very cobbly sandy loam

*Subsoil:*

14 to 53 inches—yellowish brown very cobbly sandy loam

*Substratum:*

53 to 62 inches—yellowish brown extremely cobbly sandy loam

#### **Minor Components**

*Dissimilar components:*

- Areas with rubbly surfaces in landform positions similar to those of the Greenlee soil

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Greenlee soils that have fewer stones or cobbles on the surface
- Greenlee soils that have bouldery surfaces
- Cullasaja soils, which have a dark surface layer that is thicker than that of the Greenlee soil; on north-facing footslopes and lower backslopes
- Tate soils, which have fewer rock fragments and more clay in the subsoil than the Greenlee soil; in similar landform positions
- Thunder soils, which have more clay in the subsoil than the Greenlee soil and a thicker dark surface layer; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Low (about 5.5 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Colluvium and/or local alluvium derived from metamorphic rock and/or igneous rock

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

**Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of rock fragments, excavation is difficult and cutbanks are unstable.

**Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland  
*Land capability class:* 7s  
*Virginia soil management group:* CC  
*Hydric soil:* No

**31E—Greenlee very cobbly loam, 35 to 55 percent slopes, very stony**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Coves, benches, and saddles on low mountains and foothills  
*Position on the landform:* Footslopes and lower backslopes  
*Size of areas:* 5 to 75 acres  
*Shape of areas:* Irregular

**Map Unit Composition**

Greenlee soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

**Typical Profile**

*Organic layer:*  
0 to 2 inches—moderately decomposed plant material

*Surface layer:*  
2 to 7 inches—dark brown very cobbly loam

*Subsurface layer:*  
7 to 14 inches—dark yellowish brown very cobbly sandy loam

*Subsoil:*  
14 to 53 inches—yellowish brown very cobbly sandy loam

*Substratum:*  
53 to 62 inches—yellowish brown extremely cobbly sandy loam

**Minor Components**

*Dissimilar components:*

- Areas with rubbly surfaces in landform positions similar to those of the Greenlee soil

*Similar components:*

- Greenlee soils that have fewer stones or cobbles on the surface

## Soil Survey of Grayson County, Virginia

- Greenlee soils that have bouldery surfaces
- Cullasaja soils, which have a dark surface layer that is thicker than that of the Greenlee soil; on north-facing footslopes and lower backslopes
- Tate soils, which have fewer rock fragments and more clay in the subsoil than the Greenlee soil; in similar landform positions
- Thunder soils, which have more clay in the subsoil than the Greenlee soil and a thicker dark surface layer; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Low (about 5.5 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Colluvium and/or local alluvium derived from metamorphic rock and/or igneous rock

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of rock fragments, excavation is difficult and cutbanks are unstable.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* CC

*Hydric soil:* No

## **32A—Hatboro sandy loam, 0 to 3 percent slopes, frequently flooded**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Flood plains in valleys

*Position on the landform:* Steps and channels; many areas are backswamps or depressions

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Hatboro soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 8 inches—brown sandy loam; yellowish brown masses of oxidized iron

*Subsoil:*

8 to 28 inches—light brownish gray sandy clay loam; yellowish brown masses of oxidized iron

28 to 45 inches—grayish brown sandy clay loam; strong brown masses of oxidized iron

*Substratum:*

45 to 62 inches—grayish brown silt loam; strong brown masses of oxidized iron

### **Minor Components**

*Dissimilar components:*

- Elsinboro soils, which are well drained and have more clay in the subsoil than the Hatboro soil; on treads
- Delanco soils, which are moderately well drained and have more clay in the subsoil than the Hatboro soil; on treads, footslopes, and toeslopes
- Craigsville soils, which are well drained and have more rock fragments in the subsoil than the Hatboro soil; in similar landform positions
- Kinkora soils, which have more clay in the subsoil than the Hatboro soil; on treads

## Soil Survey of Grayson County, Virginia

### *Similar components:*

- Codorus soils, which are somewhat poorly drained; in landform positions similar to those of the Hatboro soil
- Hatboro soils that have cobbly or stony surfaces
- Soils that have a dark surface layer; in landform positions similar to those of the Hatboro soil

### **Soil Properties and Qualities**

*Available water capacity:* High (about 9.3 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Poorly drained

*Depth to seasonal water saturation:* About 0 to 6 inches

*Water table kind:* Apparent

*Flooding hazard:* Frequent

*Ponding hazard:* Frequent

*Depth of ponding:* 0.1 to 0.5 foot

*Shrink-swell potential:* Low

*Runoff class:* Negligible

*Surface fragments:* None

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Poorly suited

- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Frost action may damage the root systems of plants.

#### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding and ponding restrict the safe use of roads by log trucks.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

#### **Building sites**

- Flooding and ponding are limitations affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

#### **Septic tank absorption fields**

- Flooding and ponding are limitations affecting septic tank absorption fields.



Figure 8.—Cabbage growing on Hayesville loam, 2 to 7 percent slopes, in a foothill area.

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

#### **Local roads and streets**

- Flooding may damage local roads and streets.
- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6w

*Virginia soil management group:* HH

*Hydric soil:* Yes

### **33B—Hayesville loam, 2 to 7 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and hills on low mountains and foothills (fig. 8)

*Position on the landform:* Summits

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Hayesville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 6 inches—brown loam

*Subsurface layer:*

6 to 11 inches—strong brown loam

*Subsoil:*

11 to 43 inches—red clay

43 to 49 inches—red clay loam

*Substratum:*

49 to 62 inches—red sandy loam

### Minor Components

*Dissimilar components:*

- Hayesville soils that have cobbly surface horizons
- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Hayesville soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Hayesville soil
- Rock outcrops in landform positions similar to those of the Hayesville soil

*Similar components:*

- Braddock soils on risers, treads, footslopes, toeslopes, and lower backslopes
- Edneytown and Glenelg soils, which have less clay in the subsoil than the Hayesville soil; in similar landform positions
- Tate soils, which have less clay in the subsoil than the Hayesville soil; on footslopes, toeslopes, and lower backslopes

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 8.1 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss and/or schist

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

#### Pastureland

*Suitability:* Well suited

## Soil Survey of Grayson County, Virginia

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- This soil is well suited to equipment operations.

### **Christmas trees**

*Suitability:* Well suited

- The high clay content increases disease problems, especially phytophthora.

### **Building sites**

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

### **Septic tank absorption fields**

- Because the excessive permeability limits the proper treatment of the effluent from conventional septic systems, the water table may become polluted.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.

### **Interpretive Groups**

*Prime farmland:* All areas are prime farmland

*Land capability class:* 2e

*Virginia soil management group:* X

*Hydric soil:* No

## **33C—Hayesville loam, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and hills on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Hayesville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 6 inches—brown loam

*Subsurface layer:*

6 to 11 inches—strong brown loam

## Soil Survey of Grayson County, Virginia

### *Subsoil:*

11 to 43 inches—red clay

43 to 49 inches—red clay loam

### *Substratum:*

49 to 62 inches—red sandy loam

### **Minor Components**

#### *Dissimilar components:*

- Hayesville soils that have cobbly surface horizons
- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Hayesville soil; in similar landform positions
- Areas with stony surfaces in landform positions similar to those of the Hayesville soil
- Rock outcrops in landform positions similar to those of the Hayesville soil

#### *Similar components:*

- Braddock soils on risers, treads, footslopes, toeslopes, and lower backslopes
- Edneytown and Glenelg soils, which have less clay in the subsoil than the Hayesville soil; in similar landform positions
- Tate soils, which have less clay in the subsoil than the Hayesville soil; on footslopes, toeslopes, and lower backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.1 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss and/or schist

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Moderately suited to corn, grass-legume hay, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- The high clay content increases disease problems, especially phytophthora.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* X

*Hydric soil:* No

## **33D—Hayesville loam, 15 to 25 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and hills on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Hayesville soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 6 inches—brown loam

*Subsurface layer:*

6 to 11 inches—strong brown loam

*Subsoil:*

11 to 43 inches—red clay

43 to 49 inches—red clay loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

49 to 62 inches—red sandy loam

### **Minor Components**

#### *Dissimilar components:*

- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Hayesville soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the Hayesville soil

#### *Similar components:*

- Hayesville soils that have cobbly or stony surfaces
- Braddock soils on risers, treads, footslopes, toeslopes, and lower backslopes
- Edneytown and Glenelg soils, which have less clay in the subsoil than the Hayesville soil; in similar landform positions
- Tate soils, which have less clay in the subsoil than the Hayesville soil; on footslopes, toeslopes, and lower backslopes
- Steeper areas of Hayesville soils

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 8.1 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss and/or schist

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Moderately suited to grass-legume hay and alfalfa hay; poorly suited to corn

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

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- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- The high clay content increases disease problems, especially phytophthora.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 4e

*Virginia soil management group:* X

*Hydric soil:* No

## **34B—Keener loam, 2 to 7 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves and benches on low mountains and foothills

*Position on the landform:* Footslopes and toeslopes

*Size of areas:* 5 to 85 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Keener soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 14 inches—yellowish brown loam

14 to 32 inches—yellowish brown clay loam

32 to 54 inches—strong brown clay loam

54 to 62 inches—strong brown gravelly sandy clay loam

### Minor Components

*Dissimilar components:*

- Keener soils that have cobbly surface horizons
- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- Sylco soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- McCamy soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Areas with stony surfaces in landform positions similar to those of the Keener soil

*Similar components:*

- Delanco soils, which are moderately well drained; in landform positions similar to those of the Keener soil

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.5 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Colluvium derived from metasandstone and/or quartzite

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- This soil is well suited to equipment operations.

**Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

**Building sites**

- This soil is well suited to building sites.

**Septic tank absorption fields**

- Because the excessive permeability limits the proper treatment of the effluent from conventional septic systems, the water table may become polluted.

**Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.

**Interpretive Groups**

*Prime farmland:* All areas are prime farmland

*Land capability class:* 2e

*Virginia soil management group:* O

*Hydric soil:* No

**34C—Keener loam, 7 to 15 percent slopes**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves and benches on low mountains and foothills

*Position on the landform:* Footslopes and toeslopes

*Size of areas:* 5 to 85 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Keener soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

**Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 14 inches—yellowish brown loam

14 to 32 inches—yellowish brown clay loam

32 to 54 inches—strong brown clay loam

54 to 62 inches—strong brown gravelly sandy clay loam

**Minor Components**

*Dissimilar components:*

- Keener soils that have cobbly surface horizons
- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- Sylco soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes

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- McCamy soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Areas with stony surfaces in landform positions similar to those of the Keener soil

### *Similar components:*

- Delanco soils, which are moderately well drained; in landform positions similar to those of the Keener soil

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.5 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Colluvium derived from metasandstone and/or quartzite

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* O

*Hydric soil:* No

## **34D—Keener loam, 15 to 25 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves and benches on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Keener soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 14 inches—yellowish brown loam

14 to 32 inches—yellowish brown clay loam

32 to 54 inches—strong brown clay loam

54 to 62 inches—strong brown gravelly sandy clay loam

### **Minor Components**

*Dissimilar components:*

- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- Sylco soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- McCamy soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes

*Similar components:*

- Keener soils that have cobbly or stony surfaces
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Keener soil

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.5 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

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*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Colluvium derived from metasediment and/or quartzite

### Use and Management Considerations

#### Cropland

*Suitability:* Moderately suited to corn, grass-legume hay, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 4e

Virginia soil management group: O  
Hydric soil: No

## **35C—Keener loam, 7 to 15 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Coves and benches on low mountains and foothills  
*Position on the landform:* Foothills and toeslopes  
*Size of areas:* 5 to 120 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Keener soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 14 inches—yellowish brown loam

14 to 32 inches—yellowish brown clay loam

32 to 54 inches—strong brown clay loam

54 to 62 inches—strong brown gravelly sandy clay loam

### **Minor Components**

*Dissimilar components:*

- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- Sylco soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- McCamy soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Areas with rubbly surfaces in landform positions similar to those of the Keener soil

*Similar components:*

- Keener soils that have fewer stones or cobbles on the surface
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Keener soil

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.5 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

## Soil Survey of Grayson County, Virginia

*Surface fragments:* About 0.10 to 3.00 percent subrounded stones

*Parent material:* Colluvium derived from metasandstone and/or quartzite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

#### Woodland

*Suitability:* Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 6s

*Virginia soil management group:* O

*Hydric soil:* No

## 35D—Keener loam, 15 to 35 percent slopes, very stony

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves and benches on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

### Map Unit Composition

Keener soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 14 inches—yellowish brown loam

14 to 32 inches—yellowish brown clay loam

32 to 54 inches—strong brown clay loam

54 to 62 inches—strong brown gravelly sandy clay loam

### Minor Components

*Dissimilar components:*

- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- Sylco soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soil; on summits, shoulders, and upper backslopes
- McCamy soils, which are moderately deep to hard bedrock; on summits, shoulders, and backslopes
- Areas with rubbly surfaces in landform positions similar to those of the Keener soil

*Similar components:*

- Keener soils that have fewer stones or cobbles on the surface
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Keener soil

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.5 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 0.10 to 3.00 percent subrounded stones

*Parent material:* Colluvium derived from metasandstone and/or quartzite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Moderately suited to northern red oak and yellow-poplar

## Soil Survey of Grayson County, Virginia

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in seeps, low-lying areas, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* O

*Hydric soil:* No

## **36A—Kinkora fine sandy loam, 0 to 3 percent slopes, rarely flooded**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Stream terraces in valleys

*Position on the landform:* Depressions or backswamps on treads

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Kinkora soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 7 inches—dark grayish brown fine sandy loam; light brownish gray iron depletions

*Subsurface layer:*

7 to 16 inches—dark grayish brown fine sandy loam; yellowish brown masses of oxidized iron

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### *Subsoil:*

16 to 38 inches—grayish brown clay loam; yellowish brown masses of oxidized iron

### *Substratum:*

38 to 48 inches—gray gravelly loam

48 to 62 inches—gray gravelly loamy sand

### **Minor Components**

#### *Dissimilar components:*

- Elsinboro soils, which are well drained; in landform positions similar to those of the Kinkora soil
- Delanco soils, which are moderately well drained and have less clay in the subsoil than the Kinkora soil; in similar landform positions
- Craigsville soils, which are well drained and have more rock fragments in the subsoil than the Kinkora soil; on flood plains
- Comus soils, which are well drained and have less clay in the subsoil than the Kinkora soil; on flood plains

#### *Similar components:*

- Kinkora soils that have cobbly or stony surfaces
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Kinkora soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Kinkora soil; on flood plains

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.6 inches)

*Slowest saturated hydraulic conductivity:* Moderately low (about 0.06 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Poorly drained

*Depth to seasonal water saturation:* About 0 to 6 inches

*Water table kind:* Apparent

*Flooding hazard:* Rare

*Ponding hazard:* Occasional

*Depth of ponding:* 0.1 to 0.5 foot

*Shrink-swell potential:* High

*Runoff class:* Negligible

*Surface fragments:* None

*Parent material:* Alluvium derived from metamorphic rock and/or igneous rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Poorly suited to corn; not suited to grass-legume hay and alfalfa hay

- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

#### **Pastureland**

*Suitability:* Poorly suited

- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Frost action may damage the root systems of plants.

### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Ponding restricts the safe use of roads by log trucks.

### **Christmas trees**

- This soil is unsuited to Christmas trees.

### **Building sites**

- Flooding and ponding are limitations affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

### **Septic tank absorption fields**

- Ponding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

### **Local roads and streets**

- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 4w

*Virginia soil management group:* OO

*Hydric soil:* Yes

## **37C—Konnarock channery silt loam, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Konnarock soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 4 inches—dark brown channery silt loam

*Subsoil:*

4 to 19 inches—brown very channery silt loam

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### *Substratum:*

19 to 23 inches—brown extremely channery silt loam

### *Hard bedrock:*

23 inches—bedrock

### **Minor Components**

#### *Dissimilar components:*

- McCamy and Pigeonroost soils, which have fewer rock fragments and more clay in the subsoil than the Konnarock soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Konnarock soil; on footslopes, toeslopes, and lower backslopes
- Areas with stony surfaces in landform positions similar to those of the Konnarock soil
- Rock outcrops in landform positions similar to those of the Konnarock soil

#### *Similar components:*

- Konnarock soils that have cobbly surface horizons
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Konnarock soil

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 2.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Residuum weathered from rhythmite and tillite

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Poorly suited to corn and grass-legume hay; not suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress.

#### **Pastureland**

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

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- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland  
*Land capability class:* 3e  
*Virginia soil management group:* JJ  
*Hydric soil:* No

## **37D—Konnarock channery silt loam, 15 to 35 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Summits, shoulders, and moderately steep backslopes  
*Size of areas:* 5 to 350 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Konnarock soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*  
0 to 4 inches—dark brown channery silt loam

*Subsoil:*  
4 to 19 inches—brown very channery silt loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

19 to 23 inches—brown extremely channery silt loam

### *Hard bedrock:*

23 inches—bedrock

### **Minor Components**

#### *Dissimilar components:*

- McCamy and Pigeonroost soils, which have fewer rock fragments and more clay in the subsoil than the Konnarock soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Konnarock soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Konnarock soil

#### *Similar components:*

- Konnarock soils that have cobbly or stony surfaces
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Konnarock soil

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 2.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from rhythmite and tillite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

## Soil Survey of Grayson County, Virginia

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* JJ

*Hydric soil:* No

## **37E—Konnarock channery silt loam, 35 to 55 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 450 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Konnarock soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 4 inches—dark brown channery silt loam

*Subsoil:*

4 to 19 inches—brown very channery silt loam

## Soil Survey of Grayson County, Virginia

### *Substratum:*

19 to 23 inches—brown extremely channery silt loam

### *Hard bedrock:*

23 inches—bedrock

### **Minor Components**

#### *Dissimilar components:*

- McCamy and Pigeonroost soils, which have fewer rock fragments and more clay in the subsoil than the Konnarock soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Konnarock soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Konnarock soil

#### *Similar components:*

- Konnarock soils that have cobbly or stony surfaces
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Konnarock soil

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 2.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from rhythmite and tillite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* JJ

*Hydric soil:* No

## **38C—McCamy fine sandy loam, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

McCamy soil and similar inclusions: Typically 85 percent, ranging from about 70 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—brown fine sandy loam

*Subsoil:*

5 to 9 inches—brown fine sandy loam

9 to 23 inches—yellowish red sandy clay loam

*Substratum:*

23 to 26 inches—yellowish red gravelly sandy loam

## Soil Survey of Grayson County, Virginia

### *Soft bedrock:*

26 to 31 inches—bedrock

### *Hard bedrock:*

31 inches—bedrock

### **Minor Components**

#### *Dissimilar components:*

- Sylco soils, which have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Keener soils, which are very deep to bedrock; on footslopes and lower backslopes
- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Areas with stony surfaces
- Rock outcrops in landform positions similar to those of the McCamy soil

#### *Similar components:*

- McCamy soils that have cobbly surface horizons
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the McCamy soil

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 2.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from metasandstone and/or phyllite

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress.

#### **Pastureland**

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### **Woodland**

*Suitability:* Moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* FF

*Hydric soil:* No

## **38D—McCamy fine sandy loam, 15 to 35 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

McCamy soil and similar inclusions: Typically 85 percent, ranging from about 70 to 95 percent

#### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—brown fine sandy loam

## Soil Survey of Grayson County, Virginia

### *Subsoil:*

5 to 9 inches—brown fine sandy loam

9 to 23 inches—yellowish red sandy clay loam

### *Substratum:*

23 to 26 inches—yellowish red gravelly sandy loam

### *Soft bedrock:*

26 to 31 inches—bedrock

### *Hard bedrock:*

31 inches—bedrock

## Minor Components

### *Dissimilar components:*

- Sylco soils, which have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Keener soils, which are very deep to bedrock; on footslopes and lower backslopes
- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Areas with stony surfaces
- Rock outcrops in landform positions similar to those of the McCamy soil

### *Similar components:*

- McCamy soils that have cobbly surface horizons
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the McCamy soil

## Soil Properties and Qualities

*Available water capacity:* Very low (about 2.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from metasandstone and/or phyllite

## Use and Management Considerations

### **Cropland**

- This soil is unsuited to cropland.

### **Pastureland**

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

### **Woodland**

*Suitability:* Moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* FF

*Hydric soil:* No

## **39D—McCamy fine sandy loam, 7 to 35 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

McCamy soil and similar inclusions: Typically 85 percent, ranging from about 70 to 95 percent

### Typical Profile

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—brown fine sandy loam

*Subsoil:*

5 to 9 inches—brown fine sandy loam

9 to 23 inches—yellowish red sandy clay loam

*Substratum:*

23 to 26 inches—yellowish red gravelly sandy loam

*Soft bedrock:*

26 to 31 inches—bedrock

*Hard bedrock:*

31 inches—bedrock

### Minor Components

*Dissimilar components:*

- Sylco soils, which have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Keener soils, which are very deep to bedrock; on footslopes and lower backslopes
- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the McCamy soil

*Similar components:*

- McCamy soils that have fewer stones or cobbles on the surface
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the McCamy soil

### Soil Properties and Qualities

*Available water capacity:* Very low (about 2.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent subrounded stones

*Parent material:* Residuum weathered from metasandstone and/or phyllite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

### **Woodland**

*Suitability:* Moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Bedrock may interfere with the construction of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* FF

*Hydric soil:* No

## **39E—McCamy fine sandy loam, 35 to 55 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 180 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

McCamy soil and similar inclusions: Typically 85 percent, ranging from about 70 to 95 percent

### Typical Profile

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—brown fine sandy loam

*Subsoil:*

5 to 9 inches—brown fine sandy loam

9 to 23 inches—yellowish red sandy clay loam

*Substratum:*

23 to 26 inches—yellowish red gravelly sandy loam

*Soft bedrock:*

26 to 31 inches—bedrock

*Hard bedrock:*

31 inches—bedrock

### Minor Components

*Dissimilar components:*

- Sylco soils, which have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Keener soils, which are very deep to bedrock; on footslopes and lower backslopes
- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the McCamy soil; in similar landform positions
- Rock outcrops in landform positions similar to those of the McCamy soil

*Similar components:*

- McCamy soils that have fewer stones or cobbles on the surface
- Soils that have a yellowish brown subsoil; in landform positions similar to those of the McCamy soil

### Soil Properties and Qualities

*Available water capacity:* Very low (about 2.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent subrounded stones

*Parent material:* Residuum weathered from metasandstone and/or phyllite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

### **Woodland**

*Suitability:* Moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* FF

*Hydric soil:* No

## **40D—Mt Rogers-Bloodyhorse-Rock outcrop complex, 7 to 35 percent slopes, rubbly, windswept**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on high mountains

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 45 acres

*Shape of areas:* Irregular

*Note:* Areas of this map unit occur at high elevations where windy conditions are common

### Map Unit Composition

Mt Rogers soil and similar inclusions: Typically 45 percent, ranging from about 40 to 50 percent

Bloodyhorse soil and similar inclusions: Typically 25 percent, ranging from about 20 to 30 percent

Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent

### Typical Profile

#### Mt Rogers

*Surface layer:*

0 to 10 inches—black gravelly loam (very dark grayish brown, dry)

10 to 16 inches—very dark grayish brown gravelly loam (pale brown, dry)

*Subsoil:*

16 to 33 inches—dark brown very cobbly loam (pale brown, dry)

*Substratum:*

33 to 62 inches—dark yellowish brown extremely cobbly coarse sandy loam

#### Bloodyhorse

*Surface layer:*

0 to 12 inches—dark brown gravelly loam (dark yellowish brown, dry)

*Subsoil:*

12 to 28 inches—yellowish brown very gravelly loam

*Substratum:*

28 to 37 inches—yellowish brown extremely gravelly loam

*Hard bedrock:*

37 inches—granite bedrock

#### Rock outcrop

This part of the map unit consists of outcrops of porphyritic rhyolite that are about 10 to 200 feet apart.

### Minor Components

*Dissimilar components:*

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Mt Rogers and Bloodyhorse soils; on concave footslopes and toeslopes

*Similar components:*

- Mt Rogers soils that have fewer boulders or stones on the surface
- Balsam soils, which are similar to the Mt Rogers soil; on footslopes, toeslopes, and lower backslopes
- Buzzrock soils, which are deep to hard bedrock; in landform positions similar to those of the Mt Rogers soil
- Soils that have a dark surface layer that is thicker than that of the Mt Rogers soil; in similar landform positions
- Soils that are moderately well drained and similar to the Mt Rogers soil; on concave footslopes and toeslopes
- Areas with rock outcrops that are spaced more than 200 feet apart; in landform positions similar to those of the Mt Rogers soil
- Bloodyhorse soils that have fewer boulders or stones on the surface
- Buzzrock soils, which are deep to hard bedrock; in landform positions similar to those of the Bloodyhorse soils

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- Soils that are shallow to hard bedrock; in landform positions similar to those of the Bloodyhorse soil
- Soils that have a dark surface layer that is thicker than that of the Bloodyhorse soil; in similar landform positions
- Areas with rock outcrops that are spaced more than 200 feet apart; in landform positions similar to those of the Bloodyhorse soil

### **Properties and Qualities of Mt. Rogers and Bloodyhorse Soils**

*Available water capacity:* Mt Rogers—low (about 4.7 inches); Bloodyhorse—low (about 3.3 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Mt Rogers—very deep (more than 60 inches); Bloodyhorse—moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* Mt Rogers—more than 60 inches; Bloodyhorse—20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Mt Rogers—medium; Bloodyhorse—very high

*Surface fragments:* About 8.00 to 25.00 percent subangular boulders and about 7.00 to 25.00 percent subangular stones

*Parent material:* Mt Rogers—colluvium and/or creep deposits derived from rhyolite; Bloodyhorse—creep deposits over residuum weathered from rhyolite, residuum weathered from granite, and/or residuum weathered from gneiss

### **Use and Management Considerations**

#### **Cropland**

- This map unit is unsuited to cropland.

#### **Pastureland**

- This map unit is unsuited to pastureland.

#### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.

- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Windy conditions may reduce tree quality.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

#### **Septic tank absorption fields**

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

#### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Mt Rogers and Bloodyhorse—7s; Rock outcrop—8

*Virginia soil management group:* Mt Rogers—GG; Bloodyhorse—JJ; Rock outcrop—none assigned

*Hydric soils:* Mt Rogers and Bloodyhorse—no; Rock outcrop—not rated

### **40F—Mt Rogers-Bloodyhorse-Rock outcrop complex, 35 to 80 percent slopes, rubbly, windswept**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on high mountains (fig. 9)

*Position on the landform:* Backslopes and very steep shoulders and summits

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

*Note:* Areas of this map unit occur at high elevations where windy conditions are common

#### **Map Unit Composition**

Mt Rogers soil and similar inclusions: Typically 45 percent, ranging from about 40 to 50 percent

Bloodyhorse soil and similar inclusions: Typically 25 percent, ranging from about 20 to 30 percent

Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent.



Figure 9.—Bedrock exposed in an area of Mt Rogers-Bloodyhorse-Rock outcrop complex, 35 to 80 percent slopes, rubbly, windswept.

### Typical Profile

#### **Mt Rogers**

*Surface layer:*

0 to 10 inches—black gravelly loam (very dark grayish brown, dry)

10 to 16 inches—very dark grayish brown gravelly loam (pale brown, dry)

*Subsoil:*

16 to 33 inches—dark brown very cobbly loam (pale brown, dry)

*Substratum:*

33 to 62 inches—dark yellowish brown extremely cobbly coarse sandy loam

#### **Bloodyhorse**

*Surface layer:*

0 to 12 inches—dark brown gravelly loam (dark yellowish brown, dry)

*Subsoil:*

12 to 28 inches—yellowish brown very gravelly loam

*Substratum:*

28 to 37 inches—yellowish brown extremely gravelly loam

*Hard bedrock:*

37 inches—granite bedrock

#### **Rock outcrop**

This part of the map unit consists of outcrops of porphyritic rhyolite that are about 10 to 200 feet apart.

### Minor Components

*Dissimilar components:*

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Mt Rogers and Bloodyhorse soils; on concave footslopes and toeslopes

*Similar components:*

- Mt Rogers soils that have fewer boulders or stones on the surface
- Balsam soils, which are similar to the Mt Rogers soil; on footslopes, toeslopes, and lower backslopes
- Buzzrock soils, which are deep to hard bedrock; in landform positions similar to those of the Mt Rogers soil
- Soils that have a dark surface layer that is thicker than that of the Mt Rogers soil; in similar landform positions
- Soils that are moderately well drained and similar to the Mt Rogers soil; on concave footslopes and toeslopes
- Areas with rock outcrops that are spaced more than 200 feet apart; in landform positions similar to those of the Mt Rogers soil
- Bloodyhorse soils that have fewer boulders or stones on the surface
- Buzzrock soils, which are deep to hard bedrock; in landform positions similar to those of the Bloodyhorse soil
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Bloodyhorse soil
- Soils that have a dark surface layer that is thicker than that of the Bloodyhorse soil; in similar landform positions
- Areas with rock outcrops that are spaced more than 200 feet apart; in landform positions similar to those of the Bloodyhorse soil

### Properties and Qualities of the Mt Rogers and Bloodyhorse Soils

*Available water capacity:* Mt Rogers—low (about 4.7 inches); Bloodyhorse—low (about 3.3 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Mt Rogers—very deep (more than 60 inches); Bloodyhorse—moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* Mt Rogers—more than 60 inches; Bloodyhorse—20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Mt Rogers—medium; Bloodyhorse—very high

*Surface fragments:* About 8.00 to 25.00 percent subangular boulders and about 7.00 to 25.00 percent subangular stones

*Parent material:* Mt Rogers—colluvium and/or creep deposits derived from rhyolite; Bloodyhorse—creep deposits over residuum weathered from rhyolite, residuum weathered from granite, and/or residuum weathered from gneiss

### Use and Management Considerations

#### Cropland

- This map unit is unsuited to cropland.

### **Pastureland**

- This map unit is unsuited to pastureland.

### **Woodland**

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

### **Christmas trees**

*Suitability:* Well suited

- Windy conditions may reduce tree quality.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

### **Septic tank absorption fields**

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Mt Rogers and Bloodyhorse—7s; Rock outcrop—8

*Virginia soil management group:* Mt Rogers—GG; Bloodyhorse—JJ; Rock outcrop—none assigned

*Hydric soils:* Mt Rogers and Bloodyhorse—no; Rock outcrop—not rated



Figure 10.—A view of Mt Rogers-Buzzrock complex, 7 to 15 percent slopes, very bouldery, windswept. This map unit occurs at some of the highest elevations in the county.

## **41C—Mt Rogers-Buzzrock complex, 7 to 15 percent slopes, very bouldery, windswept**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on high mountains (fig. 10)

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 85 acres

*Shape of areas:* Irregular

*Note:* Areas of this map unit occur at high elevations where windy conditions are common

### **Map Unit Composition**

Mt Rogers soil and similar inclusions: Typically 45 percent, ranging from about 40 to 50 percent

Buzzrock soil and similar inclusions: Typically 40 percent, ranging from about 35 to 45 percent

### **Typical Profile**

#### **Mt Rogers**

##### *Surface layer:*

0 to 10 inches—black gravelly loam (very dark grayish brown, dry)

10 to 16 inches—very dark grayish brown gravelly loam (pale brown, dry)

##### *Subsoil:*

16 to 33 inches—dark brown very cobbly loam (pale brown, dry)

##### *Substratum:*

33 to 62 inches—dark yellowish brown extremely cobbly coarse sandy loam

### **Buzzrock**

*Surface layer:*

0 to 14 inches—very dark brown loam (very dark grayish brown, dry)

*Subsoil:*

14 to 20 inches—dark yellowish brown very channery loam

*Substratum:*

20 to 42 inches—horizon is 95 percent rock fragments and 5 percent fine-earth material; fine-earth material is yellowish brown loam

*Hard bedrock:*

42 inches—rhyolite bedrock

### **Minor Components**

*Dissimilar components:*

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Mt Rogers and Buzzrock soils; on concave footslopes and toeslopes
- Soils that have fewer rock fragments and more clay in the subsoil than the Mt Rogers and Buzzrock soils; in similar landform positions
- Soils that are shallow to hard bedrock; on convex summits and shoulders

*Similar components:*

- Mt Rogers soils that have fewer boulders or stones on the surface
- Balsam soils, which are similar to the Mt Rogers soil; on footslopes, toeslopes, and lower backslopes
- Soils that are moderately well drained and similar to the Mt Rogers soil; on concave footslopes and toeslopes
- Soils that have a dark surface layer that is thicker than that of the Mt Rogers soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Mt Rogers soil; in similar landform positions
- Buzzrock soils that have fewer boulders or stones on the surface
- Balsam soils, which are similar to the Buzzrock soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a dark surface layer that is thicker than that of the Buzzrock soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Buzzrock soil; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Mt Rogers—low (about 4.7 inches); Buzzrock—very low (about 2.8 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Mt Rogers—very deep (more than 60 inches); Buzzrock—deep (40 to 60 inches)

*Depth to root-restrictive feature:* Mt Rogers—more than 60 inches; Buzzrock—40 to 60 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Low

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

## Soil Survey of Grayson County, Virginia

*Parent material:* Mt Rogers—colluvium and/or creep deposits derived from rhyolite;  
Buzzrock—creep deposits derived from rhyolite

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

- These soils are unsuited to pastureland.

#### Woodland

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.

#### Christmas trees

*Suitability:* Well suited

- Windy conditions may reduce tree quality.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* Mt Rogers—GG; Buzzrock—JJ

*Hydric soils:* No

## 41D—Mt Rogers-Buzzrock complex, 15 to 35 percent slopes, very bouldery, windswept

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

## Soil Survey of Grayson County, Virginia

*Landform:* Ridges and knobs on high mountains

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

*Note:* Areas of this map unit occur at high elevations where windy conditions are common

### Map Unit Composition

Mt Rogers soil and similar inclusions: Typically 45 percent, ranging from about 40 to 50 percent

Buzzrock soil and similar inclusions: Typically 40 percent, ranging from about 35 to 45 percent

### Typical Profile

#### Mt Rogers

*Surface layer:*

0 to 10 inches—black gravelly loam (very dark grayish brown, dry)

10 to 16 inches—very dark grayish brown gravelly loam (pale brown, dry)

*Subsoil:*

16 to 33 inches—dark brown very cobbly loam (pale brown, dry)

*Substratum:*

33 to 62 inches—dark yellowish brown extremely cobbly coarse sandy loam

#### Buzzrock

*Surface layer:*

0 to 14 inches—very dark brown loam (very dark grayish brown, dry)

*Subsoil:*

14 to 20 inches—dark yellowish brown very channery loam

*Substratum:*

20 to 42 inches—horizon is 95 percent rock fragments and 5 percent fine-earth material; fine-earth material is yellowish brown loam

*Hard bedrock:*

42 inches—rhyolite bedrock

### Minor Components

*Dissimilar components:*

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Mt Rogers and Buzzrock soils; on concave footslopes and toeslopes
- Soils that have fewer rock fragments and more clay in the subsoil than the Mt Rogers and Buzzrock soils; in similar landform positions
- Soils that are shallow to hard bedrock and similar to the Mt Rogers and Buzzrock soils; on convex summits and shoulders

*Similar components:*

- Mt Rogers soils that have fewer boulders or stones on the surface
- Balsam soils, which are similar to the Mt Rogers soil; on footslopes, toeslopes, and lower backslopes
- Soils that are moderately well drained and similar to the Mt Rogers soil; on concave footslopes and toeslopes
- Soils that have a dark surface layer that is thicker than that of the Mt Rogers soil; in similar landform positions

## Soil Survey of Grayson County, Virginia

- Soils that have a dark surface layer that is thinner than that of the Mt Rogers soil; in similar landform positions
- Buzzrock soils that have fewer boulders or stones on the surface
- Balsam soils, which are similar to the Buzzrock soil; on footslopes, toeslopes, and lower backslopes
- Soils that have a dark surface layer that is thicker than that of the Buzzrock soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Buzzrock soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Mt Rogers—low (about 4.7 inches); Buzzrock—very low (about 2.8 inches)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Mt Rogers—very deep (more than 60 inches); Buzzrock—deep (40 to 60 inches)

*Depth to root-restrictive feature:* Mt Rogers—more than 60 inches; Buzzrock—40 to 60 inches to bedrock (lithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Mt Rogers—colluvium and/or creep deposits derived from rhyolite; Buzzrock—creep deposits derived from rhyolite

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

- These soils are unsuited to pastureland.

#### Woodland

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

**Christmas trees**

*Suitability:* Well suited

- Windy conditions may reduce tree quality.

**Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

**Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* Mt Rogers—GG; Buzzrock—JJ

*Hydric soils:* No

**42C—Peaks very gravelly loam, 7 to 15 percent slopes**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Peaks soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

**Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

32 inches—gneiss bedrock

### Minor Components

#### *Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; on footslopes, toeslopes, and lower backslopes
- Areas with stony surfaces in landform positions similar to those of the Peaks soil
- Rock outcrops in landform positions similar to those of the Peaks soil

#### *Similar components:*

- Peaks soils that have cobbly surface horizons
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

### Use and Management Considerations

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak, chestnut oak, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

#### **Christmas trees**

- This soil is well suited to Christmas trees.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6s

*Virginia soil management group:* JJ

*Hydric soil:* No

## **42D—Peaks very gravelly loam, 15 to 35 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Peaks soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

32 inches—gneiss bedrock

### Minor Components

*Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Peaks soil

*Similar components:*

- Peaks soils that have cobbly or stony surfaces
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

## Use and Management Considerations

### Cropland

- This soil is unsuited to cropland.

### Pastureland

- This soil is unsuited to pastureland.

### Woodland

*Suitability:* Moderately suited to northern red oak, chestnut oak, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

### Christmas trees

- This soil is well suited to Christmas trees.

### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

## Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* JJ  
*Hydric soil:* No

## **42E—Peaks very gravelly loam, 35 to 55 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges and knobs on low mountains and foothills  
*Position on the landform:* Backslopes and steep shoulders and summits  
*Size of areas:* 5 to 450 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Peaks soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*  
0 to 1 inch—moderately decomposed plant material

*Surface layer:*  
1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*  
4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*  
8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*  
23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*  
32 inches—gneiss bedrock

### **Minor Components**

#### *Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Peaks soil

#### *Similar components:*

- Peaks soils that have cobbly or stony surfaces
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Moderately suited to northern red oak, chestnut oak, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* JJ

*Hydric soil:* No

## **43C—Peaks very gravelly loam, 7 to 15 percent slopes, extremely stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Peaks soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

32 inches—gneiss bedrock

### **Minor Components**

*Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions

## Soil Survey of Grayson County, Virginia

- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Peaks soil

### *Similar components:*

- Peaks soils that have fewer stones or cobbles on the surface
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 3.00 to 15.00 percent subrounded stones

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak, chestnut oak, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.

## Soil Survey of Grayson County, Virginia

- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* JJ

*Hydric soil:* No

## **43D—Peaks very gravelly loam, 15 to 35 percent slopes, extremely stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 400 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Peaks soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

## Soil Survey of Grayson County, Virginia

### *Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

### *Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

### *Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

### *Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

### *Hard bedrock:*

32 inches—gneiss bedrock

## Minor Components

### *Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peak soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Peaks soil

### *Similar components:*

- Peaks soils that have fewer stones or cobbles on the surface
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

## Soil Properties and Qualities

*Available water capacity:* Very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 3.00 to 15.00 percent subrounded stones

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

## Use and Management Considerations

### **Cropland**

- This soil is unsuited to cropland.

### **Pastureland**

- This soil is unsuited to pastureland.

### **Woodland**

*Suitability:* Moderately suited to northern red oak, chestnut oak, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

### **Christmas trees**

- This soil is well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* JJ

*Hydric soil:* No

## **43E—Peaks very gravelly loam, 35 to 55 percent slopes, extremely stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 500 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Peaks soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

32 inches—gneiss bedrock

### **Minor Components**

*Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Peaks soil

*Similar components:*

- Peaks soils that have fewer stones or cobbles on the surface
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 1.6 inches)

## Soil Survey of Grayson County, Virginia

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 3.00 to 15.00 percent subrounded stones

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

### Use and Management Considerations

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak, chestnut oak, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* JJ

*Hydric soil:* No

### **43F—Peaks very gravelly loam, 55 to 80 percent slopes, extremely stony**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Backslopes and very steep shoulders and summits

*Size of areas:* 5 to 300 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Peaks soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

32 inches—gneiss bedrock

### Minor Components

#### *Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Peaks soil

#### *Similar components:*

- Peaks soils that have fewer stones or cobbles on the surface
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 3.00 to 15.00 percent subrounded stones

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

### Use and Management Considerations

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Moderately suited to northern red oak, chestnut oak, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.

- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* JJ

*Hydric soil:* No

## **44C—Pigeonroost loam, 7 to 15 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

### Map Unit Composition

Pigeonroost soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### Typical Profile

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 24 inches—strong brown clay loam

24 to 37 inches—strong brown sandy loam

*Soft bedrock:*

37 inches—gneiss bedrock

### Minor Components

*Dissimilar components:*

- Pigeonroost soils that have cobbly surface horizons
- Peaks soils, which have less clay and more rock fragments in the subsoil than the Pigeonroost soil; in similar landform positions
- Edneytown soils, which are very deep to bedrock; in landform positions similar to those of the Pigeonroost soil
- Edneyville soils, which are very deep to bedrock and have less clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Hayesville soils, which are very deep to bedrock and have more clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Areas with stony surfaces; in landform positions similar to those of the Pigeonroost soil
- Rock outcrops in landform positions similar to those of the Pigeonroost soil

*Similar components:*

- Soils that have a red subsoil; in landform positions similar to those of the Pigeonroost soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Low (about 5.1 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

## Soil Survey of Grayson County, Virginia

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* N

*Hydric soil:* No

## **44D—Pigeonroost loam, 15 to 35 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

## Soil Survey of Grayson County, Virginia

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

### Map Unit Composition

Pigeonroost soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### Typical Profile

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 24 inches—strong brown clay loam

24 to 37 inches—strong brown sandy loam

*Soft bedrock:*

37 inches—gneiss bedrock

### Minor Components

*Dissimilar components:*

- Peaks soils, which have less clay and more rock fragments in the subsoil than the Pigeonroost soil; in similar landform positions
- Edneytown soils, which are very deep to bedrock; in landform positions similar to those of the Pigeonroost soil
- Edneyville soils, which are very deep to bedrock and have less clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Hayesville soils, which are very deep to bedrock and have more clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Pigeonroost soil

*Similar components:*

- Pigeonroost soils that have cobbly or stony surfaces
- Soils that have a red subsoil; in landform positions similar to those of the Pigeonroost soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Low (about 5.1 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

## Use and Management Considerations

### Cropland

- This soil is unsuited to cropland.

### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

## Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* N

*Hydric soil:* No

## 44E—Pigeonroost loam, 35 to 55 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 450 acres

*Shape of areas:* Irregular

### Map Unit Composition

Pigeonroost soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### Typical Profile

*Surface layer:*

0 to 5 inches—dark yellowish brown loam

*Subsoil:*

5 to 24 inches—strong brown clay loam

24 to 37 inches—strong brown sandy loam

*Soft bedrock:*

37 inches—gneiss bedrock

### Minor Components

*Dissimilar components:*

- Peaks soils, which have less clay and more rock fragments in the subsoil than the Pigeonroost soil; in similar landform positions
- Edneytown soils, which are very deep to bedrock; in landform positions similar to those of the Pigeonroost soil
- Edneyville soils, which are very deep to bedrock and have less clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Hayesville soils, which are very deep to bedrock and have more clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Pigeonroost soil

*Similar components:*

- Pigeonroost soils that have cobbly or stony surfaces
- Soils that have a red subsoil; in landform positions similar to those of the Pigeonroost soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Soil Properties and Qualities

*Available water capacity:* Low (about 5.1 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

## Soil Survey of Grayson County, Virginia

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

#### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* N

*Hydric soil:* No

## **45D—Pigeonroost gravelly loam, 7 to 35 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Pigeonroost soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### **Typical Profile**

*Surface layer:*

0 to 5 inches—dark yellowish brown gravelly loam

*Subsoil:*

5 to 24 inches—strong brown clay loam

24 to 37 inches—strong brown sandy loam

*Soft bedrock:*

37 inches—bedrock

### **Minor Components**

*Dissimilar components:*

- Peaks soils, which have less clay and more rock fragments in the subsoil than the Pigeonroost soil; in similar landform positions
- Edneytown soils, which are very deep to bedrock; in landform positions similar to those of the Pigeonroost soil
- Edneyville soils, which are very deep to bedrock and have less clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Hayesville soils, which are very deep to bedrock and have more clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Pigeonroost soil

*Similar components:*

- Pigeonroost soils that have fewer stones or cobbles on the surface
- Soils that have a red subsoil; in landform positions similar to those of the Pigeonroost soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Low (about 4.8 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

## Soil Survey of Grayson County, Virginia

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

#### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s  
*Virginia soil management group:* N  
*Hydric soil:* No

## **45E—Pigeonroost gravelly loam, 35 to 55 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Backslopes and steep shoulders and summits  
*Size of areas:* 5 to 450 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Pigeonroost soil and similar inclusions: Typically 85 percent, ranging from about 80 to 90 percent

### **Typical Profile**

*Surface layer:*  
0 to 5 inches—dark yellowish brown gravelly loam

*Subsoil:*  
5 to 24 inches—strong brown clay loam  
24 to 37 inches—strong brown sandy loam

*Soft bedrock:*  
37 inches—bedrock

### **Minor Components**

*Dissimilar components:*

- Peaks soils, which have less clay and more rock fragments in the subsoil than the Pigeonroost soil; in similar landform positions
- Edneytown soils, which are very deep to bedrock; in landform positions similar to those of the Pigeonroost soil
- Edneyville soils, which are very deep to bedrock and have less clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Hayesville soils, which are very deep to bedrock and have more clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Pigeonroost soil

*Similar components:*

- Pigeonroost soils that have fewer stones or cobbles on the surface
- Soils that have a red subsoil; in landform positions similar to those of the Pigeonroost soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### **Soil Properties and Qualities**

*Available water capacity:* Low (about 4.8 inches)  
*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)  
*Depth class:* Moderately deep (20 to 40 inches)

## Soil Survey of Grayson County, Virginia

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

#### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland  
*Land capability class:* 7e  
*Virginia soil management group:* N  
*Hydric soil:* No

## 46E—Pigeonroost-Rock outcrop complex, 25 to 55 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges, hills, and spurs on low mountains and foothills  
*Position on the landform:* Backslopes and steep shoulders and summits  
*Size of areas:* 5 to 300 acres  
*Shape of areas:* Irregular

### Map Unit Composition

Pigeonroost soil and similar inclusions: Typically 60 percent, ranging from about 55 to 65 percent  
Rock outcrop: Typically 30 percent, ranging from about 25 to 35 percent

### Typical Profile

#### Pigeonroost

*Surface layer:*  
0 to 5 inches—dark yellowish brown loam

*Subsoil:*  
5 to 24 inches—strong brown clay loam  
24 to 37 inches—strong brown sandy loam

*Soft bedrock:*  
37 inches—gneiss bedrock

#### Rock outcrop

This part of the map unit consists of outcrops of quartz monzonite, gneiss, and granite that are about 10 to 200 feet apart.

### Minor Components

#### *Dissimilar components:*

- Peaks soils, which have less clay and more rock fragments in the subsoil than the Pigeonroost soil; in similar landform positions
- Edneytown soils, which are very deep to bedrock; in landform positions similar to those of the Pigeonroost soil
- Edneyville soils, which are very deep to bedrock and have less clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Hayesville soils, which are very deep to bedrock and have more clay in the subsoil than the Pigeonroost soil; in similar landform positions
- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes

#### *Similar components:*

- Pigeonroost soils that have cobbly or stony surfaces

## Soil Survey of Grayson County, Virginia

- Soils that have a red subsoil; in landform positions similar to those of the Pigeonroost soil
- Areas with rock outcrops that are spaced more than 200 feet apart; in landform positions similar to those of the Pigeonroost soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

### Properties and Qualities of the Pigeonroost Soil

*Available water capacity:* Low (about 5.1 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

### Use and Management Considerations

#### Cropland

- This map unit is unsuited to cropland.

#### Pastureland

- This map unit is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is

reduced and the difficulty of constructing foundations and installing utilities is increased.

- Because of rock outcrops, rock removal may be needed.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

#### **Local roads and streets**

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Pigeonroost—7s; Rock outcrop—8

*Virginia soil management group:* Pigeonroost—N; Rock outcrop—none assigned

*Hydric soils:* Pigeonroost—no; Rock outcrop—not rated

### **47D—Pineola loam, 15 to 35 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and hills on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 50 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Pineola soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 10 inches—very dark grayish brown loam

*Subsoil:*

10 to 15 inches—brown loam

15 to 26 inches—yellowish brown gravelly clay loam

*Substratum:*

26 to 29 inches—yellowish brown gravelly sandy loam

*Soft bedrock:*

29 inches—bedrock

#### **Minor Components**

*Dissimilar components:*

- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes

## Soil Survey of Grayson County, Virginia

- Soils that have less clay and more rock fragments in the subsoil than the Pineola soil; in similar landform positions
- Soils that are very deep to bedrock; in landform positions similar to those of the Pineola soil
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Pineola soil
- Rock outcrops in landform positions similar to those of the Pineola soil

### *Similar components:*

- Pineola soils that have gravelly, cobbly, or stony surfaces
- Pigeonroost soils, which have a surface layer that is thinner or lighter colored than that of the Pineola soil; in similar landform positions
- Soils that have a red subsoil; in landform positions similar to those of the Pineola soil

### **Soil Properties and Qualities**

*Available water capacity:* Low (about 3.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from metasandstone, metagraywacke, and/or phyllite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.

## Soil Survey of Grayson County, Virginia

- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* L

*Hydric soil:* No

## **48E—Pineola loam, 35 to 55 percent slopes, very stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and hills on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Pineola soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 10 inches—very dark grayish brown loam

*Subsoil:*

10 to 15 inches—brown loam

15 to 26 inches—yellowish brown gravelly clay loam

*Substratum:*

26 to 29 inches—yellowish brown gravelly sandy loam

*Soft bedrock:*

29 inches—bedrock

### Minor Components

#### *Dissimilar components:*

- Tate soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes
- Soils that have less clay and more rock fragments in the subsoil than the Pineola soil; in similar landform positions
- Soils that are very deep to bedrock; in landform positions similar to those of the Pineola soil
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Pineola soil
- Rock outcrops in landform positions similar to those of the Pineola soil

#### *Similar components:*

- Pineola soils that have fewer stones or cobbles on the surface
- Soils that have a red subsoil; in landform positions similar to those of the Pineola soil
- Pigeonroost soils, which have a thinner or lighter colored surface layer than the Pineola soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Low (about 3.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent stones

*Parent material:* Residuum weathered from metasandstone, metagraywacke, and/or phyllite

### Use and Management Considerations

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* L

*Hydric soil:* No

## **49—Pits, quarries**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and hills on low mountains and foothills

*Position on the landform:* Summits, shoulders, and backslopes

*Size of areas:* 5 to 10 acres

*Shape of areas:* Variable; depends on ownership boundaries

### **Map Unit Composition**

Pits, quarries: Typically 100 percent

### **Definition**

Areas of this map unit are composed of open excavations from which soil and underlying rock have been removed, exposing bedrock (fig. 11). These types of pits are associated with mining or quarry activities. The sides of the pits are generally steep, and the floor is nearly level. Piles of stones and boulders are commonly on the pit floor. These areas may contain water in some low-lying places.

### **Use and Management Considerations**

Onsite investigation is needed to determine the suitability of any area for specific uses.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 8



Figure 11.—Granite being mined in an area of Pits, quarries, at the Cardinal Stone Quarry about 8 miles south of Galax, Virginia, along Route 613.

*Virginia soil management group:* None assigned  
*Hydric soil:* Not rated

## **50F—Rock outcrop-Peaks complex, 25 to 80 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Ridges and knobs on low mountains and foothills  
*Position on the landform:* Backslopes and very steep shoulders and summits  
*Size of areas:* 5 to 450 acres  
*Shape of areas:* Irregular

### **Map Unit Composition**

Rock outcrop: Typically 50 percent, ranging from about 40 to 55 percent  
Peaks soil and similar inclusions: Typically 40 percent, ranging from about 35 to 45 percent

### **Typical Profile**

#### **Rock outcrop**

This part of the map unit consists of outcrops of quartz monzonite, gneiss, granite, mica schist, rhyolite, and other metamorphic and igneous rocks that are as much as 50 feet high and less than 10 feet apart.

## **Peaks**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 4 inches—dark yellowish brown very gravelly loam

*Subsurface layer:*

4 to 8 inches—dark yellowish brown very gravelly loam

*Subsoil:*

8 to 23 inches—yellowish brown very gravelly loam

*Substratum:*

23 to 32 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

32 inches—gneiss bedrock

## **Minor Components**

*Dissimilar components:*

- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Edneytown and Glenelg soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Pigeonroost and Cowee soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soil; in similar landform positions
- Tate soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Peaks soil; on footslopes, toeslopes, and lower backslopes
- Greenlee soils, which are very deep to bedrock; on footslopes, toeslopes, and lower backslopes

*Similar components:*

- Peaks soils that have cobbly or stony surfaces
- Soils that are shallow to hard bedrock; in landform positions similar to those of the Peaks soil
- Areas with rock outcrops that are spaced more than 10 feet apart; in landform positions similar to those of the Peaks soil
- Soils that have a dark surface layer; on elevated summits and north-facing backslopes

## **Properties and Qualities of the Peaks Soil**

*Available water capacity:* Very low (about 1.6 inches)

*Slowest saturated hydraulic conductivity:* High (about 5.95 in/hr)

*Depth class:* Moderately deep (20 to 40 inches)

*Depth to root-restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

## Use and Management Considerations

### Cropland

- This map unit is unsuited to cropland.

### Pastureland

- This map unit is unsuited to pastureland.

### Woodland

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Because of rock outcrops, the use of equipment is impractical.

### Christmas trees

- This map unit is unsuited to Christmas trees.

### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

### Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

### Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* Rock outcrop—8; Peaks—7s

*Virginia soil management group:* Rock outcrop—none assigned; Peaks—JJ

*Hydric soils:* Rock outcrop—not rated; Peaks—no

## 51B—Scales mucky peak, 0 to 7 percent slopes, very bouldery

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, saddles, and benches on high mountains

*Position on the landform:* Toeslopes

*Size of areas:* About 20 acres

*Shape of areas:* Irregular

### Map Unit Composition

Scales soil and similar inclusions: Typically 95 percent, ranging from about 90 to 100 percent

### Typical Profile

*Organic layer:*

0 to 2 inches—black peat

2 to 11 inches—black mucky peat

*Substratum:*

11 to 21 inches—grayish brown gravelly sandy clay loam; light olive brown masses of oxidized iron

21 to 33 inches—light olive brown clay loam; yellowish brown masses of oxidized iron

33 to 43 inches—light olive brown gravelly clay loam; yellowish brown masses of oxidized iron

43 to 62 inches—yellowish brown gravelly clay loam; yellowish brown masses of oxidized iron

### Minor Components

*Dissimilar components:*

- Balsam soils, which are well drained and have more rock fragments in the subsoil than the Scales soil; on footslopes, toeslopes, and lower backslopes
- Mt Rogers soils, which are well drained and have more rock fragments in the subsoil than the Scales soil; on shoulders, summits, and backslopes
- Soils that are moderately well drained; in landform positions similar to those of the Scales soil

*Similar components:*

- Scales soils that have fewer boulders or stones on the surface
- Nopan soils, which have more sand in the subsoil than the Scales soil and do not have a thick organic surface layer; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Low (about 5.9 inches)

*Slowest saturated hydraulic conductivity:* Moderately low (about 0.06 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* 11 to 40 inches to densic material

*Drainage class:* Poorly drained

*Depth to seasonal water saturation:* About 0 to 6 inches

*Water table kind:* Apparent

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 0.10 to 3.00 percent subangular boulders

*Parent material:* Organic material over colluvium derived from rhyolite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

*Suitability:* Poorly suited

## Soil Survey of Grayson County, Virginia

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Large stones on the surface may restrict the operation of some farm machinery.
- Frost action may damage the root systems of plants.

### **Woodland**

*Suitability:* Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- This soil is unsuited to Christmas trees.

### **Building sites**

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.
- The dense nature of the subsurface layer increases the difficulty of digging and compacting the soil material in shallow excavations.

### **Septic tank absorption fields**

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

### **Local roads and streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength is unfavorable for supporting heavy loads.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6s

*Virginia soil management group:* None assigned

*Hydric soil:* Yes

## **52C—Sylco-Sylvatus complex, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

## Soil Survey of Grayson County, Virginia

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits and shoulders

*Size of areas:* 5 to 125 acres

*Shape of areas:* Irregular

### Map Unit Composition

Sylco soil and similar inclusions: Typically 50 percent, ranging from about 45 to 55 percent

Sylvatus soil and similar inclusions: Typically 35 percent, ranging from about 30 to 40 percent

### Typical Profile

#### **Sylco**

*Surface layer:*

0 to 4 inches—dark yellowish brown channery silt loam

*Subsoil:*

4 to 22 inches—brown very channery silt loam

*Substratum:*

22 to 27 inches—brown extremely channery silt loam

*Hard bedrock:*

27 inches—phyllite bedrock

#### **Sylvatus**

*Surface layer:*

0 to 2 inches—dark yellowish brown channery silt loam

*Subsoil:*

2 to 11 inches—yellowish brown very channery silt loam

*Substratum:*

11 to 16 inches—yellowish brown extremely channery silt loam

*Hard bedrock:*

16 inches—phyllite bedrock

### Minor Components

*Dissimilar components:*

- Unicoi soils, which are excessively drained and have more sand and less silt in the subsoil than the Sylco and Sylvatus soils; in similar landform positions
- McCamy soils, which have more clay and fewer rock fragments in the subsoil than the Sylco and Sylvatus soils; in similar landform positions
- Keener soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Sylco and Sylvatus soils; on footslopes, toeslopes, and lower backslopes
- Areas with stony surfaces in landform positions similar to those of the Sylco and Sylvatus soils
- Rock outcrops in landform positions similar to those of the Sylco and Sylvatus soils

*Similar components:*

- Sylco soils that have cobbly surface horizons
- Sylvatus soils that have cobbly surface horizons

### Soil Properties and Qualities

*Available water capacity:* Sylco—very low (about 2.9 inches); Sylvatus—very low (about 1.5 inches)

*Slowest saturated hydraulic conductivity:* Sylco—high (about 1.98 in/hr); Sylvatus—moderately high (about 0.57 in/hr)

*Depth class:* Sylco—moderately deep (20 to 40 inches); Sylvatus—shallow (10 to 20 inches)

*Depth to root-restrictive feature:* Sylco—20 to 40 inches to bedrock (lithic); Sylvatus—10 to 20 inches to bedrock (lithic)

*Drainage class:* Sylco—somewhat excessively drained; Sylvatus—well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from phyllite and metasandstone

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

*Suitability:* Poorly suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### Woodland

*Suitability:* Moderately suited to eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.

#### Christmas trees

- These soils are well suited to Christmas trees.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

#### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Sylco—3e; Sylvatus—6s

*Virginia soil management group:* JJ

*Hydric soils:* No

**52D—Sylco-Sylvatus complex, 15 to 35 percent slopes**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Sylco soil and similar inclusions: Typically 50 percent, ranging from about 45 to 55 percent

Sylvatus soil and similar inclusions: Typically 35 percent, ranging from about 30 to 40 percent

**Typical Profile**

**Sylco**

*Surface layer:*

0 to 4 inches—dark yellowish brown channery silt loam

*Subsoil:*

4 to 22 inches—brown very channery silt loam

*Substratum:*

22 to 27 inches—brown extremely channery silt loam

*Hard bedrock:*

27 inches—phyllite bedrock

**Sylvatus**

*Surface layer:*

0 to 2 inches—dark yellowish brown channery silt loam

*Subsoil:*

2 to 11 inches—yellowish brown very channery silt loam

*Substratum:*

11 to 16 inches—yellowish brown extremely channery silt loam

*Hard bedrock:*

16 inches—phyllite bedrock

### Minor Components

*Dissimilar components:*

- Unicoi soils, which are excessively drained and have more sand and less silt in the subsoil than the Sylco and Sylvatus soils; in similar landform positions
- McCamy soils, which have more clay and fewer rock fragments in the subsoil than the Sylco and Sylvatus soils; in similar landform positions
- Keener soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Sylco and Sylvatus soils; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Sylco and Sylvatus soils

*Similar components:*

- Sylco soils that have cobbly or stony surfaces
- Sylvatus soils that have cobbly or stony surfaces

### Soil Properties and Qualities

*Available water capacity:* Sylco—very low (about 2.9 inches); Sylvatus—very low (about 1.5 inches)

*Slowest saturated hydraulic conductivity:* Sylco—high (about 1.98 in/hr); Sylvatus—moderately high (about 0.57 in/hr)

*Depth class:* Sylco—moderately deep (20 to 40 inches); Sylvatus—shallow (10 to 20 inches)

*Depth to root-restrictive feature:* Sylco—20 to 40 inches to bedrock (lithic); Sylvatus—10 to 20 inches to bedrock (lithic)

*Drainage class:* Sylco—somewhat excessively drained; Sylvatus—well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* None

*Parent material:* Residuum weathered from phyllite and metasandstone

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

*Suitability:* Poorly suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.

#### Woodland

*Suitability:* Moderately suited to eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

## Soil Survey of Grayson County, Virginia

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.

### **Christmas trees**

- These soils are well suited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* JJ

*Hydric soils:* No

## **52E—Sylco-Sylvatus complex, 35 to 55 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 500 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Sylco soil and similar inclusions: Typically 50 percent, ranging from about 45 to 55 percent

Sylvatus soil and similar inclusions: Typically 35 percent, ranging from about 30 to 40 percent

### Typical Profile

#### Sylco

*Surface layer:*

0 to 4 inches—dark yellowish brown channery silt loam

*Subsoil:*

4 to 22 inches—brown very channery silt loam

*Substratum:*

22 to 27 inches—brown extremely channery silt loam

*Hard bedrock:*

27 inches—phyllite bedrock

#### Sylvatus

*Surface layer:*

0 to 2 inches—dark yellowish brown channery silt loam

*Subsoil:*

2 to 11 inches—yellowish brown very channery silt loam

*Substratum:*

11 to 16 inches—yellowish brown extremely channery silt loam

*Hard bedrock:*

16 inches—phyllite bedrock

### Minor Components

*Dissimilar components:*

- Unicoi soils, which are excessively drained and have more sand and less silt in the subsoil than the Sylco and Sylvatus soils; in similar landform positions
- McCamy soils, which have more clay and fewer rock fragments in the subsoil than the Sylco and Sylvatus soils; in similar landform positions
- Keener soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Sylco and Sylvatus soils; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Sylco and Sylvatus soils

*Similar components:*

- Sylco soils that have cobbly or stony surfaces
- Sylvatus soils that have cobbly or stony surfaces

### Soil Properties and Qualities

*Available water capacity:* Sylco—very low (about 2.9 inches); Sylvatus—very low (about 1.5 inches)

*Slowest saturated hydraulic conductivity:* Sylco—high (about 1.98 in/hr); Sylvatus—moderately high (about 0.57 in/hr)

*Depth class:* Sylco—moderately deep (20 to 40 inches); Sylvatus—shallow (10 to 20 inches)

*Depth to root-restrictive feature:* Sylco—20 to 40 inches to bedrock (lithic); Sylvatus—10 to 20 inches to bedrock (lithic)

*Drainage class:* Sylco—somewhat excessively drained; Sylvatus—well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

## Soil Survey of Grayson County, Virginia

*Surface fragments:* None

*Parent material:* Residuum weathered from phyllite and metasandstone

### Use and Management Considerations

#### Cropland

- These soils are unsuited to cropland.

#### Pastureland

- These soils are unsuited to pastureland.

#### Woodland

*Suitability:* Moderately suited to eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The low soil strength may create unsafe conditions for log trucks.

#### Christmas trees

*Suitability:* Well suited

- South to southwest aspects on steep slopes become droughty and require additional management measures.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

#### Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* JJ

*Hydric soils:* No



Figure 12.—An area of Tate loam, 2 to 7 percent slopes, on a footslope in the foreground. Peaks very gravelly loam, 15 to 35 percent slopes, is in the background.

## 53B—Tate loam, 2 to 7 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Footslopes and toeslopes (fig. 12)

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### Map Unit Composition

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

### Minor Components

*Dissimilar components:*

- Tate soils that have cobbly surface horizons
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains
- Areas with stony surfaces; in landform positions similar to those of the Tate soil

*Similar components:*

- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and a thicker or darker surface layer; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### Use and Management Considerations

#### Cropland

*Suitability:* Well suited to corn and grass-legume hay; moderately suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.

## Soil Survey of Grayson County, Virginia

- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- This soil is well suited to building sites.

### **Septic tank absorption fields**

- Because the excessive permeability limits the proper treatment of the effluent from conventional septic systems, the water table may become polluted.

### **Local roads and streets**

- The low soil strength is unfavorable for supporting heavy loads.

### **Interpretive Groups**

*Prime farmland:* All areas are prime farmland

*Land capability class:* 2e

*Virginia soil management group:* O

*Hydric soil:* No

## **53C—Tate loam, 7 to 15 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Footslopes and toeslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

### **Minor Components**

*Dissimilar components:*

- Tate soils that have cobbly surface horizons

## Soil Survey of Grayson County, Virginia

- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains
- Areas with stony surfaces; in landform positions similar to those of the Tate soil

### *Similar components:*

- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and have a thicker or darker surface layer; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

## Soil Survey of Grayson County, Virginia

- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 3e

*Virginia soil management group:* O

*Hydric soil:* No

## **53D—Tate loam, 15 to 25 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

### **Minor Components**

*Dissimilar components:*

- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains

## Soil Survey of Grayson County, Virginia

- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains

### *Similar components:*

- Tate soils that have cobbly or stony surfaces
- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and have a thicker or darker surface layer; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

*Suitability:* Moderately suited to corn, grass-legume hay, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.

- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 4e

*Virginia soil management group:* O

*Hydric soil:* No

## **53E—Tate loam, 25 to 35 percent slopes**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Foothills, toeslopes, and lower backslopes

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

#### **Minor Components**

*Dissimilar components:*

- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains

## Soil Survey of Grayson County, Virginia

- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains

### *Similar components:*

- Tate soils that have cobbly or stony surfaces
- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and have a thicker or darker surface layer; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

#### **Woodland**

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.

- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

#### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 6e

*Virginia soil management group:* O

*Hydric soil:* No

## **54C—Tate loam, 7 to 15 percent slopes, stony**

#### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Foothills and toeslopes (fig. 13)

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

#### **Map Unit Composition**

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

#### **Typical Profile**

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

#### **Minor Components**

*Dissimilar components:*

- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains



Figure 13.—A restored pioneer farm in Grayson Highlands State Park, in an area of Tate loam, 7 to 15 percent slopes, stony. Areas of this map unit are on footslopes and toeslopes.

- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains

*Similar components:*

- Tate soils that have fewer stones or cobbles on the surface
- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and have a thicker or darker surface layer; in similar landform positions

**Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

## Soil Survey of Grayson County, Virginia

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.01 to 0.10 percent subrounded stones

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### Use and Management Considerations

#### Cropland

*Suitability:* Moderately suited to grass-legume hay; not suited to corn and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Rock fragments on the surface may restrict the operation of farm machinery and interfere with the emergence of seedlings.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Rock fragments on the surface may restrict the operation of farm machinery.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 4s

*Virginia soil management group:* O

*Hydric soil:* No

## 54D—Tate loam, 15 to 35 percent slopes, stony

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### Map Unit Composition

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

### Minor Components

*Dissimilar components:*

- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains

*Similar components:*

- Tate soils that have fewer stones or cobbles on the surface
- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and have a thicker or darker surface layer; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

## Soil Survey of Grayson County, Virginia

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 0.01 to 0.10 percent subrounded stones

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* O

*Hydric soil:* No

## 54E—Tate loam, 35 to 55 percent slopes, stony

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Footslopes and lower backslopes

*Size of areas:* 5 to 200 acres

*Shape of areas:* Irregular

### Map Unit Composition

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### Typical Profile

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

### Minor Components

*Dissimilar components:*

- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains

*Similar components:*

- Tate soils that have fewer stones or cobbles on the surface
- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and have a thicker or darker surface layer; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

## Soil Survey of Grayson County, Virginia

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 0.01 to 0.10 percent subrounded stones

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* O

*Hydric soil:* No

## **55D—Tate loam, 7 to 35 percent slopes, extremely bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 150 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Tate soil and similar inclusions: Typically 90 percent, ranging from about 85 to 95 percent

### **Typical Profile**

*Surface layer:*

0 to 6 inches—dark yellowish brown loam

*Subsoil:*

6 to 12 inches—brown sandy loam

12 to 27 inches—strong brown clay loam

27 to 47 inches—strong brown sandy clay loam

*Substratum:*

47 to 62 inches—strong brown sandy loam

### **Minor Components**

*Dissimilar components:*

- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soil; on flood plains
- Craigsville soils, which have more rock fragments and less clay in the subsoil than the Tate soil; on flood plains

*Similar components:*

- Tate soils that have fewer boulders or stones on the surface
- Braddock soils, which have more clay in the subsoil than the Tate soil; in similar landform positions
- Delanco soils, which are moderately well drained; in landform positions similar to those of the Tate soil
- Greenlee soils, which have more rock fragments and less clay in the subsoil than the Tate soil; in similar landform positions
- Thunder soils, which have more rock fragments in the subsoil than the Tate soil and have a thicker or darker surface layer; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 7.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

## Soil Survey of Grayson County, Virginia

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 3.00 to 15.00 percent subrounded boulders

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to yellow-poplar and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Because of the high amount of surface rock fragments, this soil is unsuited to mechanical site preparation for planting and seeding.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

#### Christmas trees

- This soil is unsuited to Christmas trees.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* O

*Hydric soil:* No

## 56C—Thunder cobbly loam, 2 to 15 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Position on the landform:* Footslopes and toeslopes

*Size of areas:* About 35 acres

*Shape of areas:* Irregular

### Map Unit Composition

Thunder soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### Typical Profile

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—very dark gray cobbly loam

5 to 12 inches—dark brown very cobbly loam

*Subsurface layer:*

12 to 21 inches—brown very cobbly loam

*Subsoil:*

21 to 50 inches—yellowish brown very cobbly sandy clay loam

50 to 62 inches—yellowish brown extremely cobbly sandy loam

### Minor Components

*Dissimilar components:*

- Thunder soils that have bouldery surfaces
- Soils that are poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Soils that are somewhat poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions

*Similar components:*

- Thunder soils that have stony surfaces
- Tate soils, which have fewer rock fragments in the subsoil than the Thunder soil and have a thinner or lighter colored surface layer; in similar landform positions
- Cullasaja soils, which have less clay in the subsoil than the Thunder soil; in similar landform positions
- Soils that are moderately well drained; in landform positions similar to those of the Thunder soil
- Soils that have a dark surface layer that is thicker than that of the Thunder soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Thunder soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 6.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

## Soil Survey of Grayson County, Virginia

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* None

*Parent material:* Colluvium derived from rhyolite

### Use and Management Considerations

#### Cropland

*Suitability:* Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

#### Pastureland

*Suitability:* Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

#### Woodland

*Suitability:* Well suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 4s

*Virginia soil management group:* GG

*Hydric soil:* No

## 56D—Thunder cobbly loam, 15 to 35 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 75 acres

*Shape of areas:* Irregular

### Map Unit Composition

Thunder soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### Typical Profile

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—very dark gray cobbly loam

5 to 12 inches—dark brown very cobbly loam

*Subsurface layer:*

12 to 21 inches—brown very cobbly loam

*Subsoil:*

21 to 50 inches—yellowish brown very cobbly sandy clay loam

50 to 62 inches—yellowish brown extremely cobbly sandy loam

### Minor Components

*Dissimilar components:*

- Soils that are poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Soils that are somewhat poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions

*Similar components:*

- Thunder soils that have stony or bouldery surfaces
- Tate soils, which have fewer rock fragments in the subsoil than the Thunder soil and have a thinner or lighter colored surface layer; in similar landform positions
- Cullasaja soils, which have less clay in the subsoil than the Thunder soil; in similar landform positions
- Soils that are moderately well drained; in landform positions similar to those of the Thunder soil
- Soils that have a dark surface layer that is thicker than that of the Thunder soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Thunder soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 6.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

## Soil Survey of Grayson County, Virginia

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Colluvium derived from rhyolite

### Use and Management Considerations

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* GG

*Hydric soil:* No

## 56E—Thunder cobbly loam, 35 to 55 percent slopes

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 100 acres

*Shape of areas:* Irregular

### Map Unit Composition

Thunder soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### Typical Profile

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—very dark gray cobbly loam

5 to 12 inches—dark brown very cobbly loam

*Subsurface layer:*

12 to 21 inches—brown very cobbly loam

*Subsoil:*

21 to 50 inches—yellowish brown very cobbly sandy clay loam

50 to 62 inches—yellowish brown extremely cobbly sandy loam

### Minor Components

*Dissimilar components:*

- Soils that are poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Soils that are somewhat poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions

*Similar components:*

- Thunder soils that have stony or bouldery surfaces
- Tate soils, which have fewer rock fragments in the subsoil than the Thunder soil and have a thinner or lighter colored surface layer; in similar landform positions
- Cullasaja soils, which have less clay in the subsoil than the Thunder soil; in similar landform positions
- Soils that are moderately well drained; in landform positions similar to those of the Thunder soil
- Soils that have a dark surface layer that is thicker than that of the Thunder soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Thunder soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 6.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

## Soil Survey of Grayson County, Virginia

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* None

*Parent material:* Colluvium derived from rhyolite

### Use and Management Considerations

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* GG

*Hydric soil:* No

## **57C—Thunder cobbly loam, 2 to 15 percent slopes, very bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Position on the landform:* Footslopes and toeslopes

*Size of areas:* 5 to 35 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Thunder soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—very dark gray cobbly loam

5 to 12 inches—dark brown very cobbly loam

*Subsurface layer:*

12 to 21 inches—brown very cobbly loam

*Subsoil:*

21 to 50 inches—yellowish brown very cobbly sandy clay loam

50 to 62 inches—yellowish brown extremely cobbly sandy loam

### **Minor Components**

*Dissimilar components:*

- Soils that are poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Soils that are somewhat poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Areas with rubbly surfaces; in landform positions similar to those of the Thunder soil

*Similar components:*

- Thunder soils that have fewer boulders or stones on the surface
- Tate soils, which have fewer rock fragments in the subsoil than the Thunder soil and have a thinner or lighter colored surface layer; in similar landform positions
- Soils that are moderately well drained; in landform positions similar to those of the Thunder soil
- Soils that have a dark surface layer that is thicker than that of the Thunder soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Thunder soil; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 6.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

## Soil Survey of Grayson County, Virginia

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Medium

*Surface fragments:* About 0.10 to 3.00 percent subrounded boulders

*Parent material:* Colluvium derived from rhyolite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

#### Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

#### Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* GG

*Hydric soil:* No

## **57D—Thunder cobbly loam, 15 to 35 percent slopes, very bouldery**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Position on the landform:* Footslopes, toeslopes, and lower backslopes

*Size of areas:* 5 to 350 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Thunder soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### **Typical Profile**

*Organic layer:*

0 to 1 inch—moderately decomposed plant material

*Surface layer:*

1 to 5 inches—very dark gray cobbly loam

5 to 12 inches—dark brown very cobbly loam

*Subsurface layer:*

12 to 21 inches—brown very cobbly loam

*Subsoil:*

21 to 50 inches—yellowish brown very cobbly sandy clay loam

50 to 62 inches—yellowish brown extremely cobbly sandy loam

### **Minor Components**

*Dissimilar components:*

- Soils that are poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Soils that are somewhat poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Areas with rubbly surfaces; in landform positions similar to those of the Thunder soil

*Similar components:*

- Thunder soils that have fewer boulders or stones on the surface
- Tate soils, which have fewer rock fragments in the subsoil than the Thunder soil and have a thinner or lighter colored surface layer; in similar landform positions
- Soils that are moderately well drained; in landform positions similar to those of the Thunder soil
- Soils that have a dark surface layer that is thicker than that of the Thunder soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Thunder soil; in similar landform positions

### **Soil Properties and Qualities**

*Available water capacity:* Moderate (about 6.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

## Soil Survey of Grayson County, Virginia

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 0.10 to 3.00 percent subrounded boulders

*Parent material:* Colluvium derived from rhyolite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Well suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

#### **Christmas trees**

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.

#### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

#### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### Interpretive Groups

*Prime farmland:* Not prime farmland  
*Land capability class:* 7s  
*Virginia soil management group:* GG  
*Hydric soil:* No

## 57E—Thunder cobbly loam, 35 to 55 percent slopes, very bouldery

### Setting

*Major land resource area:* Blue Ridge (MLRA 130)  
*Landform:* Benches, coves, and saddles on low mountains and foothills  
*Position on the landform:* Footslopes and lower backslopes  
*Size of areas:* 5 to 350 acres  
*Shape of areas:* Irregular

### Map Unit Composition

Thunder soil and similar inclusions: Typically 80 percent, ranging from about 75 to 85 percent

### Typical Profile

*Organic layer:*  
0 to 1 inch—moderately decomposed plant material

*Surface layer:*  
1 to 5 inches—very dark gray cobbly loam  
5 to 12 inches—dark brown very cobbly loam

*Subsurface layer:*  
12 to 21 inches—brown very cobbly loam

*Subsoil:*  
21 to 50 inches—yellowish brown very cobbly sandy clay loam  
50 to 62 inches—yellowish brown extremely cobbly sandy loam

### Minor Components

#### *Dissimilar components:*

- Soils that are poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Soils that are somewhat poorly drained and have fewer rock fragments in the subsoil than the Thunder soil; in similar landform positions
- Areas with rubbly surfaces; in landform positions similar to those of the Thunder soil

#### *Similar components:*

- Thunder soils that have fewer boulders or stones on the surface
- Tate soils, which have fewer rock fragments in the subsoil than the Thunder soil and have a thinner or lighter colored surface layer; in similar landform positions
- Soils that are moderately well drained; in landform positions similar to those of the Thunder soil
- Soils that have a dark surface layer that is thicker than that of the Thunder soil; in similar landform positions
- Soils that have a dark surface layer that is thinner than that of the Thunder soil; in similar landform positions

### Soil Properties and Qualities

*Available water capacity:* Moderate (about 6.7 inches)

*Slowest saturated hydraulic conductivity:* Moderately high (about 0.57 in/hr)

*Depth class:* Very deep (more than 60 inches)

*Depth to root-restrictive feature:* More than 60 inches

*Drainage class:* Well drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* High

*Surface fragments:* About 0.10 to 3.00 percent subrounded boulders

*Parent material:* Colluvium derived from rhyolite

### Use and Management Considerations

#### Cropland

- This soil is unsuited to cropland.

#### Pastureland

- This soil is unsuited to pastureland.

#### Woodland

*Suitability:* Well suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

#### Christmas trees

*Suitability:* Well suited

- Planting should be avoided in concave depressional areas, seeps, and drainageways.

#### Building sites

- The slope influences the use of machinery and the amount of excavation required.

### **Septic tank absorption fields**

- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* GG

*Hydric soil:* No

## **58D—Udorthents-Urban land complex, 0 to 25 percent slopes**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and hills on low mountains and foothills; stream terraces and flood plains in valleys

*Position on the landform:* Summits, shoulders, and backslopes on ridges and hills; treads and risers on stream terraces; steps and channels on flood plains

*Size of areas:* 5 to 300 acres

*Shape of areas:* Variable; depending on ownership boundaries

### **Map Unit Composition**

Udorthents: Typically 50 percent, ranging from about 45 to 55 percent

Urban land: Typically 35 percent, ranging from about 30 to 40 percent

### **Typical Profile**

#### **Udorthents**

Udorthents have resulted from disturbance of soil by land leveling, excavation, or filling. They consist of loamy and clayey soil material and varying amounts of rock fragments. Depth to hard bedrock varies from a few inches to more than 5 feet. Areas range from severely compacted to slightly compacted. Drainage is variable. Because of the variability of the soil material, a typical profile is not given.

#### **Urban land**

Urban land consists of areas covered by highways, streets, parking lots, buildings, and other impervious surfaces.

### **Use and Management Considerations**

Onsite investigation is needed to determine the suitability of any area for specific uses.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* Udorthents—none assigned; Urban land—8

*Virginia soil management group:* None assigned

*Hydric soils:* Not rated

## **59D—Unicoi very gravelly sandy loam, 7 to 35 percent slopes, extremely stony**

### **Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Summits, shoulders, and moderately steep backslopes

*Size of areas:* 5 to 250 acres

*Shape of areas:* Irregular

### **Map Unit Composition**

Unicoi soil and similar inclusions: Typically 85 percent, ranging from about 80 to 95 percent

### **Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 5 inches—brown very gravelly sandy loam

*Subsoil:*

5 to 14 inches—yellowish brown very gravelly sandy loam

*Substratum:*

14 to 19 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

19 inches—bedrock

### **Minor Components**

*Dissimilar components:*

- Sylco soils, which are well drained, are moderately deep to hard bedrock, and have more silt in the subsoil than the Unicoi soil; in similar landform positions
- Sylvatus soils, which are well drained and have more silt in the subsoil than the Unicoi soil; in similar landform positions
- McCamy soils, which are well drained, moderately deep to hard bedrock, and have more clay and fewer rock fragments in the subsoil than the Unicoi soil; in similar landform positions
- Keener soils, which are well drained, are very deep to bedrock, and have more clay and fewer rock fragments in the subsoil than the Unicoi soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Unicoi soil

*Similar components:*

- Unicoi soils that have fewer stones or cobbles on the surface
- Soils that are moderately deep to hard bedrock; in landform positions similar to those of the Unicoi soil

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 0.9 inch)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Shallow (10 to 20 inches)

*Depth to root-restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

## Soil Survey of Grayson County, Virginia

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 3.00 to 15.00 percent subrounded stones

*Parent material:* Residuum weathered from metasandstone and/or quartzite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Moderately suited to chestnut oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

#### **Christmas trees**

- This soil is unsuited to Christmas trees.

#### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

#### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

**Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

**Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7s

*Virginia soil management group:* JJ

*Hydric soil:* No

**59E—Unicoi very gravelly sandy loam, 35 to 55 percent slopes, extremely stony**

**Setting**

*Major land resource area:* Blue Ridge (MLRA 130)

*Landform:* Ridges and knobs on low mountains and foothills

*Position on the landform:* Backslopes and steep shoulders and summits

*Size of areas:* 5 to 500 acres

*Shape of areas:* Irregular

**Map Unit Composition**

Unicoi soil and similar inclusions: Typically 85 percent, ranging from about 80 to 95 percent

**Typical Profile**

*Organic layer:*

0 to 2 inches—moderately decomposed plant material

*Surface layer:*

2 to 5 inches—brown very gravelly sandy loam

*Subsoil:*

5 to 14 inches—yellowish brown very gravelly sandy loam

*Substratum:*

14 to 19 inches—yellowish brown extremely gravelly sandy loam

*Hard bedrock:*

19 inches—bedrock

**Minor Components**

*Dissimilar components:*

- Sylco soils, which are well drained, are moderately deep to hard bedrock, and have more silt in the subsoil than the Unicoi soil; in similar landform positions
- Sylvatus soils, which are well drained and have more silt in the subsoil than the Unicoi soil; in similar landform positions
- McCamy soils, which are well drained, are moderately deep to hard bedrock, and have more clay and fewer rock fragments in the subsoil than the Unicoi soil; in similar landform positions

## Soil Survey of Grayson County, Virginia

- Keener soils, which are well drained, are very deep to bedrock, and have more clay and fewer rock fragments in the subsoil than the Unicoi soil; on footslopes, toeslopes, and lower backslopes
- Rock outcrops in landform positions similar to those of the Unicoi soil

### *Similar components:*

- Unicoi soils that have fewer stones or cobbles on the surface
- Soils that are moderately deep to hard bedrock; in landform positions similar to those of the Unicoi soil

### **Soil Properties and Qualities**

*Available water capacity:* Very low (about 0.9 inch)

*Slowest saturated hydraulic conductivity:* High (about 1.98 in/hr)

*Depth class:* Shallow (10 to 20 inches)

*Depth to root-restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Depth to seasonal water saturation:* More than 6 feet

*Flooding hazard:* None

*Ponding hazard:* None

*Shrink-swell potential:* Low

*Runoff class:* Very high

*Surface fragments:* About 3.00 to 15.00 percent subrounded stones

*Parent material:* Residuum weathered from metasandstone and/or quartzite

### **Use and Management Considerations**

#### **Cropland**

- This soil is unsuited to cropland.

#### **Pastureland**

- This soil is unsuited to pastureland.

#### **Woodland**

*Suitability:* Moderately suited to chestnut oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.

## Soil Survey of Grayson County, Virginia

- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

### **Christmas trees**

- This soil is unsuited to Christmas trees.

### **Building sites**

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

### **Septic tank absorption fields**

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

### **Local roads and streets**

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

### **Interpretive Groups**

*Prime farmland:* Not prime farmland

*Land capability class:* 7e

*Virginia soil management group:* JJ

*Hydric soil:* No

## **W—Water**

This map unit is in the Blue Ridge Major Land Resource Area (MLRA 130). It includes streams, rivers, lakes, and ponds or other areas that are covered with water most of the time.

This map unit is not assigned any interpretive groups.

# Use and Management of the Soils

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This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for agricultural waste management. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

## Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

## Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

## Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

## Crops and Pasture

Fred Rogers, District Conservationist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Effective pasture management practices include maintaining a mixture of grasses and legumes, rotating pasture, deferring grazing, controlling undesirable vegetation, and using proper stocking rates.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

The farms in Grayson County have decreased in number and increased in size since 1960. Livestock and forage production are the main sources of income on these farms. The main types of livestock are beef and dairy cattle. Other types include hogs and sheep. The main forage crops are mixed grass-legume hay and alfalfa hay. Corn is grown mainly for silage. Grain and specialty crops are grown in small areas. Grain crops include corn, oats, and wheat. Specialty crops include Christmas trees, tobacco, and cabbage.

Soil and water conservation practices are necessary on almost all of the cropland in the county. The most common conservation practices are conservation tillage, stripcropping, crop rotations that include grasses and legumes, winter cover crops, grassed waterways, and diversions. The most common system of conservation tillage is no-till planting. Rye is the primary cover crop in areas where no-till corn is grown.

The slope, stoniness, and depth to bedrock limit many areas to less intensive uses, such as hay and pasture. Grass-clover hay is the primary hay crop, but alfalfa has made a comeback since the early 1960's when it was almost eliminated by the alfalfa weevil. No-till alfalfa has been particularly successful. The grasses grown for hay in the county are mainly orchardgrass and fescue mixed with red clover. The pastures dominantly support cool-season grasses, such as orchardgrass and fescue. Pastures in areas where access to farm machinery is limited tend to support fescue.

Many farmers use their grassland for both hay and pasture. This dual use is most common in areas where fescue is stockpiled for winter grazing. One or two hay cuttings are made in the spring and summer, additional nitrogen fertilizer is applied in August, and cattle graze the accumulated growth during the winter. Another common dual use is one in which cattle are allowed to graze the regrowth after a first cutting of orchardgrass.

## Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification and the Virginia Soil Management Group of map units in the survey area also are shown in the table.

The yields are based on the Virginia Agronomic Land Evaluation System (VALUES) (20). Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include erosion control and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Realistic yield goals can be maintained over a long-term basis through proper nutrient management and other soil amendments such as lime. Applications of nitrogen and phosphorus from organic or inorganic forms should be in keeping with approved nutrient management practices and regulations.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

## Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at two levels—capability class and subclass (16).

*Capability classes*, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

## Soil Survey of Grayson County, Virginia

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

*Capability subclasses* are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of the soils in this survey area is given in the section "Detailed Soil Map Units" and in table 5.

### Virginia Soil Management Groups

The Virginia Agronomic Land Use Evaluation System (VALUES) is a system that ranks soils for management and productivity (20). Developed by Virginia Tech, VALUES places each soil series in Virginia into one of 43 management groups. The format of the management groups, A through QQ, include the following soil characteristics—regional occurrence; parent material; landscape position or influence; solum thickness; dominant profile features, such as texture; available water capacity for plants; and internal soil drainage. Yields that are both economically and environmentally feasible were assigned to each management group, based on yields of field trial crop data and research. The following paragraphs describe the soil management groups in Grayson County.

*Group A.* The soils in this group formed in alluvial parent materials. These soils are on nearly level or gently sloping landscapes on flood plains or stream terraces. They are deep or very deep, are medium textured throughout, have a high available water capacity, and are well drained.

*Group B.* The soils in this group formed in alluvium or colluvium, generally associated with stream terraces or base of slopes. These soils are very deep, have loamy textures throughout, have a high available water capacity, and are well drained or moderately well drained.

*Group G.* The soils in this group formed in locally transported, medium textured sediments of either colluvial or alluvial origin that overlay a wide range of residual materials. These soils are in landscape positions ranging from footslopes and toeslopes to the heads of drainageways, depressions, narrow upland drainageways, and stream terraces. They are deep or very deep and have silty to loamy upper subsoils that are underlain with clayey to stony materials. They have a moderately high available water capacity and are moderately well drained or somewhat poorly drained.

*Group L.* The soils in this group formed from old transported deposits of alluvium, colluvium, or residuum from gneiss, schist, or granite. These soils are common on stream terraces, footslopes, and older, elevated, upland landscapes that were once stream terraces. They are deep or very deep, have a medium textured surface layer,

have more clayey subsurface layers, and commonly have gravel and rounded stones. They have a moderate or high available water capacity and typically are well drained.

*Group N.* The soils in this group formed from residuum ranging from weathered mafic rock to Triassic sediments, gneiss, and schist. These soils are very deep to moderately deep, have medium textured surface layers with reddish brown clayey subsurface layers, have a moderate available water capacity, and are well drained.

*Group O.* The soils in this group formed from transported materials ranging from mountain colluvium to old alluvium on dissected uplands and old elevated river terrace deposits. These soils range from very deep to shallow, have brown loamy to very dark red clayey subsurface horizons, may have significant coarse fragments in some areas, have a moderate available water capacity, and are well drained.

*Group U.* The soils in this group formed from a variety of residual parent materials, ranging from Triassic sediments to gneiss, schist, granite, metagraywacke, or phyllite to colluvium from these materials. These soils are very deep to shallow and commonly have fine-loamy subsurface textures. They are commonly as much as one-third coarse fragments, by volume, and, as a result, have a moderate or moderately low available water capacity. They are well drained or moderately well drained.

*Group X.* The soils in this group formed from a variety of residual materials, including slates, granites, gneisses, and schists. These soils are very deep to moderately deep, have clayey subsurface horizons (with coarse fragments or gravel in some areas), have a moderate available water capacity, and are well drained or moderately well drained.

*Group CC.* The soils in this group formed from a range of parent materials, including alluvium, colluvium, and loamy saprolites. These soils are represented by a variety of landscapes, including uplands, stream terraces, colluvial positions, and bottom lands. They commonly have a moderately deep solum, are very deep to bedrock, have clayey-skeletal to coarse-loamy subsurface horizons (some with as much as 70 percent coarse fragments), and have a moderately low available water capacity. They are well drained.

*Group FF.* The soils in this group formed in residual parent materials which weathered from slate, loamy granitic saprolites, metasandstone, phyllite, or mountain colluvium. These soils are on steeply dissected uplands and mountain side slopes. They are moderately shallow and mostly have loamy-skeletal subsurface horizons that may contain 80 percent or more coarse fragments. As a result, the available water capacity is low or very low. The soils are well drained or moderately well drained.

*Group GG.* The soils in this group formed from coarse textured residuum. These soils are on upland positions and are very deep to moderately deep. They have loamy-skeletal subsurface horizons, typically with more than 60 percent coarse fragments, or are otherwise coarse textured. They have a low available water capacity and are well drained.

*Group HH.* The soils in this group formed from loamy sediments on flood plains. These soils are moderately deep or deeper, have fine-loamy or clayey subsurface textures, have a moderate available water capacity, and range from somewhat poorly drained to moderately well drained.

*Group JJ.* The soils in this group formed from residual parent materials which weathered from granite saprolites, rhythmite, tillite, metasandstone, quartzite, gneiss, rhyolite, granite, phyllites, or schists. These soils are shallow to moderately deep and dominantly have loamy-skeletal textures throughout (ranging from 30 to 70 percent coarse fragments). They have a very low available water capacity and are well drained.

*Group OO.* The soils in this group are undrained. These soils formed from alluvium or other sediments on terraces, levees, and broad, nearly level landscapes. They have fine, loamy to silty textures throughout, have a high available water capacity, and are poorly drained.

The management groups for the map units in the survey area are given in the section “Detailed Soil Map Units” and in table 5.

## Prime Farmland

Table 6 lists the map units in the survey area that are considered prime farmland. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation’s food supply.

Prime farmland is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

For some soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

## Hydric Soils

This section lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (6, 8).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (3, 8, 9, 10). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long

## Soil Survey of Grayson County, Virginia

enough during the growing season to develop anaerobic conditions in the upper part (4). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (5). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (13) and “Keys to Soil Taxonomy” (15) and in the “Soil Survey Manual” (17).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (6).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units, or a portion of the map unit, meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This information can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (6, 8).

- 2D Balsam-Nopan complex, 15 to 35 percent slopes, very bouldery (only Nopan component is hydric)
- 2E Balsam-Nopan complex, 35 to 55 percent slopes, very bouldery (only Nopan component is hydric)
- 32A Hatboro sandy loam, 0 to 3 percent slopes, frequently flooded
- 36A Kinkora fine sandy loam, 0 to 3 percent slopes, rarely flooded
- 51B Scales mucky peak, 0 to 7 percent slopes, very bouldery

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

- 1C Balsam cobbly loam, 2 to 15 percent slopes, very bouldery
- 1D Balsam cobbly loam, 15 to 35 percent slopes, very bouldery
- 1E Balsam cobbly loam, 35 to 55 percent slopes, very bouldery
- 12A Codorus loam, 0 to 3 percent slopes, frequently flooded
- 13A Comus fine sandy loam, 0 to 3 percent slopes, frequently flooded
- 17A Craigsville cobbly sandy loam, 0 to 3 percent slopes, frequently flooded
- 19A Delanco fine sandy loam, 0 to 2 percent slopes, rarely flooded
- 19B Delanco fine sandy loam, 2 to 7 percent slopes, rarely flooded
- 20C Delanco fine sandy loam, 7 to 15 percent slopes

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- 25B Elsinboro fine sandy loam, 2 to 7 percent slopes, rarely flooded
- 26B Elsinboro-Urban land complex, 0 to 7 percent slopes, rarely flooded
- 40D Mt Rogers-Bloodyhorse-Rock outcrop complex, 7 to 35 percent slopes, rubbly, windswept
- 40F Mt Rogers-Bloodyhorse-Rock outcrop complex, 35 to 80 percent slopes, rubbly, windswept
- 41C Mt Rogers-Buzzrock complex, 7 to 15 percent slopes, very bouldery, windswept
- 41D Mt Rogers-Buzzrock complex, 15 to 35 percent slopes, very bouldery, windswept
- 53B Tate loam, 2 to 7 percent slopes
- 53C Tate loam, 7 to 15 percent slopes
- 53D Tate loam, 15 to 25 percent slopes
- 53E Tate loam, 25 to 35 percent slopes
- 54C Tate loam, 7 to 15 percent slopes, stony
- 54D Tate loam, 15 to 35 percent slopes, stony
- 54E Tate loam, 35 to 55 percent slopes, stony
- 55D Tate loam, 7 to 35 percent slopes, extremely bouldery

### **Agricultural Waste Management**

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Table 7, parts I, II, and III, show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of this table, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the table are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning,

design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Application of manure and food-processing waste* not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

*Application of sewage sludge* not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

*Disposal of wastewater by irrigation* not only disposes of municipal wastewater and

wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

*Overland flow of wastewater* is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

*Rapid infiltration of wastewater* is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

*Slow rate treatment of wastewater* is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility

group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

## Forestland Productivity and Management

Donald Garman, Forester, and Harold D. Hannah, Regional Forester, Virginia Department of Forestry, helped prepare this section.

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Oak-hickory forests once covered most of Grayson County. As the area was settled, the forests were cleared for agriculture and pasture. The river valleys and broad ridges were the prime targets, but eventually many steep knobs and lower slopes of the bigger mountains were added to the agricultural area. This left mostly the rough, steep, and inaccessible land in forest.

Around 1900, as the need for lumber and wood products grew, the best timber was removed from all the remaining forest. The blight destroyed the American chestnut in the 1920's, and, at about the same time, agricultural land started reverting back to forest. The light-seeded species, such as yellow-poplar, ash, black locust, maple, and pine, invaded the abandoned farmland as well as the areas once occupied by chestnut; some fields were taken over by eastern white pine and black locust. This trend continued until about 1976. By this time, urban development began to decrease forest acreage as well as agricultural land.

In 1992, about 61 percent of Grayson County was covered mostly by second-growth oak, hickory, yellow-poplar, and other hardwoods. White pine makes up 23 percent of the forest type. It is often in pure stands but is usually in a mixture with the hardwoods. Southern yellow pines occur on the south-facing slopes in pure old field stands and in scattered patches high on the south- and west-facing slopes of the mountains and ridges.

Mount Rodgers, the highest point in Virginia, is the only place in Virginia where Fraser fir grows naturally in mixture with red spruce, birch, and sugar maple. Fraser fir is being depleted in natural stands by the balsam wooly aphid and acid fog. Fraser fir is commercially grown in large quantities within the county and is sold primarily as Christmas trees.

The quality of trees in Grayson County varies from excellent in moist coves and on north-facing lower slopes to very poor on the dry high ridgetops and west-facing slopes. Quality has been affected by wildfire and the high-grading type of harvests which removed only the best stems of certain species periodically. As a result, some areas contain a high percentage of trees generally not currently suitable for lumber.

The forests of Grayson County are important environmentally. They prevent and reduce erosion and help keep streams cool; streams provide habitat for trout and other aquatic life. Caution should be used when clearing land or harvesting timber near or adjacent to streams and drainageways. Forests also improve air quality by converting carbon dioxide into oxygen.

### Forestland Productivity

In table 8, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged,

unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual" (11), which is available at the local office of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

*Trees to manage* are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

## Forestland Management

In table 9, parts I through V, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Proper planning for timber harvesting is essential to minimize the potential impact to soil and water quality. A harvest plan should include logging roads, log decks, streamside management zones, stream crossings, skid trails, schedule of activities, and Best Management Practices (BMP's) for each activity.

Forests should be managed to increase economic and environmental benefits. A forest stewardship plan should be developed to guide management and utilization of the woodlands.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low*, *moderate*, and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual" (11), which is available at the local office of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that

## Soil Survey of Grayson County, Virginia

no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to

a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

## Christmas Tree Production

Jimmy Osborne, Virginia Polytechnic Institute and State University Cooperative Extension Agent, Grayson County, helped prepare this section.

General management needed for Christmas tree production (principally Fraser fir) is suggested in the following paragraphs. Planners of Christmas tree management systems for the production of Christmas trees for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed Soil Map Units." Specific information can be obtained at the local office of the Cooperative Extension Service.

Many of the farms in Grayson County, especially in the central and western portions of the county, have gradually converted from livestock and forage production to the production of Christmas trees (fig. 14). Fraser fir is the dominant tree grown in Grayson County for Christmas tree production. The recommended production capacity for Fraser fir is about 1,500 trees per acre at 5' X 5' spacing. A viability of about 85 percent at harvest or about 1,275 trees per acre is expected for economic feasibility. Major soil factors to consider when selecting a potential site for Christmas tree production are: adequate soil drainage, soil texture, depth to bedrock, and topsoil thickness. Well drained soils that have an average of less than 35 percent clay in the subsoil, are at least 20 inches deep to bedrock, and have a minimum of 4 inches of topsoil are preferred. Disease problems (primarily phytophthora) increase dramatically on wetter soils and on soils which average more than 35 percent clay in the subsoil. Sites on north-northeast aspects are favored over sites on south-southwest aspects. The south-southwest aspects tend to be more droughty than the north-northeast aspects. Fraser fir stands on south-southwest aspects require a high level of soil surface cover management. Herbicidal applications must not be allowed to reduce the ground vegetation to bare cover, especially on south-southwest aspects. Optimum soil surface cover management practices are increasingly important in order to control erosion on steeper slopes.

## Recreational Development

The county has many areas which offer opportunities for various outdoor recreational activities. The Jefferson National Forest, Grayson Highlands State Park (fig. 15), Blue Ridge Parkway (fig. 16), Appalachian Trail, Virginia Creeper Trail, New River Trail State Park, and the New River provide opportunities for boating, fishing, hunting, hiking, camping, biking, and horseback riding.

In table 10, parts I and II, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are



**Figure 14.—A significant shift from other land uses to Christmas tree production is taking place in Grayson County.**

limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season



**Figure 15.—Many areas in Grayson Highlands State Park are maintained as alpine meadow areas and exhibit the style of fencing used during the 19th century, when most of these areas were first farmed.**

when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

*Camp areas* require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Picnic areas* are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil

properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Playgrounds* require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Paths and trails* for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

*Off-road motorcycle trails* require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

*Golf fairways* are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table;



Figure 16.—A view of the Blue Ridge Parkway, which is one of the major recreation areas in the county.

ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

## Wildlife Habitat

Grayson County has a wide variety of wildlife species, some of which are not found in other parts of the state due to the unique climatic conditions at the high elevation areas in the county.

White-tailed deer, black bear, wild turkey, ruffed grouse, raccoon, ground squirrel, fox squirrel, gray squirrel, opossum, bobcat, red fox, gray fox, and wood thrush are common in the forested mountain areas, especially on Peaks, McCamy, Unicoi, Sylco, and Sylvatus soils. Cottontail rabbit, ground hog, quail, mourning dove, and woodcock are on upland pastures and open fields throughout the county, especially on Glenelg, Edneytown, Edneyville, Hayesville, Cowee, and Pigeonroost soils.

Some species of wildlife found on the higher mountains in the county and, rarely, if ever, found in other parts of the state, include the Appalachian cottontail rabbit, northern flying squirrel, golden eagle, and raven. They inhabit the Grayson Highlands Area, especially on Mt Rogers, Buzzrock, Bloodyhorse, and Balsam soils.

Beaver, muskrat, and mink are found along the New River and its tributaries, especially on Comus, Craigsville, Delanco, and Elsinboro soils. Populations of river otter have been established along the South Fork of New River in North Carolina and are expected to eventually move into Grayson County.

Mallard, woodduck, blackduck, Canadian goose, blue-winged teal, and numerous warblers inhabit the wetland areas of Hatboro soils during migration periods.

The New River and its major tributaries offer smallmouth bass, rock bass, catfish, bluegill, yellow perch, brown trout, brook trout, rainbow trout, and muskellunge. Stocked trout fishing is permitted in season. Native brook trout inhabit some of the remote mountain streams in the county.

Numerous song and garden birds, most of which are migratory, inhabit the survey area. Birds of prey, such as hawks and owls, are common.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting the appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

## Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

*Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet.*

*Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.*

*The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.*

*Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.*

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

## **Building Site Development**

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 11, parts I and II, show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate

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gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Small commercial buildings* are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

*Lawns and landscaping* require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate;

and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

## Sanitary Facilities

Table 12, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If

the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

*Daily cover for landfill* is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

## Construction Materials

Table 13, parts I and II, give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

*Gravel* and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 13, part I, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 13, part II, the rating class terms are *good*, *fair*, and *poor*. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, and topsoil. The lower the number, the greater the limitation.

*Reclamation material* is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation

is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

## Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

*Embankments, dikes, and levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

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Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

*Aquifer-fed excavated ponds* are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.



# Soil Properties

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Data relating to soil properties are collected during the course of the soil survey.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

## Engineering Soil Properties

Table 15 gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

*Classification* of the soils is determined according to the Unified soil classification system (2) and the system adopted by the American Association of State Highway and Transportation Officials (1).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional

refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Rock fragments* larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit* and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

## Physical Soil Properties

Table 16 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

*Sand* as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at  $1/3$ - or  $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2

millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Saturated hydraulic conductivity* refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity ( $K_{sat}$ ). The estimates in the table indicate the rate of water movement, in micrometers per second, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

*Erosion factors* are shown in the table as the K factor ( $K_w$  and  $K_f$ ) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor  $K_w$*  indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor  $K_f$*  indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion

by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook" (12), which is available at the local office of the Natural Resources Conservation Service or on the Internet.

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

## Chemical Soil Properties

Table 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Cation-exchange capacity* is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

*Effective cation-exchange capacity* refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

*Soil reaction* is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

## Water Features

Table 18 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils

of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

*Water table* refers to a saturated zone in the soil. The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration* and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of

flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Soil Features

Table 19 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

*Potential for frost action* is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

*Risk of corrosion* pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

# Classification of the Soils

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The system of soil classification used by the National Cooperative Soil Survey has six categories (13, 15). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

**ORDER.** Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

**SUBORDER.** Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

**GREAT GROUP.** Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

**SUBGROUP.** Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

**FAMILY.** Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludults.

**SERIES.** The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

## Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in

the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (17) and in the "Field Book for Describing and Sampling Soils" (14). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (13) and in "Keys to Soil Taxonomy" (15). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

## Balsam Series

*Physiographic province:* Blue Ridge

*Landform:* Coves, benches, and saddles; on high mountains

*Parent material:* Colluvium derived from rhyolite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Very deep

*Slope range:* 2 to 55 percent

### Associated Soils

- Nopan soils, which are poorly drained and have fewer rock fragments in the subsoil than the Balsam soils
- Buzzrock soils, which are deep to hard bedrock
- Bloodyhorse soils, which are moderately deep to hard bedrock
- Mt Rogers soils on summits, shoulders, and backslopes

### Taxonomic Classification

Loamy-skeletal, isotic, frigid Humic Dystrudepts

### Typical Pedon

Balsam cobbly loam, 15 to 35 percent slopes, very bouldery; in Grayson County, Virginia; about 1.51 miles northwest of Mill Creek, about 1.28 miles north of the junction of Highways VA-362 and US-58 on Highway VA-362, about 1.0 mile southwest of Grayson Highlands Campground, in a hardwood forest; Trout Dale, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 37 minutes 50.00 seconds N. and long. 81 degrees 29 minutes 51.00 seconds W.

Oe—0 to 2 inches; moderately decomposed plant material.

A1—2 to 10 inches; very dark gray (10YR 3/1) cobbly loam, very dark grayish brown (10YR 3/2) dry; weak fine granular structure; very friable; many fine and medium and few coarse roots; 5 percent gravel and 20 percent cobbles; extremely acid; clear wavy boundary.

A2—10 to 19 inches; dark brown (10YR 3/3) cobbly loam, brown (10YR 4/3) dry; weak fine granular structure; very friable; common fine and medium and few coarse roots; 5 percent gravel and 25 percent cobbles; very strongly acid; clear wavy boundary.

Bw1—19 to 35 inches; yellowish brown (10YR 5/6) very cobbly loam; weak medium subangular blocky structure; friable; common fine and medium and few coarse roots; 10 percent gravel and 35 percent cobbles; very strongly acid; gradual wavy boundary.

Bw2—35 to 48 inches; yellowish brown (10YR 5/6) extremely cobbly loam; weak fine subangular blocky structure; friable; few fine and medium roots; 20 percent gravel and 40 percent cobbles; very strongly acid; clear wavy boundary.

C—48 to 62 inches; yellowish brown (10YR 5/6) extremely cobbly sandy loam; massive; very friable; 25 percent gravel and 50 percent cobbles; very strongly acid.

### Range in Characteristics

*Solum thickness:* 40 to 72 inches

*Depth to bedrock:* More than 72 inches

*Rock fragments:* 25 to 35 percent in the A horizon, 25 to 60 percent in the B horizon, and 35 to 90 percent in the C horizon

*Reaction:* Extremely acid to moderately acid in unlimed areas

*A horizon:*

Hue—7.5YR to 2.5Y

Value—2 or 3

Chroma—0 to 3

Fine-earth texture—loam

*AB horizon (if it occurs):*

Hue—7.5YR to 2.5Y

Value—3 or 4

Chroma—2 to 4

Fine-earth texture—loam, fine sandy loam, or sandy loam

*Bw horizon:*

Hue—7.5YR to 2.5Y

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam, sandy clay loam, or sandy loam

*BC horizon (if it occurs):*

Hue—7.5YR to 2.5Y

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, sandy loam, or fine sandy loam

*C horizon:*

Hue—7.5YR to 2.5Y

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, sandy loam, fine sandy loam, or loamy sand

## Bloodyhorse Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges and knobs on high mountains

*Parent material:* Creep deposits over residuum weathered from gneiss, granite, and rhyolite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Moderately deep

*Slope range:* 7 to 80 percent

### Associated Soils

- Mt Rogers soils, which are very deep to bedrock
- Buzzrock soils, which are deep to hard bedrock

### Taxonomic Classification

Loamy-skeletal, isotic, frigid Humic Dystrudepts

### Typical Pedon

Bloodyhorse gravelly loam, 7 to 35 percent slopes, very bouldery; in Grayson County, Virginia; about 3.0 miles north of Independence, about 1.8 miles east of the junction of Highways VA-729 and US-21, about 2.3 miles north of the junction of Highways VA-654 and US-21, in a pasture; Elk Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 40 minutes 3.00 seconds N. and long. 81 degrees 9 minutes 60.00 seconds W.

A—0 to 12 inches; dark brown (10YR 3/3) gravelly loam, dark yellowish brown (10YR 4/4) dry; weak fine granular structure; very friable; many very fine roots; 20 percent gravel; very strongly acid; clear smooth boundary.

Bw—12 to 28 inches; yellowish brown (10YR 5/6) very gravelly loam; weak fine subangular blocky structure; friable; common fine roots; 40 percent gravel; very strongly acid; clear smooth boundary.

C—28 to 37 inches; yellowish brown (10YR 5/6) extremely gravelly loam; massive; friable; few fine roots; 60 percent gravel; very strongly acid; clear smooth boundary.

R—37 inches; hard granite bedrock.

### Range in Characteristics

*Solum thickness:* 15 to 40 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 20 to 35 percent in the A horizon, 35 to 90 percent in the B horizon, and 40 to 90 percent in the C horizon

*Reaction:* Extremely acid to moderately acid

#### *A horizon:*

Hue—7.5YR to 2.5Y

Value—2 or 3

Chroma—0 to 3

Fine-earth texture—loam

#### *Bw horizon:*

Hue—7.5YR to 2.5Y

Value—3 to 6

Chroma—2 to 8

Fine-earth texture—fine sandy loam, sandy loam, loam, or silt loam

#### *C horizon:*

Hue—7.5YR to 2.5Y

Value—3 to 6

Chroma—2 to 8

Fine-earth texture—fine sandy loam, sandy loam, loam, or silt loam

## Braddock Series

*Physiographic province:* Blue Ridge

*Landform:* Stream terraces, coves, and benches; on foothills

*Parent material:* Alluvium and/or colluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 2 to 35 percent

### Associated Soils

- Delanco soils, which are moderately well drained and have less clay in the subsoil than the Braddock soils
- Tate soils, which have less clay in the subsoil than the Braddock soils

### Taxonomic Classification

Fine, mixed, semiactive, mesic Typic Hapludults

### Typical Pedon

Braddock loam, 7 to 15 percent slopes; in Grayson County, Virginia; about 2.0 miles south of Fries, about 2.0 miles northeast of the junction of Highways VA-638 and VA-94, about 1.5 miles west of the Carroll County line, about 1.3 miles northwest of the junction of Highways VA-634 and VA-641, in a hayfield; Galax, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 41 minutes 6.00 seconds N. and long. 80 degrees 58 minutes 33.00 seconds W.

A—0 to 8 inches; brown (7.5YR 4/4) loam; moderate medium granular structure; friable; many very fine and fine roots; common fine mica flakes; slightly acid; abrupt smooth boundary.

BA—8 to 15 inches; strong brown (7.5YR 4/6) clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; common fine mica flakes; moderately acid; clear smooth boundary.

Bt1—15 to 51 inches; red (2.5YR 5/6) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; common distinct clay films on all faces of pedis; common fine mica flakes; strongly acid; gradual smooth boundary.

Bt2—51 to 62 inches; red (2.5YR 4/6) clay loam; weak medium subangular blocky structure; firm, moderately sticky, slightly plastic; common distinct clay films on all faces of pedis; common fine mica flakes; strongly acid.

### Range in Characteristics

*Solum thickness:* More than 40 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 25 percent in the the upper part of the solum and 0 to 40 percent in the lower part of the solum and in the substratum

*Reaction:* Extremely acid to strongly acid in unlimed areas

*Ap horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—2 to 5

Chroma—1 to 6

Fine-earth texture—loam

*A horizon:*

Hue—7.5YR or 10YR

Value—2 to 5

Chroma—1 to 6

Fine-earth texture—loam

*E horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam, sandy loam, or fine sandy loam

## Soil Survey of Grayson County, Virginia

### *BA horizon or BE horizon (if it occurs):*

Hue—2.5YR to 7.5YR

Value—4 or 5

Chroma—4 to 8

Fine-earth texture—sandy clay loam, clay loam, or clay

### *Bt horizon:*

Hue—10R to 5YR

Value—3 to 5

Chroma—6 to 8

Fine-earth texture—clay, sandy clay, clay loam, or silty clay loam

### *BC horizon (if it occurs):*

Hue—10R to 5YR

Value—3 to 5

Chroma—6 to 8

Fine-earth texture—sandy clay loam, clay loam, sandy clay, silty clay loam, or clay

### *C or 2C horizon (if it occurs):*

Hue—10R to 7.5YR

Value—3 to 8

Chroma—1 to 8

Fine-earth texture—sandy loam, loam, sandy clay loam, clay loam, silty clay loam, clay, or sandy clay

## **Brevard Series**

*Physiographic province:* Blue Ridge

*Landform:* Coves and benches on low mountains and foothills

*Parent material:* Colluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 8 to 25 percent

### **Associated Soils**

- Chestnut soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Brevard soils
- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Brevard soils

### **Taxonomic Classification**

Fine-loamy, parasesquic, mesic Typic Hapludults

### **Typical Pedon**

Brevard gravelly fine sandy loam; in Surry County, North Carolina; about 4 miles southwest of Low Gap, 1.4 miles west of the intersection of Highways NC-1411 and NC-1408 on Highway NC-1411, about 900 feet west of Eckerd Camp Shop and 200 feet west of a campsite, in a hardwood forest; Roaring Gap, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 29 minutes 56.00 seconds N. and long. 80 degrees 55 minutes 3.00 seconds W.

A1—0 to 5 inches; dark brown (7.5YR 3/2) gravelly fine sandy loam; weak fine granular structure; very friable; 2 percent stones, 2 percent flagstones, and 25 percent gravel; very strongly acid; clear wavy boundary.

## Soil Survey of Grayson County, Virginia

- A2—5 to 8 inches; dark brown (7.5YR 3/4) gravelly fine sandy loam; weak fine granular structure; very friable; 2 percent flagstones and 25 percent gravel; very strongly acid; clear wavy boundary.
- BA—8 to 12 inches; strong brown (7.5YR 4/6) gravelly sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine mica flakes; 20 percent gravel; very strongly acid; clear wavy boundary.
- Bt1—12 to 17 inches; yellowish red (5YR 4/6) gravelly sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few faint clay films on all faces of peds; few fine mica flakes; 15 percent gravel; very strongly acid; gradual wavy boundary.
- Bt2—17 to 33 inches; red (2.5YR 4/6) gravelly sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few faint clay films on all faces of peds; few fine mica flakes; 15 percent gravel; very strongly acid; gradual wavy boundary.
- Bt3—33 to 48 inches; yellowish red (5YR 4/6) gravelly sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few faint clay films on all faces of peds; few fine mica flakes; 15 percent gravel; very strongly acid; gradual wavy boundary.
- C—48 to 60 inches; yellowish red (5YR 5/8) very gravelly fine sandy loam; massive; very friable; few fine mica flakes; 35 percent gravel; strongly acid.

### Range in Characteristics

*Solum thickness:* 40 to 60 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 50 percent, by volume, in the upper part of the solum, 0 to 35 percent in the lower part of the solum, and 15 to 60 percent in the substratum

*Reaction:* Very strongly acid to moderately acid in unlimed areas

#### *A1 horizon:*

Hue—5YR to 10YR

Value—2 to 5

Chroma—2 to 4

Fine-earth texture—fine sandy loam

#### *A2 horizon:*

Hue—5YR to 10YR

Value—3 to 6

Chroma—3 to 6

Fine-earth texture—fine sandy loam, sandy loam, or loam

#### *BA horizon or BE horizon (if it occurs):*

Hue—2.5YR to 7.5YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—sandy clay loam, fine sandy loam, sandy loam, or loam

#### *Bt horizon:*

Hue—10R to 5YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—sandy clay loam, clay loam, or loam

#### *BC horizon (if it occurs):*

Hue—10R to 7.5YR

Value—4 to 6

Chroma—4 to 8

## Soil Survey of Grayson County, Virginia

Mottles (if they occur)—in shades of red, yellow, or brown  
Fine-earth texture—sandy clay loam, fine sandy loam, sandy loam, or loam

*C horizon or 2C horizon (if it occurs):*

Hue—variable

Value—variable

Chroma—4 to 8

Mottles—horizon may be mottled in shades of red, yellow, or brown

Fine-earth texture—variable; ranging from loamy to clayey

### Burton Series

*Physiographic province:* Blue Ridge

*Landform:* Broad ridges on high mountains

*Parent material:* Residuum weathered from metagraywacke, metasandstone, and phyllite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Moderately deep

*Slope range:* 7 to 55 percent

#### Associated Soils

- Pineola soils, which have more clay in the subsoil than the Burton soils; at lower elevations

#### Taxonomic Classification

Fine-loamy, isotic, frigid Humic Dystrudepts

#### Typical Pedon

Burton loam, 35 to 55 percent slopes, very stony; in Grayson County, Virginia; about 2.0 miles southwest of Greencove, about 1.75 miles west-southwest of the junction of Highways VA-755 and VA-726, about 1.2 miles northeast of the North Carolina Corner, 1.77 mile west of Whitetop Cemetery, in a hardwood forest; Grayson, Tennessee USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 35 minutes 49.00 seconds N. and long. 81 degrees 39 minutes 36.00 seconds W.

Oe—0 to 2 inches; moderately decomposed plant material.

A—2 to 13 inches; very dark grayish brown (10YR 3/2) loam, brown (10YR 4/3) dry; weak medium granular structure; friable; many fine and medium roots; 5 percent gravel; very strongly acid; clear smooth boundary.

Bw—13 to 21 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; common fine and medium roots; 10 percent gravel; strongly acid; clear wavy boundary.

C—21 to 26 inches; yellowish brown (10YR 5/4) very gravelly sandy loam; massive; friable; few fine and medium roots; 40 percent gravel; strongly acid; abrupt wavy boundary.

Cr—26 to 31 inches; rippable and weathered metagraywacke bedrock.

R—31 inches; hard metagraywacke bedrock.

#### Range in Characteristics

*Solum thickness:* 20 to 40 inches

*Depth to hard bedrock:* 20 to 40 inches

*Rock fragments:* 0 to 15 percent in the A horizon, 0 to 35 percent in the B horizon, and 0 to 50 percent in the C horizon

*Reaction:* Extremely acid to moderately acid throughout the profile in unlimed areas

## Soil Survey of Grayson County, Virginia

### *A horizon:*

Hue—7.5YR or 10YR

Value—2 or 3

Chroma—1 to 3

Texture—loam

### *AB horizon (if it occurs):*

Hue—10YR

Value—3 or 4

Chroma—1 to 3

Fine-earth texture—loam, fine sandy loam, or sandy loam

### *Bw horizon:*

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 to 8

Fine-earth texture—loam, fine sandy loam, or sandy loam

### *C horizon:*

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 to 8

Fine-earth texture—loam, fine sandy loam, sandy loam, or loamy sand

The range in characteristics of the Official Series Description for the Burton series indicates that flakes of mica are few or common throughout the soil. The Burton soils in this survey area do not have mica flakes. This deviation does not affect interpretations or classification.

## **Buzzrock Series**

*Physiographic province:* Blue Ridge

*Landform:* Ridges and knobs on high mountains

*Parent material:* Creep deposits derived from rhyolite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Deep

*Slope range:* 7 to 35 percent

### **Associated Soils**

- Mt Rogers soils, which are very deep to bedrock
- Bloodyhorse soils, which are moderately deep to hard bedrock

### **Taxonomic Classification**

Loamy-skeletal over fragmental, isotic over mixed, frigid Humic Dystrudepts

### **Typical Pedon**

Buzzrock loam; in the Jefferson National Forest, about 2.6 miles northwest of Whitetop, Virginia, about 1.1 miles northwest of the junction of Highways NF-89 (the road to Whitetop Mountain) and VA-600, about 2.6 miles south of the junction of Highways VA-603 and VA-600, in a pasture; Whitetop Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 38 minutes 6.00 seconds N. and long. 81 degrees 36 minutes 26.00 seconds W.

A—0 to 14 inches; very dark brown (10YR 2/2) loam, very dark grayish brown (10YR

## Soil Survey of Grayson County, Virginia

- 3/2) dry; moderate fine granular structure; very friable; many fine roots; 10 percent gravel; very strongly acid; clear smooth boundary.
- Bw—14 to 20 inches; dark yellowish brown (10YR 4/4) very channery loam; weak fine subangular blocky structure; very friable; common fine roots; 50 percent channers; very strongly acid; clear wavy boundary.
- C—20 to 42 inches; horizon is 95 percent rock fragments and 5 percent fine-earth; fine-earth part is yellowish brown (10YR 5/4) loam; rock fragments are 30 percent cobbles and 65 percent angular rhyolite channers; single grain; loose; very strongly acid; clear smooth boundary.
- R—42 inches; hard rhyolite bedrock.

### Range in Characteristics

*Solum thickness:* 15 to 40 inches

*Depth to bedrock:* 40 to 60 inches

*Content of rock fragments:* 10 to 35 percent in the A horizon, 35 to 65 percent in the B horizon, and more than 90 percent in the C horizon

*Reaction:* Extremely acid to moderately acid

*A horizon:*

Hue—7.5YR to 2.5Y

Value—2 or 3

Chroma—0 to 3

Fine-earth texture—loam

*Bw horizon:*

Hue—7.5YR to 2.5Y

Value—3 to 6

Chroma—2 to 8

Fine-earth texture—fine sandy loam, sandy loam, loam, or silt loam

*C horizon:*

Hue—7.5YR to 2.5Y

Value—3 to 6

Chroma—2 to 8

Fine-earth texture—fine sandy loam, sandy loam, loam, or silt loam

## Chestnut Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges and knobs on low mountains and foothills

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Moderately deep

*Slope range:* 8 to 90 percent

### Associated Soils

- Peaks soils, which have more rock fragments in the subsoil than the Chestnut soils
- Cowee soils, which have more clay in the subsoil than the Chestnut soils
- Tuckasegee soils, which are very deep to bedrock and have a dark surface layer that is thicker than that of the Chestnut soils

### Taxonomic Classification

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

### Typical Pedon

Chestnut gravelly fine sandy loam; in Surry County, North Carolina; about 3 miles northwest of Low Gap, 1.0 mile south of the intersection of Highways NC-89 and NC-18 on Highway NC-89, about 150 feet downslope west of a hairpin curve on Highway NC-89, in a hardwood forest; Cumberland Knob, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 32 minutes 8.00 seconds N. and long. 80 degrees 53 minutes 37.00 seconds W.

- A—0 to 3 inches; very dark grayish brown (10YR 3/2) gravelly fine sandy loam; weak fine granular structure; very friable; many fine and medium and few coarse roots; many fine tubular pores; common fine mica flakes; 5 percent channers and 15 percent gravel; very strongly acid; clear wavy boundary.
- BA—3 to 8 inches; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; few medium faint brown (10YR 4/3) and common medium faint yellowish brown (10YR 5/4) mottles; weak fine subangular blocky structure; very friable; common fine and medium and few coarse roots; many fine tubular pores; common fine mica flakes; 15 percent gravel; strongly acid; clear wavy boundary.
- Bw—8 to 21 inches; light olive brown (2.5Y 5/4) gravelly fine sandy loam; common medium faint yellowish brown (10YR 5/4) mottles; weak fine subangular blocky structure; very friable; common fine and medium and few coarse roots; many fine tubular pores; common fine mica flakes; 2 percent channers and 20 percent gravel; strongly acid; gradual wavy boundary.
- C—21 to 29 inches; light olive brown (2.5Y 5/4) gravelly fine sandy loam; common medium faint yellowish brown (10YR 5/4) mottles; massive; very friable; common fine and medium and few coarse roots; common fine mica flakes; 20 percent gravel; strongly acid; gradual wavy boundary.
- Cr—29 to 45 inches; partially weathered schist bedrock.
- R—45 inches; hard schist bedrock.

### Range in Characteristics

*Solum thickness:* 15 to 39 inches

*Depth to bedrock:* 20 to 40 inches to soft bedrock; more than 40 inches to hard bedrock

*Rock fragments:* 0 to 35 percent throughout the profile

*Reaction:* Extremely acid to moderately acid in unlimed areas

*A horizon:*

Hue—7.5YR to 2.5Y

Value—2 to 6

Chroma—1 to 6

Fine-earth texture—fine sandy loam

*BA horizon:*

Hue—7.5YR to 2.5Y

Value—3 or 4

Chroma—3 or 4

Fine-earth texture—loam, fine sandy loam, or sandy loam

*Bw horizon:*

Hue—7.5YR to 2.5Y

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—sandy loam, fine sandy loam, or loam; some pedons have thin subhorizons of sandy clay loam

*C horizon:*

Color—horizon has colors similar to those of the Bw horizon or is multicolored  
Fine-earth texture—loam, sandy loam, fine sandy loam, loamy sand, or loamy fine sand

*Cr horizon:*

Bedrock—weathered, multicolored felsic crystalline rock, such as gneiss, schist, or granite, that is rippable

## Codorus Series

*Physiographic province:* Blue Ridge

*Landform:* Flood plains in valleys

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Somewhat poorly drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 0 to 3 percent

### Associated Soils

- Hatboro soils, which are poorly drained
- Comus soils, which are well drained
- Craigsville soils, which are well drained and have more rock fragments in the subsoil than the Codorus soils

### Taxonomic Classification

Fine-loamy, mixed, active, mesic Fluvaquentic Dystrudepts

### Typical Pedon

Codorus loam, 0 to 3 percent slopes, frequently flooded; in Grayson County, Virginia; about 5.3 miles southeast of Galax, about 1.0 mile southeast of the junction of Highways VA-799 and VA-790, about 1.25 mile southwest of the junction of Highways VA-718 and VA-799, in a pasture; Lambsburg, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 35 minutes 8.00 seconds N. and long. 80 degrees 51 minutes 58.00 seconds W.

Ap—0 to 7 inches; brown (10YR 4/3) loam; weak fine granular structure; friable; common fine and many very fine roots; common fine mica flakes; slightly acid; abrupt smooth boundary.

Bw1—7 to 12 inches; brown (10YR 5/3) loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; common fine mica flakes; moderately acid; clear smooth boundary.

Bw2—12 to 19 inches; brown (10YR 5/3) loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron; common fine mica flakes; strongly acid; gradual smooth boundary.

Bw3—19 to 37 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common medium distinct gray (10YR 5/1) iron depletions; strongly acid; abrupt smooth boundary.

C1—37 to 49 inches; yellowish brown (10YR 5/4) gravelly sandy loam; massive; friable, nonsticky, nonplastic; common medium distinct gray (10YR 5/1) iron depletions; 20 percent well rounded gravel; strongly acid; gradual smooth boundary.

C2—49 to 62 inches; yellowish brown (10YR 5/4) very gravelly sandy loam; massive;

## Soil Survey of Grayson County, Virginia

friable, nonsticky, nonplastic; common medium distinct gray (10YR 5/1) iron depletions; 45 percent well rounded gravel; strongly acid.

### Range in Characteristics

*Solum thickness:* 30 to 60 inches

*Depth to bedrock:* More than 72 inches

*Rock fragments:* 0 to 15 percent in the A and B horizons, 0 to 25 percent in the C horizon above a depth of 40 inches, and 0 to 70 percent in the C horizon below a depth of 40 inches

*Reaction (in unlimed areas):* Very strongly acid to moderately acid in the upper part of the solum and strongly acid to slightly acid in the lower part of the solum and in the substratum

*A or Ap horizon:*

Hue—10YR

Value—3 to 6

Chroma—2 or 3

Texture—loam

*B horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Redoximorphic features—in shades of brown and gray

Texture—loam, silt loam, clay loam, or silty clay loam

*C horizon:*

Hue—7.5YR to 2.5Y

Value—3 to 5

Chroma—3 or 4

Redoximorphic features—in shades of brown and gray

Fine-earth texture—loam, silt loam, clay loam, or silty clay loam

*Cg horizon (if it occurs):*

Hue—neutral, 7.5YR, or 10YR

Value—3 to 5

Chroma—0 to 2

Redoximorphic features—in shades of brown

Fine-earth texture—loam, silt loam, clay loam, or silty clay loam

## Comus Series

*Physiographic province:* Blue Ridge

*Landform:* Flood plains in valleys

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 0 to 3 percent

### Associated Soils

- Delanco soils, which are moderately well drained
- Elsinboro soils, which have more clay in the subsoil than the Comus soils
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Comus soils

### Taxonomic Classification

Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts

### Typical Pedon

Comus fine sandy loam, 0 to 3 percent slopes, frequently flooded; in Grayson County, Virginia; about 2.75 miles south of Fries, about 1.35 miles west of the junction of Highways VA-641 and VA-634, about 2.45 miles northwest of the junction of Highways US-58 and VA-94, in a pasture along the New River; Galax, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 40 minutes 22.00 seconds N. and long. 80 degrees 58 minutes 58.00 seconds W.

Ap—0 to 9 inches; dark yellowish brown (10YR 3/4) fine sandy loam; weak fine and medium granular structure; friable; common fine and many very fine roots; few fine mica flakes; strongly acid; abrupt smooth boundary.

Bw—9 to 31 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; common very fine roots; few fine mica flakes; strongly acid; clear smooth boundary.

C1—31 to 53 inches; brown (10YR 4/3) fine sandy loam; few fine prominent yellowish brown (10YR 5/8) mottles; massive; friable, slightly sticky, nonplastic; few very fine roots; common fine mica flakes; strongly acid; clear smooth boundary.

2C2—53 to 62 inches; brown (10YR 4/3) gravelly loamy sand; massive; loose, nonsticky, nonplastic; 20 percent quartz gravel; strongly acid.

### Range in Characteristics

*Solum thickness:* 24 to 40 inches

*Depth to bedrock:* More than 72 inches

*Rock fragments:* 0 to 15 percent in the A and B horizons and 0 to 40 percent in the C horizon

*Reaction:* Very strongly acid to moderately acid in unlimed areas

#### *Ap horizon:*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—1 to 4

Texture—fine sandy loam

#### *Bw horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture—loam, silt loam, or fine sandy loam

#### *C or 2C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—2 to 6

Fine-earth texture—loam, silt loam, fine sandy loam, or sandy loam; including loamy sand or loamy fine sand below a depth of 40 inches

## Cowee Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Parent material:* Residuum weathered from mica schist and/or gneiss

*Drainage class:* Well drained

## Soil Survey of Grayson County, Virginia

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Moderately deep

*Slope range:* 7 to 55 percent

### Associated Soils

- Clifford soils, which are very deep to bedrock and have more clay in the subsoil than the Cowee soils
- Glenelg soils, which are very deep to bedrock
- Peaks soils, which have less clay and more rock fragments in the subsoil than the Cowee soils

### Taxonomic Classification

Fine-loamy, parasquic, mesic Typic Hapludults

### Typical Pedon

Cowee loam, 7 to 15 percent slopes; in Grayson County, Virginia; about 6.5 miles southeast of Galax, about 1.0 mile east of the junction of Highways VA-89 and VA-613, about 1.0 mile northeast of the junction of Highway VA-89 and the Blue Ridge Parkway, 75 feet north of Highway VA-804, in a hardwood forest; Cumberland Knob, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 34 minutes 46.00 seconds N. and long. 80 degrees 53 minutes 25.00 seconds W.

Oe—0 to 2 inches; moderately decomposed plant material.

A—2 to 6 inches; brown (7.5YR 4/4) loam; moderate fine granular structure; friable; many fine and medium roots; common fine mica flakes; 10 percent schist gravel; strongly acid; abrupt wavy boundary.

Bt—6 to 27 inches; yellowish red (5YR 5/6) clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few medium and few very fine roots; common distinct clay films on all faces of peds; common fine mica flakes; 10 percent schist gravel; strongly acid; clear wavy boundary.

C—27 to 39 inches; multicolored gravelly sandy loam; massive; very friable, nonsticky, nonplastic; few fine and medium roots; common fine and medium mica flakes; 25 percent schist gravel; strongly acid; abrupt wavy boundary.

Cr—39 to 45 inches; interbedded mica gneiss and mica schist bedrock that is multicolored, weathered, and rippable.

### Range in Characteristics

*Solum thickness:* 15 to 39 inches

*Depth to bedrock:* 20 to 40 inches to soft bedrock; more than 40 inches to hard bedrock

*Rock fragments:* 0 to 35 percent throughout the profile

*Reaction:* Extremely acid to moderately acid in unlimed areas

*Flakes of mica:* Few or common throughout the profile

*A or Ap horizon:*

Hue—5YR to 10YR

Value—3 to 5

Chroma—2 to 8

Fine-earth texture—loam

*E horizon (if it occurs):*

Hue—5YR or 7.5YR

Value—4 or 5

Chroma—4 to 8

Fine-earth texture—loam, sandy loam, or fine sandy loam

*Bt horizon:*

Hue—5YR or 7.5YR; 7.5YR is restricted to individual subhorizons

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—sandy clay loam, loam, clay loam, sandy loam, or fine sandy loam

*C horizon:*

Hue—horizon has hue of 5YR or 7.5YR or is multicolored

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—sandy loam, fine sandy loam, or loam

*Cr horizon:*

Bedrock—weathered, multicolored, felsic to mafic crystalline rock, such as gneiss or schist, that is rippable

## **Craigsville Series**

*Physiographic province:* Blue Ridge

*Landform:* Flood plains in valleys and mountain valleys

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Very deep

*Slope range:* 0 to 3 percent

### **Associated Soils**

- Comus soils, which have fewer rock fragments in the subsoil than the Craigsville soils
- Delanco soils, which are moderately well drained and have more clay and fewer rock fragments in the subsoil than the Craigsville soils
- Elsinboro soils, which have more clay and fewer rock fragments in the subsoil than the Craigsville soils
- Kinkora soils, which are poorly drained and have more clay and fewer rock fragments in the subsoil than the Craigsville soils

### **Taxonomic Classification**

Loamy-skeletal, mixed, superactive, mesic Fluventic Dystrudepts

### **Typical Pedon**

Craigsville cobbly sandy loam, 0 to 3 percent slopes, frequently flooded; in Grayson County, Virginia; about 4.15 miles southeast of Whitetop, about 0.3 mile northwest of the junction of Highways VA-751-S and US-58, about 0.4 mile southeast of the junction of Highways US-58 and VA-750, about 100 yards northwest of Mt. Rogers School, in a pasture along Helton Creek; Park, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 35 minutes 39.00 seconds N. and long. 81 degrees 52 minutes 6.00 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) cobbly sandy loam; weak fine granular structure; very friable; many very fine and fine roots; 15 percent cobbles and 15 percent gravel; strongly acid; clear wavy boundary.

Bw1—6 to 19 inches; yellowish brown (10YR 5/6) very cobbly sandy loam; weak fine subangular blocky structure; friable; common very fine and fine roots; 20 percent gravel and 20 percent cobbles; very strongly acid; gradual wavy boundary.

## Soil Survey of Grayson County, Virginia

Bw2—19 to 32 inches; yellowish brown (10YR 5/6) very cobbly sandy loam; weak fine and medium subangular blocky structure; friable; few very fine and fine roots; 25 percent gravel and 30 percent cobbles; very strongly acid; clear wavy boundary.  
2C—32 to 62 inches; yellowish brown (10YR 5/6) extremely cobbly loamy sand; massive; very friable; 30 percent gravel and 35 percent cobbles; very strongly acid.

### Range in Characteristics

*Solum thickness:* 20 to 40 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 15 to 35 percent in the A horizon and 35 to 70 percent in the B and C horizons

*Reaction:* Very strongly acid or strongly acid in unlimed areas

*A or Ap horizon:*

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 to 4

Fine-earth texture—sandy loam

*Bw horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Fine-earth texture—loam or sandy loam

*C or 2C horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Fine-earth texture—loamy sand or sandy loam

## Cullasaja Series

*Physiographic province:* Blue Ridge

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Parent material:* Colluvium derived from rhyolite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Very deep

*Slope range:* 7 to 35 percent

### Associated Soils

- Tate soils, which have more clay than the Cullasaja soils, have fewer rock fragments in the subsoil, and have a thinner dark surface layer
- Thunder soils, which have more clay in the subsoil than the Cullasaja soils

### Taxonomic Classification

Loamy-skeletal, isotic, mesic Humic Dystrudepts

### Typical Pedon

Cullasaja cobbly loam; in the Jefferson National Forest; about 2.83 miles north of Whitetop, about 1.28 mile south of the junction of Highways VA-603 and VA-600, about 1.25 miles west of the junction of Highway VA-600 and Forest Service Road 842, in a hardwood forest; Whitetop Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27;

## Soil Survey of Grayson County, Virginia

lat. 36 degrees 39 minutes 15.00 seconds N. and long. 81 degrees 36 minutes 57.00 seconds W.

Oe—0 to 2 inches; moderately decomposed plant material.

A1—2 to 6 inches; very dark brown (10YR 2/2) cobbly loam, brown (10YR 4/3) dry; moderate medium granular structure; friable; many fine, medium, and coarse roots; 5 percent gravel and 15 percent cobbles; very strongly acid; clear smooth boundary.

A2—6 to 15 inches; very dark grayish brown (10YR 3/2) very cobbly loam, brown (10YR 4/3) dry; moderate medium subangular blocky structure; friable; many fine, medium, and coarse roots; 10 percent gravel and 30 percent cobbles; very strongly acid; clear smooth boundary.

A3—15 to 21 inches; dark brown (10YR 3/3) very cobbly loam, dark yellowish brown (10YR 4/4) dry; moderate medium subangular blocky structure; friable; many fine, medium, and coarse roots; 10 percent gravel and 30 percent cobbles; strongly acid; gradual smooth boundary.

Bw1—21 to 34 inches; brown (10YR 4/3) very cobbly loam; moderate medium subangular blocky structure; friable; few fine and medium roots; 20 percent gravel and 35 percent cobbles; strongly acid; clear wavy boundary.

Bw2—34 to 42 inches; dark yellowish brown (10YR 4/4) very cobbly loam; moderate medium subangular blocky structure; friable; few fine and medium roots; 10 percent gravel and 30 percent cobbles; strongly acid; clear wavy boundary.

BC—42 to 62 inches; dark yellowish brown (10YR 4/4) extremely cobbly sandy loam; weak fine subangular blocky structure; friable; 20 percent gravel and 40 percent cobbles; strongly acid.

### Range in Characteristics

*Solum thickness:* 30 to more than 60 inches

*Depth to bedrock:* More than 72 inches

*Rock fragments:* 15 to 65 percent in the A horizon, 35 to 65 percent in the Bw horizon, and 35 to 80 percent in the BC horizon

*Reaction:* Very strongly acid to moderately acid in unlimed areas

#### *A horizon:*

Hue—5YR to 10YR

Value—2 or 3

Chroma—1 to 3

Fine-earth texture—loam

#### *Bw horizon:*

Hue—5YR to 10YR

Value—3 to 6

Chroma—3 to 8

Fine-earth texture—sandy loam, fine sandy loam, loam, or sandy clay loam

#### *BC horizon:*

Hue—5YR to 10YR

Value—3 to 6

Chroma—4 to 8

Fine-earth texture—loam, sandy loam, coarse sandy loam, loamy fine sand, or loamy sand

#### *C horizon (if it occurs):*

Hue—horizon has hue of 5YR or 10YR or is multicolored

Value—3 to 6

Chroma—4 to 8

## Soil Survey of Grayson County, Virginia

Fine-earth texture—loam, fine sandy loam, sandy loam, coarse sandy loam, loamy fine sand, loamy sand, or loamy coarse sand

### Delanco Series

*Physiographic province:* Blue Ridge

*Landform:* Stream terraces and alluvial fans in valleys; coves in foothills

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Moderately well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 0 to 15 percent

#### Associated Soils

- Comus soils, which are well drained and have less clay in the subsoil than the Delanco soils
- Elsinboro and Tate soils, which are well drained

#### Taxonomic Classification

Fine-loamy, mixed, semiactive, mesic Aquic Hapludults

#### Typical Pedon

Delanco fine sandy loam, 2 to 7 percent slopes, rarely flooded; in Grayson County, Virginia; about 3.5 miles southeast of Independence, about 0.65 mile southeast of the junction of Highways VA-700 and VA-701, about 1.1 miles southwest of the junction of Highways VA-700 and VA-697, in a hayfield; Sparta East, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 34 minutes 26.00 seconds N. and long. 81 degrees 6 minutes 44.00 seconds W.

Ap—0 to 10 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine granular structure; friable; common fine and many very fine roots; common fine mica flakes; 2 percent quartz gravel and 3 percent gneiss gravel; strongly acid; abrupt smooth boundary.

E—10 to 16 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; common fine mica flakes; 2 percent quartz gravel and 3 percent gneiss gravel; strongly acid; clear smooth boundary.

Bt—16 to 41 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; common distinct clay films on all faces of peds; many medium prominent light brownish gray (10YR 6/2) iron depletions; common fine mica flakes; 5 percent gneiss gravel and 5 percent quartz gravel; strongly acid; clear smooth boundary.

BC—41 to 47 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many medium prominent light brownish gray (10YR 6/2) iron depletions; common fine mica flakes; 2 percent quartz gravel and 3 percent gneiss gravel; strongly acid; clear smooth boundary.

C—47 to 62 inches; yellowish brown (10YR 5/6) sandy loam; massive; friable, slightly sticky, slightly plastic; many medium prominent light brownish gray (10YR 6/2) iron depletions; common fine mica flakes; 2 percent quartz gravel and 3 percent gneiss gravel; strongly acid.

#### Range in Characteristics

*Solum thickness:* 26 to 56 inches

## Soil Survey of Grayson County, Virginia

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 15 percent in the A horizon, 0 to 20 percent in the E and B horizons, and 5 to 25 percent in the C horizon

*Reaction:* Extremely acid to strongly acid in unlimed areas

*A horizon:*

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—fine sandy loam

*E horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Fine-earth texture—loam or fine sandy loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—3 to 7

Chroma—4 to 8

Redoximorphic features—in shades of gray and brown

Fine-earth texture—clay loam or sandy clay loam

*BC horizon:*

Hue—2.5YR to 10YR

Value—3 to 6

Chroma—1 to 6

Redoximorphic features—in shades of gray and brown

Fine-earth texture—silt loam, loam, or sandy loam

*C horizon:*

Hue—2.5YR to 10YR

Value—3 to 6

Chroma—1 to 6

Redoximorphic features—in shades of gray and brown

Fine-earth texture—silt loam, loam, or sandy loam

## Edneytown Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 0 to 55 percent

### Associated Soils

- Clifford soils, which have more clay in the subsoil than the Edneytown soils
- Edneyville soils, which have less clay in the subsoil than the Edneytown soils
- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Edneytown soils
- Pigeonroost soils, which are moderately deep to soft bedrock

### Taxonomic Classification

Fine-loamy, mixed, active, mesic Typic Hapludults



Figure 17.—An example of an Edneytown soil. Saprolite is at a depth of about 54 inches. The subsoil is generally strong brown sandy clay loam. Depth to bedrock is more than 60 inches. Depth is marked in inches.

#### Typical Pedon

Edneytown loam, 7 to 15 percent slopes (fig. 17); in Grayson County, Virginia; about 2.5 miles northwest of Fries, about 0.75 mile northwest of the junction of Highways VA-647 and VA-759, about 1.0 mile north of the junction of Highways VA-646 and VA-648, in a pasture; Brierpatch Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 43 minutes 35.00 seconds N. and long. 81 degrees 0 minutes 58.00 seconds W.

Ap—0 to 4 inches; brown (10YR 4/3) loam; moderate fine granular structure; friable; many very fine roots; few fine mica flakes; strongly acid; abrupt wavy boundary.  
E—4 to 7 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky

## Soil Survey of Grayson County, Virginia

- structure; friable, slightly sticky, slightly plastic; common very fine roots; few fine mica flakes; strongly acid; abrupt wavy boundary.
- Bt—7 to 20 inches; strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; common discontinuous clay films on all faces of peds; few fine mica flakes; strongly acid; clear wavy boundary.
- BC—20 to 27 inches; strong brown (7.5YR 5/8) sandy loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine mica flakes; strongly acid; clear wavy boundary.
- C1—27 to 44 inches; brownish yellow (10YR 6/6) loamy sand; massive; loose, nonsticky, nonplastic; few fine mica flakes; very strongly acid; gradual wavy boundary.
- C2—44 to 62 inches; brownish yellow (10YR 6/8) loamy sand; massive; loose, nonsticky, nonplastic; few fine mica flakes; very strongly acid.

### Range in Characteristics

*Solum thickness:* 20 to 40 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 15 percent throughout the profile

*Reaction:* Very strongly acid or strongly acid in unlimed areas

*Note:* Some profiles have weathered saprolite in the lower part

#### *Ap horizon:*

Hue—10YR

Value—3 to 6

Chroma—1 to 4

Texture—loam

#### *E horizon:*

Hue—10YR

Value—4 to 6

Chroma—3 to 6

Texture—loam, fine sandy loam, or sandy loam

#### *Bt horizon:*

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—4 to 8

Texture—clay loam or sandy clay loam

#### *BC horizon:*

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—6 to 8

Texture—sandy loam or sandy clay loam

#### *C horizon:*

Hue—7.5YR or 10YR

Value—5 to 8

Chroma—3 to 8

Texture—loam, fine sandy loam, sandy loam, or loamy sand

## Edneyville Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

## Soil Survey of Grayson County, Virginia

*Parent material:* Residuum weathered from gneiss, granite, and/or schist

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Very deep

*Slope range:* 7 to 80 percent

### Associated Soils

- Edneytown soils, which have more clay in the subsoil than the Edneyville soils
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Edneyville soils
- Pigeonroost soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Edneyville soils

### Taxonomic Classification

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

### Typical Pedon

Edneyville loam, 15 to 35 percent slopes (fig. 18); in Grayson County, Virginia; about 3.5 miles northwest of Fries, about 0.2 mile southwest of the junction of Highways VA-604 and VA-644, about 0.2 mile northeast of the junction of Highways VA-646 and VA-604, in a pasture; Brierpatch Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 44 minutes 25.00 seconds N. and long. 81 degrees 0 minutes 53.00 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) loam; weak very fine granular structure; friable; many very fine roots; few fine mica flakes; strongly acid; abrupt wavy boundary.

AB—5 to 11 inches; yellowish brown (10YR 5/4) loam; weak medium granular structure; friable, slightly sticky, slightly plastic; common very fine roots; few fine mica flakes; strongly acid; clear wavy boundary.

Bw—11 to 26 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; few fine mica flakes; strongly acid; clear wavy boundary.

BC—26 to 34 inches; yellowish brown (10YR 5/4) sandy loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine mica flakes; strongly acid; gradual wavy boundary.

C—34 to 62 inches; brownish yellow (10YR 6/6) sandy loam; massive; very friable, slightly sticky, nonplastic; few fine mica flakes; 5 percent quartz gravel and 5 percent gneiss gravel; very strongly acid.

### Range in Characteristics

*Solum thickness:* 20 to 40 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 15 percent in the A horizon, and 0 to 35 percent in the AB, B, BC, and C horizons

*Reaction:* Very strongly acid to moderately acid in unlimed areas

*Ap horizon:*

Hue—7.5YR or 10YR

Value—2 to 5

Chroma—1 to 4

Texture—loam

*AB horizon:*

Hue—7.5YR or 10YR

Value—4 to 6



Figure 18.—An example of an Edneyville soil. Edneyville soils commonly have brownish subsoils with sandy loam textures. Depth to bedrock is more than 60 inches. Depth is marked in inches.

Chroma—2 to 4

Fine-earth texture—loam, fine sandy loam, or sandy loam

*Bw horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, fine sandy loam, or sandy loam

*BC horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

## Soil Survey of Grayson County, Virginia

Chroma—4 to 8

Fine-earth texture—loam, fine sandy loam, or sandy loam

### *C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, fine sandy loam, sandy loam, or loamy sand

## **Elsinboro Series**

*Physiographic province:* Blue Ridge

*Landform:* Stream terraces in valleys

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 0 to 7 percent

### **Associated Soils**

- Comus soils, which have more sand and less clay in the subsoil than the Elsinboro soils
- Delanco soils, which are moderately well drained
- Kinkora soils, which are poorly drained and have more clay in the subsoil than the Elsinboro soils

### **Taxonomic Classification**

Fine-loamy, mixed, semiactive, mesic Typic Hapludults

### **Typical Pedon**

Elsinboro fine sandy loam, 2 to 7 percent slopes, rarely flooded; in Grayson County, Virginia; about 1.5 miles west-southwest of Oldtown, about 1.25 miles northwest of the junction of Highways VA-94 and US-58, about 1.2 miles northwest of the junction of Highways VA-634 and VA-882, in a cornfield; Galax, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 38 minutes 53.00 seconds N. and long. 80 degrees 59 minutes 8.00 seconds W.

Ap—0 to 10 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak very fine granular structure; friable; common fine and many very fine roots; few fine mica flakes; strongly acid; abrupt smooth boundary.

E—10 to 18 inches; brown (7.5YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; common fine mica flakes; strongly acid; clear smooth boundary.

Bt—18 to 45 inches; strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine and fine roots; common discontinuous clay films on all faces of peds; common fine mica flakes; strongly acid; clear smooth boundary.

2C—45 to 62 inches; strong brown (7.5YR 5/6) cobbly sandy loam; massive; very friable, slightly sticky, nonplastic; common fine mica flakes; 5 percent gneiss gravel, 5 percent quartz gravel, 7 percent gneiss cobbles, and 8 percent quartz cobbles; strongly acid.

### **Range in Characteristics**

*Solum thickness:* 28 to 50 inches

*Depth to bedrock:* More than 72 inches

## Soil Survey of Grayson County, Virginia

*Rock fragments:* 0 to 15 percent in the A horizon and 0 to 25 percent in the E, B, and C horizons

*Reaction:* Very strongly acid or strongly acid in unlimed areas

*Ap horizon:*

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 to 4

Texture—fine sandy loam

*E horizon:*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 4

Fine-earth texture—loam, silt loam, fine sandy loam, or sandy loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 8

Fine-earth texture—silt loam, loam, silty clay loam, clay loam, or sandy clay loam

*C horizon (if it occurs) or 2C horizon:*

Hue—2.5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—silt loam, loam, sandy loam, fine sandy loam, or sandy clay loam

## Evard Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Parent material:* Creep deposits over residuum weathered from schist and/or gneiss

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 15 to 25 percent

### Associated Soils

- Cowee soils, which are moderately deep to soft bedrock
- Chestnut soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Evard soils
- Peaks soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Evard soils

### Taxonomic Classification

Fine-loamy, parasesquic, mesic Typic Hapludults

### Typical Pedon

Evard gravelly fine sandy loam; in Surry County, North Carolina; about 12 miles west of Dobson, 0.8 mile west of the intersection of Secondary Roads 1330 and 1331 on Secondary Road 1330, about 0.8 mile south on a timber road, 300 feet northwest of the road in a hardwood forest; Roaring Gap, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 26 degrees 25 minutes 33.00 seconds N. and long. 80 degrees 52 minutes 37.00 seconds W.

## Soil Survey of Grayson County, Virginia

- A—0 to 5 inches; dark yellowish brown (10YR 4/6) gravelly fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; few fine mica flakes; 20 percent gravel; very strongly acid; clear smooth boundary.
- E—5 to 8 inches; yellowish brown (10YR 5/6) gravelly fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; few fine mica flakes; 20 percent gravel; very strongly acid; clear smooth boundary.
- BE—8 to 13 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium roots; few fine mica flakes; 5 percent gravel; very strongly acid; gradual wavy boundary.
- Bt—13 to 29 inches; red (2.5YR 4/8) clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine and medium and few coarse roots; few clay films on all faces of peds; common fine mica flakes; 5 percent gravel; very strongly acid; gradual wavy boundary.
- BC—29 to 35 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine and medium and few coarse roots; common fine mica flakes; 5 percent gravel; very strongly acid; gradual wavy boundary.
- C1—35 to 45 inches; strong brown (7.5YR 5/8) loamy fine sand; massive; very friable; few fine roots; common fine mica flakes; 5 percent gravel; strongly acid; clear irregular boundary.
- C2—45 to 55 inches; yellowish red (5YR 5/8) channery fine sandy loam; massive; very friable; few fine roots; few fine mica flakes; 15 percent schist channers; strongly acid; clear wavy boundary.
- C3—55 to 60 inches; yellowish brown (10YR 5/4) channery loamy fine sand; massive; very friable; common fine mica flakes; 15 percent schist channers; strongly acid.

### Range in Characteristics

*Solum thickness:* 20 to 40 inches

*Depth to bedrock:* More than 60 inches to hard bedrock

*Rock fragments:* 0 to 35 percent in the upper part of the solum and in the substratum;  
0 to 15 percent in the subsoil

*Reaction:* Very strongly acid to moderately acid in unlimed areas

#### *A horizon:*

Hue—5YR to 10YR

Value—3 to 5

Chroma—3 to 6

Fine-earth texture—fine sandy loam

#### *E horizon:*

Hue—5YR to 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—fine sandy loam, sandy loam, or loam

#### *BE horizon or BA horizon (if it occurs):*

Hue—2.5YR to 10YR

Value—4 to 8

Chroma—4 to 8

Fine-earth texture—sandy clay loam, clay loam, fine sandy loam, sandy loam, or loam

#### *Bt horizon:*

Hue—2.5YR or 5YR

Value—4 or 5

## Soil Survey of Grayson County, Virginia

Chroma—4 to 8

Fine-earth texture—clay loam, sandy clay loam, or loam

### *BC horizon:*

Hue—2.5YR to 7.5YR

Value—4 to 6

Chroma—6 to 8

Mottles—in shades of red, brown, and yellow

Fine-earth texture—sandy clay loam, clay loam, loam, fine sandy loam, or sandy loam

### *C horizon:*

Hue—2.5YR to 10YR

Value—4 to 6

Chroma—6 to 8

Mottles—in shades of red, brown, and yellow

Texture—loamy fine sand, loamy sand, fine sandy loam, sandy loam, or loam

## **Glenelg Series**

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Parent material:* Residuum weathered from mica schist and/or gneiss

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 0 to 55 percent

### **Associated Soils**

- Clifford soils, which have more clay in the subsoil than the Glenelg soils
- Cowee soils, which are moderately deep to soft bedrock
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments and less clay in the subsoil than the Glenelg soils

### **Taxonomic Classification**

Fine-loamy, mixed, semiactive, mesic Typic Hapludults

### **Typical Pedon**

Glenelg loam, 2 to 7 percent slopes; in Grayson County, Virginia; about 3.2 miles southwest of Baywood, about 1.0 mile west of the junction of Highways VA-629 and VA-626, about 0.1 mile north-northeast of the junction of Highways VA-628 and VA-629, in a hayfield; Sparta East, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 35 minutes 11.00 seconds N. and long. 81 degrees 4 minutes 44.00 seconds W.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) loam; moderate fine and medium granular structure; friable; many fine roots; few fine mica flakes; slightly acid; abrupt smooth boundary.

Bt—4 to 24 inches; strong brown (7.5YR 5/6) clay loam; moderate fine and medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; many distinct clay films on all faces of peds; common fine mica flakes; moderately acid; gradual smooth boundary.

C1—24 to 45 inches; yellowish brown (10YR 5/6) fine sandy loam; massive; friable, slightly sticky, slightly plastic; many fine mica flakes; 5 percent mica schist gravel; strongly acid; diffuse smooth boundary.

## Soil Survey of Grayson County, Virginia

C2—45 to 62 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; friable, slightly sticky, slightly plastic; many fine mica flakes; 10 percent mica schist gravel; very strongly acid.

### Range in Characteristics

*Solum thickness:* 18 to 30 inches

*Depth to bedrock:* More than 72 inches

*Rock fragments:* 0 to 35 percent in the A and B horizons and 5 to 35 percent in the C horizon

*Reaction:* Very strongly acid to slightly acid in unlimed areas

*Ap horizon:*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 4

Fine-earth texture—loam

*E horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 4

Fine-earth texture—loam or silt loam

*Bt horizon:*

Hue—5YR to 10YR

Value—4 or 5

Chroma—4 to 8

Fine-earth texture—loam, silt loam, silty clay loam, or clay loam

*C horizon:*

Hue—5YR to 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam, silt loam, fine sandy loam, or loamy sand

## Greenlee Series

*Physiographic province:* Blue Ridge

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Parent material:* Colluvium and/or local alluvium derived from metamorphic rock and/or igneous rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Very deep

*Slope range:* 8 to 55 percent

### Associated Soils

- Thunder soils, which have more clay in the subsoil than the Greenlee soils
- Tate soils, which have more clay and fewer rock fragments in the subsoil than the Greenlee soils

### Taxonomic Classification

Loamy-skeletal, mixed, semiactive, mesic Typic Dystrudepts

### Typical Pedon

Greenlee very cobbly loam, 35 to 55 percent slopes, very stony; in Grayson County,

## Soil Survey of Grayson County, Virginia

Virginia; about 2.26 miles east-northeast of Whitetop, about 0.75 mile north of the junction of Highways US-58 and VA-783, about 1.17 miles northeast of the junction of Highways VA-362 and US-58, in a hardwood forest; Park, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 37 minutes 14.00 seconds N. and long. 81 degrees 33 minutes 46.00 seconds W.

Oe—0 to 2 inches; moderately decomposed plant material.

A—2 to 7 inches; dark brown (10YR 3/3) very cobbly loam; moderate medium granular structure; friable; many fine and medium roots; 15 percent subrounded rhyolite gravel and 30 percent subrounded rhyolite cobbles; extremely acid; clear wavy boundary.

AB—7 to 14 inches; dark yellowish brown (10YR 4/4) very cobbly sandy loam; moderate fine granular structure; friable; common fine and medium roots; 15 percent subrounded rhyolite gravel and 30 percent subrounded rhyolite cobbles; very strongly acid; clear wavy boundary.

Bw1—14 to 39 inches; yellowish brown (10YR 5/4) very cobbly sandy loam; weak fine subangular blocky structure; friable; few fine roots; 10 percent subrounded rhyolite gravel and 40 percent subrounded rhyolite cobbles; very strongly acid; gradual wavy boundary.

Bw2—39 to 53 inches; yellowish brown (10YR 5/4) very cobbly sandy loam; weak fine subangular blocky structure; friable; 15 percent subrounded rhyolite gravel and 45 percent subrounded rhyolite cobbles; very strongly acid; gradual wavy boundary.

C—53 to 62 inches; yellowish brown (10YR 5/4) extremely cobbly sandy loam; structureless, massive; very friable; 15 percent subrounded rhyolite gravel and 60 percent subrounded rhyolite cobbles; very strongly acid.

### Range in Characteristics

*Solum thickness:* 20 to 60 inches or more

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 35 to 60 percent in the A and B horizons and 35 to 80 percent in the C horizon

*Reaction:* Extremely acid to moderately acid in unlimed areas

#### *A horizon:*

Hue—10YR or 7.5YR

Value—2 to 5

Chroma—1 to 4

Fine-earth texture—loam

#### *AB horizon:*

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Fine-earth texture—loam, fine sandy loam, sandy loam, and sandy clay loam

#### *BA horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Fine-earth texture—loam, fine sandy loam, sandy loam, or sandy clay loam

#### *Bw horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam, fine sandy loam, sandy loam, or sandy clay loam

*BC horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Fine-earth texture—loam, sandy loam, fine sandy loam, loamy fine sand, or loamy sand

*C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam, sandy loam, fine sandy loam, loamy sand, or sand

## Hatboro Series

*Physiographic province:* Blue Ridge

*Landform:* Flood plains in valleys

*Parent material:* Alluvium derived from igneous rock and/or metamorphic rock

*Drainage class:* Poorly drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 0 to 3 percent

### Associated Soils

- Codorus soils, which are somewhat poorly drained
- Comus soils, which are well drained
- Craigsville soils, which are well drained and have more rock fragments in the subsoil than the Hatboro soils

### Taxonomic Classification

Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

### Typical Pedon

Hatboro sandy loam, 0 to 3 percent slopes, frequently flooded; in Grayson County, Virginia; about 2.3 miles southeast of Elk Creek, about 0.3 mile northwest of the junction of Highways VA-656 and VA-660, about 0.8 mile northeast of the junction of Highways VA-660 and VA-696, in a pasture along Turkey Fork; Elk Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 44 minutes 24.00 seconds N. and long. 81 degrees 14 minutes 22.00 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; friable; common fine and many very fine roots; few fine faint yellowish brown (10YR 5/4) masses of oxidized iron; common fine mica flakes; slightly acid; abrupt smooth boundary.

Bg1—8 to 28 inches; light brownish gray (2.5Y 6/2) sandy clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine and common very fine roots; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; common fine mica flakes; moderately acid; gradual smooth boundary.

Bg2—28 to 45 inches; grayish brown (2.5Y 5/2) sandy clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine roots; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron; common fine mica flakes; moderately acid; abrupt smooth boundary.

Cg—45 to 62 inches; grayish brown (2.5Y 5/2) silt loam; massive; friable, slightly

## Soil Survey of Grayson County, Virginia

sticky, slightly plastic; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron; moderately acid.

### Range in Characteristics

*Solum thickness:* 40 to 60 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 10 percent in the A and B horizons and 0 to 80 percent in the C horizon

*Reaction (in unlimed areas):* Very strongly acid to neutral to a depth of 30 inches and moderately acid or slightly acid below a depth of 30 inches

#### *A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Redoximorphic features—in shades of brown and/or gray

Texture—sandy loam

#### *B horizon:*

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 7

Chroma—0 to 2

Redoximorphic features—in shades of brown and/or gray

Texture—sandy clay loam, clay loam, silty clay loam, or silt loam

#### *C horizon:*

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 7

Chroma—0 to 2

Redoximorphic features—in shades of brown and/or gray

Fine-earth texture—sandy clay loam, clay loam, silty clay loam, or silt loam in the upper part of horizon and stratified sand, silt, silt, and clay sediments and gravel in the lower part

## Hayesville Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges and hills on low mountains and foothills

*Parent material:* Residuum weathered from gneiss and/or schist

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 2 to 25 percent

### Associated Soils

- Edneytown and Glenelg soils, which have less clay in the subsoil than the Hayesville soils
- Cowee and Pigeonroost soils, which are moderately deep to soft bedrock and have less clay in the subsoil than the Hayesville soils

### Taxonomic Classification

Fine, kaolinitic, mesic Typic Kanhapludults

### Typical Pedon

Hayesville loam, 2 to 7 percent slopes (fig. 19); in Grayson County, Virginia; about 0.7



Figure 19.—An example of a Hayesville soil. The subsoil is red clay. Depth to bedrock is more than 60 inches. Depth is marked in inches.

mile northeast of Baywood, about 1.0 mile northeast of the junction of Highways VA-624 and VA-626, about 100 yards northeast of the junction of Highways VA-623 and VA-626, in a hayfield; Sparta East, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 36 minutes 54.00 seconds N. and long. 81 degrees 0 minutes 6.00 seconds W.

Ap—0 to 6 inches; brown (7.5YR 4/4) loam; moderate fine and medium granular structure; friable; many fine roots; few fine mica flakes; slightly acid; abrupt smooth boundary.

E—6 to 11 inches; strong brown (7.5YR 5/6) loam; moderate fine granular structure;

## Soil Survey of Grayson County, Virginia

friable, slightly sticky, slightly plastic; common fine roots; common fine mica flakes; moderately acid; abrupt smooth boundary.

Bt—11 to 43 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; many distinct clay films on all faces of peds; common fine mica flakes; strongly acid; clear smooth boundary.

BC—43 to 49 inches; red (2.5YR 4/8) clay loam; weak fine subangular blocky structure; friable, moderately sticky, slightly plastic; common fine mica flakes; strongly acid; gradual smooth boundary.

C—49 to 62 inches; red (2.5YR 4/6) sandy loam; massive; friable, slightly sticky, slightly plastic; many fine mica flakes; strongly acid.

### Range in Characteristics

*Solum thickness:* 30 to 60 inches or more

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 15 percent in the A horizon, 0 to 35 percent in the E horizon, and 0 to 15 percent in the B and C horizons

*Reaction:* Very strongly acid to moderately acid in unlimed areas

#### *Ap horizon:*

Hue—5YR to 10YR

Value—3 or 4

Chroma—2 to 4

Texture—loam

#### *E horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam or fine sandy loam

#### *Bt horizon:*

Hue—2.5YR or 5YR

Value—4 or 5

Chroma—6 to 8

Fine-earth texture—clay or clay loam

#### *BC horizon:*

Hue—2.5YR or 5YR

Value—4 to 6

Chroma—6 to 8

Fine-earth texture—sandy clay loam, clay loam, or loam

#### *C horizon:*

Hue—2.5YR to 7.5YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—sandy loam, fine sandy loam, loam, or sandy clay loam

## Keener Series

*Physiographic province:* Blue Ridge

*Landform:* Coves and benches on low mountains and foothills

*Parent material:* Colluvium derived from metasandstone and/or quartzite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

## Soil Survey of Grayson County, Virginia

*Depth class:* Very deep

*Slope range:* 2 to 35 percent

### Associated Soils

- McCamy soils, which are moderately deep to hard bedrock
- Sylco soils, which are moderately deep to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soils
- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the Keener soils

### Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

### Typical Pedon

Keener loam, 7 to 15 percent slopes; in Grayson County, Virginia; about 3 miles south of Cripple Creek, about 0.2 mile northeast of the junction of Highways VA-602 and VA-653, about 1.25 miles north of Jones Knob, in a pasture; Cripple Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 47 minutes 1.00 seconds N. and long. 81 degrees 4 minutes 38.00 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) loam; weak fine granular structure; friable; many very fine and fine roots; 5 percent metasandstone gravel; moderately acid; clear wavy boundary.

BA—5 to 14 inches; yellowish brown (10YR 5/6) loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; many very fine and fine roots; 5 percent metasandstone gravel; strongly acid; gradual wavy boundary.

Bt1—14 to 32 inches; yellowish brown (10YR 5/6) clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; common discontinuous clay films on all faces of peds; 5 percent metasandstone gravel; very strongly acid; gradual wavy boundary.

Bt2—32 to 54 inches; strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; common discontinuous clay films on all faces of peds; 10 percent metasandstone gravel; very strongly acid; gradual wavy boundary.

BC—54 to 62 inches; strong brown (7.5YR 5/6) gravelly sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; 15 percent metasandstone gravel; very strongly acid.

### Range in Characteristics

*Solum thickness:* More than 40 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 15 percent in the A horizon, 0 to 30 percent in the BA and Bt horizons, and 10 to 50 percent in the BC and C horizons

*Reaction:* Extremely acid to moderately acid in unlimed areas

*A horizon:*

Hue—10YR

Value—3 or 4

Chroma—2 to 4

Texture—loam

*BA horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Fine-earth texture—loam or fine sandy loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—6 to 8

Fine-earth texture—loam, clay loam, or sandy clay loam

*BC horizon:*

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—6 to 8

Fine-earth texture—loam, clay loam, or sandy clay loam

*C horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—6 to 8

Fine-earth texture—loam, fine sandy loam, or sandy loam

## **Kinkora Series**

*Physiographic province:* Blue Ridge

*Landform:* Stream terraces in valleys

*Parent material:* Alluvium derived from metamorphic rock and/or igneous rock

*Drainage class:* Poorly drained

*Slowest saturated hydraulic conductivity:* Moderately low

*Depth class:* Very deep

*Slope range:* 0 to 3 percent

### **Associated Soils**

- Comus soils, which are well drained and have less clay in the subsoil than the Kinkora soils
- Delanco soils, which are moderately well drained and have less clay in the subsoil than the Kinkora soils
- Elsinboro soils, which are well drained and have less clay in the subsoil than the Kinkora soils

### **Taxonomic Classification**

Fine, mixed, semiactive, mesic Typic Endoaquults

### **Typical Pedon**

Kinkora fine sandy loam, 0 to 3 percent slopes, rarely flooded; in Grayson County, Virginia; about 1.0 mile northwest of Mouth of Wilson, about 0.5 mile northwest of the junction of Highways VA-728 and US-58, about 0.35 mile southeast of the junction of Highways VA-721 and US-58, in an area planted with Christmas trees; Mouth of Wilson, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 35 minutes 53.00 seconds N. and long. 81 degrees 21 minutes 6.00 seconds W.

A—0 to 7 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate medium granular structure; friable; common fine and many very fine roots; few fine faint light brownish gray (10YR 6/2) iron depletions; common fine mica flakes; strongly acid; abrupt smooth boundary.

ABg—7 to 16 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron; common fine mica flakes; strongly acid; clear wavy boundary.

## Soil Survey of Grayson County, Virginia

- Btg1—16 to 27 inches; grayish brown (10YR 5/2) clay loam; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; common distinct discontinuous clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; common fine mica flakes; strongly acid; clear wavy boundary.
- Btg2—27 to 38 inches; grayish brown (10YR 5/2) clay loam; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; common distinct discontinuous clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; common fine mica flakes; strongly acid; abrupt smooth boundary.
- Cg1—38 to 48 inches; gray (10YR 5/1) gravelly loam; massive; friable, slightly sticky, slightly plastic; common fine mica flakes; 10 percent quartz gravel and 10 percent gneiss gravel; strongly acid; clear smooth boundary.
- 2Cg2—48 to 62 inches; gray (10YR 5/1) gravelly loamy sand; massive; loose, nonsticky, nonplastic; common fine mica flakes; 15 percent gneiss gravel and 15 percent quartz gravel; strongly acid.

### Range in Characteristics

*Solum thickness:* 24 to 48 inches

*Depth to bedrock:* More than 72 inches

*Rock fragments:* 0 to 15 percent in the A and B horizons and 0 to 50 percent in the C horizon

*Reaction:* Extremely acid to strongly acid in unlimed areas

*A and E horizons (if they occur):*

Hue—10YR to 5Y

Value—4 or 5

Chroma—1 or 2

Redoximorphic features—in shades of brown and gray

Texture—fine sandy loam

*ABg horizon:*

Hue—10YR to 5Y

Value—4 or 5

Chroma—1 or 2

Redoximorphic features—in shades of brown and gray

Texture—silt loam or fine sandy loam

*Btg horizon:*

Hue—10YR to 5Y or neutral

Value—5 or 6

Chroma—0 to 2

Redoximorphic features—in shades of brown and gray

Texture—silty clay loam, clay loam, silty clay, or clay

*Cg horizon:*

Hue—10YR to 5Y or neutral

Value—5 or 6

Chroma—0 to 2

Redoximorphic features—in shades of brown and gray

Fine-earth texture—silt loam or loam

*2Cg horizon:*

Hue—10YR to 5Y or neutral

Value—4 to 6

Chroma—0 to 2

Redoximorphic features—in shades of brown and gray  
Fine-earth texture—sandy loam or loamy sand

## Konnarock Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Parent material:* Residuum weathered from rhythmite and tillite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Moderately deep

*Slope range:* 7 to 55 percent

### Associated Soils

- Tate and Keener soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Konnarock soils
- McCamy and Pigeonroost soils, which have more clay and fewer rock fragments in the subsoil than the Konnarock soils
- Unicoi soils, which are shallow to hard bedrock

### Taxonomic Classification

Loamy-skeletal, mixed, semiactive, mesic Typic Dystrudepts

### Typical Pedon

Konnarock channery silt loam, 15 to 35 percent slopes; in Grayson County, Virginia; about 1.1 miles north of Flatridge, about 0.5 mile north-northeast of the junction of Highways VA-675 and VA-601, about 0.5 mile southeast of Glenwood Church, in an area planted with Christmas trees; Middle Fox Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 42 minutes 49.00 seconds N. and long. 81 degrees 20 minutes 24.00 seconds W.

Ap—0 to 4 inches; dark brown (7.5YR 3/4) channery silt loam; weak fine granular structure; friable; many very fine and fine roots; 25 percent channers; very strongly acid; clear wavy boundary.

Bw—4 to 19 inches; brown (7.5YR 4/4) very channery silt loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; 40 percent channers; very strongly acid; gradual wavy boundary.

C—19 to 23 inches; brown (7.5YR 4/4) extremely channery silt loam; massive; friable, slightly sticky, slightly plastic; 70 percent channers; very strongly acid; clear smooth boundary.

R—23 inches; hard rhythmite bedrock.

### Range in Characteristics

*Solum thickness:* 10 to 30 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 15 to 35 percent in the A horizon, 15 to 80 percent in the B horizon, and 35 to 95 percent in the C horizon; the particle-size control section averages more than 35 percent rock fragments

*Reaction:* Extremely acid to moderately acid in unlimed areas

*A horizon:*

Hue—5YR to 10YR

Value—3 or 4

Chroma—2 to 4  
Fine-earth texture—silt loam

*Bw horizon:*

Hue—5YR to 10YR  
Value—3 or 4  
Chroma—3 to 6  
Fine-earth texture—silt loam or loam

*C horizon:*

Hue—5YR to 10YR  
Value—4 or 5  
Chroma—3 to 6  
Fine-earth texture—silt loam or loam

## McCamy Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Parent material:* Residuum weathered from metasandstone and/or phyllite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Moderately deep

*Slope range:* 7 to 55 percent

### Associated Soils

- Sylvatus and Unicoi soils, which are shallow to hard bedrock and have less clay and more rock fragments in the subsoil than the McCamy soils
- Konnarock and Sylco soils, which have less clay and more rock fragments in the subsoil than the McCamy soils

### Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

### Typical Pedon

McCamy fine sandy loam, 7 to 35 percent slopes, very stony; in Grayson County, Virginia, about 3.0 miles northeast of Flatridge, about 1.0 mile northeast of the junction of Highways VA-675 and VA-846, about 0.5 mile west of VA-672, in a hardwood forest; Middle Fox Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 44 minutes 11.00 seconds N. and long. 81 degrees 18 minutes 58.00 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material.

A—1 to 5 inches; brown (7.5YR 4/4) fine sandy loam; weak medium granular structure; very friable; many fine and medium and many coarse roots; 5 percent metasandstone gravel; extremely acid; abrupt wavy boundary.

BA—5 to 9 inches; brown (7.5YR 5/4) fine sandy loam; weak fine subangular blocky structure; friable; common fine and medium and common coarse roots; 5 percent metasandstone gravel; very strongly acid; clear wavy boundary.

Bt—9 to 23 inches; yellowish red (5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine and medium and few coarse roots; few faint clay films on all faces of peds; 10 percent metasandstone gravel; very strongly acid; abrupt wavy boundary.

C—23 to 26 inches; yellowish red (5YR 5/6) gravelly sandy loam; massive; very friable; 20 percent metasandstone gravel; strongly acid; clear wavy boundary.

## Soil Survey of Grayson County, Virginia

Cr—26 to 31 inches; metasandstone bedrock that is weathered, multicolored, and rippable.

R—31 inches; hard metasandstone bedrock.

### Range in Characteristics

*Solum thickness:* 20 to 40 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 0 to 15 percent in the A horizon, 0 to 30 percent in the B horizon, and 5 to 50 percent in the C horizon

*Reaction:* Extremely acid to strongly acid in unlimed areas

*A horizon:*

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—2 to 4

Texture—fine sandy loam

*BA horizon and BE or E horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Fine-earth texture—loam, fine sandy loam, or sandy loam

*Bt horizon:*

Hue—5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, clay loam, or sandy clay loam

*C horizon or BC horizon (if it occurs):*

Hue—2.5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, clay loam, or possibly clay (in areas that have low-grade phyllite interbeds)

*Cr horizon:*

Bedrock—multicolored, weathered, and fractured metasedimentary rock, such as low-grade metasandstone and phyllite

The range in characteristics of the Official Series Description for the McCamy series indicates that color hues in the A and BA horizons are 10YR or 2.5Y. The McCamy soils in this survey area include hue of 7.5YR in these horizons. This deviation does not affect interpretations or classification.

## Mt Rogers Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges and knobs on high mountains

*Parent material:* Colluvium and/or creep deposits derived from rhyolite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Very deep

*Slope range:* 7 to 80 percent

### Associated Soils

- Bloodyhorse soils, which are moderately deep to hard bedrock
- Buzzrock soils, which are deep to hard bedrock

### Taxonomic Classification

Loamy-skeletal, isotic, frigid Humic Dystrudepts

### Typical Pedon

Mt Rogers gravelly loam; in the Jefferson National Forest; about 3.0 miles southwest of Troutdale, Virginia, about 3.6 miles southwest of the junction of Highways US-16 and VA-603, about 0.9 mile southeast of the "Scales" on Pine Mountain, in a pasture; Trout Dale, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 39 minutes 32.00 seconds N. and long. 81 degrees 28 minutes 47.00 seconds W.

- A1—0 to 10 inches; black (10YR 2/1) gravelly loam, very dark grayish brown (10YR 3/2) dry; moderate medium granular structure; very friable; common fine roots; 5 percent cobbles and 20 percent gravel; very strongly acid; clear wavy boundary.
- A2—10 to 16 inches; very dark grayish brown (10YR 3/2) gravelly loam, pale brown (10YR 6/3) dry; weak fine subangular blocky structure; very friable; few fine roots; 5 percent cobbles and 25 percent gravel; very strongly acid; gradual wavy boundary.
- Bw—16 to 33 inches; dark brown (10YR 3/3) very cobbly loam, pale brown (10YR 6/3) dry; weak fine subangular blocky structure; very friable; few fine roots; 25 percent gravel and 25 percent cobbles; very strongly acid; gradual wavy boundary.
- C—33 to 62 inches; dark yellowish brown (10YR 4/4) extremely cobbly coarse sandy loam; massive; very friable; 25 percent gravel and 40 percent cobbles; very strongly acid.

### Range in Characteristics

*Solum thickness:* 25 to 60 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 20 to 35 percent in the A horizon, 35 to 90 percent in the B horizon, and 50 to 90 percent in the C horizon

*Reaction:* Extremely acid to moderately acid

#### *A horizon:*

Hue—7.5YR to 2.5Y

Value—2 or 3

Chroma—0 to 3

Fine-earth texture—loam

#### *Bw horizon:*

Hue—7.5YR to 2.5Y

Value—3 to 6

Chroma—2 to 8

Fine-earth texture—fine sandy loam, sandy loam, loam, or silt loam

#### *C horizon:*

Hue—7.5YR to 2.5Y

Value—3 to 6

Chroma—2 to 8

Fine-earth texture—fine sandy loam, sandy loam, loam, or silt loam

## Nopan Series

*Physiographic province:* Blue Ridge

*Landform:* Coves, benches, and saddles; on high mountains

*Parent material:* Colluvium derived from rhyolite

*Drainage class:* Poorly drained

*Slowest saturated hydraulic conductivity:* Low

*Depth class:* Very deep

*Slope range:* 15 to 55 percent

### Associated Soils

- Balsam and Mt Rogers soils, which are well drained and have more rock fragments in the subsoil than the Nopan soils
- Buzzrock soils, which are well drained, are deep to hard bedrock, and have more rock fragments in the subsoil than the Nopan soils
- Bloodyhorse soils, which are well drained, are moderately deep to hard bedrock, and have more rock fragments in the subsoil than the Nopan soils

### Taxonomic Classification

Coarse-loamy, mixed, active, acid, frigid Typic Epiaquepts

### Typical Pedon

Nopan loam; in the Jefferson National Forest; about 4.0 miles northeast of Whitetop, Virginia, about 2.3 miles northwest of the junction of Highway VA-362 (the main road for Grayson Highlands State Park) and the campground road, 2.3 miles east of Elk Garden, in a pasture; Whitetop Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 38 minutes 44.00 seconds N. and long. 81 degrees 32 minutes 31.00 seconds W.

A—0 to 6 inches; very dark gray (10YR 3/1) loam; weak fine granular structure; very friable, slightly sticky, slightly plastic; common very fine and fine roots; 5 percent gravel and 5 percent cobbles; strongly acid; clear wavy boundary.

Bg1—6 to 17 inches; gray (10YR 5/1) loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; 5 percent gravel and 5 percent cobbles; strongly acid; clear wavy boundary.

Bg2—17 to 33 inches; grayish brown (10YR 5/2) loamy sand; weak medium subangular blocky structure; friable; few very fine and fine roots; yellowish brown (10YR 5/4) masses of oxidized iron; 10 percent gravel; strongly acid; gradual wavy boundary.

Bh1—33 to 44 inches; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure; firm; dark yellowish brown (10YR 4/6) organic stains on surfaces along pores; 10 percent gravel; strongly acid; gradual wavy boundary.

Bh2—44 to 50 inches; dark brown (7.5YR 3/4) and black (10YR 2/1) sandy loam; weak medium subangular blocky structure; firm; 10 percent gravel; strongly acid; clear wavy boundary.

C—50 to 62 inches; yellowish brown (10YR 5/4) sandy loam; massive; firm; yellowish brown (10YR 5/8) masses of oxidized iron; 10 percent gravel; strongly acid.

### Range in Characteristics

*Solum thickness:* 20 to 60 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 35 percent throughout the profile

*Reaction:* Extremely acid to strongly acid

*O horizon (if it occurs):*

Hue—7.5YR, 10YR, 2.5Y, or neutral  
Value—2 or 3  
Chroma—0 or 1  
Fine-earth texture—hemic or sapric material

*A horizon:*

Hue—10YR or 2.5Y  
Value—2 or 3  
Chroma—1 or 2  
Fine-earth texture—loam

*Bg horizon:*

Hue—10YR or 2.5Y  
Value—4 to 6  
Chroma—1 or 2  
Redoximorphic features—in shades of brown and gray  
Fine-earth texture—loamy sand, sandy loam, or loam

*Bh horizon:*

Hue—7.5YR to 2.5Y  
Value—2 to 6  
Chroma—1 to 4  
Fine-earth texture—loamy sand, sandy loam, or loam

*C horizon:*

Hue—7.5YR to 2.5Y  
Value—4 to 6  
Chroma—3 to 6  
Redoximorphic features—in shades of brown and gray  
Fine-earth texture—loamy sand, sandy loam, or loam

## Peaks Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges and knobs on low mountains and foothills

*Parent material:* Residuum weathered from granite, gneiss, and/or schist

*Drainage class:* Somewhat excessively drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Moderately deep

*Slope range:* 7 to 90 percent

### Associated Soils

- Cowee and Pigeonroost soils, which have more clay and fewer rock fragments in the subsoil than the Peaks soils
- Chestnut soils, which have fewer rock fragments in the subsoil than the Peaks soils
- Edneyville soils, which are very deep to bedrock and have fewer rock fragments in the subsoil than the Peaks soils

### Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

### Typical Pedon

Peaks very gravelly loam, 35 to 55 percent slopes, extremely stony (fig. 20); in Grayson County, Virginia; about 3.4 miles east-southeast of Troutdale, on Razor Ridge



**Figure 20.—An example of a Peaks soil. Bedrock is at a depth of about 34 inches. Rock fragments exceed 35 percent throughout the profile. Depth is marked in inches.**

about 0.6 mile southeast of Razor Ridge Church, about 0.65 mile southeast of the junction of Highways VA-672 and VA-677, in a pasture; Trout Dale, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 41 minutes 7.00 seconds N. and long. 81 degrees 22 minutes 55.00 seconds W.

O<sub>e</sub>—0 to 1 inch; moderately decomposed plant material.

A<sub>p</sub>—1 to 4 inches; dark yellowish brown (10YR 3/4) very gravelly loam; moderate fine granular structure; friable; many very fine roots; 45 percent gravel; strongly acid; clear smooth boundary.

E—4 to 8 inches; dark yellowish brown (10YR 4/4) very gravelly loam; weak fine

## Soil Survey of Grayson County, Virginia

- granular structure; friable, nonsticky, nonplastic; common very fine and fine roots; 45 percent gravel; very strongly acid; abrupt smooth boundary.
- Bw—8 to 23 inches; yellowish brown (10YR 5/4) very gravelly loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; few very fine and fine roots; 55 percent gravel; very strongly acid; gradual smooth boundary.
- C—23 to 32 inches; yellowish brown (10YR 5/4) extremely gravelly sandy loam; massive; friable, nonsticky, nonplastic; 75 percent gravel; very strongly acid; abrupt smooth boundary.
- R—32 inches; hard gneiss bedrock.

### Range in Characteristics

*Solum thickness:* 14 to 38 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 35 to 55 percent in the A horizon, 15 to 55 percent in the E horizon, 35 to 60 percent in the B horizon, and 35 to 75 percent in the C horizon

*Reaction:* Very strongly acid to moderately acid in unlimed areas

#### *A horizon:*

Hue—7.5YR or 10YR

Value—2 to 4

Chroma—2 to 4

Fine-earth texture—loam

#### *E horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 or 4

Fine-earth texture—loam, fine sandy loam, or sandy loam

#### *Bw horizon:*

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—4 to 8

Fine-earth texture—loam, fine sandy loam, or sandy loam

#### *C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, fine sandy loam, sandy loam, or loamy sand

## Pigeonroost Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges, hills, and spurs on low mountains and foothills

*Parent material:* Residuum weathered from gneiss, schist, and/or granite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Moderately deep

*Slope range:* 7 to 55 percent

### Associated Soils

- Edneytown soils, which are very deep to bedrock
- Edneyville soils, which are very deep to bedrock and have less clay in the subsoil than the Pigeonroost soils

## Soil Survey of Grayson County, Virginia

- Clifford soils, which are very deep to bedrock and have more clay in the subsoil than the Pigeonroost soils
- Peaks soils, which have less clay and more rock fragments in the subsoil than the Pigeonroost soils

### Taxonomic Classification

Fine-loamy, mixed, active, mesic Typic Hapludults

### Typical Pedon

Pigeonroost loam, 15 to 35 percent slopes; in Grayson County, Virginia; about 2.25 miles south-southeast of Providence, about 0.45 mile northeast of the junction of Highways VA-637 and VA-636, about 0.9 mile northwest of the junction of Highways VA-637 and 631, in a pasture; Brierpatch Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 39 minutes 55.00 seconds N. and long. 81 degrees 1 minute 46.00 seconds W.

- A—0 to 5 inches; dark yellowish brown (10YR 3/4) loam; weak fine granular structure; friable; many very fine and fine roots; strongly acid; abrupt smooth boundary.
- Bt—5 to 24 inches; strong brown (7.5YR 5/8) clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; common distinct clay films on all faces of peds; very strongly acid; clear wavy boundary.
- BC—24 to 37 inches; strong brown (7.5YR 5/8) sandy loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; few very fine roots; very strongly acid; abrupt wavy boundary.
- Cr—37 inches; gneiss bedrock that is weathered, multicolored, and rippable.

### Range in Characteristics

*Solum thickness:* 15 to 40 inches

*Depth to bedrock:* 20 to 40 inches to soft bedrock; more than 60 inches to hard bedrock

*Rock fragments:* 0 to 35 percent in the A horizon and 0 to 15 percent in the B and C horizons

*Reaction:* Extremely acid to moderately acid in unlimed areas

#### *Ap horizon:*

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 6

Fine-earth texture—loam

#### *BA or BE horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 to 6

Texture—loam, sandy loam, fine sandy loam, or sandy clay loam

#### *Bt horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Texture—sandy clay loam, loam, clay loam, or silty clay loam

#### *BC horizon or CB horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—4 to 8

## Soil Survey of Grayson County, Virginia

Chroma—3 to 8

Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

*C horizon (if it occurs):*

Hue—5YR to 10YR

Value—3 to 8

Chroma—3 to 8

Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

*Cr horizon:*

Bedrock—weathered, multicolored, high-grade metamorphic or igneous rock, such as gneiss or granite, that is rippable

### **Pineola Series**

*Physiographic province:* Blue Ridge

*Landform:* Ridges and hills on low mountains and foothills

*Parent material:* Residuum weathered from metasandstone, metagraywacke, and/or phyllite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Moderately deep

*Slope range:* 15 to 55 percent

#### **Associated Soils**

- Burton soils, which have less clay in the subsoil than the Pineola soils; at higher elevations
- Pigeonroost soils, which have a thinner or lighter colored surface layer than the Pineola soils

#### **Taxonomic Classification**

Fine-loamy, mixed, active, mesic Humic Hapludults

#### **Typical Pedon**

Pineola loam, 15 to 35 percent slopes; in Grayson County, Virginia; about 2.15 miles southwest of Whitetop, about 2.1 miles southwest of the junction of Highways VA-755 and VA-726, about 0.83 mile northeast of the North Carolina Corner, about 2.19 miles west of Whitetop Cemetery, in an abandoned pasture; Grayson, Tennessee USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 35 minutes 45.00 seconds N. and long. 81 degrees 39 minutes 59.00 seconds W.

A—0 to 10 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; very friable; many fine and common medium roots; 10 percent gravel; strongly acid; clear wavy boundary.

BA—10 to 15 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; many fine and few medium roots; 10 percent gravel; strongly acid; gradual wavy boundary.

Bt—15 to 26 inches; yellowish brown (10YR 5/6) gravelly clay loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and few medium roots; common distinct clay films on all faces of peds; 15 percent gravel; strongly acid; clear wavy boundary.

C—26 to 29 inches; yellowish brown (10YR 5/6) gravelly sandy loam; massive; friable, slightly sticky, nonplastic; few very fine and fine roots; 25 percent gravel; strongly acid; abrupt wavy boundary.

Cr—29 inches; metagraywacke bedrock; weathered and rippable.

### Range in Characteristics

*Solum thickness:* 15 to 39 inches

*Depth to bedrock:* 20 to 40 inches to soft bedrock; more than 60 inches to hard bedrock

*Rock fragments:* 0 to 15 percent in the A horizon, 0 to 35 percent in the B horizon, and 0 to 50 percent in the C horizon

*Reaction:* Extremely acid to moderately acid in unlimed areas

*A or Ap horizon:*

Hue—7.5YR or 10YR

Value—2 or 3

Chroma—1 to 4

Texture—loam

*BA horizon or AB horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 to 6

Fine-earth texture—loam, sandy loam, fine sandy loam, or silt loam

*Bt horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—sandy clay loam, loam, clay loam, or silty clay loam

*BC horizon (if it occurs):*

Hue—7.5YR or 10YR

Value—4 to 7

Chroma—4 to 8

Fine-earth texture—sandy loam, fine sandy loam, loam, or silt loam

*C horizon:*

Hue—7.5YR or 10YR

Value—3 to 8

Chroma—1 to 8

Fine-earth texture—sandy loam, fine sandy loam, loam, or silt loam

*Cr horizon:*

Bedrock—weathered, multicolored, low-grade metasedimentary rock, such as metagraywacke or metasandstone, that is rippable

### Scales Series

*Physiographic province:* Blue Ridge

*Landform:* Coves, saddles, and benches on high mountains

*Parent material:* Organic material over colluvium derived from rhyolite

*Drainage class:* Poorly drained

*Slowest saturated hydraulic conductivity:* Moderately low

*Depth class:* Very deep

*Slope range:* 0 to 7 percent

### Associated Soils

- Balsam soils, which are well drained and have more rock fragments in the subsoil than the Scales soils
- Nopan soils, which do not have a thick organic surface layer

### Taxonomic Classification

Loamy, mixed, superactive, acid, frigid, shallow Histic Humaquepts

### Typical Pedon

Scales mucky peak; in the Jefferson National Forest; about 3.5 miles southwest of Troutdale, Virginia, about 3.3 miles southwest of the junction of Highways VA-16 and VA-603, about 0.1 mile southeast of the gate at the "Scales" on Pine Mountain, in a pasture; Trout Dale, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 40 minutes 9.00 seconds N. and long. 81 degrees 29 minutes 13.00 seconds W.

Oi—0 to 2 inches; black (10YR 2/1) peat.

Oe—2 to 11 inches; black (10YR 2/1) mucky peat.

2Cg—11 to 21 inches; grayish brown (10YR 5/2) gravelly sandy clay loam; massive; friable; few fine roots; few fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron; 30 percent gravel; strongly acid; clear smooth boundary.

3Cd1—21 to 33 inches; light olive brown (2.5Y 5/3) clay loam; massive; firm, slightly sticky, nonplastic; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron; 10 percent gravel; very strongly acid; gradual wavy boundary.

3Cd2—33 to 43 inches; light olive brown (2.5Y 5/4) gravelly clay loam; massive; firm, slightly sticky, nonplastic; few medium prominent yellowish brown (10YR 5/8, moist) masses of oxidized iron; 20 percent gravel; very strongly acid; gradual wavy boundary.

3Cd3—43 to 62 inches; yellowish brown (10YR 5/6) gravelly clay loam; massive; firm, moderately sticky, moderately plastic; few medium distinct yellowish brown (10YR 5/8) masses of oxidized iron; 20 percent gravel; very strongly acid.

### Range in Characteristics

*Solum thickness:* 0 to 20 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 35 percent in the O and A horizons and 5 to 35 percent in the C horizon; some pedons have thin layers of gravel in the upper part of the C horizon

*Reaction:* Very strongly acid to moderately acid

#### *O horizon:*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Fine-earth texture—fibric, hemic, or sapric material

#### *A horizon (if it occurs):*

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Fine-earth texture—loamy sand, sandy loam, fine sandy loam, loam, or silt loam; mucky analogues of these textures are common

#### *Cg horizon:*

Hue—10YR to 5Y

Value—4 to 6

Chroma—1 or 2

Redoximorphic features—in shades of gray and brown

Fine-earth texture—loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

#### *Cd horizon:*

Hue—10YR to 5Y

## Soil Survey of Grayson County, Virginia

Value—4 to 6

Chroma—3 to 8

Redoximorphic features—in shades of gray and brown

Fine-earth texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

### Sylco Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges and knobs on low mountains and foothills

*Parent material:* Residuum weathered from phyllite and metasandstone

*Drainage class:* Somewhat excessively drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Moderately deep

*Slope range:* 7 to 55 percent

#### Associated Soils

- Sylvatus and Unicoi soils, which are shallow to hard bedrock
- McCamy soils, which have more clay and fewer rock fragments in the subsoil than the Sylco soils

#### Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### Typical Pedon

Sylco channery silt loam in an area of Sylco-Sylvatus complex, 7 to 15 percent slopes; in Grayson County, Virginia; about 3.5 miles southeast of Cripple Creek, about 2.0 miles west of the junction of Highways VA-602 and VA-738, about 2.0 miles east of the junction of Highways VA-653 and VA-602, about 0.2 mile north of Cold Springs Church and cemetery, in a pasture; Cripple Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 47 minutes 5.00 seconds N. and long. 81 degrees 2 minutes 37.00 seconds W.

A—0 to 4 inches; dark yellowish brown (10YR 4/4) channery silt loam; weak medium granular structure; friable; many very fine roots; 20 percent channers; strongly acid; abrupt smooth boundary.

Bw—4 to 22 inches; brown (7.5YR 5/4) very channery silt loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; 45 percent channers; strongly acid; clear smooth boundary.

C—22 to 27 inches; brown (7.5YR 5/4) extremely channery silt loam; massive; friable, slightly sticky, slightly plastic; few fine roots; 70 percent channers; strongly acid; clear wavy boundary.

R—27 inches; hard phyllite bedrock.

#### Range in Characteristics

*Solum thickness:* 20 to 40 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 15 to 35 percent in the A horizon, 15 to 45 percent in the B horizon, and 40 to 70 percent in the C horizon

*Reaction:* Extremely acid to strongly acid in unlimed areas

*A horizon:*

Hue—10YR

Value—3 or 4

## Soil Survey of Grayson County, Virginia

Chroma—2 to 4  
Fine-earth texture—silt loam

### *Bw horizon:*

Hue—7.5YR or 10YR  
Value—3 to 5  
Chroma—3 to 6  
Fine-earth texture—silt loam, loam, or silty clay loam

### *C horizon:*

Hue—7.5YR or 10YR  
Value—3 to 5  
Chroma—3 to 6  
Fine-earth texture—silt loam, loam, or silty clay loam

## Sylvatus Series

*Physiographic province:* Blue Ridge

*Landform:* Ridges and knobs on low mountains and foothills

*Parent material:* Residuum weathered from phyllite and metasandstone

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Shallow

*Slope range:* 7 to 55 percent

### Associated Soils

- Sylco soils, which are moderately deep to hard bedrock
- Unicoi soils, which have less silt and more sand in the subsoil than the Sylvatus soils
- McCamy soils, which are moderately deep to hard bedrock and have more clay and fewer rock fragments in the subsoil than the Sylvatus soils

### Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

### Typical Pedon

Sylvatus channery silt loam in an area of Sylco-Sylvatus complex, 15 to 35 percent slopes; in Grayson County, Virginia; about 3.0 miles southeast of Cripple Creek, about 0.7 mile east of the junction of Highways VA-602 and VA-653, about 2.0 miles west of Faith Church, about 0.75 mile south of the Wythe County line, in a pasture; Cripple Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 46 minutes 59.00 seconds N. and long. 81 degrees 4 minutes 12.00 seconds W.

A—0 to 2 inches; dark yellowish brown (10YR 3/4) channery silt loam; weak fine granular structure; friable; many very fine and fine roots; 20 percent channers; very strongly acid; abrupt smooth boundary.

Bw—2 to 11 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; 50 percent channers; very strongly acid; clear smooth boundary.

C—11 to 16 inches; yellowish brown (10YR 5/6) extremely channery silt loam; massive; friable, slightly sticky, slightly plastic; 70 percent channers; very strongly acid; clear wavy boundary.

R—16 inches; hard phyllite bedrock.

### Range in Characteristics

*Solum thickness:* 10 to 18 inches

*Depth to bedrock:* 10 to 20 inches

*Rock fragments:* 15 to 35 percent in the A horizon, 15 to 75 percent in the B horizon, and 45 to 90 percent in the C horizon

*Reaction:* Extremely acid or very strongly acid in unlimed areas

*A horizon:*

Hue—10YR

Value—2 to 5

Chroma—1 to 4

Fine-earth texture—silt loam

*Bw horizon:*

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—4 to 8

Fine-earth texture—silt loam, loam, silty clay loam, or clay loam

*C horizon:*

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—1 to 8

Fine-earth texture—silt loam, loam, silty clay loam, or clay loam

## Tate Series

*Physiographic province:* Blue Ridge

*Landform:* Coves, benches, and saddles on low mountains and foothills

*Parent material:* Colluvium and/or alluvium derived from igneous and metamorphic rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 2 to 55 percent

### Associated Soils

- Delanco soils, which are moderately well drained
- Codorus soils, which are somewhat poorly drained and have less clay in the subsoil than the Tate soils
- Hatboro soils, which are poorly drained and have less clay in the subsoil than the Tate soils

### Taxonomic Classification

Fine-loamy, mixed, semiactive, mesic Typic Hapludults

### Typical Pedon

Tate loam, 7 to 15 percent slopes (fig. 21); in Grayson County, Virginia; about 3.75 miles northwest of Fries, about 0.35 mile northeast of the junction of Highways VA-604 and VA-644, about 0.85 mile northeast of the junction of Highways VA-604 and VA-646, in an alfalfa field; Brierspatch Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 44 minutes 44.00 seconds N. and long. 81 degrees 0 minutes 20.00 seconds W.

Ap—0 to 6 inches; dark yellowish brown (10YR 4/4) loam; moderate very fine granular



Figure 21.—An example of a Tate soil. The average content of semi-rounded rock fragments is as much as 35 percent in the solum and as much as 60 percent in the substratum. Depth to bedrock is more than 60 inches. Depth is marked in inches.

structure; friable; few medium and many very fine roots; few fine mica flakes; moderately acid; abrupt wavy boundary.

BA—6 to 12 inches; brown (7.5YR 5/4) sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few medium and common very fine roots; few fine mica flakes; moderately acid; abrupt smooth boundary.

Bt—12 to 27 inches; strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine and fine roots; common discontinuous clay films on all faces of peds; common fine mica flakes; strongly acid; clear wavy boundary.

BC—27 to 47 inches; strong brown (7.5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common fine mica flakes; 2

## Soil Survey of Grayson County, Virginia

percent gneiss gravel and 3 percent quartz gravel; strongly acid; clear wavy boundary.

C—47 to 62 inches; strong brown (7.5YR 5/6) sandy loam; massive; friable, slightly sticky, slightly plastic; common fine mica flakes; 5 percent gneiss gravel and 5 percent quartz gravel; strongly acid.

### Range in Characteristics

*Solum thickness:* 24 to 60 inches or more

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 0 to 15 percent in the A horizon, 0 to 35 percent in the BA and Bt horizons, and 5 to 60 percent in the BC and C horizons

*Reaction:* Very strongly acid to slightly acid in unlimed areas

#### *Ap horizon:*

Hue—10YR

Value—3 to 5

Chroma—2 to 4

Texture—loam

#### *BA horizon:*

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Fine-earth texture—loam, fine sandy loam, sandy loam, sandy clay loam, or clay loam

#### *Bt horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, clay loam, or sandy clay loam

#### *BC horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, sandy loam, fine sandy loam, or sandy clay loam

#### *C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 8

Fine-earth texture—loam, sandy loam, fine sandy loam, sandy clay loam, or loamy sand

## Thunder Series

*Physiographic province:* Blue Ridge

*Landform:* Benches, coves, and saddles on low mountains and foothills

*Parent material:* Colluvium derived from rhyolite

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* Moderately high

*Depth class:* Very deep

*Slope range:* 2 to 55 percent

### Associated Soils

- Tate soils, which have more clay and fewer rock fragments in the subsoil than the Thunder soils and have a thinner or lighter colored surface layer
- Cullasaja soils, which have less clay in the subsoil than the Thunder soils and a thicker dark surface layer
- Greenlee soils, which have less clay in the subsoil than the Thunder soils and a thinner dark surface layer

### Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Humic Hapludults

### Typical Pedon

Thunder cobbly loam, 15 to 35 percent slopes, very bouldery; in Grayson County, Virginia; about 2.64 miles northwest of Rugby, about 1.85 miles north of the junction of Highways US-58 and VA-362, about 0.64 mile east of the junction of Grayson Highlands State Park campground road and Highway VA-362, on the campground road, 0.25 mile west of the campground, in a hardwood forest; Trout Dale, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 38 minutes 18.00 seconds N. and long. 81 degrees 29 minutes 35.00 seconds W.

Oe—0 to 1 inch; moderately decomposed plant material; 10 percent gravel and 15 percent cobbles.

A1—1 to 5 inches; very dark gray (10YR 3/1) cobbly loam; moderate medium granular structure; friable; many fine and medium and few coarse roots; 10 percent gravel and 15 percent cobbles; strongly acid; clear wavy boundary.

A2—5 to 12 inches; dark brown (10YR 3/3) very cobbly loam; moderate fine granular structure; friable, slightly sticky, slightly plastic; common fine and medium and few coarse roots; 10 percent gravel and 25 percent cobbles; strongly acid; clear wavy boundary.

E—12 to 21 inches; brown (10YR 4/3) very cobbly loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium and few coarse roots; 10 percent gravel and 30 percent cobbles; strongly acid; abrupt wavy boundary.

Bt1—21 to 32 inches; yellowish brown (10YR 5/6) very cobbly sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine, medium, and coarse roots; few faint clay films on all faces of peds; 15 percent gravel and 30 percent cobbles; strongly acid; gradual wavy boundary.

Bt2—32 to 50 inches; yellowish brown (10YR 5/6) very cobbly sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine, medium, and coarse roots; common faint clay films on all faces of peds; 15 percent gravel and 35 percent cobbles; strongly acid; clear wavy boundary.

BC—50 to 62 inches; yellowish brown (10YR 5/6) extremely cobbly sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; 25 percent gravel and 35 percent cobbles; strongly acid.

### Range in Characteristics

*Solum thickness:* More than 50 inches

*Depth to bedrock:* More than 60 inches

*Rock fragments:* 15 to 60 percent in the A horizon, 25 to 85 percent in the E horizon, and 35 to 85 percent in the B and C horizons

*Reaction:* Strongly acid to slightly acid in unlimed areas

*A horizon:*

Hue—10YR

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Value—2 to 4  
Chroma—1 to 3  
Fine-earth texture—loam

### *E horizon:*

Hue—10YR  
Value—4 or 5  
Chroma—3 to 6  
Fine-earth texture—loam or sandy loam

### *Bt horizon:*

Hue—5YR to 10YR  
Value—4 to 6  
Chroma—4 to 8  
Fine-earth texture—loam, clay loam, or sandy clay loam

### *BC horizon:*

Hue—7.5YR or 10YR  
Value—4 to 6  
Chroma—6 to 8  
Fine-earth texture—sandy loam, sandy clay loam, or clay loam

### *C horizon (if it occurs):*

Hue—7.5YR or 10YR  
Value—5 or 6  
Chroma—6 to 8  
Fine-earth texture—loamy sand or sandy loam

## **Tuckasegee Series**

*Physiographic province:* Blue Ridge

*Landform:* Coves and saddles on low mountains and foothills

*Parent material:* Colluvium derived from igneous and metamorphic rock

*Drainage class:* Well drained

*Slowest saturated hydraulic conductivity:* High

*Depth class:* Very deep

*Slope range:* 45 to 90 percent

### **Associated Soils**

- Chestnut soils, which are moderately deep to soft bedrock
- Peaks soils, which are moderately deep to hard bedrock and have more rock fragments in the subsoil than the Tuckasegee soils
- Cowee soils, which are moderately deep to soft bedrock and have more clay in the subsoil than the Tuckasegee soils

### **Taxonomic Classification**

Fine-loamy, isotic, mesic Humic Dystrudepts

### **Typical Pedon**

Tuckasegee gravelly loam; in Surry County, North Carolina; about 4 miles southwest of Low Gap, 0.6 mile south of intersection of Alleghany County Secondary Roads 1462 and 1461 on Secondary Road 1462 into Surry County, 1.3 miles south on a woods road, 0.8 mile east on an adjoining woods road, 500 feet east of the road in hardwood forest; Roaring Gap, North Carolina USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 29 minutes 15.00 seconds N. and long. 80 degrees 54 minutes 50.00 seconds W.

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- A1—0 to 8 inches; very dark brown (10YR 2/2) gravelly loam, brown (10YR 4/3) dry; weak medium granular structure; friable, nonsticky, nonplastic; many fine, medium, and coarse roots; few fine tubular pores; few fine mica flakes; 1 percent gneiss stones, 5 percent quartz gravel, and 10 percent gneiss gravel; moderately acid; clear wavy boundary.
- A2—8 to 13 inches; very dark grayish brown (10YR 3/2) gravelly loam, dark yellowish brown (10YR 4/4) dry; weak medium granular structure; friable, nonsticky, nonplastic; common fine, medium, and coarse roots; few fine tubular pores; few fine mica flakes; 5 percent quartz gravel and 10 percent gneiss gravel; moderately acid; gradual wavy boundary.
- Bw1—13 to 28 inches; brown (7.5YR 4/4) gravelly loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few medium and coarse roots; few fine tubular pores; common fine mica flakes; 5 percent quartz gravel and 10 percent gneiss gravel; moderately acid; gradual wavy boundary.
- Bw2—28 to 47 inches; strong brown (7.5YR 4/6) gravelly loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few medium and coarse roots; few fine tubular pores; common fine mica flakes; 5 percent quartz gravel and 15 percent gneiss gravel; strongly acid; gradual wavy boundary.
- BC—47 to 79 inches; strong brown (7.5YR 5/6) very gravelly loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few medium and coarse roots; common fine mica flakes; 5 percent quartz gravel, 5 percent gneiss cobbles, 5 percent schist channers, and 20 percent gneiss gravel; strongly acid.

### Range in Characteristics

*Solum thickness:* 40 to more than 60 inches

*Depth to bedrock:* More than than 72 inches

*Rock fragments:* 0 to 35 percent in the upper 40 inches of the profile and 0 to 60 percent below a depth of 40 inches

*Reaction:* Unless areas are limed, very strongly acid to slightly acid in the A horizon and very strongly acid to moderately acid in the B and C horizons

#### *A or Ap horizon:*

Hue—5YR to 10YR

Value—2 or 3

Chroma—1 to 3

Fine-earth texture—loam in the surface layer; including loam, sandy loam, and fine sandy loam in subhorizons below the surface layer

#### *Bw horizon:*

Hue—5YR to 10YR

Value—3 to 6

Chroma—3 to 8

Fine-earth texture—sandy loam, fine sandy loam, loam, or sandy clay loam

#### *BC horizon:*

Hue—5YR to 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—sandy loam, fine sandy loam, loam, or sandy clay loam

#### *C horizon (if it occurs):*

Hue—5YR to 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

## Udorthents

*Physiographic province:* Blue Ridge  
*Landform:* Variable  
*Parent material:* Fill material from a variety of sources  
*Drainage class:* Variable  
*Slowest saturated hydraulic conductivity:* Unspecified  
*Depth class:* Variable  
*Slope range:* 0 to 25 percent

### Typical Pedon

The properties and characteristics of Udorthents vary to the extent that there is not a typical profile. Udorthents formed when soils were disturbed by land-leveling, excavation, or filling. They consist of loamy and clayey soil material and varying amounts of rock fragments. Depth to hard bedrock varies from a few inches to more than 5 feet. Areas range from slightly compacted to severely compacted. Unvegetated areas are susceptible to severe erosion. Drainage is variable.

## Unicoi Series

*Physiographic province:* Blue Ridge  
*Landform:* Ridges and knobs on low mountains and foothills  
*Parent material:* Residuum weathered from metasandstone and/or quartzite  
*Drainage class:* Somewhat excessively drained  
*Slowest saturated hydraulic conductivity:* High  
*Depth class:* Shallow  
*Slope range:* 7 to 55 percent

### Associated Soils

- Keener soils, which are very deep to bedrock and have more clay and fewer rock fragments in the subsoil than the Unicoi soils
- McCamy soils, which are moderately deep to hard bedrock and have more clay and fewer rock fragments in the subsoil than the Unicoi soils
- Sylco soils, which are moderately deep to hard bedrock
- Sylvatus soils, which have more silt and less sand in the subsoil than the Unicoi soils

### Taxonomic Classification

Loamy-skeletal, mixed, semiactive, mesic Lithic Dystrudepts

### Typical Pedon

Unicoi very gravelly sandy loam, 35 to 55 percent slopes, extremely stony; in Grayson County, Virginia; about 5 miles south of Cripple Creek, about 0.85 mile south of Jones Knob, about 0.75 mile northeast of the intersection of Highways VA-604 and VA-653, about 1.25 mile east of the Wythe County line, in a mixed hardwood-pine forest; Cripple Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 45 minutes 20.00 seconds N. and long. 81 degrees 4 minutes 15.00 seconds W.

Oe—0 to 2 inches; moderately decomposed plant material.

A—2 to 5 inches; brown (10YR 4/3) very gravelly sandy loam; weak fine granular structure; friable; many fine and medium roots; 40 percent gravel; extremely acid; abrupt wavy boundary.

Bw—5 to 14 inches; yellowish brown (10YR 5/6) very gravelly sandy loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium roots; 50 percent gravel; extremely acid; gradual wavy boundary.

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- C—14 to 19 inches; yellowish brown (10YR 5/6) extremely gravelly sandy loam; massive; friable, slightly sticky, slightly plastic; few fine and medium roots; 60 percent gravel; extremely acid; clear wavy boundary.
- R—19 inches; hard metasandstone bedrock.

**Range in Characteristics**

*Solum thickness:* 7 to 20 inches

*Depth to bedrock:* 10 to 20 inches

*Rock fragments:* 35 to 60 percent throughout the profile

*Reaction:* Extremely acid to strongly acid in unlimed areas

*A horizon:*

Hue—10YR

Value—3 to 6

Chroma—1 to 4

Fine-earth texture—sandy loam

*Bw horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam, fine sandy loam, or sandy loam

*C horizon:*

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 8

Fine-earth texture—loam, fine sandy loam, or sandy loam



# Formation of the Soils

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This section describes the factors that have affected the formation of the soils in Grayson County. It also discusses the morphology of the soils and the processes of horizon differentiation.

## Factors of Soil Formation

Soil is formed by weathering and other processes that act upon parent material. The characteristics of the soil at any given point depend upon the interaction of the five factors of soil formation. These factors are parent material, climate, plants and animals, relief, and time (7).

Climate and plants and animals are the active forces of soil formation. In this survey area, they act on the parent material that has accumulated through the weathering of rocks and slowly change it into soil. Although all of the five factors affect the formation of every soil, the relative importance of each differs from place to place. In extreme cases one factor may dominate in the formation of a soil and fix most of its properties. Generally, the combined action of the five factors determines the characteristics of each soil.

## Parent Material

The unconsolidated mass from which a soil forms is the parent material. It is largely responsible for the chemical and mineralogical composition of the soil and the rate at which soil-forming processes take place. There are three kinds of parent material in Grayson County: residual, alluvial, and colluvial.

Some of the residual parent materials are quartz monzonite, biotite gneiss, granite, mica schist, mica gneiss, metasandstone, quartzite, phyllite, and rhyolite. Soils that formed in residuum from quartz monzonite, biotite gneiss, and granite are the most extensive on ridges and foothills in the central part of the county and have a wide range of characteristics. Soils derived from quartz monzonite, biotite gneiss, and granite typically have a loamy surface layer and a clay loam or sandy clay loam subsoil. Examples are Edneytown, Edneyville, and Pigeonroost soils. Residuum from mica schist and mica gneiss on ridges and foothills in the southeastern part of the county weathered to form the parent material of the loamy textured Glenelg and Cowee soils. The coarse textured granite residuum on mountain ridges in the central part of the county weathered to form the parent material of Peaks soils. Metamorphosed sedimentary rocks, such as metasandstone, phyllite, and quartzite, on mountain ridges along the northern rim of Grayson County, weathered to form the parent material of Sylco, Sylvatus, McCamy, and Unicoi soils. The very resistant rhyolite residuum on high mountains in the western part of the county weathered to form the parent material of Bloodyhorse and Buzzrock soils.

Alluvial parent materials are of local origin along the New River and its tributaries. Soils derived from alluvium have a wide range in texture and development. Examples of such soils are Codorus, Comus, Craigsville, Delanco, Elsinboro, Hatboro, Kinkora, and Braddock.

Colluvial parent materials are dominantly along lower mountain side slopes, in

coves, and on benches. They primarily are moderately coarse textured, medium textured, or moderately fine textured. Examples are Braddock, Delanco, Greenlee, Keener, and Tate soils.

## **Climate**

As a genetic factor, climate affects the physical, chemical, and biological relationships in soils, principally through the influence of precipitation and temperature. Water dissolves minerals and organic residue through the surface layer and subsoil. Temperature determines the types of physical, chemical, and biological activities that take place and the speed at which they act.

Because the precipitation in the county exceeds evapotranspiration, the soils have been leached. Much of the soluble material that originally was present or was released through weathering has been removed. In addition to leaching soluble materials, water that percolates through the soil moves clay from the surface layer to the subsoil. Except for soils that formed in recent alluvium or sand or on very steep slopes, the soils of the county typically contain more clay in the subsoil than in the surface layer.

Also influenced by climate is the formation of blocky structure in the subsoil of well developed soils. The development of peds (aggregates) in the subsoil is caused partly by changes in volume of the soil mass that are primarily the result of alternating periods of wetting and drying.

The climate is uniform throughout most of the county, except for the areas at the higher elevations (over 4,400 feet) in the western part of the county. These areas are significantly colder and, as a result, the soils at these locations contain more organic matter in the surface layer. In other areas of the survey area, the climate's affect on soil formation may be modified locally by the gradient and aspect of slope.

## **Plant and Animal Life**

Micro-organisms, vegetation, animals, and humans are major factors in the formation of soils. Vegetation is generally responsible for the amount of organic matter in the soil and the color of the surface layer. Earthworms, cicada, and burrowing animals help keep the soil open and porous. Micro-organisms decompose the vegetation and dead animal matter, thus releasing nutrients for plant food.

Before the survey area was settled, the native vegetation was the major living organism affecting soil development. The native vegetation consisted mainly of hardwoods. Oaks, hickories, chestnuts, maples, beech, and birch were the dominant trees in the original forest cover; hemlock and eastern white pine were the most abundant conifers in the cooler areas; red spruce and Fraser fir were confined to the higher elevations. Most hardwoods use a large amount of the available calcium and other bases and constantly recycle them through leaf fall and decay. Coniferous trees recycle smaller amount of bases than deciduous trees; consequently, more bases have been leached from soils that developed under coniferous vegetation than under deciduous vegetation. The soils of the mountainous regions of the county that are underlain by acid parent rock have few remaining bases, even though they developed under a hardwood forest. This is mainly because of the low base content of the original parent material. Because the soils formed under forest vegetation, rapid decay of organic matter and constant recycling of plant nutrients have prevented organic matter from accumulating in large quantities. In addition, the present climate favors rapid decay of plant materials, oxidation of organic matter, and leaching of plant nutrients.

As farming developed in the area, humans became an important factor in the development of the soils. The clearing of the forests, cultivation, introduction of new plants, and changes in natural drainage all have had their effect on soil development. The most important changes brought about by humans are the mixing of the upper

layers of the soil to form a plow layer, the cultivation of steep erodible slopes, and the liming and fertilizing that change the content of plant nutrients, especially in the upper layers of the soils.

## **Relief**

The underlying formations, the geologic history of the general region, and the effects of dissection by rivers and streams largely determine the relief of an area. Relief affects the formation of soils by influencing the rate of surface runoff, the soil temperature, and the geologic erosion. It can alter the effects of climate acting on the parent material to the extent that several different kinds of soil may form from the same kind of parent material. Relief also affects the amount of radiant energy absorbed by the soils, which in turn affects the type of native vegetation.

Relief affects drainage. Runoff from upland areas tends to accumulate in areas of the nearly level flood plains, resulting in a high water table. Poorly drained Hatboro and Kinkora soils are examples of soils in these areas.

The gently sloping to very steep soils generally are well drained or moderately well drained. Geologic erosion is slight, surface runoff is medium to rapid, and the translocation of bases and clay has typically occurred downward through the soil. On the steeper soils, however, surface runoff is very rapid, water infiltration and the translocation of clays and bases throughout the soil are minimized, and geologic erosion has removed soil material almost as fast as it forms.

## **Time**

As a factor of soil formation, time generally is related to the degree of development or degree of horizon differentiation within the soil. A soil that has little or no horizon development is considered a young soil, and one that has strongly developed horizons is considered an old or mature soil.

The oldest soils in the survey area are those that formed in residual material weathered from bedrock. In general, these soils are in less sloping, relatively stable positions and formed in easily weatherable materials. These older soils have a strong degree of horizon differentiation. Hayesville soils are an example. On very steep slopes, geologic erosion removed soil material in a relatively short period and the soils generally have not been in place long enough to develop more than moderate horizon differentiation. Examples are Sylvatus and Unicoi soils. Soils that formed in recent alluvium have been in place only a relatively short time and show little or no development other than an accumulation of organic matter in the surface layer. They commonly are stratified and have an irregular distribution of organic matter. Examples are Comus and Craigsville soils.

## **Morphology of the Soils**

The results of the interaction of the soil-forming factors can be distinguished by the different layers, or horizons, in a soil profile. The soil profile extends from the surface down to materials that are little altered by the soil-forming processes.

Most soils have three major horizons—the A, B, and C horizons. Soils under a forest canopy have an O (organic) horizon at the surface. These major horizons may be further subdivided by the use of numbers and letters to indicate changes within one horizon. An example is a Bt horizon, which is a B horizon that has an accumulation of clay.

The A horizon is the surface layer. It is the layer that has the maximum accumulation of organic matter and that shows a maximum leaching or eluviation of clay and iron. The E horizon is a subsurface layer that has the maximum amount of

leaching of bases and eluviation of clay and iron and is normally the lightest colored horizon in the profile.

The B horizon underlies an A or E horizon and is commonly called the subsoil. It is the horizon of maximum accumulation of clay, iron, aluminum, or other compounds leached from the surface layer. In some soils the B horizon formed by alteration in place rather than by illuviation. The alteration can be caused by oxidation and reduction of iron or by the weathering of clay minerals. The B horizon commonly has blocky or prismatic structure, and it generally is firmer textured and lighter in color than the A horizon but darker than the C horizon or the E horizon.

The C horizon is below the B horizon or, in some instances, below the A horizon. It consists of materials that are little altered by the soil-forming processes.

## **Processes of Horizon Differentiation**

In this survey area several processes are involved in the formation of soil horizons. Among these are the accumulation of organic matter, the leaching of soluble salts, the reduction and transfer of iron, the formation of soil structure, and the formation and translocation of clay minerals. These processes are continually taking place, generally at the same time throughout the soil profile. Such processes have been going on for thousands of years.

The accumulation and incorporation of organic matter takes place with the decomposition of plant residue. Organic matter darkens the surface layer and helps to form the A horizon. In many places much of the surface layer has been eroded away or has been mixed with materials from underlying layers through cultivation. Once lost, organic matter normally takes a long time to replace. In Grayson County, the organic matter content of the surface layer ranges from low, as in Unicoi soils, to very high, as in Balsam soils.

For soils to form distinct subsoil horizons, soluble salts must be leached before the translocation of clay minerals can occur. Among the factors that affect this leaching are the kind of salts originally present and the permeability of the soil profile.

Well drained and moderately well drained soils in the survey area have a red to yellowish brown subsoil. These colors are caused mainly by thin coatings of iron oxides on the soil particles; although in some soils the color is inherited from the materials in which they formed. The structure of the subsoil is, in most soils in the survey area, weak or moderate subangular blocky.

The reduction and transfer of iron, called gleying, is associated mainly with the wetter, more poorly drained soils. Moderately well drained soils, such as Delanco, have yellowish brown to gray mottles, indicating the segregation of iron. In poorly drained soils, such as Hatboro and Kinkora, the subsoil and underlying material are grayish, indicating reduction and transfer of iron by removal in solution.

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# Glossary

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**ABC soil.** A soil having an A, a B, and a C horizon.

**AC soil.** A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

**Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

**Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

**Alkali (sodic) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

**Alluvial cone.** A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

**Alluvial fan.** A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

**Alluvium.** Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

**Alpha,alpha-dipyridyl.** A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

**Animal unit month (AUM).** The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

**Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.

**Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low .....	0 to 3
Low .....	3 to 6
Moderate .....	6 to 9
High .....	9 to 12
Very high .....	more than 12

- Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.
- Backswamp.** A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.
- Basal area.** The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.
- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- Base slope (geomorphology).** A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).
- Bedding plane.** A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.
- Bedding system.** A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.
- Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
- Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Blowout.** A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed; the adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.
- Bottom land.** An informal term loosely applied to various portions of a flood plain.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Breaks.** A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.
- Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Cable yarding.** A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing.

To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Catsteps.** See Terracettes.
- Cement rock.** Shaly limestone used in the manufacture of cement.
- Channery soil material.** Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.
- Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay depletions.** See Redoximorphic features.
- Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Claypan.** A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.
- Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
- Concretions.** See Redoximorphic features.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material.** Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
- COLE (coefficient of linear extensibility).** See Linear extensibility.
- Colluvium.** Unconsolidated, unsorted earth material being transported or deposited

on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Concretions.** Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.
- Conglomerate.** A coarse-grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.
- Conservation cropping system.** Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.
- Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.
- Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."
- Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.
- Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.
- Coprogenous earth (sedimentary peat).** A type of limnic layer composed predominantly of fecal material derived from aquatic animals.
- Corrosion (geomorphology).** A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.
- Corrosion (soil survey interpretations).** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
- Creep deposits.** Soil material which has moved downslope short distances from forces of gravity.
- Crop residue management.** Returning crop residue to the soil, which helps to

maintain soil structure, organic matter content, and fertility and helps to control erosion.

- Cropping system.** Growing crops according to a planned system of rotation and management practices.
- Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.
- Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- Cryoturbate.** A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.
- Cuesta.** An asymmetric ridge capped by resistant rock layers of slight or moderate dip (commonly less than 15 percent slopes); a type of homocline produced by differential erosion of interbedded resistant and weak rocks. A cuesta has a long, gentle slope on one side (dip slope) that roughly parallels the inclined beds; on the other side, it has a relatively short and steep or clifflike slope (scarp) that cuts through the tilted rocks.
- Culmination of the mean annual increment (CMAI).** The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.
- Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.
- Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.
- Delta.** A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.
- Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.
- Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep soils, 20 to 40 inches; shallow soils, 10 to 20 inches; and very shallow soils, less than 10 inches.
- Diatomaceous earth.** A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.
- Dip slope.** A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.
- Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.
- Divided-slope farming.** A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.
- Drainage class** (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained*, *somewhat excessively drained*, *well drained*, *moderately well drained*, *somewhat poorly drained*, *poorly drained*, and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

- Drainage, surface.** Runoff, or surface flow of water, from an area.
- Drainageway.** A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.
- Draw.** A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.
- Drift.** A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.
- Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.
- Dune.** A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.
- Earthy fill.** See Mine spoil.
- Ecological site.** An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.
- Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
- Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
- Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
- Erosion (geologic).* Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
- Erosion (accelerated).* Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.
- Erosion pavement.** A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.
- Erosion surface.** A land surface shaped by the action of erosion, especially by running water.
- Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or

faulting. Most commonly applied to cliffs produced by differential erosion.  
Synonym: scarp.

- Fallow.** Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.
- Fan remnant.** A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.
- Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.
- Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.
- Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.
- Fine textured soil.** Sandy clay, silty clay, or clay.
- Firebreak.** An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.
- First bottom.** An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.
- Flaggy soil material.** Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.
- Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.
- Flood plain.** The nearly level plain that borders a stream and is subject to flooding unless protected artificially.
- Flood-plain landforms.** A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.
- Flood-plain splay.** A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.
- Flood-plain step.** An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.
- Fluvial.** Of or pertaining to rivers or streams; produced by stream or river action.
- Foothills.** A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).
- Footslope.** The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).
- Forb.** Any herbaceous plant not a grass or a sedge.

- Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Fragipan.** A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.
- Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- Gilgai.** Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.
- Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
- Graded stripcropping.** Growing crops in strips that grade toward a protected waterway.
- Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.
- Gravel.** Rounded or angular fragments of rock as much as 3 inches (7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- Green manure crop (agronomy).** A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Gully.** A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
- Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- Hard to reclaim (in tables).** Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.
- Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.
- Head slope (geomorphology).** A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.
- Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.
- High-residue crops.** Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next

crop in the rotation is established. These crops return large amounts of organic matter to the soil.

**Hill.** A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

**Hillslope.** A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

**Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

*O horizon.*—An organic layer of fresh and decaying plant residue.

*L horizon.*—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

*A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon.*—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*—Soft, consolidated bedrock beneath the soil.

*R layer.*—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic soil groups.** Refers to soils grouped according to their runoff potential.

The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Igneous rock.** Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

**Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

**Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Infiltration.** The downward entry of water into the immediate surface of soil or other

material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Intake rate.** The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2 .....	very low
0.2 to 0.4 .....	low
0.4 to 0.75 .....	moderately low
0.75 to 1.25 .....	moderate
1.25 to 1.75 .....	moderately high
1.75 to 2.5 .....	high
More than 2.5 .....	very high

**Interfluve.** A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

**Interfluve (geomorphology).** A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

**Intermittent stream.** A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

**Iron depletions.** See Redoximorphic features.

**Irrigation.** Application of water to soils to assist in production of crops. Methods of irrigation are:

*Basin.*—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

*Border.*—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

*Controlled flooding.*—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

*Corrugation.*—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

*Drip (or trickle).*—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

*Furrow.*—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

*Sprinkler.*—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

*Subirrigation.*—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

*Wild flooding.*—Water, released at high points, is allowed to flow onto an area without controlled distribution.

**Karst** (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

**Knoll.** A small, low, rounded hill rising above adjacent landforms.

**K<sub>sat</sub>.** Saturated hydraulic conductivity. (See Permeability.)

**Lacustrine deposit.** Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

**Lake plain.** A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

**Lake terrace.** A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

**Landslide.** A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

**Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Leaching.** The removal of soluble material from soil or other material by percolating water.

**Linear extensibility.** Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

**Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Loess.** Material transported and deposited by wind and consisting dominantly of silt-sized particles.

**Low strength.** The soil is not strong enough to support loads.

**Low-residue crops.** Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

**Marl.** An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

**Mass movement.** A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

**Masses.** See Redoximorphic features.

**Meander belt.** The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

**Meander scar.** A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

**Meander scroll.** One of a series of long, parallel, close-fitting, crescent-shaped ridges

and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

**Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.

**Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.

**Mesa.** A broad, nearly flat-topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

**Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

**Mine spoil.** An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

**Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

**Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.

**Miscellaneous area.** A kind of map unit that has little or no natural soil and supports little or no vegetation.

**Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.

**Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.

**Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

**Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

**Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Mountain.** A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion. Mountains are defined as low or high:  
*Low mountains.*—Mountains that have elevations above sea level of less than 4,400 feet on southern aspects and less than 4,000 feet on northern aspects.  
*High mountains.*—Mountains that have elevations above sea level of more than 4,400 feet on southern aspects and more than 4,000 feet on northern aspects.

**Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

**Mudstone.** A blocky or massive, fine-grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

**Munsell notation.** A designation of color by degrees of three simple variables—hue,

value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

**Natric horizon.** A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

**Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

**Nodules.** See Redoximorphic features.

**Nose slope (geomorphology).** A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

**Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low .....	less than 0.5 percent
Low .....	0.5 to 1.0 percent
Moderately low .....	1.0 to 2.0 percent
Moderate .....	2.0 to 4.0 percent
High .....	4.0 to 8.0 percent
Very high .....	more than 8.0 percent

**Paleoterrace.** An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedisediment.** A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

**Pedon.** The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation.** The movement of water through the soil.

**Permafrost.** Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

**Permeability.** The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable .....	less than 0.0015 inch
Very slow .....	0.0015 to 0.06 inch
Slow .....	0.06 to 0.2 inch

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Moderately slow .....	0.2 to 0.6 inch
Moderate .....	0.6 inch to 2.0 inches
Moderately rapid .....	2.0 to 6.0 inches
Rapid .....	6.0 to 20 inches
Very rapid .....	more than 20 inches

- pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
- Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
- Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.
- Pitting** (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.
- Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.
- Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
- Plateau** (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower-lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.
- Playa.** The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.
- Plinthite.** The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.
- Plowpan.** A compacted layer formed in the soil directly below the plowed layer.
- Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.
- Poorly graded.** Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
- Pore linings.** See Redoximorphic features.
- Potential native plant community.** See Climax plant community.
- Potential rooting depth (effective rooting depth).** Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.
- Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.
- Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.
- Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.
- Proper grazing use.** Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

**Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid .....	less than 3.5
Extremely acid .....	3.5 to 4.4
Very strongly acid .....	4.5 to 5.0
Strongly acid .....	5.1 to 5.5
Moderately acid .....	5.6 to 6.0
Slightly acid .....	6.1 to 6.5
Neutral .....	6.6 to 7.3
Slightly alkaline .....	7.4 to 7.8
Moderately alkaline .....	7.9 to 8.4
Strongly alkaline .....	8.5 to 9.0
Very strongly alkaline .....	9.1 and higher

**Red beds.** Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

**Redoximorphic concentrations.** See Redoximorphic features.

**Redoximorphic depletions.** See Redoximorphic features.

**Redoximorphic features.** Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features. The redoximorphic features are defined as follows:

1. *Redoximorphic concentrations.*—These are zones of apparent accumulation of iron-manganese oxides and include nodules and concretions, masses, and pore linings. *Nodules and concretions* are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure. *Masses* are noncemented concentrations of substances within the soil matrix. *Pore linings* are zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. *Redoximorphic depletions.*—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out. They include iron depletions and clay depletions. *Iron depletions* are zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix. *Clay depletions* are zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletons).
3. *Reduced matrix.*—This is a soil matrix that has low chroma in situ but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

**Reduced matrix.** See Redoximorphic features.

**Regolith.** All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

- Relief.** The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.
- Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.
- Ridge.** A long, narrow elevation of the land surface, usually sharp crested with steep sides and forming an extended upland between valleys. The term is used in areas of both hill and mountain relief.
- Rill.** A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.
- Riser.** The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.
- Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.
- Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
- Root zone.** The part of the soil that can be penetrated by plant roots.
- Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called groundwater runoff or seepage flow from ground water.
- Saline soil.** A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.
- Sand.** As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.
- Sandstone.** Sedimentary rock containing dominantly sand-sized particles.
- Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.
- Saturated hydraulic conductivity ( $K_{sat}$ ).** See Permeability.
- Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- Scarification.** The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.
- Sedimentary rock.** A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.
- Sequum.** A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)
- Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
- Shale.** Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.
- Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

- Shoulder.** The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.
- Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
- Shrub-coppice dune.** A small, streamlined dune that forms around brush and clump vegetation.
- Side slope (geomorphology).** A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.
- Silica.** A combination of silicon and oxygen. The mineral form is called quartz.
- Silica-sesquioxide ratio.** The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.
- Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- Siltstone.** An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.
- Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- Sinkhole.** A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.
- Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.
- Slickensides** (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.
- Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:
- |                        |                       |
|------------------------|-----------------------|
| Nearly level .....     | 0 to 3 percent        |
| Gently sloping .....   | 2 to 7 percent        |
| Strongly sloping ..... | 7 to 15 percent       |
| Moderately steep ..... | 15 to 25 percent      |
| Steep .....            | 25 to 35 percent      |
| Very steep .....       | 35 percent and higher |
- Slope alluvium.** Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines.

Burnished pedes and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

**Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

**Sodic (alkali) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

**Sodicity.** The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of  $\text{Na}^+$  to  $\text{Ca}^{++} + \text{Mg}^{++}$ . The degrees of sodicity and their respective ratios are:

Slight .....	less than 13:1
Moderate .....	13-30:1
Strong .....	more than 30:1

**Sodium adsorption ratio (SAR).** A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

**Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

**Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

**Soil crusts.** Relatively thin, somewhat continuous layers of the soil surface that often restrict water movement, air entry, and seedling emergence from the soil. They generally are less than 2 inches thick and are massive.

**Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand .....	2.0 to 1.0
Coarse sand .....	1.0 to 0.5
Medium sand .....	0.5 to 0.25
Fine sand .....	0.25 to 0.10
Very fine sand .....	0.10 to 0.05
Silt .....	0.05 to 0.002
Clay .....	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

**Spur.** A subordinate ridge or lesser elevation that projects sharply from the crest or side of a hill, mountain, or other prominent range of hills or mountains.

**Stone line.** In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

- Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.
- Strath terrace.** A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).
- Stream terrace.** One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.
- Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.
- Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).
- Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.
- Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.
- Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.
- Substratum.** The part of the soil below the solum.
- Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.
- Summer fallow.** The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.
- Summit.** The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.
- Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”
- Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.
- Talus.** Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.
- Terrace (conservation).** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- Terrace (geomorphology).** A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.
- Terracettes.** Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil.

The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

**Thin layer** (in tables). Otherwise suitable soil material that is too thin for the specified use.

**Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

**Toeslope.** The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

**Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

**Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

**Tread.** The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

**Upland.** An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

**Valley fill.** The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

**Variiegation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

**Varve.** A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

**Water bars.** Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

**Weathering.** All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

**Well graded.** Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

**Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

**Windthrow.** The uprooting and tipping over of trees by the wind.

# Tables

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## Soil Survey of Grayson County, Virginia

Table 1.--Temperature and Precipitation  
(Recorded in the period 1961-90 at Transou, North Carolina)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snow-fall
				Maximum temp. higher than--	Minimum temp. lower than--			Less than--	More than--		
	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>Units</u>	<u>In</u>	<u>In</u>	<u>In</u>		<u>In</u>
January--	41.9	20.6	31.2	63	-10	2	3.53	2.24	4.71	7	8.6
February-	45.0	22.7	33.9	67	-2	5	4.02	2.10	5.70	6	7.8
March----	54.5	30.4	42.5	75	8	31	5.23	2.99	7.21	7	3.0
April----	63.3	37.4	50.4	81	17	107	4.40	2.46	6.12	7	0.9
May-----	70.6	45.4	58.0	82	25	260	5.42	3.59	7.09	8	0.0
June-----	76.7	52.6	64.7	86	34	440	4.62	2.43	6.54	7	0.0
July-----	76.9	56.7	68.1	88	40	561	4.87	3.01	6.54	8	0.0
August---	78.5	55.7	67.1	88	39	530	4.50	2.25	6.46	7	0.0
September	72.7	49.6	61.2	83	29	340	4.71	2.19	6.89	6	0.0
October--	63.7	38.4	51.1	78	18	115	5.06	2.11	7.57	5	0.2
November-	54.1	31.2	42.7	71	9	26	4.55	2.46	6.39	6	1.2
December-	45.3	24.0	34.7	65	-2	7	3.84	1.96	5.47	6	4.3
Yearly: Average	62.2	38.7	50.4	---	---	---	---	---	---	---	---
Extreme	93	-24	---	89	-11	---	---	---	---	---	---
Total--	---	---	---	---	---	2,425	54.75	46.42	62.52	80	26.1

\* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

## Soil Survey of Grayson County, Virginia

Table 2.—Freeze Dates in Spring and Fall  
(Recorded in the period 1961-90 at Transou, North Carolina)

Probability	Temperature					
	24 °F or lower		28 °F or lower		32 °F or lower	
<b>Last freezing temperature in spring:</b>						
1 year in 10 later than--	May	1	May	17	June	3
2 years in 10 later than--	Apr.	26	May	12	May	28
5 years in 10 later than--	Apr.	15	May	1	May	16
<b>First freezing temperature in fall:</b>						
1 year in 10 earlier than--	Oct.	4	Sept.	24	Sept.	13
2 years in 10 earlier than--	Oct.	9	Sept.	28	Sept.	17
5 years in 10 earlier than-	Oct.	18	Oct.	5	Sept.	27

Table 3.—Growing Season  
(Recorded in the period 1961-90 at Transou, North Carolina)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	165	136	113
8 years in 10	172	143	120
5 years in 10	185	156	132
2 years in 10	198	169	145
1 year in 10	204	176	152

# Soil Survey of Grayson County, Virginia

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1C	Balsam cobbly loam, 2 to 15 percent slopes, very bouldery-----	71	*
1D	Balsam cobbly loam, 15 to 35 percent slopes, very bouldery-----	340	0.1
1E	Balsam cobbly loam, 35 to 55 percent slopes, very bouldery-----	650	0.3
2D	Balsam-Nopan complex, 15 to 35 percent slopes, very bouldery-----	173	*
2E	Balsam-Nopan complex, 35 to 55 percent slopes, very bouldery-----	142	*
3D	Bloodyhorse gravelly loam, 7 to 35 percent slopes, very bouldery-----	496	0.2
4F	Bloodyhorse gravelly loam, 35 to 80 percent slopes, extremely bouldery---	410	0.2
5B	Braddock loam, 2 to 7 percent slopes-----	282	0.1
5C	Braddock loam, 7 to 15 percent slopes-----	940	0.4
5D	Braddock loam, 15 to 25 percent slopes-----	218	*
6E	Braddock cobbly loam, 25 to 35 percent slopes-----	313	0.1
7D	Brevard-Greenlee complex, 8 to 25 percent slopes, very bouldery-----	20	*
8C	Burton loam, 7 to 15 percent slopes, stony-----	16	*
9D	Burton loam, 15 to 35 percent slopes, very stony-----	50	*
9E	Burton loam, 35 to 55 percent slopes, very stony-----	134	*
10D	Chestnut-Peaks complex, 8 to 25 percent slopes, very rocky-----	48	*
10E	Chestnut-Peaks complex, 25 to 45 percent slopes, very rocky-----	154	*
11F	Chestnut-Peaks-Tuckasegee complex, 45 to 90 percent slopes, very rocky---	93	*
12A	Codorus loam, 0 to 3 percent slopes, frequently flooded-----	4,709	1.9
13A	Comus fine sandy loam, 0 to 3 percent slopes, frequently flooded-----	2,154	0.9
14C	Cowee loam, 7 to 15 percent slopes-----	1,123	0.4
14D	Cowee loam, 15 to 35 percent slopes-----	3,006	1.2
14E	Cowee loam, 35 to 55 percent slopes-----	3,658	1.4
15D	Cowee gravelly loam, 7 to 35 percent slopes, stony-----	419	0.2
15E	Cowee gravelly loam, 35 to 55 percent slopes, stony-----	847	0.3
16D	Cowee-Rock outcrop complex, 7 to 35 percent slopes-----	45	*
16E	Cowee-Rock outcrop complex, 35 to 55 percent slopes-----	369	0.1
17A	Craigsville cobbly sandy loam, 0 to 3 percent slopes, frequently flooded-	636	0.3
18C	Cullasaja cobbly loam, 7 to 15 percent slopes, very stony-----	10	*
18D	Cullasaja cobbly loam, 15 to 35 percent slopes, very stony-----	1	*
19A	Delanco fine sandy loam, 0 to 2 percent slopes, rarely flooded-----	675	0.3
19B	Delanco fine sandy loam, 2 to 7 percent slopes, rarely flooded-----	2,173	0.9
20C	Delanco fine sandy loam, 7 to 15 percent slopes-----	477	0.2
21B	Edneytown loam, 2 to 7 percent slopes-----	887	0.4
21C	Edneytown loam, 7 to 15 percent slopes-----	14,139	5.6
21D	Edneytown loam, 15 to 25 percent slopes-----	18,610	7.4
21E	Edneytown loam, 25 to 35 percent slopes-----	7,659	3.0
21F	Edneytown loam, 35 to 55 percent slopes-----	561	0.2
22C	Edneytown-Urban land complex, 0 to 15 percent slopes-----	813	0.3
23C	Edneyville loam, 7 to 15 percent slopes-----	2,146	0.8
23D	Edneyville loam, 15 to 35 percent slopes-----	7,419	2.9
23E	Edneyville loam, 35 to 55 percent slopes-----	4,977	2.0
24D	Edneyville loam, 15 to 35 percent slopes, very stony-----	6,242	2.5
24E	Edneyville loam, 35 to 55 percent slopes, very stony-----	11,012	4.4
24F	Edneyville loam, 55 to 80 percent slopes, very stony-----	1,558	0.6
25B	Elsinboro fine sandy loam, 2 to 7 percent slopes, rarely flooded-----	456	0.2
26B	Elsinboro-Urban land complex, 0 to 7 percent slopes, rarely flooded-----	162	*
27D	Evard-Cowee complex, 15 to 25 percent slopes, stony-----	9	*
28B	Glenelg loam, 2 to 7 percent slopes-----	337	0.1
28C	Glenelg loam, 7 to 15 percent slopes-----	7,642	3.0
28D	Glenelg loam, 15 to 25 percent slopes-----	7,331	2.9
28E	Glenelg loam, 25 to 35 percent slopes-----	7,671	3.0
28F	Glenelg loam, 35 to 55 percent slopes-----	1,053	0.4
29C	Glenelg gravelly loam, 7 to 15 percent slopes, very stony-----	460	0.2
29D	Glenelg gravelly loam, 15 to 35 percent slopes, very stony-----	1,383	0.5
29E	Glenelg gravelly loam, 35 to 55 percent slopes, very stony-----	2,834	1.1
30C	Glenelg-Urban land complex, 0 to 15 percent slopes-----	715	0.3
31D	Greenlee very cobbly loam, 15 to 35 percent slopes, very stony-----	373	0.1
31E	Greenlee very cobbly loam, 35 to 55 percent slopes, very stony-----	110	*
32A	Hathboro sandy loam, 0 to 3 percent slopes, frequently flooded-----	3,720	1.5
33B	Hayesville loam, 2 to 7 percent slopes-----	2,734	1.1
33C	Hayesville loam, 7 to 15 percent slopes-----	7,530	3.0

See footnote at end of table.

# Soil Survey of Grayson County, Virginia

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
33D	Hayesville loam, 15 to 25 percent slopes-----	812	0.3
34B	Keener loam, 2 to 7 percent slopes-----	105	*
34C	Keener loam, 7 to 15 percent slopes-----	141	*
34D	Keener loam, 15 to 25 percent slopes-----	321	0.1
35C	Keener loam, 7 to 15 percent slopes, very stony-----	170	*
35D	Keener loam, 15 to 35 percent slopes, very stony-----	1,183	0.5
36A	Kinkora fine sandy loam, 0 to 3 percent slopes, rarely flooded-----	621	0.2
37C	Konnarock channery silt loam, 7 to 15 percent slopes-----	222	*
37D	Konnarock channery silt loam, 15 to 35 percent slopes-----	1,063	0.4
37E	Konnarock channery silt loam, 35 to 55 percent slopes-----	989	0.4
38C	McCamy fine sandy loam, 7 to 15 percent slopes-----	248	*
38D	McCamy fine sandy loam, 15 to 35 percent slopes-----	543	0.2
39D	McCamy fine sandy loam, 7 to 35 percent slopes, very stony-----	532	0.2
39E	McCamy fine sandy loam, 35 to 55 percent slopes, very stony-----	427	0.2
40D	Mt Rogers-Bloodyhorse-Rock outcrop complex, 7 to 35 percent slopes, rubbly, windswept-----	77	*
40F	Mt Rogers-Bloodyhorse-Rock outcrop complex, 35 to 80 percent slopes, rubbly, windswept-----	255	0.1
41C	Mt Rogers-Buzzrock complex, 7 to 15 percent slopes, very bouldery, windswept-----	171	*
41D	Mt Rogers-Buzzrock complex, 15 to 35 percent slopes, very bouldery, windswept-----	623	0.2
42C	Peaks very gravelly loam, 7 to 15 percent slopes-----	635	0.3
42D	Peaks very gravelly loam, 15 to 35 percent slopes-----	4,739	1.9
42E	Peaks very gravelly loam, 35 to 55 percent slopes-----	12,340	4.9
43C	Peaks very gravelly loam, 7 to 15 percent slopes, extremely stony-----	245	*
43D	Peaks very gravelly loam, 15 to 35 percent slopes, extremely stony-----	3,718	1.5
43E	Peaks very gravelly loam, 35 to 55 percent slopes, extremely stony-----	15,241	6.0
43F	Peaks very gravelly loam, 55 to 80 percent slopes, extremely stony-----	9,992	4.0
44C	Pigeonroost loam, 7 to 15 percent slopes-----	2,300	0.9
44D	Pigeonroost loam, 15 to 35 percent slopes-----	7,243	2.9
44E	Pigeonroost loam, 35 to 55 percent slopes-----	5,734	2.3
45D	Pigeonroost gravelly loam, 7 to 35 percent slopes, very stony-----	1,978	0.8
45E	Pigeonroost gravelly loam, 35 to 55 percent slopes, very stony-----	2,763	1.1
46E	Pigeonroost-Rock outcrop complex, 25 to 55 percent slopes-----	731	0.3
47D	Pineola loam, 15 to 35 percent slopes-----	71	*
48E	Pineola loam, 35 to 55 percent slopes, very stony-----	309	0.1
49	Pits, quarries-----	15	*
50F	Rock outcrop-Peaks complex, 25 to 80 percent slopes-----	1,550	0.6
51B	Scales mucky peak, 0 to 7 percent slopes, very bouldery-----	18	*
52C	Sylco-Sylvatus complex, 7 to 15 percent slopes-----	169	*
52D	Sylco-Sylvatus complex, 15 to 35 percent slopes-----	1,386	0.5
52E	Sylco-Sylvatus complex, 35 to 55 percent slopes-----	1,841	0.7
53B	Tate loam, 2 to 7 percent slopes-----	3,707	1.5
53C	Tate loam, 7 to 15 percent slopes-----	7,917	3.1
53D	Tate loam, 15 to 25 percent slopes-----	3,793	1.5
53E	Tate loam, 25 to 35 percent slopes-----	360	0.1
54C	Tate loam, 7 to 15 percent slopes, stony-----	683	0.3
54D	Tate loam, 15 to 35 percent slopes, stony-----	2,181	0.9
54E	Tate loam, 35 to 55 percent slopes, stony-----	274	0.1
55D	Tate loam, 7 to 35 percent slopes, extremely bouldery-----	1,033	0.4
56C	Thunder cobbly loam, 2 to 15 percent slopes-----	35	*
56D	Thunder cobbly loam, 15 to 35 percent slopes-----	102	*
56E	Thunder cobbly loam, 35 to 55 percent slopes-----	113	*
57C	Thunder cobbly loam, 2 to 15 percent slopes, very bouldery-----	43	*
57D	Thunder cobbly loam, 15 to 35 percent slopes, very bouldery-----	413	0.2
57E	Thunder cobbly loam, 35 to 55 percent slopes, very bouldery-----	598	0.2
58D	Udorthents-Urban land complex, 0 to 25 percent slopes-----	351	0.1
59D	Unicoi very gravelly sandy loam, 7 to 35 percent slopes, extremely stony-----	343	0.1
59E	Unicoi very gravelly sandy loam, 35 to 55 percent slopes, extremely stony-----	1,580	0.6
W	Water-----	2,458	1.0
	Total-----	252,900	100.0

\* Less than 0.1 percent.

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			<u>Tons</u>	<u>Bu</u>	<u>Tons</u>	<u>Tons</u>	<u>AUM</u>	<u>Lbs</u>
1C: Balsam-----	7s	GG	---	---	---	---	---	---
1D: Balsam-----	7s	GG	---	---	---	---	---	---
1E: Balsam-----	7e	GG	---	---	---	---	---	---
2D: Balsam-----	7s	GG	---	---	---	---	---	---
Nopan-----	7s	NN	---	---	---	---	---	---
2E: Balsam-----	7e	GG	---	---	---	---	---	---
Nopan-----	7e	NN	---	---	---	---	---	---
3D: Bloodyhorse-----	7s	JJ	---	---	---	---	---	---
4F: Bloodyhorse-----	7e	JJ	---	---	---	---	---	---
5B: Braddock-----	2e	O	5.5	130	21.0	4.0	10.6	---
5C: Braddock-----	3e	O	4.8	114	19.0	3.5	10.6	---
5D: Braddock-----	4e	O	4.4	104	18.0	3.2	9.3	---
6E: Braddock-----	7s	O	---	---	---	---	---	---
7D: Brevard-----	7s	B	---	---	---	---	---	---
Greenlee-----	7s	CC	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			Tons	Bu	Tons	Tons	AUM	Lbs
8C: Burton-----	4s	FF	---	---	---	2.2	2.0	---
9D: Burton-----	7s	FF	---	---	---	---	---	---
9E: Burton-----	7e	FF	---	---	---	---	---	---
10D: Chestnut-----	6s	GG	---	---	---	---	5.0	---
Peaks-----	6s	JJ	---	---	---	---	5.0	---
10E: Chestnut-----	7e	GG	---	---	---	---	---	---
Peaks-----	7e	JJ	---	---	---	---	---	---
11F: Chestnut-----	7e	GG	---	---	---	---	---	---
Peaks-----	7e	JJ	---	---	---	---	---	---
Tuckasegee-----	7e	G	---	---	---	---	---	---
12A: Codorus-----	6w	A	---	---	---	---	8.1	---
13A: Comus-----	2w	A	6.0	160	23.0	4.5	10.5	---
14C: Cowee-----	3e	N	4.8	114	19.0	3.5	6.0	---
14D: Cowee-----	6e	N	---	---	---	---	5.5	---
14E: Cowee-----	7e	N	---	---	---	---	---	---
15D: Cowee-----	7s	N	---	---	---	---	---	---
15E: Cowee-----	7e	N	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			Tons	Bu	Tons	Tons	AUM	Lbs
16D: Cowee-----	7s	N	---	---	---	---	---	---
Rock outcrop-----	8	---	---	---	---	---	---	---
16E: Cowee-----	7s	N	---	---	---	---	---	---
Rock outcrop-----	8	---	---	---	---	---	---	---
17A: Craigs ville-----	2w	CC	---	72	15.0	3.0	4.5	---
18C: Cullasaja-----	6s	FF	---	---	---	---	5.5	---
18D: Cullasaja-----	7s	FF	---	---	---	---	---	---
19A: Delanco-----	2w	B	5.5	160	23.0	4.5	8.5	2,660
19B: Delanco-----	2e	B	5.5	160	23.0	4.5	8.5	2,500
20C: Delanco-----	3e	B	4.8	140	22.0	4.0	8.5	2,400
21B: Edneytown-----	2e	L	5.5	130	21.0	4.0	10.5	2,800
21C: Edneytown-----	3e	L	4.8	114	19.0	3.5	10.5	2,700
21D: Edneytown-----	4e	L	4.4	104	18.0	3.2	9.5	2,600
21E: Edneytown-----	6e	L	---	---	---	---	8.5	---
21F: Edneytown-----	7e	L	---	---	---	---	---	---
22C: Edneytown-----	3e	L	---	---	---	---	---	---
Urban land-----	8	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			<u>Tons</u>	<u>Bu</u>	<u>Tons</u>	<u>Tons</u>	<u>AUM</u>	<u>Lbs</u>
23C: Edneyville-----	3e	GG	---	75	15.0	3.1	9.5	2,300
23D: Edneyville-----	6e	GG	---	---	---	---	9.5	---
23E: Edneyville-----	7e	GG	---	---	---	---	---	---
24D: Edneyville-----	7s	GG	---	---	---	---	---	---
24E: Edneyville-----	7e	GG	---	---	---	---	---	---
24F: Edneyville-----	7e	GG	---	---	---	---	---	---
25B: Elsinboro-----	2e	L	5.5	130	21.0	4.0	9.5	2,800
26B: Elsinboro-----	2e	L	---	---	---	---	---	---
Urban land-----	8	---	---	---	---	---	---	---
27D: Evard-----	6s	L	---	---	---	---	5.0	---
Cowee-----	6s	N	---	---	---	---	4.5	---
28B: Glenelg-----	2e	N	5.5	130	21.0	4.0	10.5	2,700
28C: Glenelg-----	3e	N	4.8	114	19.0	3.5	9.5	2,600
28D: Glenelg-----	4e	N	4.4	104	18.0	3.2	8.5	2,400
28E: Glenelg-----	6e	N	---	---	---	---	7.5	---
28F: Glenelg-----	7e	N	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			<u>Tons</u>	<u>Bu</u>	<u>Tons</u>	<u>Tons</u>	<u>ADM</u>	<u>Lbs</u>
29C: Glenelg-----	6s	N	---	---	---	---	6.5	---
29D: Glenelg-----	7s	N	---	---	---	---	---	---
29E: Glenelg-----	7e	N	---	---	---	---	---	---
30C: Glenelg-----	3e	N	---	---	---	---	---	---
Urban land-----	8	---	---	---	---	---	---	---
31D: Greenlee-----	7s	CC	---	---	---	---	---	---
31E: Greenlee-----	7e	CC	---	---	---	---	---	---
32A: Hatboro-----	6w	HH	---	---	---	---	3.5	---
33B: Hayesville-----	2e	X	4.0	100	18.0	3.5	12.0	2,800
33C: Hayesville-----	3e	X	3.5	88	16.0	3.1	8.0	2,600
33D: Hayesville-----	4e	X	3.2	80	16.0	2.8	6.6	---
34B: Keener-----	2e	O	5.5	130	21.0	4.0	8.5	2,200
34C: Keener-----	3e	O	4.8	114	19.0	3.5	8.5	2,100
34D: Keener-----	4e	O	4.4	104	18.0	3.2	7.5	2,000
35C: Keener-----	6s	O	---	---	---	---	6.0	---
35D: Keener-----	7s	O	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			Tons	Bu	Tons	Tons	AUM	Lbs
36A: Kinkora-----	4w	00	---	65	14.0	---	3.5	---
37C: Konnarock-----	3e	JJ	---	49	12.0	2.2	5.5	---
37D: Konnarock-----	6e	JJ	---	---	---	---	5.5	---
37E: Konnarock-----	7e	JJ	---	---	---	---	---	---
38C: McCamy-----	3e	FF	---	75	15.0	3.1	5.5	---
38D: McCamy-----	6e	FF	---	---	---	---	5.5	---
39D: McCamy-----	7s	FF	---	---	---	---	---	---
39E: McCamy-----	7e	FF	---	---	---	---	---	---
40D: Mt Rogers-----	7s	GG	---	---	---	---	---	---
Bloodyhorse-----	7s	JJ	---	---	---	---	---	---
Rock outcrop-----	8	---	---	---	---	---	---	---
40F: Mt Rogers-----	7s	GG	---	---	---	---	---	---
Bloodyhorse-----	7s	JJ	---	---	---	---	---	---
Rock outcrop-----	8	---	---	---	---	---	---	---
41C: Mt Rogers-----	7s	GG	---	---	---	---	---	---
Buzzrock-----	7s	JJ	---	---	---	---	---	---
41D: Mt Rogers-----	7s	GG	---	---	---	---	---	---
Buzzrock-----	7s	JJ	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			Tons	Bu	Tons	Tons	AUM	Lbs
42C: Peaks-----	6s	JJ	---	---	---	---	6.5	---
42D: Peaks-----	7s	JJ	---	---	---	---	---	---
42E: Peaks-----	7e	JJ	---	---	---	---	---	---
43C: Peaks-----	7s	JJ	---	---	---	---	---	---
43D: Peaks-----	7s	JJ	---	---	---	---	---	---
43E: Peaks-----	7e	JJ	---	---	---	---	---	---
43F: Peaks-----	7e	JJ	---	---	---	---	---	---
44C: Pigeonroost-----	3e	N	4.8	114	19.0	3.5	8.5	---
44D: Pigeonroost-----	6e	N	---	---	---	---	8.5	---
44E: Pigeonroost-----	7e	N	---	---	---	---	---	---
45D: Pigeonroost-----	7s	N	---	---	---	---	---	---
45E: Pigeonroost-----	7e	N	---	---	---	---	---	---
46E: Pigeonroost-----	7s	N	---	---	---	---	---	---
Rock outcrop-----	8	---	---	---	---	---	---	---
47D: Pineola-----	6e	L	---	---	---	---	5.5	---
48E: Pineola-----	7e	L	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			<u>Tons</u>	<u>Bu</u>	<u>Tons</u>	<u>Tons</u>	<u>AUM</u>	<u>Lbs</u>
49: Pits, quarries-----	8	---	---	---	---	---	---	---
50F: Rock outcrop-----	8	---	---	---	---	---	---	---
Peaks-----	7s	JJ	---	---	---	---	---	---
51B: Scales-----	6s	---	---	---	---	---	2.0	---
52C: Sylco-----	3e	JJ	---	---	---	---	2.0	---
Sylvatus-----	6s	JJ	---	---	---	---	1.5	---
52D: Sylco-----	6e	JJ	---	---	---	---	1.5	---
Sylvatus-----	6e	JJ	---	---	---	---	1.0	---
52E: Sylco-----	7e	JJ	---	---	---	---	---	---
Sylvatus-----	7e	JJ	---	---	---	---	---	---
53B: Tate-----	2e	0	5.5	130	21.0	4.0	12.0	2,900
53C: Tate-----	3e	0	4.8	114	19.0	3.5	11.0	2,700
53D: Tate-----	4e	0	4.4	104	18.0	3.2	10.0	2,500
53E: Tate-----	6e	0	---	---	---	---	8.0	---
54C: Tate-----	4s	0	---	---	---	3.0	9.5	---
54D: Tate-----	7s	0	---	---	---	---	---	---
54E: Tate-----	7e	0	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
			Tons	Bu	Tons	Tons	AUM	Lbs
55D: Tate-----	7s	0	---	---	---	---	---	---
56C: Thunder-----	4s	GG	---	64	14.0	2.6	7.0	---
56D: Thunder-----	7s	GG	---	---	---	---	---	---
56E: Thunder-----	7e	GG	---	---	---	---	---	---
57C: Thunder-----	7s	GG	---	---	---	---	---	---
57D: Thunder-----	7s	GG	---	---	---	---	---	---
57E: Thunder-----	7e	GG	---	---	---	---	---	---
58D: Udorthents.								
Urban land-----	8	---	---	---	---	---	---	---
59D: Unicoi-----	7s	JJ	---	---	---	---	---	---
59E: Unicoi-----	7e	JJ	---	---	---	---	---	---
W. Water								

## Soil Survey of Grayson County, Virginia

Table 6.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Map unit name
5B	Braddock loam, 2 to 7 percent slopes
19A	Delanco fine sandy loam, 0 to 2 percent slopes, rarely flooded (if drained)
19B	Delanco fine sandy loam, 2 to 7 percent slopes, rarely flooded (if drained)
21B	Edneytown loam, 2 to 7 percent slopes
25B	Elsinboro fine sandy loam, 2 to 7 percent slopes, rarely flooded
28B	Glenelg loam, 2 to 7 percent slopes
33B	Hayesville loam, 2 to 7 percent slopes
34B	Keener loam, 2 to 7 percent slopes
53B	Tate loam, 2 to 7 percent slopes

# Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Very limited Cobble content Too acid Large stones content	1.00 0.62 0.47	Very limited Cobble content Too acid Slope	1.00 1.00 0.04
1D: Balsam-----	85	Very limited Slope Cobble content Too acid	1.00 1.00 0.62	Very limited Slope Cobble content Too acid	1.00 1.00 1.00
1E: Balsam-----	85	Very limited Slope Cobble content Too acid	1.00 1.00 0.62	Very limited Slope Cobble content Too acid	1.00 1.00 1.00
2D: Balsam-----	70	Very limited Slope Cobble content Too acid	1.00 1.00 0.62	Very limited Slope Cobble content Too acid	1.00 1.00 1.00
Nopan-----	20	Very limited Slope Slow water movement Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Slope Slow water movement	1.00 1.00 1.00
2E: Balsam-----	70	Very limited Slope Cobble content Too acid	1.00 1.00 0.62	Very limited Slope Cobble content Too acid	1.00 1.00 1.00
Nopan-----	20	Very limited Slope Slow water movement Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Slope Slow water movement	1.00 1.00 1.00
3D: Bloodyhorse-----	80	Very limited Slope Droughty Too acid	1.00 0.98 0.73	Very limited Low adsorption Too acid Slope	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
4F: Bloodyhorse-----	80	Very limited Slope Large stones content Droughty	1.00 1.00 0.98	Very limited Low adsorption Slope Too acid	1.00 1.00 1.00
5B: Braddock-----	90	Somewhat limited Too acid	0.02	Somewhat limited Too acid	0.07
5C: Braddock-----	90	Somewhat limited Slope Too acid	0.37 0.02	Somewhat limited Slope Too acid	0.37 0.07
5D: Braddock-----	90	Very limited Slope Too acid	1.00 0.02	Very limited Slope Too acid	1.00 0.07
6E: Braddock-----	90	Very limited Slope Cobble content Too acid	1.00 0.40 0.02	Very limited Slope Cobble content Too acid	1.00 0.40 0.07
7D: Brevard-----	50	Very limited Slope Large stones content Too acid	1.00 0.47 0.32	Very limited Slope Too acid Large stones on the surface	1.00 0.91 0.08
Greenlee-----	35	Very limited Cobble content Slope Too acid	1.00 1.00 0.73	Very limited Cobble content Too acid Slope	1.00 1.00 1.00
8C: Burton-----	90	Somewhat limited Depth to bedrock Droughty Slope	0.80 0.73 0.63	Very limited Low adsorption Too acid Depth to bedrock	1.00 1.00 0.80
9D: Burton-----	90	Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.73	Very limited Low adsorption Slope Too acid	1.00 1.00 1.00
9E: Burton-----	90	Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.73	Very limited Low adsorption Slope Too acid	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
10D: Peaks-----	20	Very limited Droughty Slope Filtering capacity	1.00 1.00 0.99	Very limited Low adsorption Droughty Slope	1.00 1.00 1.00
Chestnut-----	65	Very limited Slope Droughty Depth to bedrock	1.00 0.83 0.54	Very limited Low adsorption Slope Too acid	1.00 1.00 0.99
10E: Chestnut-----	65	Very limited Slope Droughty Depth to bedrock	1.00 0.83 0.54	Very limited Low adsorption Slope Too acid	1.00 1.00 0.99
Peaks-----	20	Very limited Slope Droughty Filtering capacity	1.00 1.00 0.99	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00
11F: Chestnut-----	40	Very limited Slope Droughty Depth to bedrock	1.00 0.83 0.54	Very limited Low adsorption Slope Too acid	1.00 1.00 0.99
Peaks-----	25	Very limited Slope Droughty Filtering capacity	1.00 1.00 0.99	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00
Tuckasegee-----	20	Very limited Slope Leaching Too acid	1.00 0.45 0.05	Very limited Slope Too acid	1.00 0.21
12A: Codorus-----	90	Very limited Depth to saturated zone Flooding Too acid	1.00 1.00 0.05	Very limited Depth to saturated zone Flooding Too acid	1.00 1.00 0.21
13A: Comus-----	90	Very limited Flooding Too acid	1.00 0.32	Very limited Flooding Too acid	1.00 0.91
14C: Cowee-----	90	Somewhat limited Droughty Too acid Slope	0.55 0.37 0.37	Very limited Low adsorption Too acid Droughty	1.00 0.96 0.55

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
14D: Cowee-----	90	Very limited Slope Droughty Too acid	1.00 0.55 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
14E: Cowee-----	90	Very limited Slope Droughty Too acid	1.00 0.55 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
15D: Cowee-----	90	Very limited Slope Droughty Too acid	1.00 0.95 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
15E: Cowee-----	90	Very limited Slope Droughty Too acid	1.00 0.95 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
16D: Cowee-----	60	Very limited Slope Droughty Too acid	1.00 0.55 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
Rock outcrop-----	35	Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope Droughty Too acid	1.00 0.55 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
Rock outcrop-----	35	Not rated		Not rated	
17A: Craigsville-----	85	Very limited Flooding Filtering capacity Droughty	1.00 0.99 0.78	Very limited Flooding Filtering capacity Too acid	1.00 0.99 0.96
18C: Cullasaja-----	85	Somewhat limited Cobble content Too acid Large stones content	0.87 0.62 0.47	Very limited Too acid Cobble content Slope	1.00 0.87 0.37
18D: Cullasaja-----	85	Very limited Slope Cobble content Too acid	1.00 0.87 0.62	Very limited Slope Too acid Cobble content	1.00 1.00 0.87

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
19A: Delanco-----	90	Very limited Depth to saturated zone Too acid Slow water movement	1.00 0.73 0.50	Very limited Depth to saturated zone Too acid Flooding	1.00 1.00 0.40
19B: Delanco-----	90	Very limited Depth to saturated zone Too acid Slow water movement	1.00 0.73 0.50	Very limited Depth to saturated zone Too acid Flooding	1.00 1.00 0.40
20C: Delanco-----	90	Very limited Depth to saturated zone Too acid Slow water movement	1.00 0.73 0.50	Very limited Depth to saturated zone Too acid Slow water movement	1.00 1.00 0.37
21B: Edneytown-----	90	Somewhat limited Too acid	0.37	Somewhat limited Too acid	0.96
21C: Edneytown-----	90	Somewhat limited Too acid Slope	0.37 0.37	Somewhat limited Too acid Slope	0.96 0.37
21D: Edneytown-----	90	Very limited Slope Too acid	1.00 0.37	Very limited Slope Too acid	1.00 0.96
21E: Edneytown-----	90	Very limited Slope Too acid	1.00 0.37	Very limited Slope Too acid	1.00 0.96
21F: Edneytown-----	90	Very limited Slope Too acid	1.00 0.37	Very limited Slope Too acid	1.00 0.96
22C: Edneytown-----	60	Somewhat limited Too acid Slope	0.37 0.01	Somewhat limited Too acid Slope	0.96 0.01
Urban land-----	35	Not rated		Not rated	
23C: Edneyville-----	90	Somewhat limited Slope Too acid	0.37 0.32	Somewhat limited Too acid Slope	0.91 0.37

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
23D: Edneyville-----	90	Very limited Slope Too acid	1.00 0.32	Very limited Slope Too acid	1.00 0.91
23E: Edneyville-----	90	Very limited Slope Too acid	1.00 0.32	Very limited Slope Too acid	1.00 0.91
24D: Edneyville-----	90	Very limited Slope Large stones content Too acid	1.00 0.53 0.32	Very limited Slope Too acid	1.00 0.91
24E: Edneyville-----	90	Very limited Slope Large stones content Too acid	1.00 0.53 0.32	Very limited Slope Too acid	1.00 0.91
24F: Edneyville-----	90	Very limited Slope Large stones content Too acid	1.00 0.53 0.32	Very limited Slope Too acid	1.00 0.91
25B: Elsinboro-----	90	Somewhat limited Too acid	0.37	Somewhat limited Too acid Flooding	0.96 0.40
26B: Elsinboro-----	60	Somewhat limited Too acid	0.37	Somewhat limited Too acid Flooding	0.96 0.40
Urban land-----	35	Not rated		Not rated	
27D: Evard-----	50	Very limited Slope Too acid	1.00 0.50	Very limited Slope Too acid	1.00 0.99
Cowee-----	35	Very limited Slope Droughty Too acid	1.00 0.95 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
28B: Glenelg-----	90	Somewhat limited Too acid	0.02	Somewhat limited Too acid	0.07

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
28C: Glenelg-----	90	Somewhat limited Slope Too acid	0.37 0.02	Somewhat limited Slope Too acid	0.37 0.07
28D: Glenelg-----	90	Very limited Slope Too acid	1.00 0.02	Very limited Slope Too acid	1.00 0.07
28E: Glenelg-----	90	Very limited Slope Too acid	1.00 0.02	Very limited Slope Too acid	1.00 0.07
28F: Glenelg-----	90	Very limited Slope Too acid	1.00 0.02	Very limited Slope Too acid	1.00 0.07
29C: Glenelg-----	90	Somewhat limited Large stones content Slope Too acid	0.53 0.37 0.02	Somewhat limited Slope Too acid	0.37 0.07
29D: Glenelg-----	90	Very limited Slope Large stones content Too acid	1.00 0.53 0.02	Very limited Slope Too acid	1.00 0.07
29E: Glenelg-----	90	Very limited Slope Large stones content Too acid	1.00 0.53 0.02	Very limited Slope Too acid	1.00 0.07
30C: Glenelg-----	60	Somewhat limited Too acid Slope	0.02 0.01	Somewhat limited Too acid Slope	0.07 0.01
Urban land-----	35	Not rated		Not rated	
31D: Greenlee-----	90	Very limited Slope Cobble content Too acid	1.00 1.00 0.73	Very limited Cobble content Slope Too acid	1.00 1.00 1.00
31E: Greenlee-----	90	Very limited Slope Cobble content Too acid	1.00 1.00 0.73	Very limited Cobble content Slope Too acid	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
32A: Hatboro-----	90	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00
33B: Hayesville-----	90	Somewhat limited Low adsorption Too acid	0.48 0.05	Somewhat limited Low adsorption Too acid	0.30 0.21
33C: Hayesville-----	90	Somewhat limited Low adsorption Slope Too acid	0.48 0.37 0.05	Somewhat limited Slope Low adsorption Too acid	0.37 0.30 0.21
33D: Hayesville-----	90	Very limited Slope Low adsorption Too acid	1.00 0.48 0.05	Very limited Slope Low adsorption Too acid	1.00 0.30 0.21
34B: Keener-----	90	Somewhat limited Too acid	0.11	Somewhat limited Too acid	0.42
34C: Keener-----	90	Somewhat limited Slope Too acid	0.37 0.11	Somewhat limited Too acid Slope	0.42 0.37
34D: Keener-----	90	Very limited Slope Too acid	1.00 0.11	Very limited Slope Too acid	1.00 0.42
35C: Keener-----	90	Somewhat limited Large stones content Slope Too acid	0.47 0.37 0.11	Somewhat limited Too acid Slope	0.42 0.37
35D: Keener-----	90	Very limited Slope Large stones content Too acid	1.00 0.47 0.11	Very limited Slope Too acid	1.00 0.42
36A: Kinkora-----	90	Very limited Slow water movement Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
37C: Konnarock-----	90	Very limited Droughty Depth to bedrock Too acid	1.00 0.95 0.73	Very limited Low adsorption Droughty Too acid	1.00 1.00 1.00
37D: Konnarock-----	90	Very limited Slope Droughty Depth to bedrock	1.00 1.00 0.95	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00
37E: Konnarock-----	90	Very limited Slope Droughty Depth to bedrock	1.00 1.00 0.95	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00
38C: McCamy-----	85	Very limited Droughty Too acid Depth to bedrock	1.00 0.94 0.80	Very limited Low adsorption Too acid Droughty	1.00 1.00 1.00
38D: McCamy-----	85	Very limited Slope Droughty Too acid	1.00 1.00 0.94	Very limited Low adsorption Slope Too acid	1.00 1.00 1.00
39D: McCamy-----	85	Very limited Droughty Slope Too acid	1.00 1.00 0.94	Very limited Low adsorption Too acid Droughty	1.00 1.00 1.00
39E: McCamy-----	85	Very limited Slope Droughty Too acid	1.00 1.00 0.94	Very limited Low adsorption Slope Too acid	1.00 1.00 1.00
40D: Mt Rogers-----	45	Very limited Large stones content Slope Too acid	1.00 1.00 0.73	Very limited Too acid Slope Droughty	1.00 1.00 0.29
Bloodyhorse-----	25	Very limited Large stones content Slope Droughty	1.00 1.00 0.98	Very limited Low adsorption Too acid Slope	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
40F: Mt Rogers-----	45	Very limited Slope Large stones content Too acid	1.00 1.00 0.73	Very limited Slope Too acid Droughty	1.00 1.00 0.29
Bloodyhorse-----	25	Very limited Slope Large stones content Droughty	1.00 1.00 0.98	Very limited Low adsorption Slope Too acid	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
41C: Mt Rogers-----	45	Somewhat limited Too acid Large stones content Slope	0.73 0.47 0.37	Very limited Too acid Slope Droughty	1.00 0.37 0.29
Buzzrock-----	40	Very limited Filtering capacity Droughty Too acid	1.00 1.00 0.73	Very limited Filtering capacity Low adsorption Droughty	1.00 1.00 1.00
41D: Mt Rogers-----	45	Very limited Slope Too acid Large stones content	1.00 0.73 0.47	Very limited Slope Too acid Droughty	1.00 1.00 0.29
Buzzrock-----	40	Very limited Slope Filtering capacity Droughty	1.00 1.00 1.00	Very limited Filtering capacity Low adsorption Slope	1.00 1.00 1.00
42C: Peaks-----	90	Very limited Droughty Filtering capacity Too acid	1.00 0.99 0.37	Very limited Low adsorption Droughty Filtering capacity	1.00 1.00 0.99
42D: Peaks-----	90	Very limited Slope Droughty Filtering capacity	1.00 1.00 0.99	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
42E: Peaks-----	90	Very limited Slope Droughty Filtering capacity	 1.00 1.00 0.99	Very limited Low adsorption Slope Droughty	 1.00 1.00 1.00
43C: Peaks-----	90	Very limited Large stones content Droughty Filtering capacity	 1.00 1.00 0.99	Very limited Low adsorption Droughty Filtering capacity	 1.00 1.00 0.99
43D: Peaks-----	90	Very limited Slope Large stones content Droughty	 1.00 1.00 1.00	Very limited Low adsorption Slope Droughty	 1.00 1.00 1.00
43E: Peaks-----	90	Very limited Slope Large stones content Droughty	 1.00 1.00 1.00	Very limited Low adsorption Slope Droughty	 1.00 1.00 1.00
43F: Peaks-----	90	Very limited Slope Large stones content Droughty	 1.00 1.00 1.00	Very limited Low adsorption Slope Droughty	 1.00 1.00 1.00
44C: Pigeonroost-----	85	Somewhat limited Too acid Slope Droughty	 0.37 0.37 0.14	Very limited Low adsorption Too acid Slope	 1.00 0.96 0.37
44D: Pigeonroost-----	85	Very limited Slope Too acid Droughty	 1.00 0.37 0.14	Very limited Low adsorption Slope Too acid	 1.00 1.00 0.96
44E: Pigeonroost-----	85	Very limited Slope Too acid Droughty	 1.00 0.37 0.14	Very limited Low adsorption Slope Too acid	 1.00 1.00 0.96
45D: Pigeonroost-----	85	Very limited Slope Large stones content Too acid	 1.00 0.53 0.37	Very limited Low adsorption Slope Too acid	 1.00 1.00 0.96

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
45E: Pigeonroost-----	85	Very limited Slope Large stones content Too acid	1.00 0.53 0.37	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
46E: Pigeonroost-----	60	Very limited Slope Too acid Droughty	1.00 0.37 0.14	Very limited Low adsorption Slope Too acid	1.00 1.00 0.96
Rock outcrop-----	30	Not rated		Not rated	
47D: Pineola-----	90	Very limited Slope Droughty Depth to bedrock	1.00 0.77 0.54	Very limited Low adsorption Slope Too acid	1.00 1.00 0.91
48E: Pineola-----	90	Very limited Slope Droughty Depth to bedrock	1.00 0.77 0.54	Very limited Low adsorption Slope Too acid	1.00 1.00 0.91
49: Pits, quarries-----	100	Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated	
Peaks-----	40	Very limited Slope Droughty Filtering capacity	1.00 1.00 0.99	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00
51B: Scales-----	95	Very limited Slow water movement Depth to saturated zone Dense layer	1.00 1.00 1.00	Very limited Depth to saturated zone Low adsorption Slow water movement	1.00 1.00 1.00
52C: Sylco-----	50	Very limited Droughty Depth to bedrock Too acid	1.00 0.71 0.37	Very limited Low adsorption Droughty Too acid	1.00 1.00 0.96
Sylvatus-----	35	Very limited Droughty Depth to bedrock Too acid	1.00 1.00 0.73	Very limited Droughty Low adsorption Too acid	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52D: Sylco-----	50	Very limited Slope Droughty Depth to bedrock	1.00 1.00 0.71	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00
Sylvatus-----	35	Very limited Slope Droughty Depth to bedrock	1.00 1.00 1.00	Very limited Droughty Low adsorption Slope	1.00 1.00 1.00
52E: Sylco-----	50	Very limited Slope Droughty Depth to bedrock	1.00 1.00 0.71	Very limited Low adsorption Slope Droughty	1.00 1.00 1.00
Sylvatus-----	35	Very limited Slope Droughty Depth to bedrock	1.00 1.00 1.00	Very limited Droughty Low adsorption Slope	1.00 1.00 1.00
53B: Tate-----	90	Somewhat limited Too acid	0.11	Somewhat limited Too acid	0.42
53C: Tate-----	90	Somewhat limited Slope Too acid	0.37 0.11	Somewhat limited Too acid Slope	0.42 0.37
53D: Tate-----	90	Very limited Slope Too acid	1.00 0.11	Very limited Slope Too acid	1.00 0.42
53E: Tate-----	90	Very limited Slope Too acid	1.00 0.11	Very limited Slope Too acid	1.00 0.42
54C: Tate-----	90	Somewhat limited Slope Too acid	0.37 0.11	Somewhat limited Too acid Slope	0.42 0.37
54D: Tate-----	90	Very limited Slope Too acid	1.00 0.11	Very limited Slope Too acid	1.00 0.42
54E: Tate-----	90	Very limited Slope Too acid	1.00 0.11	Very limited Slope Too acid	1.00 0.42

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
55D: Tate-----	90	Very limited Large stones content Slope Too acid	1.00  1.00 0.11	Very limited Slope Too acid	1.00  0.42
56C: Thunder-----	80	Somewhat limited Too acid Slope Cobble content	0.37 0.37 0.12	Somewhat limited Too acid Slope Cobble content	0.96 0.37 0.12
56D: Thunder-----	80	Very limited Slope Too acid Cobble content	1.00 0.37 0.12	Very limited Slope Too acid Cobble content	1.00 0.96 0.12
56E: Thunder-----	80	Very limited Slope Too acid Cobble content	1.00 0.37 0.12	Very limited Slope Too acid Cobble content	1.00 0.96 0.12
57C: Thunder-----	80	Somewhat limited Large stones content Too acid Slope	0.47  0.37 0.37	Somewhat limited Too acid Slope Cobble content	0.96  0.37 0.12
57D: Thunder-----	80	Very limited Slope Large stones content Too acid	1.00 0.47 0.37	Very limited Slope Too acid Cobble content	1.00 0.96 0.12
57E: Thunder-----	80	Very limited Slope Large stones content Too acid	1.00 0.47 0.37	Very limited Slope Too acid Cobble content	1.00 0.96 0.12
58D: Udorthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
59D: Unicoi-----	85	Very limited Droughty Large stones content Depth to bedrock	1.00 1.00 1.00	Very limited Droughty Low adsorption Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
59E: Unicoi-----	85	Very limited Slope Droughty Large stones content	1.00 1.00 1.00	Very limited Droughty Low adsorption Slope	1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Very limited Cobble content Too acid Too steep for surface application	1.00 1.00 1.00	Very limited Seepage Cobble content Too acid	1.00 1.00 1.00
1D: Balsam-----	85	Very limited Too steep for surface application Too steep for sprinkler application Cobble content	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00 1.00
1E: Balsam-----	85	Very limited Too steep for surface application Too steep for sprinkler application Cobble content	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00 1.00
2D: Balsam-----	70	Very limited Too steep for surface application Too steep for sprinkler application Cobble content	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00 1.00
Nopan-----	20	Very limited Depth to saturated zone Too steep for surface application Too steep for sprinkler application	1.00 1.00 1.00	Very limited Depth to saturated zone Too steep for surface application Seepage	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
2E: Balsam-----	70	Very limited Too steep for surface application Too steep for sprinkler application Cobble content	1.00  1.00  1.00	Very limited Seepage Too steep for surface application Cobble content	1.00  1.00  1.00
Nopan-----	20	Very limited Depth to saturated zone Too steep for surface application Too steep for sprinkler application	1.00  1.00  1.00	Very limited Depth to saturated zone Too steep for surface application Seepage	1.00  1.00  1.00
3D: Bloodyhorse-----	80	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00  1.00  1.00	Very limited Seepage Depth to bedrock Too acid	1.00  1.00  1.00
4F: Bloodyhorse-----	80	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00  1.00  1.00
5B: Braddock-----	90	Somewhat limited Too steep for surface application Too acid	0.32  0.07	Very limited Seepage Too acid	1.00  0.07
5C: Braddock-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  0.60  0.07	Very limited Seepage Too steep for surface application Too acid	1.00  0.94  0.07

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
5D: Braddock-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.07	Very limited Too steep for surface application Seepage Too acid	1.00 1.00 0.07
6E: Braddock-----	90	Very limited Too steep for surface application Too steep for sprinkler application Cobble content	1.00 1.00 0.40	Very limited Too steep for surface application Seepage Too acid	1.00 1.00 0.07
7D: Brevard-----	50	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.91	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.91
Greenlee-----	35	Very limited Cobble content Too steep for surface application Too acid	1.00 1.00 1.00	Very limited Seepage Cobble content Too steep for surface application	1.00 1.00 1.00
8C: Burton-----	90	Very limited Too steep for surface application Too acid Depth to bedrock	1.00 1.00 0.80	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 1.00
9D: Burton-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
9E: Burton-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
10D: Peaks-----	20	Very limited Too steep for surface application Droughty Too steep for sprinkler application	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Too steep for surface application	1.00 1.00 1.00
Chestnut-----	65	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.99	Very limited Seepage Depth to bedrock Too steep for surface application	1.00 1.00 1.00
10E: Chestnut-----	65	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.99	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
Peaks-----	20	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
11F: Chestnut-----	40	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.99	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11F: Peaks-----	25	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
Tuckasegee-----	20	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.21	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.21
12A: Codorus-----	90	Very limited Depth to saturated zone Flooding Too acid	1.00 1.00 0.21	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00
13A: Comus-----	90	Very limited Flooding Too acid	1.00 0.91	Very limited Flooding Seepage Too acid	1.00 1.00 0.91
14C: Cowee-----	90	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00 0.96 0.60	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 0.96
14D: Cowee-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
14E: Cowee-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
15D: Cowee-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00 0.96	Very limited Seepage Depth to bedrock Too steep for surface application	1.00 1.00 1.00
15E: Cowee-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
16D: Cowee-----	60	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00 0.96	Very limited Seepage Depth to bedrock Too steep for surface application	1.00 1.00 1.00
Rock outcrop-----	35	Not rated		Not rated	
16E: Cowee-----	60	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	35	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
17A: Craigsville-----	85	Very limited Flooding Filtering capacity Too acid	1.00 0.99 0.96	Very limited Flooding Seepage Cobble content	1.00 1.00 1.00
18C: Cullasaja-----	85	Very limited Too steep for surface application Too acid Cobble content	1.00 1.00 0.87	Very limited Seepage Cobble content Too acid	1.00 1.00 1.00
18D: Cullasaja-----	85	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00 1.00
19A: Delanco-----	90	Very limited Depth to saturated zone Too acid Slow water movement	1.00 1.00 0.37	Very limited Depth to saturated zone Seepage Too acid	1.00 1.00 1.00
19B: Delanco-----	90	Very limited Depth to saturated zone Too acid Slow water movement	1.00 1.00 0.37	Very limited Depth to saturated zone Seepage Too acid	1.00 1.00 1.00
20C: Delanco-----	90	Very limited Depth to saturated zone Too steep for surface application Too acid	1.00 1.00 1.00	Very limited Depth to saturated zone Seepage Too acid	1.00 1.00 1.00
21B: Edneytown-----	90	Somewhat limited Too acid Too steep for surface application	0.96 0.32	Very limited Seepage Too acid	1.00 0.96

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
21C: Edneytown-----	90	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00   0.96 0.60	Very limited Seepage Too acid Too steep for surface application	1.00 0.96 0.94
21D: Edneytown-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.96	Very limited Seepage Too steep for surface application Too acid	1.00 1.00  0.96
21E: Edneytown-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.96	Very limited Seepage Too steep for surface application Too acid	1.00 1.00  0.96
21F: Edneytown-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.96	Very limited Seepage Too steep for surface application Too acid	1.00 1.00  0.96
22C: Edneytown-----	60	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00  0.96 0.10	Very limited Seepage Too acid Too steep for surface application	1.00 0.96 0.22
Urban land-----	35	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
23C: Edneyville-----	90	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00  0.91 0.60	Very limited Seepage Too steep for surface application Too acid	1.00 0.94 0.91
23D: Edneyville-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00 0.91	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.91
23E: Edneyville-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00 0.91	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.91
24D: Edneyville-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00 0.91	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.91
24E: Edneyville-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00 0.91	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.91
24F: Edneyville-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00 0.91	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.91

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
25B: Elsinboro-----	90	Somewhat limited Too acid Too steep for surface application	0.96 0.32	Very limited Seepage Too acid Flooding	1.00 0.96 0.40
26B: Elsinboro-----	60	Somewhat limited Too acid Too steep for surface application	0.96 0.08	Very limited Seepage Too acid Flooding	1.00 0.96 0.40
Urban land-----	35	Not rated		Not rated	
27D: Evard-----	50	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.99	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.99
Cowee-----	35	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
28B: Glenelg-----	90	Somewhat limited Too steep for surface application Too acid	0.32 0.07	Very limited Seepage Too acid	1.00 0.07
28C: Glenelg-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 0.60 0.07	Very limited Seepage Too steep for surface application Too acid	1.00 0.94 0.07

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
28D: Glenelg-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.07	Very limited Too steep for surface application Seepage Too acid	1.00 1.00 0.07
28E: Glenelg-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.07	Very limited Too steep for surface application Seepage Too acid	1.00 1.00 0.07
28F: Glenelg-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.07	Very limited Too steep for surface application Seepage Too acid	1.00 1.00 0.07
29C: Glenelg-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 0.60 0.07	Very limited Seepage Too steep for surface application Too acid	1.00 0.94 0.07
29D: Glenelg-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.07	Very limited Too steep for surface application Seepage Too acid	1.00 1.00 0.07
29E: Glenelg-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.07	Very limited Too steep for surface application Seepage Too acid	1.00 1.00 0.07

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
30C: Glenelg-----	60	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  0.10  0.07	Very limited Seepage Too steep for surface application Too acid	1.00 0.22  0.07
Urban land-----	35	Not rated		Not rated	
31D: Greenlee-----	90	Very limited Cobble content Too steep for surface application Too steep for sprinkler application	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00 1.00
31E: Greenlee-----	90	Very limited Cobble content Too steep for surface application Too steep for sprinkler application	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00 1.00
32A: Hatboro-----	90	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00	Very limited Flooding Ponding Depth to saturated zone	1.00 1.00 1.00
33B: Hayesville-----	90	Somewhat limited Low adsorption Too steep for surface application Too acid	0.48 0.32 0.21	Very limited Seepage Low adsorption Too acid	1.00 0.48 0.21
33C: Hayesville-----	90	Very limited Too steep for surface application Too steep for sprinkler application Low adsorption	1.00 0.60 0.48	Very limited Seepage Too steep for surface application Low adsorption	1.00 0.94 0.48

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
33D: Hayesville-----	90	Very limited Too steep for surface application Too steep for sprinkler application Low adsorption	1.00  1.00  0.48	Very limited Seepage Too steep for surface application Low adsorption	1.00 1.00  0.48
34B: Keener-----	90	Somewhat limited Too acid Too steep for surface application	0.42 0.32	Very limited Seepage Too acid	1.00 0.42
34C: Keener-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  0.60  0.42	Very limited Seepage Too steep for surface application Too acid	1.00 0.94  0.42
34D: Keener-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.42	Very limited Seepage Too steep for surface application Too acid	1.00 1.00  0.42
35C: Keener-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  0.60  0.42	Very limited Seepage Too steep for surface application Too acid	1.00 0.94  0.42
35D: Keener-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.42	Very limited Seepage Too steep for surface application Too acid	1.00 1.00  0.42

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Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
36A: Kinkora-----	90	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
37C: Konarock-----	90	Very limited Too steep for surface application Droughty Too acid	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 1.00
37D: Konarock-----	90	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
37E: Konarock-----	90	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
38C: McCamy-----	85	Very limited Too steep for surface application Too acid Droughty	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 1.00
38D: McCamy-----	85	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00	Very limited Too steep for surface application Seepage Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
39D: McCamy-----	85	Very limited Too steep for surface application Too acid Droughty	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 1.00
39E: McCamy-----	85	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00	Very limited Too steep for surface application Seepage Depth to bedrock	1.00 1.00 1.00
40D: Mt Rogers-----	45	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00 1.00 1.00	Very limited Seepage Too acid Too steep for surface application	1.00 1.00 1.00
Bloodyhorse-----	25	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
40F: Mt Rogers-----	45	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 1.00
Bloodyhorse-----	25	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
41C: Mt Rogers-----	45	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00   1.00 0.60	Very limited Seepage Too acid Too steep for surface application	1.00  1.00 0.94
Buzzrock-----	40	Very limited Filtering capacity Too steep for surface application Droughty	1.00  1.00  1.00	Very limited Seepage Too acid Depth to bedrock	1.00 1.00 0.96
41D: Mt Rogers-----	45	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  1.00	Very limited Seepage Too steep for surface application Too acid	1.00 1.00  1.00
Buzzrock-----	40	Very limited Filtering capacity Too steep for surface application Too steep for sprinkler application	1.00  1.00  1.00	Very limited Seepage Too steep for surface application Too acid	1.00 1.00  1.00
42C: Peaks-----	90	Very limited Droughty Too steep for surface application Filtering capacity	1.00 1.00  0.99	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 0.96
42D: Peaks-----	90	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00  1.00  1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00  1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
42E: Peaks-----	90	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
43C: Peaks-----	90	Very limited Droughty Too steep for surface application Filtering capacity	1.00 1.00 0.99	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 0.96
43D: Peaks-----	90	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
43E: Peaks-----	90	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
43F: Peaks-----	90	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
44C: Pigeonroost-----	85	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00 0.96 0.60	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 0.96

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
44D: Pigeonroost-----	85	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
44E: Pigeonroost-----	85	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
45D: Pigeonroost-----	85	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.96	Very limited Seepage Depth to bedrock Too steep for surface application	1.00 1.00 1.00
45E: Pigeonroost-----	85	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
46E: Pigeonroost-----	60	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.96	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	30	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
47D: Pineola-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.91	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
48E: Pineola-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.91	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
49: Pits, quarries-----	100	Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated	
Peaks-----	40	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
51B: Scales-----	95	Very limited Depth to saturated zone Slow water movement Too acid	1.00 1.00 0.96	Very limited Seepage Depth to saturated zone Too acid	1.00 1.00 0.96
52C: Sylco-----	50	Very limited Too steep for surface application Droughty Too acid	1.00 1.00 0.96	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 0.96
Sylvatus-----	35	Very limited Droughty Too acid Depth to bedrock	1.00 1.00 1.00	Very limited Depth to bedrock Seepage Too acid	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52D: Sylco-----	50	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
Sylvatus-----	35	Very limited Droughty Too steep for surface application Too steep for sprinkler application	1.00 1.00 1.00	Very limited Depth to bedrock Too steep for surface application Seepage	1.00 1.00 1.00
52E: Sylco-----	50	Very limited Too steep for surface application Too steep for sprinkler application Droughty	1.00 1.00 1.00	Very limited Seepage Too steep for surface application Depth to bedrock	1.00 1.00 1.00
Sylvatus-----	35	Very limited Droughty Too steep for surface application Too steep for sprinkler application	1.00 1.00 1.00	Very limited Depth to bedrock Too steep for surface application Seepage	1.00 1.00 1.00
53B: Tate-----	90	Somewhat limited Too acid Too steep for surface application	0.42 0.32	Very limited Seepage Too acid	1.00 0.42
53C: Tate-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 0.60 0.42	Very limited Seepage Too steep for surface application Too acid	1.00 0.94 0.42

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53D: Tate-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.42	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.42
53E: Tate-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.42	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.42
54C: Tate-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 0.60 0.42	Very limited Seepage Too steep for surface application Too acid	1.00 0.94 0.42
54D: Tate-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.42	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.42
54E: Tate-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.42	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.42
55D: Tate-----	90	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00 1.00 0.42	Very limited Seepage Too steep for surface application Too acid	1.00 1.00 0.42

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
56C: Thunder-----	80	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00   0.96 0.60	Very limited Seepage Cobble content Too acid	1.00 1.00 0.96
56D: Thunder-----	80	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.96	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00  1.00
56E: Thunder-----	80	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.96	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00  1.00
57C: Thunder-----	80	Very limited Too steep for surface application Too acid Too steep for sprinkler application	1.00  0.96 0.60	Very limited Seepage Cobble content Too acid	1.00 1.00 0.96
57D: Thunder-----	80	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.96	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00  1.00
57E: Thunder-----	80	Very limited Too steep for surface application Too steep for sprinkler application Too acid	1.00  1.00  0.96	Very limited Seepage Too steep for surface application Cobble content	1.00 1.00  1.00

Soil Survey of Grayson County, Virginia

Table 7.-Agricultural Waste Management, Part II

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
58D: Udorthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
59D: Unicoi-----	85	Very limited Droughty Depth to bedrock Too steep for surface application	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Too acid	1.00 1.00 1.00
59E: Unicoi-----	85	Very limited Droughty Too steep for surface application Too steep for sprinkler application	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Too steep for surface application	1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Very limited Cobble content Slope Slow water movement	1.00 1.00 0.32	Very limited Cobble content Too acid Too steep for surface application	1.00 1.00 1.00
1D: Balsam-----	85	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Cobble content	1.00 1.00 1.00
1E: Balsam-----	85	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Cobble content	1.00 1.00 1.00
2D: Balsam-----	70	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Cobble content	1.00 1.00 1.00
Nopan-----	20	Very limited Slope Slow water movement Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
2E: Balsam-----	70	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Cobble content	1.00 1.00 1.00 1.00
Nopan-----	20	Very limited Slope Slow water movement Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00 1.00
3D: Bloodyhorse-----	80	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.32	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 1.00 1.00
4F: Bloodyhorse-----	80	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00 1.00
5B: Braddock-----	90	Very limited Slow water movement Slope	1.00 0.12	Somewhat limited Too steep for surface application Too acid	0.32 0.07
5C: Braddock-----	90	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.07

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
5D: Braddock-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.07
6E: Braddock-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Cobble content	1.00 1.00 0.40
7D: Brevard-----	50	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.91
Greenlee-----	35	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Cobble content Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00
8C: Burton-----	90	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.78	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 1.00
9D: Burton-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.78	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
9E: Burton-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.78	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00 1.00
10D: Peaks-----	20	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Depth to bedrock Too steep for sprinkler irrigation	1.00 1.00 1.00 1.00
Chestnut-----	65	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Depth to bedrock Too steep for sprinkler irrigation	1.00 1.00 1.00 1.00
10E: Chestnut-----	65	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00 1.00
Peaks-----	20	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00 1.00
11F: Chestnut-----	40	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11F: Peaks-----	25	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
Tuckasegee-----	20	Very limited Slope Slow water movement	1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.21
12A: Codorus-----	90	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Too acid	1.00 1.00 0.21
13A: Comus-----	90	Very limited Flooding Slow water movement	1.00 1.00	Very limited Flooding Too acid	1.00 0.91
14C: Cowee-----	90	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 0.96
14D: Cowee-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
14E: Cowee-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
15D: Cowee-----	90	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to bedrock Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00
15E: Cowee-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
16D: Cowee-----	60	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to bedrock Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00
Rock outcrop-----	35	Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	35	Not rated		Not rated	
17A: Craigsville-----	85	Very limited Flooding Cobble content Too acid	1.00 1.00 0.03	Very limited Flooding Filtering capacity Too acid	1.00 0.99 0.96
18C: Cullasaja-----	85	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too acid Too steep for sprinkler irrigation	1.00 1.00 1.00 0.94

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
18D: Cullasaja-----	85	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00 1.00
19A: Delanco-----	90	Very limited Slow water movement Depth to saturated zone Too acid	1.00 1.00 0.14	Very limited Depth to saturated zone Too acid Slow water movement	1.00 1.00 0.26
19B: Delanco-----	90	Very limited Slow water movement Depth to saturated zone Too acid	1.00 1.00 0.14	Very limited Depth to saturated zone Too acid Too steep for surface application	1.00 1.00 0.32
20C: Delanco-----	90	Very limited Slow water movement Depth to saturated zone Slope	1.00 1.00 1.00	Very limited Depth to saturated zone Too steep for surface application Too acid	1.00 1.00 1.00
21B: Edneytown-----	90	Very limited Slow water movement Too acid Slope	1.00 0.14 0.12	Somewhat limited Too acid Too steep for surface application	0.96 0.32
21C: Edneytown-----	90	Very limited Slow water movement Slope Too acid	1.00 1.00 0.14	Very limited Too steep for surface application Too acid Too steep for sprinkler irrigation	1.00 0.96 0.94

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
21D: Edneytown-----	90	Very limited Slope Slow water movement Too acid	1.00 1.00 0.14	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00 0.96
21E: Edneytown-----	90	Very limited Slope Slow water movement Too acid	1.00 1.00 0.14	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00 0.96
21F: Edneytown-----	90	Very limited Slope Slow water movement Too acid	1.00 1.00 0.14	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00 0.96
22C: Edneytown-----	60	Very limited Slow water movement Slope Too acid	1.00 1.00 0.14	Very limited Too steep for surface application Too acid Too steep for sprinkler irrigation	1.00 0.96 0.22
Urban land-----	35	Not rated		Not rated	
23C: Edneyville-----	90	Very limited Slope Slow water movement Too acid	1.00 0.32 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.91
23D: Edneyville-----	90	Very limited Slope Slow water movement Too acid	1.00 0.32 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.91

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
23E: Edneyville-----	90	Very limited Slope Slow water movement Too acid	1.00 0.32 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00  1.00 0.91
24D: Edneyville-----	90	Very limited Slope Slow water movement Too acid	1.00 0.32 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00  1.00 0.91
24E: Edneyville-----	90	Very limited Slope Slow water movement Too acid	1.00 0.32 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00  1.00 0.91
24F: Edneyville-----	90	Very limited Slope Slow water movement Too acid	1.00 0.32 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00  1.00 0.91
25B: Elsinboro-----	90	Very limited Slow water movement Slope	1.00 0.12	Somewhat limited Too acid Too steep for surface application	0.96 0.32
26B: Elsinboro-----	60	Very limited Slow water movement	1.00	Somewhat limited Too acid Too steep for surface application	0.96 0.08
Urban land-----	35	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
27D: Evard-----	50	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.99
Cowee-----	35	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
28B: Glenelg-----	90	Very limited Slow water movement Slope	1.00 0.12	Somewhat limited Too steep for surface application Too acid	0.32 0.07
28C: Glenelg-----	90	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.07
28D: Glenelg-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.07
28E: Glenelg-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.07

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
28F: Glenelg-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.07
29C: Glenelg-----	90	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.07
29D: Glenelg-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.07
29E: Glenelg-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.07
30C: Glenelg-----	60	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.22 0.07
Urban land-----	35	Not rated		Not rated	
31D: Greenlee-----	90	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Cobble content Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
31E: Greenlee-----	90	Very limited Slope Cobble content Slow water movement	1.00 1.00 0.32	Very limited Cobble content Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00
32A: Hatboro-----	90	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 1.00
33B: Hayesville-----	90	Very limited Slow water movement Slope	1.00 0.12	Somewhat limited Low adsorption Too steep for surface application Too acid	0.48 0.32 0.21
33C: Hayesville-----	90	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Low adsorption	1.00 0.94 0.48
33D: Hayesville-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Low adsorption	1.00 1.00 0.48
34B: Keener-----	90	Very limited Slow water movement Slope Too acid	1.00 0.12 0.03	Somewhat limited Too acid Too steep for surface application	0.42 0.32
34C: Keener-----	90	Very limited Slow water movement Slope Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.42

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
34D: Keener-----	90	Very limited Slope Slow water movement Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00 0.42
35C: Keener-----	90	Very limited Slow water movement Slope Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.42
35D: Keener-----	90	Very limited Slope Slow water movement Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00 0.42
36A: Kinkora-----	90	Very limited Ponding Slow water movement Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 0.96
37C: Konarock-----	90	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.32	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 1.00
37D: Konarock-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
37E: Konnarock-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
38C: McCamy-----	85	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.61	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 1.00
38D: McCamy-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.61	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
39D: McCamy-----	85	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.61	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 1.00
39E: McCamy-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.61	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
40D: Mt Rogers-----	45	Very limited Slope Cobble content Slow water movement	1.00 0.99 0.32	Very limited Too steep for surface application Too acid Too steep for sprinkler irrigation	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
40D: Bloodyhorse-----	25	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.32	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
40F: Mt Rogers-----	45	Very limited Slope Cobble content Slow water movement	1.00 0.99 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00
Bloodyhorse-----	25	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
41C: Mt Rogers-----	45	Very limited Slope Cobble content Slow water movement	1.00 0.99 0.32	Very limited Too steep for surface application Too acid Too steep for sprinkler irrigation	1.00 1.00 0.94
Buzzrock-----	40	Very limited Depth to bedrock Slope Cobble content	1.00 1.00 0.95	Very limited Filtering capacity Too steep for surface application Too acid	1.00 1.00 1.00
41D: Mt Rogers-----	45	Very limited Slope Cobble content Slow water movement	1.00 0.99 0.32	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
41D: Buzzrock-----	40	Very limited Slope Depth to bedrock Cobble content	1.00 1.00 0.95	Very limited Filtering capacity Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00
42C: Peaks-----	90	Very limited Depth to bedrock Slope Too acid	1.00 1.00 0.03	Very limited Depth to bedrock Too steep for surface application Filtering capacity	1.00 1.00 0.99
42D: Peaks-----	90	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
42E: Peaks-----	90	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
43C: Peaks-----	90	Very limited Depth to bedrock Slope Too acid	1.00 1.00 0.03	Very limited Depth to bedrock Too steep for surface application Filtering capacity	1.00 1.00 0.99
43D: Peaks-----	90	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
43E: Peaks-----	90	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
43F: Peaks-----	90	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
44C: Pigeonroost-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 0.96
44D: Pigeonroost-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
44E: Pigeonroost-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
45D: Pigeonroost-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 1.00 1.00	Very limited Depth to bedrock Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
45E: Pigeonroost-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
46E: Pigeonroost-----	60	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	30	Not rated		Not rated	
47D: Pineola-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
48E: Pineola-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00
49: Pits, quarries-----	100	Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated	
Peaks-----	40	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.03	Very limited Too steep for surface application Too steep for sprinkler irrigation Depth to bedrock	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
51B: Scales-----	95	Very limited Slow water movement	1.00	Very limited Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.99
		Too acid	0.14	Too acid	0.96
52C: Sylco-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.78	Too acid	0.96
Sylvatus-----	35	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slow water movement	1.00	Too acid	1.00
		Slope	1.00	Too steep for surface application	1.00
52D: Sylco-----	50	Very limited Slope	1.00	Very limited Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
		Slow water movement	0.78	Depth to bedrock	1.00
Sylvatus-----	35	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
52E: Sylco-----	50	Very limited Slope	1.00	Very limited Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
		Slow water movement	0.78	Depth to bedrock	1.00
Sylvatus-----	35	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53B: Tate-----	90	Very limited Slow water movement Slope	1.00 0.12	Somewhat limited Too acid Too steep for surface application	0.42 0.32
53C: Tate-----	90	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.42
53D: Tate-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.42
53E: Tate-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.42
54C: Tate-----	90	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 0.94 0.42
54D: Tate-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.42

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
54E: Tate-----	90	Very limited Slope Slow water movement	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.42
55D: Tate-----	90	Very limited Slow water movement Slope	1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.42
56C: Thunder-----	80	Very limited Slow water movement Cobble content Slope	1.00 1.00 1.00	Very limited Too steep for surface application Too acid Too steep for sprinkler irrigation	1.00 0.96 0.94
56D: Thunder-----	80	Very limited Slope Slow water movement Cobble content	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.96
56E: Thunder-----	80	Very limited Slope Slow water movement Cobble content	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.96
57C: Thunder-----	80	Very limited Slow water movement Cobble content Slope	1.00 1.00 1.00	Very limited Too steep for surface application Too acid Too steep for sprinkler irrigation	1.00 0.96 0.94

Soil Survey of Grayson County, Virginia

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
57D: Thunder-----	80	Very limited Slope Slow water movement Cobble content	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.96
57E: Thunder-----	80	Very limited Slope Slow water movement Cobble content	1.00 1.00 1.00	Very limited Too steep for surface application Too steep for sprinkler irrigation Too acid	1.00 1.00 0.96
58D: Udorthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
59D: Unicoi-----	85	Very limited Depth to bedrock Slope Too acid	1.00 1.00 0.77	Very limited Depth to bedrock Too steep for surface application Too acid	1.00 1.00 1.00
59E: Unicoi-----	85	Very limited Slope Depth to bedrock Too acid	1.00 1.00 0.77	Very limited Depth to bedrock Too steep for surface application Too steep for sprinkler irrigation	1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity

(Absence of an entry indicates information was not available)

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
1C: Balsam-----	Fraser fir----- northern red oak---- red spruce----- sugar maple----- yellow birch-----	--- --- 64 --- ---	--- --- 105 --- ---	Fraser fir, red spruce
1D: Balsam-----	Fraser fir----- northern red oak---- red spruce----- sugar maple----- yellow birch-----	--- --- 64 --- ---	--- --- 105 --- ---	Fraser fir, red spruce
1E: Balsam-----	Fraser fir----- northern red oak---- red spruce----- sugar maple----- yellow birch-----	--- --- 64 --- ---	--- --- 105 --- ---	Fraser fir, red spruce
2D: Balsam-----	Fraser fir----- northern red oak---- red spruce----- sugar maple----- yellow birch-----	--- --- 64 --- ---	--- --- 105 --- ---	Fraser fir, red spruce
Nopan-----	Fraser fir----- northern red oak---- red spruce----- sugar maple----- yellow birch-----	--- --- 58 --- ---	--- --- 93 --- ---	black ash, spruce
2E: Balsam-----	Fraser fir----- northern red oak---- red spruce----- sugar maple----- yellow birch-----	--- --- 64 --- ---	--- --- 105 --- ---	Fraser fir, red spruce
Nopan-----	Fraser fir----- northern red oak---- red spruce----- sugar maple----- yellow birch-----	--- --- 58 --- ---	--- --- 93 --- ---	black ash, spruce
3D: Bloodyhorse-----	Fraser fir----- red spruce-----	--- 53	--- 79	Fraser fir, red spruce
4F: Bloodyhorse-----	Fraser fir----- red spruce-----	--- 53	--- 79	Fraser fir, red spruce

Soil Survey of Grayson County, Virginia

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
5B: Braddock-----	eastern white pine-- northern red oak---- yellow-poplar-----	95 80 90	172 57 86	eastern white pine, northern red oak, yellow-poplar
5C: Braddock-----	eastern white pine-- northern red oak---- yellow-poplar-----	95 80 90	172 57 86	eastern white pine, northern red oak, yellow-poplar
5D: Braddock-----	eastern white pine-- northern red oak---- yellow-poplar-----	95 80 90	172 57 86	eastern white pine, northern red oak, yellow-poplar
6E: Braddock-----	eastern white pine-- northern red oak---- yellow-poplar-----	95 80 90	172 57 86	eastern white pine, northern red oak, yellow-poplar
7D: Brevard-----	eastern white pine-- hemlock----- northern red oak---- red maple----- shortleaf pine----- Virginia pine----- white oak----- yellow-poplar-----	90 --- 75 --- 70 80 --- 95	172 --- 57 --- 114 114 --- 100	black walnut, eastern white pine, northern red oak, shortleaf pine, yellow- poplar
Greenlee-----	black locust----- eastern hemlock----- eastern white pine-- pitch pine----- red maple----- scarlet oak----- Virginia pine----- white oak----- yellow-poplar-----	--- --- 83 63 --- 55 69 --- 110	--- --- 157 --- --- 43 114 --- 129	eastern white pine, northern red oak, yellow-poplar
8C: Burton-----	American beech----- Fraser fir----- red spruce----- sugar maple----- yellow birch-----	--- --- 59 --- ---	--- --- 95 --- ---	Fraser fir, red spruce
9D: Burton-----	American beech----- Fraser fir----- red spruce----- sugar maple----- yellow birch-----	--- --- 59 --- ---	--- --- 95 --- ---	Fraser fir, red spruce
9E: Burton-----	American beech----- Fraser fir----- red spruce----- sugar maple----- yellow birch-----	--- --- 59 --- ---	--- --- 95 --- ---	Fraser fir, red spruce

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
<b>10D:</b>				
Peaks-----	eastern white pine--	81	146	eastern white pine, yellow-poplar
	Virginia pine-----	62	95	
	chestnut oak-----	70	52	
Chestnut-----	eastern white pine--	78	139	eastern white pine, yellow-poplar
	yellow-poplar-----	97	102	
	northern red oak----	80	62	
	scarlet oak-----	68	50	
	chestnut oak-----	69	51	
	black oak-----	71	53	
	white oak-----	70	52	
	pitch pine-----	---	---	
	shortleaf pine-----	---	---	
<b>10E:</b>				
Chestnut-----	eastern white pine--	78	139	eastern white pine, yellow-poplar
	yellow-poplar-----	97	102	
	northern red oak----	80	62	
	scarlet oak-----	68	50	
	chestnut oak-----	69	51	
	black oak-----	71	53	
	white oak-----	70	52	
	white oak-----	70	52	
	pitch pine-----	---	---	
	shortleaf pine-----	---	---	
Peaks-----	eastern white pine--	81	146	eastern white pine, yellow-poplar
	Virginia pine-----	62	95	
	chestnut oak-----	70	52	
<b>11F:</b>				
Chestnut-----	eastern white pine--	78	139	eastern white pine, yellow-poplar
	yellow-poplar-----	97	102	
	northern red oak----	80	62	
	scarlet oak-----	68	50	
	chestnut oak-----	69	51	
	black oak-----	71	53	
	white oak-----	70	52	
	white oak-----	70	52	
	pitch pine-----	---	---	
	shortleaf pine-----	---	---	
Peaks-----	eastern white pine--	81	146	eastern white pine, yellow-poplar
	Virginia pine-----	62	95	
	chestnut oak-----	70	52	
Tuckasegee-----	yellow-poplar-----	109	114	black cherry, eastern white pine, northern red oak, yellow-poplar
	eastern white pine--	98	172	
	northern red oak----	92	74	
	hickory-----	---	---	
	black cherry-----	---	---	
	white oak-----	---	---	
	eastern hemlock-----	---	---	
	black locust-----	---	---	

Soil Survey of Grayson County, Virginia

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
12A: Codorus-----	black walnut-----	100	78	black walnut, eastern white pine, yellow- poplar
	eastern white pine--	100	191	
	northern red oak----	90	70	
	sugar maple-----	90	70	
	white ash-----	90	70	
	yellow-poplar-----	100	107	
13A: Comus-----	eastern white pine--	105	200	black walnut, eastern white pine, yellow- poplar
	northern red oak----	85	66	
	yellow-poplar-----	110	123	
14C: Cowee-----	chestnut oak-----	55	40	eastern white pine, yellow-poplar
	eastern white pine--	90	166	
	scarlet oak-----	54	60	
	Virginia pine-----	63	97	
	yellow-poplar-----	85	80	
14D: Cowee-----	chestnut oak-----	55	40	eastern white pine, yellow-poplar
	eastern white pine--	90	166	
	scarlet oak-----	54	60	
	Virginia pine-----	63	97	
	yellow-poplar-----	85	80	
14E: Cowee-----	chestnut oak-----	55	40	eastern white pine, yellow-poplar
	eastern white pine--	90	166	
	scarlet oak-----	54	60	
	Virginia pine-----	63	97	
	yellow-poplar-----	85	80	
15D: Cowee-----	chestnut oak-----	55	40	eastern white pine, yellow-poplar
	eastern white pine--	90	166	
	scarlet oak-----	54	60	
	Virginia pine-----	63	97	
	yellow-poplar-----	85	80	
15E: Cowee-----	chestnut oak-----	55	40	eastern white pine, yellow-poplar
	eastern white pine--	90	166	
	scarlet oak-----	54	60	
	Virginia pine-----	63	97	
	yellow-poplar-----	85	80	
16D: Cowee-----	chestnut oak-----	55	40	eastern white pine, yellow-poplar
	eastern white pine--	90	166	
	scarlet oak-----	54	60	
	Virginia pine-----	63	97	
	yellow-poplar-----	85	80	
Rock outcrop.				

Soil Survey of Grayson County, Virginia

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
16E: Cowee-----	chestnut oak-----	55	40	eastern white pine, yellow-poplar
	eastern white pine--	90	166	
	scarlet oak-----	54	60	
	Virginia pine-----	63	97	
	yellow-poplar-----	85	80	
Rock outcrop.				
17A: Craigs ville-----	eastern white pine--	90	166	eastern white pine, yellow-poplar
	northern red oak----	80	62	
	Virginia pine-----	80	120	
	yellow-poplar-----	95	97	
18C: Cullasaja-----	yellow-poplar-----	103	111	yellow-poplar, eastern white pine, northern red oak
	eastern white pine--	90	166	
	northern red oak----	80	62	
18D: Cullasaja-----	yellow-poplar-----	103	111	yellow-poplar, eastern white pine, northern red oak
	eastern white pine--	90	166	
	northern red oak----	80	62	
19A: Delanco-----	black oak-----	80	62	eastern white pine, yellow-poplar
	eastern white pine--	95	175	
	yellow-poplar-----	90	91	
19B: Delanco-----	black oak-----	80	62	eastern white pine, yellow-poplar
	eastern white pine--	95	175	
	yellow-poplar-----	90	91	
20C: Delanco-----	black oak-----	80	62	eastern white pine, yellow-poplar
	eastern white pine--	95	175	
	yellow-poplar-----	90	91	
21B: Edneytown-----	eastern white pine--	115	220	eastern white pine, yellow-poplar
	hickory-----	58	37	
	Virginia pine-----	70	109	
	white oak-----	60	44	
	yellow-poplar-----	120	149	
21C: Edneytown-----	eastern white pine--	115	220	eastern white pine, yellow-poplar
	hickory-----	58	37	
	Virginia pine-----	70	109	
	white oak-----	60	44	
	yellow-poplar-----	120	149	

Soil Survey of Grayson County, Virginia

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
21D: Edneytown-----	eastern white pine--	115	220	eastern white pine, yellow-poplar
	hickory-----	58	37	
	Virginia pine-----	70	109	
	white oak-----	60	44	
	yellow-poplar-----	120	149	
21E: Edneytown-----	eastern white pine--	115	220	eastern white pine, yellow-poplar
	hickory-----	58	37	
	Virginia pine-----	70	109	
	white oak-----	60	44	
	yellow-poplar-----	120	149	
21F: Edneytown-----	eastern white pine--	115	220	eastern white pine, yellow-poplar
	hickory-----	58	37	
	Virginia pine-----	70	109	
	white oak-----	60	44	
	yellow-poplar-----	120	149	
22C: Edneytown-----	eastern white pine--	115	220	eastern white pine, yellow-poplar
	hickory-----	58	37	
	Virginia pine-----	70	109	
	white oak-----	60	44	
	yellow-poplar-----	120	149	
Urban land.				
23C: Edneyville-----	eastern white pine--	95	175	eastern white pine, northern red oak, yellow-poplar
	northern red oak---	75	57	
	Virginia pine-----	75	115	
	yellow-poplar-----	105	110	
23D: Edneyville-----	eastern white pine--	95	175	eastern white pine, northern red oak, yellow-poplar
	northern red oak---	75	57	
	Virginia pine-----	75	115	
	yellow-poplar-----	105	110	
23E: Edneyville-----	eastern white pine--	95	175	eastern white pine, northern red oak, yellow-poplar
	northern red oak---	75	57	
	Virginia pine-----	75	115	
	yellow-poplar-----	105	110	
24D: Edneyville-----	eastern white pine--	95	175	eastern white pine, northern red oak, yellow-poplar
	northern red oak---	75	57	
	Virginia pine-----	75	115	
	yellow-poplar-----	105	110	
24E: Edneyville-----	eastern white pine--	95	175	eastern white pine, northern red oak, yellow-poplar
	northern red oak---	75	57	
	Virginia pine-----	75	115	
	yellow-poplar-----	105	110	

Soil Survey of Grayson County, Virginia

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
24F: Edneyville-----	eastern white pine--	95	175	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	75	57	
	Virginia pine-----	75	115	
	yellow-poplar-----	105	110	
25B: Elsinboro-----	black oak-----	80	62	eastern white pine, northern red oak, yellow-poplar
	eastern white pine--	130	248	
	northern red oak----	80	62	
	white oak-----	80	62	
	yellow-poplar-----	140	161	
26B: Elsinboro-----	black oak-----	80	62	eastern white pine, northern red oak, yellow-poplar
	eastern white pine--	130	248	
	northern red oak----	80	62	
	white oak-----	80	62	
	yellow-poplar-----	140	161	
Urban land.				
27D: Evard-----	eastern white pine--	91	168	eastern white pine, shortleaf pine, white oak, chestnut oak
	yellow-poplar-----	95	98	
	white oak-----	75	57	
	Virginia pine-----	70	109	
	shortleaf pine-----	73	116	
	southern red oak----	75	57	
	pitch pine-----	---	---	
	hickory-----	---	---	
Cowee-----	eastern white pine--	78	139	eastern white pine, shortleaf pine
	yellow-poplar-----	80	71	
	chestnut oak-----	55	38	
	Virginia pine-----	63	96	
	pitch pine-----	52	72	
	scarlet oak-----	54	38	
	shortleaf pine-----	---	---	
	white oak-----	---	---	
	black oak-----	---	---	
28B: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
28C: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
28D: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
28E: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
28F: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
29C: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
29D: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
29E: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
30C: Glenelg-----	black oak-----	78	60	black oak, black walnut, eastern white pine, yellow-poplar
	eastern white pine--	100	191	
	hickory-----	75	64	
	white oak-----	75	57	
	yellow-poplar-----	95	97	
Urban land.				
31D: Greenlee-----	eastern white pine--	95	175	eastern white pine, yellow-poplar
	scarlet oak-----	55	40	
	Virginia pine-----	69	107	
	yellow-poplar-----	100	107	

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
31E: Greenlee-----	eastern white pine-- scarlet oak----- Virginia pine----- yellow-poplar-----	95 55 69 100	175 40 107 107	eastern white pine, yellow-poplar
32A: Hatboro-----	American sycamore--- red maple-----	60 60	40 40	American sycamore, black willow, green ash, white ash
33B: Hayesville-----	eastern white pine-- northern red oak---- yellow-poplar-----	95 81 103	175 63 110	eastern white pine, northern red oak, yellow-poplar
33C: Hayesville-----	eastern white pine-- northern red oak---- yellow-poplar-----	95 81 103	175 63 110	eastern white pine, northern red oak, yellow-poplar
33D: Hayesville-----	eastern white pine-- northern red oak---- yellow-poplar-----	95 81 103	175 63 110	eastern white pine, northern red oak, yellow-poplar
34B: Keener-----	northern red oak---- Virginia pine----- yellow-poplar-----	65 60 85	47 47 80	eastern white pine, northern red oak, yellow-poplar
34C: Keener-----	northern red oak---- Virginia pine----- yellow-poplar-----	65 60 85	47 47 80	eastern white pine, northern red oak, yellow-poplar
34D: Keener-----	northern red oak---- Virginia pine----- yellow-poplar-----	65 60 85	47 47 80	eastern white pine, northern red oak, yellow-poplar
35C: Keener-----	northern red oak---- Virginia pine----- yellow-poplar-----	65 60 85	47 47 80	eastern white pine, northern red oak, yellow-poplar
35D: Keener-----	northern red oak---- Virginia pine----- yellow-poplar-----	65 60 85	47 47 80	eastern white pine, northern red oak, yellow-poplar
36A: Kinkora-----	American sycamore--- red maple-----	60 60	40 40	American sycamore, black willow, green ash, white ash

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
37C: Konnarock-----	northern red oak----	77	59	eastern white pine, northern red oak
	yellow-poplar-----	80	76	
37D: Konnarock-----	northern red oak----	77	59	eastern white pine, northern red oak
	yellow-poplar-----	80	76	
37E: Konnarock-----	northern red oak----	77	59	eastern white pine, northern red oak
	yellow-poplar-----	80	76	
38C: McCamy-----	scarlet oak-----	75	57	eastern white pine, northern red oak, yellow-poplar
	Virginia pine-----	70	109	
	white oak-----	70	52	
	yellow-poplar-----	90	91	
38D: McCamy-----	scarlet oak-----	75	57	eastern white pine, northern red oak, yellow-poplar
	Virginia pine-----	70	109	
	white oak-----	70	52	
	yellow-poplar-----	90	91	
39D: McCamy-----	scarlet oak-----	75	57	eastern white pine, northern red oak, yellow-poplar
	Virginia pine-----	70	109	
	white oak-----	70	52	
	yellow-poplar-----	90	91	
39E: McCamy-----	scarlet oak-----	75	57	eastern white pine, northern red oak, yellow-poplar
	Virginia pine-----	70	109	
	white oak-----	70	52	
	yellow-poplar-----	90	91	
40D: Mt Rogers-----	Fraser fir-----	---	---	Fraser fir, red spruce
	red spruce-----	53	79	
Bloodyhorse-----	Fraser fir-----	---	---	Fraser fir, red spruce
	red spruce-----	50	63	
Rock outcrop.				
40F: Mt Rogers-----	Fraser fir-----	---	---	Fraser fir, red spruce
	red spruce-----	53	79	
Bloodyhorse-----	Fraser fir-----	---	---	Fraser fir, red spruce
	red spruce-----	50	63	
Rock outcrop.				

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
41C:				
Mt Rogers-----	Fraser fir----- red spruce-----	--- 53	--- 79	Fraser fir, red spruce
Buzzrock-----	Fraser fir----- red spruce-----	--- 52	--- 78	Fraser fir, red spruce
41D:				
Mt Rogers-----	Fraser fir----- red spruce-----	--- 53	--- 79	Fraser fir, red spruce
Buzzrock-----	Fraser fir----- red spruce-----	--- 52	--- 78	Fraser fir, red spruce
42C:				
Peaks-----	chestnut oak----- eastern white pine-- northern red oak--- scarlet oak----- Virginia pine-----	55 70 62 60 57	40 120 46 44 81	eastern white pine
42D:				
Peaks-----	chestnut oak----- eastern white pine-- northern red oak--- scarlet oak----- Virginia pine-----	55 70 62 60 57	40 120 46 44 81	eastern white pine
42E:				
Peaks-----	chestnut oak----- eastern white pine-- northern red oak--- scarlet oak----- Virginia pine-----	55 70 62 60 57	40 120 46 44 81	eastern white pine
43C:				
Peaks-----	chestnut oak----- eastern white pine-- northern red oak--- scarlet oak----- Virginia pine-----	55 70 62 60 57	40 120 46 44 81	eastern white pine
43D:				
Peaks-----	chestnut oak----- eastern white pine-- northern red oak--- scarlet oak----- Virginia pine-----	55 70 62 60 57	40 120 46 44 81	eastern white pine
43E:				
Peaks-----	chestnut oak----- eastern white pine-- northern red oak--- scarlet oak----- Virginia pine-----	55 70 62 60 57	40 120 46 44 81	eastern white pine

Soil Survey of Grayson County, Virginia

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
43F: Peaks-----	chestnut oak-----	55	40	eastern white pine
	eastern white pine--	70	120	
	northern red oak----	62	46	
	scarlet oak-----	60	44	
	Virginia pine-----	57	81	
44C: Pigeonroost-----	eastern white pine--	99	186	eastern white pine, white oak, yellow- poplar
	white oak-----	80	62	
	yellow-poplar-----	101	109	
44D: Pigeonroost-----	eastern white pine--	99	186	eastern white pine, white oak, yellow- poplar
	white oak-----	80	62	
	yellow-poplar-----	101	109	
44E: Pigeonroost-----	eastern white pine--	99	186	eastern white pine, white oak, yellow- poplar
	white oak-----	80	62	
	yellow-poplar-----	101	109	
45D: Pigeonroost-----	eastern white pine--	99	186	eastern white pine, white oak, yellow- poplar
	white oak-----	80	62	
	yellow-poplar-----	101	109	
45E: Pigeonroost-----	eastern white pine--	99	186	eastern white pine, white oak, yellow- poplar
	white oak-----	80	62	
	yellow-poplar-----	101	109	
46E: Pigeonroost-----	eastern white pine--	99	186	eastern white pine, white oak, yellow- poplar
	white oak-----	80	62	
	yellow-poplar-----	101	109	
Rock outcrop.				
47D: Pineola-----	eastern white pine--	105	200	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	80	62	
	yellow-poplar-----	110	123	
48E: Pineola-----	eastern white pine--	105	200	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	80	62	
	yellow-poplar-----	110	123	
49. Pits, quarries				
50F. Rock outcrop-Peaks				
51B: Scales-----	Fraser fir-----	---	---	spruce
	northern red oak----	---	---	
	red spruce-----	58	93	

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
52C:				
Sylco-----	eastern white pine--	75	131	eastern white pine
	Virginia pine-----	60	91	
Sylvatus-----	eastern white pine--	70	120	eastern white pine
	Virginia pine-----	55	79	
52D:				
Sylco-----	eastern white pine--	75	131	eastern white pine
	Virginia pine-----	60	91	
Sylvatus-----	eastern white pine--	70	120	eastern white pine
	Virginia pine-----	55	79	
52E:				
Sylco-----	eastern white pine--	75	131	eastern white pine
	Virginia pine-----	60	91	
Sylvatus-----	eastern white pine--	70	120	eastern white pine
	Virginia pine-----	55	79	
53B:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
53C:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
53D:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
53E:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
54C:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
54D:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
54E:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
55D:				
Tate-----	eastern white pine--	100	191	eastern white pine,
	yellow-poplar-----	105	110	yellow-poplar
56C:				
Thunder-----	yellow-poplar-----	100	107	eastern white pine,
	northern red oak----	93	72	northern red oak,
	sugar maple-----	80	62	yellow-poplar
	scarlet oak-----	90	70	

Soil Survey of Grayson County, Virginia

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
56D: Thunder-----	yellow-poplar-----	100	107	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	93	72	
	sugar maple-----	80	62	
	scarlet oak-----	90	70	
56E: Thunder-----	yellow-poplar-----	100	107	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	93	72	
	sugar maple-----	80	62	
	scarlet oak-----	90	70	
57C: Thunder-----	yellow-poplar-----	100	107	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	93	72	
	sugar maple-----	80	62	
	scarlet oak-----	90	70	
57D: Thunder-----	yellow-poplar-----	100	107	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	93	72	
	sugar maple-----	80	62	
	scarlet oak-----	90	70	
57E: Thunder-----	yellow-poplar-----	100	107	eastern white pine, northern red oak, yellow-poplar
	northern red oak----	93	72	
	sugar maple-----	80	62	
	scarlet oak-----	90	70	
58D. Udorthents-Urban land				
59D: Unicoi-----	chestnut oak-----	50	34	Virginia pine
	scarlet oak-----	50	34	
	Virginia pine-----	50	64	
59E: Unicoi-----	chestnut oak-----	50	34	Virginia pine
	scarlet oak-----	50	34	
	Virginia pine-----	50	64	
W. Water				

# Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Slight		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
1D: Balsam-----	85	Moderate Slope	0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
1E: Balsam-----	85	Severe Slope	1.00	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
2D: Balsam-----	70	Moderate Slope	0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Nopan-----	20	Severe Wetness Slope	1.00 0.50	Poorly suited Slope Low strength Wetness	1.00 1.00 0.50	Severe Low strength	1.00
2E: Balsam-----	70	Severe Slope	1.00	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Nopan-----	20	Severe Slope Wetness	1.00 1.00	Poorly suited Slope Low strength Wetness	1.00 1.00 0.50	Severe Low strength	1.00
3D: Bloodyhorse-----	80	Moderate Slope Restrictive layer	0.50 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
4F: Bloodyhorse-----	80	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
5B: Braddock-----	90	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
5C: Braddock-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5D: Braddock-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
6E: Braddock-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
7D: Brevard-----	50	Moderate Slope	0.50	Poorly suited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
Greenlee-----	35	Moderate Slope	0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
8C: Burton-----	90	Severe Low strength Restrictive layer	1.00 0.50	Poorly suited Low strength Slope	1.00 0.50	Severe Low strength	1.00
9D: Burton-----	90	Severe Low strength Slope Restrictive layer	1.00 0.50 0.50	Poorly suited Slope Low strength	1.00 1.00	Severe Low strength	1.00
9E: Burton-----	90	Severe Slope Low strength	1.00 1.00	Poorly suited Slope Low strength	1.00 1.00	Severe Low strength	1.00
10D: Peaks-----	20	Moderate Restrictive layer Slope	0.50 0.50	Poorly suited Slope Sandiness	1.00 0.50	Slight Strength	0.10
Chestnut-----	65	Moderate Slope Restrictive layer	0.50 0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
10E: Chestnut-----	65	Severe Slope	1.00	Poorly suited Slope	1.00	Moderate Low strength	0.50
Peaks-----	20	Severe Slope	1.00	Poorly suited Slope Sandiness	1.00 0.50	Slight Strength	0.10
11F: Chestnut-----	40	Severe Slope	1.00	Poorly suited Slope	1.00	Moderate Low strength	0.50
Peaks-----	25	Severe Slope	1.00	Poorly suited Slope Sandiness	1.00 0.50	Slight Strength	0.10

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11F: Tuckasegee-----	20	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
12A: Codorus-----	90	Severe Flooding Low strength Wetness	1.00 0.50 0.50	Poorly suited Flooding Low strength	1.00 0.50	Severe Low strength	1.00
13A: Comus-----	90	Severe Flooding	1.00	Poorly suited Flooding	1.00	Moderate Low strength	0.50
14C: Cowee-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
14D: Cowee-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
14E: Cowee-----	90	Severe Slope Low strength	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
15D: Cowee-----	90	Moderate Slope	0.50	Poorly suited Slope	1.00	Slight Strength	0.10
15E: Cowee-----	90	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
16D: Cowee-----	60	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Severe Slope Low strength	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Rock outcrop-----	35	Not rated		Not rated		Not rated	
17A: Craigsville-----	85	Severe Flooding	1.00	Poorly suited Flooding	1.00	Moderate Low strength	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18C: Cullasaja-----	85	Severe Low strength Stoniness	1.00 1.00	Poorly suited Low strength Slope	1.00 0.50	Severe Low strength	1.00
18D: Cullasaja-----	85	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 1.00	Severe Low strength	1.00
19A: Delanco-----	90	Slight		Well suited		Moderate Low strength	0.50
19B: Delanco-----	90	Slight		Well suited		Moderate Low strength	0.50
20C: Delanco-----	90	Slight		Moderately suited Slope	0.50	Moderate Low strength	0.50
21B: Edneytown-----	90	Slight		Moderately suited Low strength	0.50	Severe Low strength	1.00
21C: Edneytown-----	90	Slight		Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
21D: Edneytown-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
21E: Edneytown-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
21F: Edneytown-----	90	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
22C: Edneytown-----	60	Slight		Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23D: Edneyville-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
23E: Edneyville-----	90	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
24D: Edneyville-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
24E: Edneyville-----	90	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
24F: Edneyville-----	90	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
25B: Elsinboro-----	90	Slight		Well suited		Moderate Low strength	0.50
26B: Elsinboro-----	60	Slight		Well suited		Moderate Low strength	0.50
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Moderate Slope	0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
Cowee-----	35	Moderate Slope	0.50	Poorly suited Slope	1.00	Slight Strength	0.10
28B: Glenelg-----	90	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
28C: Glenelg-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
28D: Glenelg-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28E: Glenelg-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
28F: Glenelg-----	90	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
29C: Glenelg-----	90	Moderate Low strength	0.50	Moderately suited Slope	0.50	Moderate Low strength	0.50
29D: Glenelg-----	90	Moderate Slope	0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
29E: Glenelg-----	90	Severe Slope	1.00	Poorly suited Slope	1.00	Moderate Low strength	0.50
30C: Glenelg-----	60	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Moderate Slope	0.50	Poorly suited Slope	1.00	Slight Strength	0.10
31E: Greenlee-----	90	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
32A: Hatboro-----	90	Severe Flooding Wetness	1.00 1.00	Poorly suited Ponding Flooding Wetness	1.00 1.00 0.50	Moderate Low strength	0.50
33B: Hayesville-----	90	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
33C: Hayesville-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
33D: Hayesville-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34B: Keener-----	90	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
34C: Keener-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
34D: Keener-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
35C: Keener-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
35D: Keener-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
36A: Kinkora-----	90	Severe Wetness	1.00	Poorly suited Ponding Wetness	1.00 0.50	Moderate Low strength	0.50
37C: Konnarock-----	90	Moderate Restrictive layer	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
37D: Konnarock-----	90	Severe Restrictive layer Slope	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
37E: Konnarock-----	90	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
38C: McCamy-----	85	Moderate Restrictive layer	0.50	Moderately suited Slope	0.50	Moderate Low strength	0.50
38D: McCamy-----	85	Moderate Slope Restrictive layer	0.50 0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
39D: McCamy-----	85	Moderate Slope Restrictive layer	0.50 0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
39E: McCamy-----	85	Severe Slope	1.00	Poorly suited Slope	1.00	Moderate Low strength	0.50
40D: Mt Rogers-----	45	Severe Stoniness Slope	1.00 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Slight Strength	0.10
Bloodyhorse-----	25	Severe Stoniness Slope Restrictive layer	1.00 0.50 0.50	Poorly suited Rock fragments Slope	1.00 1.00	Slight Strength	0.10
Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope	1.00 1.00	Slight Strength	0.10
Bloodyhorse-----	25	Severe Slope Stoniness	1.00 1.00	Poorly suited Rock fragments Slope	1.00 1.00	Slight Strength	0.10
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Severe Stoniness	1.00	Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
Buzzrock-----	40	Slight		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
41D: Mt Rogers-----	45	Moderate Slope	0.50	Poorly suited Slope Rock fragments	1.00 0.50	Slight Strength	0.10
Buzzrock-----	40	Moderate Slope Restrictive layer	0.50 0.50	Poorly suited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
42C: Peaks-----	90	Moderate Restrictive layer	0.50	Moderately suited Slope Sandiness	0.50 0.50	Slight Strength	0.10
42D: Peaks-----	90	Moderate Slope Restrictive layer	0.50 0.50	Poorly suited Slope Sandiness	1.00 0.50	Slight Strength	0.10
42E: Peaks-----	90	Severe Slope	1.00	Poorly suited Slope Sandiness	1.00 0.50	Slight Strength	0.10

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43C: Peaks-----	90	Moderate Restrictive layer Stoniness	0.50 0.50	Moderately suited Slope Rock fragments Sandiness	0.50 0.50 0.50	Slight Strength	0.10
43D: Peaks-----	90	Moderate Slope Restrictive layer Stoniness	0.50 0.50 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Slight Strength	0.10
43E: Peaks-----	90	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Slight Strength	0.10
43F: Peaks-----	90	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50	Slight Strength	0.10
44C: Pigeonroost-----	85	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
44D: Pigeonroost-----	85	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
44E: Pigeonroost-----	85	Severe Slope Low strength	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
45D: Pigeonroost-----	85	Moderate Slope	0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
45E: Pigeonroost-----	85	Severe Slope Low strength	1.00 0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
46E: Pigeonroost-----	60	Severe Slope Low strength	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Rock outcrop-----	30	Not rated		Not rated		Not rated	
47D: Pineola-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48E: Pineola-----	90	Severe Slope Low strength	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Severe Slope	1.00	Poorly suited Slope Sandiness	1.00 0.50	Slight Strength	0.10
51B: Scales-----	95	Severe Wetness	1.00	Poorly suited Low strength Wetness Rock fragments	1.00 1.00 0.50	Severe Low strength Wetness	1.00 0.50
52C: Sylco-----	50	Moderate Restrictive layer	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
Sylvatus-----	35	Severe Restrictive layer	1.00	Moderately suited Slope	0.50	Severe Low strength	1.00
52D: Sylco-----	50	Severe Restrictive layer Slope	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Sylvatus-----	35	Severe Restrictive layer Slope	1.00 0.50	Poorly suited Slope	1.00	Severe Low strength	1.00
52E: Sylco-----	50	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Sylvatus-----	35	Severe Slope	1.00	Poorly suited Slope	1.00	Severe Low strength	1.00
53B: Tate-----	90	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
53C: Tate-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
53D: Tate-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53E: Tate-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
54C: Tate-----	90	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
54D: Tate-----	90	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
54E: Tate-----	90	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
55D: Tate-----	90	Moderate Slope Stoniness	0.50 0.50	Poorly suited Rock fragments Slope Low strength	1.00 1.00 0.50	Severe Low strength	1.00
56C: Thunder-----	80	Severe Stoniness Low strength	1.00 0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
56D: Thunder-----	80	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
56E: Thunder-----	80	Severe Slope	1.00	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
57C: Thunder-----	80	Severe Stoniness Low strength	1.00 0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50	Severe Low strength	1.00
57D: Thunder-----	80	Moderate Slope	0.50	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50	Severe Low strength	1.00
57E: Thunder-----	80	Severe Slope	1.00	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50	Severe Low strength	1.00

Soil Survey of Grayson County, Virginia

Table 9.--Forestland Management, Part I--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Severe Restrictive layer	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
		Slope	0.50	Rock fragments	0.50		
		Stoniness	0.50				
59E: Unicoi-----	85	Severe Slope	1.00	Poorly suited Slope	1.00	Slight Strength	0.10
		Stoniness	0.50	Rock fragments	0.50		
W: Water-----	100	Not rated		Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Slight		Slight		Moderately suited Slope Rock fragments	0.50 0.50
1D: Balsam-----	85	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50
1E: Balsam-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
2D: Balsam-----	70	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50
Nopan-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Wetness	1.00 1.00 0.50
2E: Balsam-----	70	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Nopan-----	20	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Wetness	1.00 1.00 0.50
3D: Bloodyhorse-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
4F: Bloodyhorse-----	80	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
5B: Braddock-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
5C: Braddock-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5D: Braddock-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
6E: Braddock-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
7D: Brevard-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Greenlee-----	35	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50
8C: Burton-----	90	Slight		Severe Slope/erodibility	0.95	Poorly suited Low strength Slope	1.00 0.50
9D: Burton-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00
9E: Burton-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 1.00
10D: Peaks-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Chestnut-----	65	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
10E: Chestnut-----	65	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Peaks-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
11F: Chestnut-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Peaks-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
Tuckasegee-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12A: Codorus-----	90	Slight		Slight		Poorly suited Flooding Low strength	1.00 0.50
13A: Comus-----	90	Slight		Slight		Poorly suited Flooding	1.00
14C: Cowee-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
14D: Cowee-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
14E: Cowee-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
15D: Cowee-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
15E: Cowee-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
16D: Cowee-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	35	Not rated		Not rated		Not rated	
17A: Craigsville-----	85	Slight		Slight		Poorly suited Flooding	1.00
18C: Cullasaja-----	85	Slight		Moderate Slope/erodibility	0.50	Poorly suited Low strength Slope	1.00 0.50
18D: Cullasaja-----	85	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
19A: Delanco-----	90	Slight		Slight		Well suited	
19B: Delanco-----	90	Slight		Moderate Slope/erodibility	0.50	Well suited	
20C: Delanco-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
21B: Edneytown-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
21C: Edneytown-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
21D: Edneytown-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
21E: Edneytown-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
21F: Edneytown-----	90	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
22C: Edneytown-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
23D: Edneyville-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
23E: Edneyville-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
24D: Edneyville-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24E: Edneyville-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
24F: Edneyville-----	90	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
25B: Elsinboro-----	90	Slight		Moderate Slope/erodibility	0.50	Well suited	
26B: Elsinboro-----	60	Slight		Slight		Well suited	
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Cowee-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
28B: Glenelg-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
28C: Glenelg-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
28D: Glenelg-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
28E: Glenelg-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
28F: Glenelg-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
29C: Glenelg-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
29D: Glenelg-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
29E: Glenelg-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
30C: Glenelg-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
31E: Greenlee-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
32A: Hatboro-----	90	Slight		Slight		Poorly suited Ponding Flooding Wetness	1.00 1.00 0.50
33B: Hayesville-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
33C: Hayesville-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
33D: Hayesville-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
34B: Keener-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
34C: Keener-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
34D: Keener-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
35C: Keener-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35D: Keener-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
36A: Kinkora-----	90	Slight		Slight		Poorly suited Ponding Wetness	1.00 0.50
37C: Konnarock-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
37D: Konnarock-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
37E: Konnarock-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
38C: McCamy-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
38D: McCamy-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
39D: McCamy-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
39E: McCamy-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
40D: Mt Rogers-----	45	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 1.00
Bloodyhorse-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00
Bloodyhorse-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40F: Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
Buzzrock-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
41D: Mt Rogers-----	45	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50
Buzzrock-----	40	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50
42C: Peaks-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness	0.50 0.50
42D: Peaks-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
42E: Peaks-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
43C: Peaks-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Sandiness	0.50 0.50 0.50
43D: Peaks-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
43E: Peaks-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
43F: Peaks-----	90	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44C: Pigeonroost-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
44D: Pigeonroost-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
44E: Pigeonroost-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
45D: Pigeonroost-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
45E: Pigeonroost-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
46E: Pigeonroost-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	30	Not rated		Not rated		Not rated	
47D: Pineola-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
48E: Pineola-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
51B: Scales-----	95	Slight		Slight		Poorly suited Low strength Wetness Rock fragments	1.00 1.00 0.50
52C: Sylco-----	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52C: Sylvatus-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
52D: Sylco-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Sylvatus-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
52E: Sylco-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Sylvatus-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
53B: Tate-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
53C: Tate-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
53D: Tate-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
53E: Tate-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
54C: Tate-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
54D: Tate-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
54E: Tate-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
55D: Tate-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Rock fragments Slope Low strength	1.00 1.00 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
56C: Thunder-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
56D: Thunder-----	80	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 0.50
56E: Thunder-----	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
57C: Thunder-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
57D: Thunder-----	80	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
57E: Thunder-----	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
59E: Unicoi-----	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
W: Water-----	100	Not rated		Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Rock fragments	0.50
1D: Balsam-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Rock fragments Slope	0.50 0.50
1E: Balsam-----	85	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50
2D: Balsam-----	70	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Rock fragments Slope	0.50 0.50
Nopan-----	20	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Poorly suited Low strength Wetness Rock fragments	1.00 1.00 0.50
2E: Balsam-----	70	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50
Nopan-----	20	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Low strength Wetness Slope	1.00 1.00 1.00
3D: Bloodyhorse-----	80	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Rock fragments Slope	0.50 0.50
4F: Bloodyhorse-----	80	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Rock fragments Slope	1.00 1.00
5B: Braddock-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5C: Braddock-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Slope	0.50 0.50	Moderately suited Low strength	0.50
5D: Braddock-----	90	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
6E: Braddock-----	90	Moderately suited Stickiness; high plasticity index Rock fragments	0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Moderately suited Low strength Slope	0.50 0.50
7D: Brevard-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Rock fragments	0.50
Greenlee-----	35	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Rock fragments	0.50
8C: Burton-----	90	Well suited		Moderately suited Slope	0.50	Poorly suited Low strength	1.00
9D: Burton-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Poorly suited Low strength Slope	1.00 0.50
9E: Burton-----	90	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Low strength Slope	1.00 1.00
10D: Peaks-----	20	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Sandiness	0.50
Chestnut-----	65	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Well suited	
10E: Chestnut-----	65	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderately suited Slope	0.50
Peaks-----	20	Moderately suited Sandiness Rock fragments Slope	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Moderately suited Slope Sandiness	0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11F: Chestnut-----	40	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Peaks-----	25	Moderately suited Slope Sandiness Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Sandiness	1.00 0.50
Tuckasegee-----	20	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
12A: Codorus-----	90	Moderately suited Sandiness	0.50	Moderately suited Sandiness	0.50	Moderately suited Low strength Wetness	0.50 0.50
13A: Comus-----	90	Well suited		Well suited		Well suited	
14C: Cowee-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
14D: Cowee-----	90	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
14E: Cowee-----	90	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
15D: Cowee-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
15E: Cowee-----	90	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
16D: Cowee-----	60	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	35	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A: Craigsville-----	85	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Well suited	
18C: Cullasaja-----	85	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Low strength	1.00
18D: Cullasaja-----	85	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Poorly suited Low strength Slope	1.00 0.50
19A: Delanco-----	90	Well suited		Well suited		Well suited	
19B: Delanco-----	90	Well suited		Moderately suited Slope	0.50	Well suited	
20C: Delanco-----	90	Well suited		Moderately suited Slope	0.50	Well suited	
21B: Edneytown-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
21C: Edneytown-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
21D: Edneytown-----	90	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
21E: Edneytown-----	90	Well suited		Unsuited Slope	1.00	Moderately suited Low strength Slope	0.50 0.50
21F: Edneytown-----	90	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
22C: Edneytown-----	60	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23D: Edneyville-----	90	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
23E: Edneyville-----	90	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
24D: Edneyville-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
24E: Edneyville-----	90	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
24F: Edneyville-----	90	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
25B: Elsinboro-----	90	Well suited		Moderately suited Slope	0.50	Well suited	
26B: Elsinboro-----	60	Well suited		Well suited		Well suited	
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
Cowee-----	35	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
28B: Glenelg-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
28C: Glenelg-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
28D: Glenelg-----	90	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
28E: Glenelg-----	90	Well suited		Unsuited Slope	1.00	Moderately suited Low strength Slope	0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28F: Glenelg-----	90	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
29C: Glenelg-----	90	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
29D: Glenelg-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
29E: Glenelg-----	90	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
30C: Glenelg-----	60	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Slope	0.50
31E: Greenlee-----	90	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope	1.00
32A: Hatboro-----	90	Poorly suited Wetness	0.75	Poorly suited Wetness	0.75	Poorly suited Wetness	1.00
33B: Hayesville-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
33C: Hayesville-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
33D: Hayesville-----	90	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
34B: Keener-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
34C: Keener-----	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34D: Keener-----	90	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
35C: Keener-----	90	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Low strength	0.50
35D: Keener-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
36A: Kinkora-----	90	Poorly suited Wetness Sandiness	0.75 0.50	Poorly suited Wetness Sandiness	0.75 0.50	Poorly suited Wetness	1.00
37C: Konnarock-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Low strength	0.50
37D: Konnarock-----	90	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Low strength Slope	0.50 0.50
37E: Konnarock-----	90	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Low strength	1.00 0.50
38C: McCamy-----	85	Well suited		Moderately suited Slope	0.50	Well suited	
38D: McCamy-----	85	Well suited		Poorly suited Slope	0.75	Moderately suited Slope	0.50
39D: McCamy-----	85	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
39E: McCamy-----	85	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
40D: Mt Rogers-----	45	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Poorly suited Rock fragments Slope	1.00 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40D: Bloodyhorse-----	25	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Poorly suited Rock fragments Slope	1.00 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Rock fragments Slope	1.00 1.00
Bloodyhorse-----	25	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Rock fragments Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Rock fragments	0.50
Buzzrock-----	40	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Rock fragments	0.50
41D: Mt Rogers-----	45	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Rock fragments Slope	0.50 0.50
Buzzrock-----	40	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Rock fragments Slope	0.50 0.50
42C: Peaks-----	90	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.50 0.50	Moderately suited Sandiness	0.50
42D: Peaks-----	90	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Sandiness Slope	0.50 0.50
42E: Peaks-----	90	Moderately suited Slope Sandiness Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Sandiness	1.00 0.50
43C: Peaks-----	90	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Rock fragments Slope Sandiness	0.75 0.50 0.50	Moderately suited Rock fragments Sandiness	0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43D: Peaks-----	90	Moderately suited Sandiness Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Sandiness	0.75 0.75 0.50	Moderately suited Rock fragments Sandiness Slope	0.50 0.50 0.50
43E: Peaks-----	90	Moderately suited Slope Sandiness Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
43F: Peaks-----	90	Moderately suited Slope Sandiness Rock fragments	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Rock fragments Sandiness	1.00 0.50 0.50
44C: Pigeonroost-----	85	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
44D: Pigeonroost-----	85	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
44E: Pigeonroost-----	85	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
45D: Pigeonroost-----	85	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.75 0.50 0.50	Moderately suited Slope	0.50
45E: Pigeonroost-----	85	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50	Poorly suited Slope	1.00
46E: Pigeonroost-----	60	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	30	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
47D: Pineola-----	90	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
48E: Pineola-----	90	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Moderately suited Sandiness Rock fragments Slope	0.50 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.75 0.50	Poorly suited Slope Sandiness	1.00 0.50
51B: Scales-----	95	Moderately suited Wetness Stickiness; high plasticity index	0.50 0.50	Poorly suited Wetness Rock fragments Stickiness; high plasticity index	0.75 0.50 0.50	Poorly suited Low strength Wetness Rock fragments	1.00 1.00 0.50
52C: Sylco-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Low strength	0.50
Sylvatus-----	35	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Well suited	
52D: Sylco-----	50	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Low strength Slope	0.50 0.50
Sylvatus-----	35	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Slope	0.50
52E: Sylco-----	50	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Low strength	1.00 0.50
Sylvatus-----	35	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope	1.00
53B: Tate-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53C: Tate-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
53D: Tate-----	90	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
53E: Tate-----	90	Moderately suited Stickiness; high plasticity index	0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Moderately suited Low strength Slope	0.50 0.50
54C: Tate-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
54D: Tate-----	90	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
54E: Tate-----	90	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Unsuited Slope Stickiness; high plasticity index	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50
55D: Tate-----	90	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Poorly suited Slope Rock fragments Stickiness; high plasticity index	0.75 0.75 0.50	Poorly suited Rock fragments Low strength Slope	1.00 0.50 0.50
56C: Thunder-----	80	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Moderately suited Low strength	0.50
56D: Thunder-----	80	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Low strength Slope	0.50 0.50
56E: Thunder-----	80	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Low strength	1.00 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
57C: Thunder-----	80	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Moderately suited Rock fragments Low strength	0.50 0.50
57D: Thunder-----	80	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Rock fragments Low strength Slope	0.50 0.50 0.50
57E: Thunder-----	80	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Rock fragments Slope	0.50 0.50
59E: Unicoi-----	85	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Rock fragments	1.00 0.50
W: Water-----	100	Not rated		Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
1D: Balsam-----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
1E: Balsam-----	85	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
2D: Balsam-----	70	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Nopan-----	20	Poorly suited Slope Rock fragments	0.50 0.50	Unsuited Wetness Slope	1.00 0.50
2E: Balsam-----	70	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Nopan-----	20	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Wetness Slope	1.00 1.00
3D: Bloodyhorse-----	80	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope	0.50
4F: Bloodyhorse-----	80	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Rock fragments	1.00 0.50
5B: Braddock-----	90	Well suited		Well suited	
5C: Braddock-----	90	Well suited		Well suited	
5D: Braddock-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
6E: Braddock-----	90	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
7D: Brevard-----	50	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope	0.50
Greenlee-----	35	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
8C: Burton-----	90	Well suited		Poorly suited Restrictive layer	0.50
9D: Burton-----	90	Poorly suited Slope	0.50	Poorly suited Slope Restrictive layer	0.50 0.50
9E: Burton-----	90	Unsuited Slope	1.00	Unsuited Slope Restrictive layer	1.00 0.50
10D: Peaks-----	20	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Slope Restrictive layer	0.50 0.50
Chestnut-----	65	Poorly suited Slope	0.50	Poorly suited Slope	0.50
10E: Chestnut-----	65	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Peaks-----	20	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Restrictive layer	0.50 0.50
11F: Chestnut-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
Peaks-----	25	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
Tuckasegee-----	20	Unsuited Slope	1.00	Unsuited Slope	1.00
12A: Codorus-----	90	Well suited		Unsuited Wetness	1.00

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
13A: Comus-----	90	Well suited		Well suited	
14C: Cowee-----	90	Well suited		Well suited	
14D: Cowee-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
14E: Cowee-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
15D: Cowee-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
15E: Cowee-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
16D: Cowee-----	60	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Rock outcrop-----	35	Not rated		Not rated	
16E: Cowee-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Rock outcrop-----	35	Not rated		Not rated	
17A: Craigsville-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
18C: Cullasaja-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
18D: Cullasaja-----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
19A: Delanco-----	90	Well suited		Well suited	
19B: Delanco-----	90	Well suited		Well suited	
20C: Delanco-----	90	Well suited		Well suited	
21B: Edneytown-----	90	Well suited		Well suited	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
21C: Edneytown-----	90	Well suited		Well suited	
21D: Edneytown-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
21E: Edneytown-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
21F: Edneytown-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
22C: Edneytown-----	60	Well suited		Well suited	
Urban land-----	35	Not rated		Not rated	
23C: Edneyville-----	90	Well suited		Well suited	
23D: Edneyville-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
23E: Edneyville-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
24D: Edneyville-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
24E: Edneyville-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
24F: Edneyville-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
25B: Elsinboro-----	90	Well suited		Well suited	
26B: Elsinboro-----	60	Well suited		Well suited	
Urban land-----	35	Not rated		Not rated	
27D: Evard-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Cowee-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
28B: Glenelg-----	90	Well suited		Well suited	
28C: Glenelg-----	90	Well suited		Well suited	
28D: Glenelg-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
28E: Glenelg-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
28F: Glenelg-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
29C: Glenelg-----	90	Well suited		Well suited	
29D: Glenelg-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
29E: Glenelg-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
30C: Glenelg-----	60	Well suited		Well suited	
Urban land-----	35	Not rated		Not rated	
31D: Greenlee-----	90	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
31E: Greenlee-----	90	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
32A: Hatboro-----	90	Unsuited Wetness	0.75	Unsuited Wetness	1.00
33B: Hayesville-----	90	Well suited		Well suited	
33C: Hayesville-----	90	Well suited		Well suited	
33D: Hayesville-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
34B: Keener-----	90	Well suited		Well suited	
34C: Keener-----	90	Well suited		Well suited	
34D: Keener-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
35C: Keener-----	90	Well suited		Well suited	
35D: Keener-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
36A: Kinkora-----	90	Unsuited Wetness	0.75	Unsuited Wetness	1.00
37C: Konnarock-----	90	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer	0.50
37D: Konnarock-----	90	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Restrictive layer	0.50 0.50
37E: Konnarock-----	90	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
38C: McCamy-----	85	Well suited		Poorly suited Restrictive layer	0.50
38D: McCamy-----	85	Poorly suited Slope	0.50	Poorly suited Slope Restrictive layer	0.50 0.50
39D: McCamy-----	85	Poorly suited Slope	0.50	Poorly suited Slope Restrictive layer	0.50 0.50
39E: McCamy-----	85	Unsuited Slope	1.00	Unsuited Slope Restrictive layer	1.00 0.50
40D: Mt Rogers-----	45	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
40D: Bloodyhorse-----	25	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	
40F: Mt Rogers-----	45	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Bloodyhorse-----	25	Unsuited Rock fragments Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
41C: Mt Rogers-----	45	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Buzzrock-----	40	Poorly suited Rock fragments	0.50	Well suited	
41D: Mt Rogers-----	45	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Buzzrock-----	40	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
42C: Peaks-----	90	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer	0.50
42D: Peaks-----	90	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Restrictive layer	0.50 0.50
42E: Peaks-----	90	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
43C: Peaks-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments Restrictive layer	0.50 0.50
43D: Peaks-----	90	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments Restrictive layer	0.50 0.50 0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
43E: Peaks-----	90	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments Restrictive layer	1.00 0.50
43F: Peaks-----	90	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments Restrictive layer	1.00 0.50
44C: Pigeonroost-----	85	Well suited		Well suited	
44D: Pigeonroost-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
44E: Pigeonroost-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
45D: Pigeonroost-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
45E: Pigeonroost-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
46E: Pigeonroost-----	60	Unsuited Slope	1.00	Unsuited Slope	1.00
Rock outcrop-----	30	Not rated		Not rated	
47D: Pineola-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
48E: Pineola-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
49: Pits, quarries-----	100	Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated	
Peaks-----	40	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
51B: Scales-----	95	Poorly suited Rock fragments Wetness	0.50 0.50	Unsuited Wetness	1.00

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52C: Sylco-----	50	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer	0.50
Sylvatus-----	35	Poorly suited Rock fragments	0.50	Unsuited Restrictive layer	1.00
52D: Sylco-----	50	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Restrictive layer	0.50 0.50
Sylvatus-----	35	Poorly suited Slope Rock fragments	0.50 0.50	Unsuited Restrictive layer Slope	1.00 0.50
52E: Sylco-----	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 0.50
Sylvatus-----	35	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer	1.00 1.00
53B: Tate-----	90	Well suited		Well suited	
53C: Tate-----	90	Well suited		Well suited	
53D: Tate-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
53E: Tate-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
54C: Tate-----	90	Well suited		Well suited	
54D: Tate-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
54E: Tate-----	90	Unsuited Slope	1.00	Unsuited Slope	1.00
55D: Tate-----	90	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Rock fragments Slope	0.50 0.50
56C: Thunder-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
56D: Thunder-----	80	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
56E: Thunder-----	80	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
57C: Thunder-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
57D: Thunder-----	80	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
57E: Thunder-----	80	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
58D: Udorthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
59D: Unicoi-----	85	Poorly suited Rock fragments Slope	0.50 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50
59E: Unicoi-----	85	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 0.50
W: Water-----	100	Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Low Texture/rock fragments	0.10	Low	
1D: Balsam-----	85	Low Texture/rock fragments	0.10	Low	
1E: Balsam-----	85	Low Texture/rock fragments	0.10	Low	
2D: Balsam-----	70	Low Texture/rock fragments	0.10	Low	
Nopan-----	20	Low Texture/rock fragments	0.10	High Wetness	1.00
2E: Balsam-----	70	Low Texture/rock fragments	0.10	Low	
Nopan-----	20	Low Texture/slope/ rock fragments	0.10	High Wetness	1.00
3D: Bloodyhorse-----	80	Low Texture/rock fragments	0.10	Low	
4F: Bloodyhorse-----	80	Low Texture/rock fragments	0.10	Low	
5B: Braddock-----	90	Moderate Texture/rock fragments	0.50	Low	
5C: Braddock-----	90	Moderate Texture/rock fragments	0.50	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
5D: Braddock-----	90	Moderate Texture/rock fragments	0.50	Low	
6E: Braddock-----	90	Moderate Texture/slope/ rock fragments	0.50	Low	
7D: Brevard-----	50	Low Texture/rock fragments	0.10	Low	
Greenlee-----	35	Low Texture/rock fragments	0.10	Low	
8C: Burton-----	90	Low Texture/rock fragments	0.10	Low	
9D: Burton-----	90	Low Texture/rock fragments	0.10	Low	
9E: Burton-----	90	Low Texture/rock fragments	0.10	Low	
10D: Peaks-----	20	Moderate Texture/surface depth/rock fragments	0.50	Low	
Chestnut-----	65	Low Texture/surface depth/rock fragments	0.10	Low	
10E: Chestnut-----	65	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Peaks-----	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
11F: Chestnut-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11F: Peaks-----	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Tuckasegee-----	20	Low Texture/rock fragments	0.10	Moderate Available water	0.50
12A: Codorus-----	90	Low Texture/rock fragments	0.10	Moderate Wetness	0.50
13A: Comus-----	90	Low Texture/rock fragments	0.10	Low	
14C: Cowee-----	90	Low Texture/rock fragments	0.10	Low	
14D: Cowee-----	90	Low Texture/rock fragments	0.10	Low	
14E: Cowee-----	90	Low Texture/slope/ rock fragments	0.10	Low	
15D: Cowee-----	90	Low Texture/rock fragments	0.10	Low	
15E: Cowee-----	90	Low Texture/slope/ rock fragments	0.10	Low	
16D: Cowee-----	60	Low Texture/rock fragments	0.10	Low	
Rock outcrop-----	35	Not rated		Not rated	
16E: Cowee-----	60	Low Texture/slope/ rock fragments	0.10	Low	
Rock outcrop-----	35	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
17A: Craigsville-----	85	Low Texture/rock fragments	0.10	Low	
18C: Cullasaja-----	85	Low Texture/rock fragments	0.10	Low	
18D: Cullasaja-----	85	Low Texture/rock fragments	0.10	Low	
19A: Delanco-----	90	Low Texture/rock fragments	0.10	Low	
19B: Delanco-----	90	Low Texture/rock fragments	0.10	Low	
20C: Delanco-----	90	Low Texture/rock fragments	0.10	Low	
21B: Edneytown-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
21C: Edneytown-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
21D: Edneytown-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
21E: Edneytown-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
21F: Edneytown-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
22C: Edneytown-----	60	Low Texture/surface depth/rock fragments	0.10	Low	
Urban land-----	35	Not rated		Not rated	
23C: Edneyville-----	90	Low Texture/rock fragments	0.10	Low	
23D: Edneyville-----	90	Low Texture/rock fragments	0.10	Low	
23E: Edneyville-----	90	Low Texture/slope/ rock fragments	0.10	Low	
24D: Edneyville-----	90	Low Texture/rock fragments	0.10	Low	
24E: Edneyville-----	90	Low Texture/slope/ rock fragments	0.10	Low	
24F: Edneyville-----	90	Low Texture/slope/ rock fragments	0.10	Low	
25B: Elsinboro-----	90	Low Texture/rock fragments	0.10	Low	
26B: Elsinboro-----	60	Low Texture/rock fragments	0.10	Low	
Urban land-----	35	Not rated		Not rated	
27D: Evard-----	50	Low Texture/rock fragments	0.10	Low	
Cowee-----	35	Low Texture/rock fragments	0.10	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
28B: Glenelg-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
28C: Glenelg-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
28D: Glenelg-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
28E: Glenelg-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
28F: Glenelg-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
29C: Glenelg-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
29D: Glenelg-----	90	Low Texture/surface depth/rock fragments	0.10	Low	
29E: Glenelg-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
30C: Glenelg-----	60	Low Texture/surface depth/rock fragments	0.10	Low	
Urban land-----	35	Not rated		Not rated	
31D: Greenlee-----	90	Low Texture/rock fragments	0.10	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
31E: Greenlee-----	90	Moderate Texture/slope/ rock fragments	0.50	Low	
32A: Hatboro-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
33B: Hayesville-----	90	Moderate Texture/rock fragments	0.50	Low	
33C: Hayesville-----	90	Moderate Texture/rock fragments	0.50	Low	
33D: Hayesville-----	90	Moderate Texture/rock fragments	0.50	Low	
34B: Keener-----	90	Low Texture/rock fragments	0.10	Low	
34C: Keener-----	90	Low Texture/rock fragments	0.10	Low	
34D: Keener-----	90	Low Texture/rock fragments	0.10	Low	
35C: Keener-----	90	Low Texture/rock fragments	0.10	Low	
35D: Keener-----	90	Low Texture/rock fragments	0.10	Low	
36A: Kinkora-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
37C: Konarock-----	90	Moderate Texture/surface depth/rock fragments	0.50	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
37D: Konnarock-----	90	Moderate Texture/surface depth/rock fragments	0.50	Low	
37E: Konnarock-----	90	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
38C: McCamy-----	85	Low Texture/rock fragments	0.10	Moderate Soil reaction	0.50
38D: McCamy-----	85	Low Texture/rock fragments	0.10	Moderate Soil reaction	0.50
39D: McCamy-----	85	Low Texture/rock fragments	0.10	Moderate Soil reaction	0.50
39E: McCamy-----	85	Low Texture/slope/ rock fragments	0.10	Moderate Soil reaction	0.50
40D: Mt Rogers-----	45	Low Texture/rock fragments	0.10	Low	
Bloodyhorse-----	25	Low Texture/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
40F: Mt Rogers-----	45	Low Texture/rock fragments	0.10	Low	
Bloodyhorse-----	25	Low Texture/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
41C: Mt Rogers-----	45	Low Texture/rock fragments	0.10	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
41C: Buzzrock-----	40	Low Texture/rock fragments	0.10	Low	
41D: Mt Rogers-----	45	Low Texture/rock fragments	0.10	Low	
Buzzrock-----	40	Low Texture/rock fragments	0.10	Low	
42C: Peaks-----	90	Moderate Texture/surface depth/rock fragments	0.50	Low	
42D: Peaks-----	90	Moderate Texture/surface depth/rock fragments	0.50	Low	
42E: Peaks-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
43C: Peaks-----	90	Moderate Texture/surface depth/rock fragments	0.50	Low	
43D: Peaks-----	90	Moderate Texture/surface depth/rock fragments	0.50	Low	
43E: Peaks-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
43F: Peaks-----	90	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
44C: Pigeonroost-----	85	Low Texture/rock fragments	0.10	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
44D: Pigeonroost-----	85	Low Texture/rock fragments	0.10	Low	
44E: Pigeonroost-----	85	Low Texture/slope/ rock fragments	0.10	Low	
45D: Pigeonroost-----	85	Low Texture/rock fragments	0.10	Low	
45E: Pigeonroost-----	85	Low Texture/slope/ rock fragments	0.10	Low	
46E: Pigeonroost-----	60	Low Texture/slope/ rock fragments	0.10	Low	
Rock outcrop-----	30	Not rated		Not rated	
47D: Pineola-----	90	Low Texture/rock fragments	0.10	Low	
48E: Pineola-----	90	Low Texture/rock fragments	0.10	Low	
49: Pits, quarries-----	100	Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated	
Peaks-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
51B: Scales-----	95	Low		High Wetness	1.00
52C: Sylco-----	50	Moderate Texture/surface depth/rock fragments	0.50	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52C: Sylvatus-----	35	Moderate Texture/surface depth/rock fragments	0.50	Low	
52D: Sylco-----	50	Moderate Texture/surface depth/rock fragments	0.50	Low	
Sylvatus-----	35	Moderate Texture/surface depth/rock fragments	0.50	Low	
52E: Sylco-----	50	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
Sylvatus-----	35	High Texture/slope/ surface depth/ rock fragments	1.00	Low	
53B: Tate-----	90	Low Texture/rock fragments	0.10	Low	
53C: Tate-----	90	Low Texture/rock fragments	0.10	Low	
53D: Tate-----	90	Low Texture/rock fragments	0.10	Low	
53E: Tate-----	90	Low Texture/slope/ rock fragments	0.10	Low	
54C: Tate-----	90	Low Texture/rock fragments	0.10	Low	
54D: Tate-----	90	Low Texture/rock fragments	0.10	Low	

Soil Survey of Grayson County, Virginia

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
54E: Tate-----	90	Low Texture/slope/ rock fragments	0.10	Low	
55D: Tate-----	90	Low Texture/rock fragments	0.10	Low	
56C: Thunder-----	80	Low Texture/rock fragments	0.10	Low	
56D: Thunder-----	80	Low Texture/rock fragments	0.10	Low	
56E: Thunder-----	80	Low Texture/slope/ rock fragments	0.10	Low	
57C: Thunder-----	80	Low Texture/rock fragments	0.10	Low	
57D: Thunder-----	80	Low Texture/rock fragments	0.10	Low	
57E: Thunder-----	80	Low Texture/slope/ rock fragments	0.10	Low	
58D: Udorthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
59D: Unitcoi-----	85	Moderate Texture/rock fragments	0.50	Moderate Soil reaction	0.50
59E: Unicoi-----	85	High Texture/slope/ rock fragments	1.00	Moderate Soil reaction	0.50
W: Water-----	100	Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Somewhat limited Large stones content Slope	0.47  0.04	Somewhat limited Large stones content Slope	0.47  0.04	Very limited Slope Gravel content Large stones content	1.00 0.70 0.47
1D: Balsam-----	85	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Gravel content Large stones content	1.00 0.70 0.47
1E: Balsam-----	85	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Gravel content Large stones content	1.00 0.70 0.47
2D: Balsam-----	70	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Gravel content Large stones content	1.00 0.70 0.47
Nopan-----	20	Very limited Depth to saturated zone Slope Slow water movement	1.00  1.00 1.00	Very limited Slope Depth to saturated zone Slow water movement	1.00  1.00 1.00	Very limited Depth to saturated zone Slope Slow water movement	1.00  1.00 1.00
2E: Balsam-----	70	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Gravel content Large stones content	1.00 0.70 0.47
Nopan-----	20	Very limited Depth to saturated zone Slope Slow water movement	1.00  1.00 1.00	Very limited Slope Depth to saturated zone Slow water movement	1.00  1.00 1.00	Very limited Depth to saturated zone Slope Slow water movement	1.00  1.00 1.00
3D: Bloodyhorse-----	80	Very limited Slope Gravel content Large stones content	1.00 0.97 0.47	Very limited Slope Gravel content Large stones content	1.00 0.97 0.47	Very limited Gravel content Slope Large stones content	1.00 1.00 0.47

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
4F: Bloodyhorse-----	80	Very limited Slope Large stones content Gravel content	1.00 1.00 0.97	Very limited Large stones content Slope Gravel content	1.00 1.00 0.97	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00 1.00
5B: Braddock-----	90	Not limited		Not limited		Somewhat limited Slope	0.88
5C: Braddock-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
5D: Braddock-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
6E: Braddock-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
7D: Brevard-----	50	Very limited Slope Large stones content Gravel content	1.00 0.47 0.11	Very limited Slope Large stones content Gravel content	1.00 0.47 0.11	Very limited Slope Gravel content Large stones content	1.00 1.00 0.47
Greenlee-----	35	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Gravel content Large stones content	1.00 0.73 0.47
8C: Burton-----	90	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope Depth to bedrock Gravel content	1.00 0.80 0.01
9D: Burton-----	90	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Depth to bedrock Large stones content	1.00 0.80 0.47
9E: Burton-----	90	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Depth to bedrock Large stones content	1.00 0.80 0.47

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
10D: Peaks-----	20	Very limited Gravel content Slope	1.00 1.00	Very limited Gravel content Slope	1.00 1.00	Very limited Gravel content Slope Depth to bedrock	1.00 1.00 0.29
Chestnut-----	65	Very limited Slope Gravel content	1.00 0.07	Very limited Slope Gravel content	1.00 0.07	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.54
10E: Chestnut-----	65	Very limited Slope Gravel content	1.00 0.07	Very limited Slope Gravel content	1.00 0.07	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.54
Peaks-----	20	Very limited Slope Gravel content	1.00 1.00	Very limited Slope Gravel content	1.00 1.00	Very limited Gravel content Slope Depth to bedrock	1.00 1.00 0.29
11F: Chestnut-----	40	Very limited Slope Gravel content	1.00 0.07	Very limited Slope Gravel content	1.00 0.07	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.54
Peaks-----	25	Very limited Slope Gravel content	1.00 1.00	Very limited Slope Gravel content	1.00 1.00	Very limited Gravel content Slope Depth to bedrock	1.00 1.00 0.29
Tuckasegee-----	20	Very limited Slope Gravel content	1.00 0.06	Very limited Slope Gravel content	1.00 0.06	Very limited Slope Gravel content	1.00 1.00
12A: Codorus-----	90	Very limited Flooding Depth to saturated zone	1.00 0.99	Somewhat limited Depth to saturated zone Flooding	0.78 0.40	Very limited Flooding Depth to saturated zone	1.00 0.99
13A: Comus-----	90	Very limited Flooding Too sandy	1.00 0.01	Somewhat limited Flooding Too sandy	0.40 0.01	Very limited Flooding Too sandy	1.00 0.01
14C: Cowee-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope Gravel content Depth to bedrock	1.00 0.56 0.01
14D: Cowee-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Depth to bedrock	1.00 0.56 0.01

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
14E: Cowee-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Depth to bedrock	1.00 0.56 0.01
15D: Cowee-----	90	Very limited Slope Gravel content	1.00 0.61	Very limited Slope Gravel content	1.00 0.61	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.01
15E: Cowee-----	90	Very limited Slope Gravel content	1.00 0.61	Very limited Slope Gravel content	1.00 0.61	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.01
16D: Cowee-----	60	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Depth to bedrock	1.00 0.56 0.01
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Depth to bedrock	1.00 0.56 0.01
Rock outcrop-----	35	Not rated		Not rated		Not rated	
17A: Craigsville-----	85	Very limited Flooding	1.00	Somewhat limited Flooding	0.40	Very limited Flooding Gravel content	1.00 0.97
18C: Cullasaja-----	85	Somewhat limited Large stones content Slope	0.47 0.37	Somewhat limited Large stones content Slope	0.47 0.37	Very limited Slope Large stones content Gravel content	1.00 0.47 0.47 0.01
18D: Cullasaja-----	85	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content Gravel content	1.00 0.47 0.01
19A: Delanco-----	90	Very limited Flooding Depth to saturated zone Slow water movement	1.00 0.81 0.26	Somewhat limited Depth to saturated zone Slow water movement	0.48 0.26	Somewhat limited Depth to saturated zone Slow water movement Gravel content	0.81 0.26 0.01

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
19B: Delanco-----	90	Very limited Flooding Depth to saturated zone Slow water movement	1.00 0.81 0.26	Somewhat limited Depth to saturated zone Slow water movement	0.48 0.26	Somewhat limited Slope Depth to saturated zone Slow water movement	0.88 0.81 0.26
20C: Delanco-----	90	Somewhat limited Depth to saturated zone Slope Slow water movement	0.81 0.37 0.26	Somewhat limited Depth to saturated zone Slope Slow water movement	0.48 0.37 0.26	Very limited Slope Depth to saturated zone Slow water movement	1.00 0.81 0.26
21B: Edneytown-----	90	Not limited		Not limited		Somewhat limited Slope	0.88
21C: Edneytown-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
21D: Edneytown-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
21E: Edneytown-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
21F: Edneytown-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
22C: Edneytown-----	60	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Very limited Slope	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
23D: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
23E: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
24D: Edneyville-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24E: Edneyville-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53
24F: Edneyville-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53
25B: Elsinboro-----	90	Very limited Flooding Too sandy	1.00 0.01	Somewhat limited Too sandy	0.01	Somewhat limited Slope Too sandy	0.88 0.01
26B: Elsinboro-----	60	Very limited Flooding Too sandy	1.00 0.01	Somewhat limited Too sandy	0.01	Somewhat limited Slope Too sandy	0.50 0.01
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Very limited Slope Gravel content	1.00 0.05	Very limited Slope Gravel content	1.00 0.05	Very limited Slope Gravel content	1.00 1.00
Cowee-----	35	Very limited Slope Gravel content	1.00 0.61	Very limited Slope Gravel content	1.00 0.61	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.01
28B: Glenelg-----	90	Not limited		Not limited		Somewhat limited Slope	0.88
28C: Glenelg-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
28D: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
28E: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
28F: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
29C: Glenelg-----	90	Somewhat limited Gravel content Large stones content Slope	0.79 0.53 0.37	Somewhat limited Gravel content Large stones content Slope	0.79 0.53 0.37	Very limited Gravel content Slope Large stones content	1.00 1.00 0.53

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
29D: Glenelg-----	90	Very limited Slope Gravel content Large stones content	1.00 0.79 0.53	Very limited Slope Gravel content Large stones content	1.00 0.79 0.53	Very limited Gravel content Slope Large stones content	1.00 1.00 0.53
29E: Glenelg-----	90	Very limited Slope Gravel content Large stones content	1.00 0.79 0.53	Very limited Slope Gravel content Large stones content	1.00 0.79 0.53	Very limited Gravel content Slope Large stones content	1.00 1.00 0.53
30C: Glenelg-----	60	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Very limited Slope	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Gravel content Large stones content	1.00 0.73 0.53
31E: Greenlee-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Gravel content Large stones content	1.00 0.73 0.53
32A: Hatboro-----	90	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00
33B: Hayesville-----	90	Not limited		Not limited		Somewhat limited Slope	0.88
33C: Hayesville-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
33D: Hayesville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
34B: Keener-----	90	Not limited		Not limited		Somewhat limited Slope	0.88
34C: Keener-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34D: Keener-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
35C: Keener-----	90	Somewhat limited Large stones content Slope	0.47 0.37	Somewhat limited Large stones content Slope	0.47 0.37	Very limited Slope Large stones content	1.00 0.47
35D: Keener-----	90	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47
36A: Kinkora-----	90	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 0.96	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.96
37C: Konnarock-----	90	Somewhat limited Slope Gravel content	0.37 0.01	Somewhat limited Slope Gravel content	0.37 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.95
37D: Konnarock-----	90	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.95
37E: Konnarock-----	90	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.95
38C: McCamy-----	85	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope Depth to bedrock	1.00 0.80
38D: McCamy-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.80
39D: McCamy-----	85	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Depth to bedrock Large stones content	1.00 0.80 0.47

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
39E: McCamy-----	85	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Depth to bedrock Large stones content	1.00 0.80 0.47
40D: Mt Rogers-----	45	Very limited Large stones content Slope Gravel content	1.00 1.00 0.89	Very limited Large stones content Slope Gravel content	1.00 1.00 0.89	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
Bloodyhorse-----	25	Very limited Large stones content Slope Gravel content	1.00 1.00 0.97	Very limited Large stones content Slope Gravel content	1.00 1.00 0.97	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Very limited Slope Large stones content Gravel content	1.00 1.00 0.89	Very limited Large stones content Slope Gravel content	1.00 1.00 0.89	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
Bloodyhorse-----	25	Very limited Slope Large stones content Gravel content	1.00 1.00 0.97	Very limited Large stones content Slope Gravel content	1.00 1.00 0.97	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Somewhat limited Gravel content Large stones content Slope	0.89 0.47 0.37	Somewhat limited Gravel content Large stones content Slope	0.89 0.47 0.37	Very limited Gravel content Slope Large stones content	1.00 1.00 0.47
Buzzrock-----	40	Somewhat limited Large stones content Slope Gravel content	0.47 0.37 0.03	Somewhat limited Large stones content Slope Gravel content	0.47 0.37 0.03	Very limited Slope Gravel content Large stones content	1.00 1.00 0.47
41D: Mt Rogers-----	45	Very limited Slope Gravel content Large stones content	1.00 0.89 0.47	Very limited Slope Gravel content Large stones content	1.00 0.89 0.47	Very limited Gravel content Slope Large stones content	1.00 1.00 0.47

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41D: Buzzrock-----	40	Very limited Slope Large stones content Gravel content	1.00 0.47 0.03	Very limited Slope Large stones content Gravel content	1.00 0.47 0.03	Very limited Slope Gravel content Large stones content	1.00 1.00 0.47
42C: Peaks-----	90	Very limited Gravel content Slope	1.00 0.37	Very limited Gravel content Slope	1.00 0.37	Very limited Gravel content Slope Depth to bedrock	1.00 1.00 0.29
42D: Peaks-----	90	Very limited Slope Gravel content	1.00 1.00	Very limited Slope Gravel content	1.00 1.00	Very limited Gravel content Slope Depth to bedrock	1.00 1.00 0.29
42E: Peaks-----	90	Very limited Slope Gravel content	1.00 1.00	Very limited Slope Gravel content	1.00 1.00	Very limited Gravel content Slope Depth to bedrock	1.00 1.00 0.29
43C: Peaks-----	90	Very limited Large stones content Gravel content Slope	1.00 1.00 0.37	Very limited Large stones content Gravel content Slope	1.00 1.00 0.37	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
43D: Peaks-----	90	Very limited Slope Large stones content Gravel content	1.00 1.00 1.00	Very limited Large stones content Slope Gravel content	1.00 1.00 1.00	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
43E: Peaks-----	90	Very limited Slope Large stones content Gravel content	1.00 1.00 1.00	Very limited Large stones content Slope Gravel content	1.00 1.00 1.00	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
43F: Peaks-----	90	Very limited Slope Large stones content Gravel content	1.00 1.00 1.00	Very limited Large stones content Slope Gravel content	1.00 1.00 1.00	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00
44C: Pigeonroost-----	85	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope Depth to bedrock	1.00 0.03

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44D: Pigeonroost-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.03
44E: Pigeonroost-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.03
45D: Pigeonroost-----	85	Very limited Slope Large stones content Gravel content	1.00 0.53 0.10	Very limited Slope Large stones content Gravel content	1.00 0.53 0.10	Very limited Slope Gravel content Large stones content	1.00 1.00 0.53
45E: Pigeonroost-----	85	Very limited Slope Large stones content Gravel content	1.00 0.53 0.10	Very limited Slope Large stones content Gravel content	1.00 0.53 0.10	Very limited Slope Gravel content Large stones content	1.00 1.00 0.53
46E: Pigeonroost-----	60	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.03
Rock outcrop-----	30	Not rated		Not rated		Not rated	
47D: Pineola-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock Gravel content	1.00 0.54 0.44
48E: Pineola-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Depth to bedrock Large stones content	1.00 0.54 0.53
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Very limited Slope Gravel content	1.00 1.00	Very limited Slope Gravel content	1.00 1.00	Very limited Gravel content Slope Depth to bedrock	1.00 1.00 0.29
51B: Scales-----	95	Not rated		Not rated		Not rated	

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Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52C: Sylco-----	50	Somewhat limited Slope Gravel content	0.37 0.01	Somewhat limited Slope Gravel content	0.37 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.71
Sylvatus-----	35	Very limited Depth to bedrock Slope Gravel content	1.00 0.37 0.01	Very limited Depth to bedrock Slope Gravel content	1.00 0.37 0.01	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 1.00
52D: Sylco-----	50	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.71
Sylvatus-----	35	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.01	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.01	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 1.00
52E: Sylco-----	50	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.71
Sylvatus-----	35	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.01	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.01	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 1.00
52E: Sylco-----	50	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content	1.00 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 0.71
Sylvatus-----	35	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.01	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.01	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 1.00
53B: Tate-----	90	Not limited		Not limited		Somewhat limited Slope	0.88
53C: Tate-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
53D: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
53E: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
54C: Tate-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
54D: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
54E: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 10.--Recreational Development, Part I--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
55D: Tate-----	90	Very limited Large stones content Slope	1.00 1.00	Very limited Large stones content Slope	1.00 1.00	Very limited Large stones content Slope	1.00 1.00
56C: Thunder-----	80	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope Gravel content	1.00 0.12
56D: Thunder-----	80	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.12
56E: Thunder-----	80	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.12
57C: Thunder-----	80	Somewhat limited Large stones content Slope	0.47 0.37	Somewhat limited Large stones content Slope	0.47 0.37	Very limited Slope Large stones content Gravel content	1.00 0.47 0.12
57D: Thunder-----	80	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content Gravel content	1.00 0.47 0.12
57E: Thunder-----	80	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content Gravel content	1.00 0.47 0.12
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59E: Unicoi-----	85	Very limited Slope Large stones content Gravel content	1.00 1.00 1.00	Very limited Large stones content Slope Gravel content	1.00 1.00 1.00 1.00	Very limited Large stones content Gravel content Slope	1.00 1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Somewhat limited Large stones content	0.47	Somewhat limited Large stones content	0.47	Very limited Large stones content Slope	1.00  0.04
1D: Balsam-----	85	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Large stones content	1.00 1.00
1E: Balsam-----	85	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 1.00
2D: Balsam-----	70	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Large stones content	1.00 1.00
Nopan-----	20	Very limited Depth to saturated zone Slope Large stones content	1.00 1.00 0.47	Very limited Depth to saturated zone Large stones content	1.00 0.47	Very limited Slope Depth to saturated zone Large stones content	1.00 1.00 0.26
2E: Balsam-----	70	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 1.00
Nopan-----	20	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00
3D: Bloodyhorse-----	80	Somewhat limited Slope Large stones content	0.68 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Gravel content Droughty	1.00 0.97 0.24
4F: Bloodyhorse-----	80	Very limited Large stones content Slope	1.00 1.00	Very limited Large stones content Slope	1.00 1.00	Very limited Slope Gravel content Droughty	1.00 0.97 0.24

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5B: Braddock-----	90	Not limited		Not limited		Not limited	
5C: Braddock-----	90	Not limited		Not limited		Somewhat limited Slope	0.37
5D: Braddock-----	90	Somewhat limited Slope	0.50	Not limited		Very limited Slope	1.00
6E: Braddock-----	90	Very limited Slope	1.00	Somewhat limited Slope	0.22	Very limited Slope Large stones content	1.00 0.88
7D: Brevard-----	50	Somewhat limited Large stones content Slope	0.47 0.08	Somewhat limited Large stones content	0.47	Very limited Slope Large stones content Gravel content	1.00 0.16 0.11
Greenlee-----	35	Somewhat limited Large stones content Slope	0.47 0.08	Somewhat limited Large stones content	0.47	Very limited Large stones content Slope Droughty	1.00 1.00 0.02
8C: Burton-----	90	Not limited		Not limited		Somewhat limited Depth to bedrock Slope	0.80 0.63
9D: Burton-----	90	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Depth to bedrock	1.00 0.80
9E: Burton-----	90	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Depth to bedrock	1.00 0.80
10D: Peaks-----	20	Somewhat limited Slope	0.08	Not limited		Very limited Gravel content Droughty Slope	1.00 1.00 1.00
Chestnut-----	65	Somewhat limited Slope	0.08	Not limited		Very limited Slope Depth to bedrock Gravel content	1.00 0.54 0.07

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
10E: Chestnut-----	65	Very limited Slope	1.00	Somewhat limited Slope	0.78	Very limited Slope Depth to bedrock Gravel content	1.00 0.54 0.07
Peaks-----	20	Very limited Slope	1.00	Somewhat limited Slope	0.78	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
11F: Chestnut-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock Gravel content	1.00 0.54 0.07
Peaks-----	25	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
Tuckasegee-----	20	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.06
12A: Codorus-----	90	Somewhat limited Depth to saturated zone Flooding	0.50 0.40	Somewhat limited Depth to saturated zone Flooding	0.50 0.40	Very limited Flooding Depth to saturated zone	1.00 0.78
13A: Comus-----	90	Somewhat limited Flooding Too sandy	0.40 0.01	Somewhat limited Flooding Too sandy	0.40 0.01	Very limited Flooding	1.00
14C: Cowee-----	90	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	0.37 0.01
14D: Cowee-----	90	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock	1.00 0.01
14E: Cowee-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.01
15D: Cowee-----	90	Somewhat limited Slope	0.68	Not limited		Very limited Slope Gravel content Droughty	1.00 0.61 0.16

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15E: Cowee-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Droughty	1.00 0.61 0.16
16D: Cowee-----	60	Somewhat limited Slope	0.68	Not limited		Very limited Slope Depth to bedrock	1.00 0.01
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.01
Rock outcrop-----	35	Not rated		Not rated		Not rated	
17A: Craigsville-----	85	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40	Very limited Flooding Large stones content Droughty	1.00 0.84 0.44
18C: Cullasaja-----	85	Somewhat limited Large stones content	0.47	Somewhat limited Large stones content	0.47	Very limited Large stones content Slope	0.99 0.37
18D: Cullasaja-----	85	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Large stones content	1.00 0.99
19A: Delanco-----	90	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.48
19B: Delanco-----	90	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.48
20C: Delanco-----	90	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone Slope	0.48 0.37
21B: Edneytown-----	90	Not limited		Not limited		Not limited	

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21C: Edneytown-----	90	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.37
21D: Edneytown-----	90	Very limited Water erosion Slope	1.00 0.50	Very limited Water erosion	1.00	Very limited Slope	1.00
21E: Edneytown-----	90	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 0.22	Very limited Slope	1.00
21F: Edneytown-----	90	Very limited Slope Water erosion	1.00 1.00	Very limited Water erosion Slope	1.00 1.00	Very limited Slope	1.00
22C: Edneytown-----	60	Not limited		Not limited		Somewhat limited Slope	0.01
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Not limited		Not limited		Somewhat limited Slope	0.37
23D: Edneyville-----	90	Very limited Slope	1.00	Not limited		Very limited Slope	1.00
23E: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
24D: Edneyville-----	90	Very limited Slope Large stones content	1.00 0.53	Somewhat limited Large stones content	0.53	Very limited Slope	1.00
24E: Edneyville-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope	1.00
24F: Edneyville-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope	1.00
25B: Elsinboro-----	90	Somewhat limited Too sandy	0.01	Somewhat limited Too sandy	0.01	Not limited	

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
26B: Elsinboro-----	60	Somewhat limited Too sandy	0.01	Somewhat limited Too sandy	0.01	Not limited	
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Somewhat limited Slope	0.50	Not limited		Very limited Slope Gravel content	1.00 0.05
Cowee-----	35	Somewhat limited Slope	0.50	Not limited		Very limited Slope Gravel content Droughty	1.00 0.61 0.16
28B: Glenelg-----	90	Not limited		Not limited		Not limited	
28C: Glenelg-----	90	Not limited		Not limited		Somewhat limited Slope	0.37
28D: Glenelg-----	90	Somewhat limited Slope	0.50	Not limited		Very limited Slope	1.00
28E: Glenelg-----	90	Very limited Slope	1.00	Somewhat limited Slope	0.22	Very limited Slope	1.00
28F: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
29C: Glenelg-----	90	Somewhat limited Large stones content	0.53	Somewhat limited Large stones content	0.53	Somewhat limited Gravel content Slope	0.79 0.37
29D: Glenelg-----	90	Very limited Slope Large stones content	1.00 0.53	Somewhat limited Large stones content	0.53	Very limited Slope Gravel content	1.00 0.79
29E: Glenelg-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Gravel content	1.00 0.79
30C: Glenelg-----	60	Not limited		Not limited		Somewhat limited Slope	0.01
Urban land-----	35	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31D: Greenlee-----	90	Very limited Slope Large stones content	1.00 0.53	Somewhat limited Large stones content	0.53	Very limited Slope Large stones content Droughty	1.00 1.00 0.02
31E: Greenlee-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content Droughty	1.00 1.00 0.02
32A: Hatboro-----	90	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
33B: Hayesville-----	90	Not limited		Not limited		Not limited	
33C: Hayesville-----	90	Not limited		Not limited		Somewhat limited Slope	0.37
33D: Hayesville-----	90	Somewhat limited Slope	0.50	Not limited		Very limited Slope	1.00
34B: Keener-----	90	Not limited		Not limited		Not limited	
34C: Keener-----	90	Not limited		Not limited		Somewhat limited Slope	0.37
34D: Keener-----	90	Somewhat limited Slope	0.50	Not limited		Very limited Slope	1.00
35C: Keener-----	90	Somewhat limited Large stones content	0.47	Somewhat limited Large stones content	0.47	Somewhat limited Slope	0.37
35D: Keener-----	90	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope	1.00
36A: Kinkora-----	90	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00

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Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
37C: Konnarock-----	90	Not limited		Not limited		Somewhat limited Depth to bedrock Droughty Slope	0.95 0.79 0.37
37D: Konnarock-----	90	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock Droughty	1.00 0.95 0.79
37E: Konnarock-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.95 0.79
38C: McCamy-----	85	Not limited		Not limited		Somewhat limited Depth to bedrock Droughty Slope	0.80 0.54 0.37
38D: McCamy-----	85	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.54
39D: McCamy-----	85	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.54
39E: McCamy-----	85	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.54
40D: Mt Rogers-----	45	Very limited Large stones content Slope	1.00 0.68	Very limited Large stones content	1.00	Very limited Slope Gravel content Large stones content	1.00 0.89 0.08
Bloodyhorse-----	25	Very limited Large stones content Slope	1.00 0.68	Very limited Large stones content	1.00	Very limited Slope Gravel content Droughty	1.00 0.97 0.24
Rock outcrop-----	15	Not rated		Not rated		Not rated	

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Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40F: Mt Rogers-----	45	Very limited Large stones content Slope	1.00  1.00	Very limited Large stones content Slope	1.00  1.00	Very limited Slope Gravel content Large stones content	1.00 0.89 0.08
Bloodyhorse-----	25	Very limited Large stones content Slope	1.00  1.00	Very limited Large stones content Slope	1.00  1.00	Very limited Slope Gravel content Droughty	1.00 0.97 0.24
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Somewhat limited Large stones content	0.47	Somewhat limited Large stones content	0.47	Somewhat limited Gravel content Slope Large stones content	0.89 0.37 0.08
Buzzrock-----	40	Somewhat limited Large stones content	0.47	Somewhat limited Large stones content	0.47	Somewhat limited Droughty Slope Gravel content	0.66 0.37 0.03
41D: Mt Rogers-----	45	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Gravel content Large stones content	1.00 0.89 0.08
Buzzrock-----	40	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Droughty Gravel content	1.00 0.66 0.03
42C: Peaks-----	90	Not limited		Not limited		Very limited Gravel content Droughty Slope	1.00 1.00 0.37
42D: Peaks-----	90	Very limited Slope	1.00	Not limited		Very limited Slope Gravel content Droughty	1.00 1.00 1.00
42E: Peaks-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00

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Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43C: Peaks-----	90	Very limited Large stones content	1.00	Very limited Large stones content	1.00	Very limited Gravel content Droughty Slope	1.00 1.00 0.37
43D: Peaks-----	90	Very limited Large stones content Slope	1.00 1.00	Very limited Large stones content	1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
43E: Peaks-----	90	Very limited Large stones content Slope	1.00 1.00	Very limited Large stones content Slope	1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
43F: Peaks-----	90	Very limited Large stones content Slope	1.00 1.00	Very limited Large stones content Slope	1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
44C: Pigeonroost-----	85	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	0.37 0.03
44D: Pigeonroost-----	85	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock	1.00 0.03
44E: Pigeonroost-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.03
45D: Pigeonroost-----	85	Somewhat limited Slope Large stones content	0.68 0.53	Somewhat limited Large stones content	0.53	Very limited Slope Gravel content Depth to bedrock	1.00 0.10 0.03
45E: Pigeonroost-----	85	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Gravel content Depth to bedrock	1.00 0.10 0.03
46E: Pigeonroost-----	60	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.03
Rock outcrop-----	30	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
47D: Pineola-----	90	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock Droughty	1.00 0.54 0.01
48E: Pineola-----	90	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Large stones content	1.00 0.53	Very limited Slope Depth to bedrock Droughty	1.00 0.54 0.01
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
51B: Scales-----	95	Not rated		Not rated		Not rated	
52C: Sylco-----	50	Not limited		Not limited		Somewhat limited Depth to bedrock Droughty Slope	0.71 0.58 0.37
Sylvatus-----	35	Not limited		Not limited		Very limited Depth to bedrock Droughty Slope	1.00 1.00 0.37
52D: Sylco-----	50	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock Droughty	1.00 0.71 0.58
Sylvatus-----	35	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock Droughty	1.00 1.00 1.00
52E: Sylco-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.71 0.58
Sylvatus-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock Droughty	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53B: Tate-----	90	Not limited		Not limited		Not limited	
53C: Tate-----	90	Not limited		Not limited		Somewhat limited Slope	0.37
53D: Tate-----	90	Somewhat limited Slope	0.50	Not limited		Very limited Slope	1.00
53E: Tate-----	90	Very limited Slope	1.00	Somewhat limited Slope	0.22	Very limited Slope	1.00
54C: Tate-----	90	Not limited		Not limited		Somewhat limited Slope	0.37
54D: Tate-----	90	Very limited Slope	1.00	Not limited		Very limited Slope	1.00
54E: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
55D: Tate-----	90	Very limited Large stones content Slope	1.00 0.68	Very limited Large stones content	1.00	Very limited Slope	1.00
56C: Thunder-----	80	Not limited		Not limited		Somewhat limited Large stones content Slope	0.68 0.37
56D: Thunder-----	80	Very limited Slope	1.00	Not limited		Very limited Slope Large stones content	1.00 0.68
56E: Thunder-----	80	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Large stones content	1.00 0.68
57C: Thunder-----	80	Somewhat limited Large stones content	0.47	Somewhat limited Large stones content	0.47	Somewhat limited Large stones content Slope	0.68 0.37

Soil Survey of Grayson County, Virginia

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
57D: Thunder-----	80	Very limited Slope Large stones content	1.00 0.47	Somewhat limited Large stones content	0.47	Very limited Slope Large stones content	1.00 0.68
57E: Thunder-----	80	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.47	Very limited Slope Large stones content	1.00 0.68
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Very limited Large stones content Slope	1.00 0.68	Very limited Large stones content	1.00	Very limited Droughty Depth to bedrock Gravel content	1.00 1.00 1.00
59E: Unicoi-----	85	Very limited Large stones content Slope	1.00 1.00	Very limited Large stones content Slope	1.00 1.00	Very limited Slope Droughty Depth to bedrock	1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Somewhat limited Large stones content Slope	0.84  0.04	Somewhat limited Large stones content Slope	0.84  0.04	Very limited Slope Large stones content	1.00  0.84
1D: Balsam-----	85	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84
1E: Balsam-----	85	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84
2D: Balsam-----	70	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84
Nopan-----	20	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00
2E: Balsam-----	70	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84	Very limited Slope Large stones content	1.00 0.84
Nopan-----	20	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00
3D: Bloodyhorse-----	80	Very limited Slope Depth to hard bedrock	1.00 0.03	Very limited Depth to hard bedrock Slope	1.00  1.00	Very limited Slope Depth to hard bedrock	1.00  0.03
4F: Bloodyhorse-----	80	Very limited Slope Depth to hard bedrock	1.00 0.03	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.03

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5B: Braddock-----	90	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
5C: Braddock-----	90	Somewhat limited Shrink-swell Slope	0.50 0.37	Somewhat limited Shrink-swell Slope	0.50 0.37	Very limited Slope Shrink-swell	1.00 0.50
5D: Braddock-----	90	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
6E: Braddock-----	90	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Shrink-swell	1.00 0.50
7D: Brevard-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Greenlee-----	35	Very limited Slope Large stones content	1.00 0.99	Very limited Slope Large stones content	1.00 0.99	Very limited Slope Large stones content	1.00 0.99
8C: Burton-----	90	Somewhat limited Slope Depth to hard bedrock	0.63 0.35	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 0.79 0.63	Very limited Slope Depth to hard bedrock	1.00 0.35
9D: Burton-----	90	Very limited Slope Depth to hard bedrock	1.00 0.35	Very limited Slope Depth to hard bedrock Depth to soft bedrock	1.00 1.00 0.79	Very limited Slope Depth to hard bedrock	1.00 0.35
9E: Burton-----	90	Very limited Slope Depth to hard bedrock	1.00 0.35	Very limited Slope Depth to hard bedrock Depth to soft bedrock	1.00 1.00 0.79	Very limited Slope Depth to hard bedrock	1.00 0.35
10D: Peaks-----	20	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
10D: Chestnut-----	65	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock Depth to soft bedrock	1.00 0.84 0.54	Very limited Slope	1.00
10E: Chestnut-----	65	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock Depth to soft bedrock	1.00 0.84 0.54	Very limited Slope	1.00
Peaks-----	20	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
11F: Chestnut-----	40	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock Depth to soft bedrock	1.00 0.84 0.54	Very limited Slope	1.00
Peaks-----	25	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
Tuckasegee-----	20	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
12A: Codorus-----	90	Very limited Flooding Depth to saturated zone	1.00 0.99	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.99
13A: Comus-----	90	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
14C: Cowee-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope Depth to soft bedrock	0.37 0.01	Very limited Slope	1.00
14D: Cowee-----	90	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
14E: Cowee-----	90	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
15D: Cowee-----	90	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
15E: Cowee-----	90	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
16D: Cowee-----	60	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
Rock outcrop-----	35	Not rated		Not rated		Not rated	
17A: Craigsville-----	85	Very limited Flooding Large stones content	1.00 0.41	Very limited Flooding Large stones content	1.00 0.41	Very limited Flooding Large stones content	1.00 0.41
18C: Cullasaja-----	85	Somewhat limited Large stones content Slope	0.88 0.37	Somewhat limited Large stones content Slope	0.88 0.37	Very limited Slope Large stones content	1.00 0.88
18D: Cullasaja-----	85	Very limited Slope Large stones content	1.00 0.88	Very limited Slope Large stones content	1.00 0.88	Very limited Slope Large stones content	1.00 0.88
19A: Delanco-----	90	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 0.81 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 0.81 0.50

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
19B: Delanco-----	90	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 0.81 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 0.81 0.50
20C: Delanco-----	90	Somewhat limited Depth to saturated zone Shrink-swell Slope	0.81 0.50 0.37	Very limited Depth to saturated zone Shrink-swell Slope	1.00 0.50 0.37	Very limited Slope Depth to saturated zone Shrink-swell	1.00 0.81 0.50
21B: Edneytown-----	90	Not limited		Not limited		Somewhat limited Slope	0.12
21C: Edneytown-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
21D: Edneytown-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
21E: Edneytown-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
21F: Edneytown-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
22C: Edneytown-----	60	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Very limited Slope	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
23D: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
23E: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
24D: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
24E: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24F: Edneyville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
25B: Elsinboro-----	90	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding Slope	1.00 0.12
26B: Elsinboro-----	60	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Cowee-----	35	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.01	Very limited Slope	1.00
28B: Glenelg-----	90	Not limited		Not limited		Somewhat limited Slope	0.12
28C: Glenelg-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
28D: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
28E: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
28F: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
29C: Glenelg-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
29D: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
29E: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
30C: Glenelg-----	60	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Very limited Slope	1.00
Urban land-----	35	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31D: Greenlee-----	90	Very limited Slope Large stones content	1.00 0.99	Very limited Slope Large stones content	1.00 0.99	Very limited Slope Large stones content	1.00 0.99
31E: Greenlee-----	90	Very limited Slope Large stones content	1.00 0.99	Very limited Slope Large stones content	1.00 0.99	Very limited Slope Large stones content	1.00 0.99
32A: Hatboro-----	90	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
33B: Hayesville-----	90	Not limited		Not limited		Somewhat limited Slope	0.12
33C: Hayesville-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
33D: Hayesville-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
34B: Keener-----	90	Not limited		Not limited		Somewhat limited Slope	0.12
34C: Keener-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
34D: Keener-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
35C: Keener-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
35D: Keener-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
36A: Kinkora-----	90	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
37C: Konnarock-----	90	Somewhat limited Depth to hard bedrock Slope	0.95  0.37	Very limited Depth to hard bedrock Slope	1.00  0.37	Very limited Slope Depth to hard bedrock	1.00  0.95
37D: Konnarock-----	90	Very limited Slope Depth to hard bedrock	1.00 0.95	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.95
37E: Konnarock-----	90	Very limited Slope Depth to hard bedrock	1.00 0.95	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.95
38C: McCamy-----	85	Somewhat limited Slope Depth to hard bedrock	0.37 0.35	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 0.79 0.37	Very limited Slope Depth to hard bedrock	1.00 0.35
38D: McCamy-----	85	Very limited Slope Depth to hard bedrock	1.00 0.35	Very limited Slope Depth to hard bedrock Depth to soft bedrock	1.00 1.00 0.79	Very limited Slope Depth to hard bedrock	1.00 0.35
39D: McCamy-----	85	Very limited Slope Depth to hard bedrock	1.00 0.35	Very limited Depth to hard bedrock Slope Depth to soft bedrock	1.00 1.00 0.79	Very limited Slope Depth to hard bedrock	1.00 0.35
39E: McCamy-----	85	Very limited Slope Depth to hard bedrock	1.00 0.35	Very limited Slope Depth to hard bedrock Depth to soft bedrock	1.00 1.00 0.79	Very limited Slope Depth to hard bedrock	1.00 0.35
40D: Mt Rogers-----	45	Very limited Slope Large stones content	1.00 0.01	Very limited Slope Large stones content	1.00 0.01	Very limited Slope Large stones content	1.00 0.01
Bloodyhorse-----	25	Very limited Slope Depth to hard bedrock	1.00 0.03	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.03

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40D: Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Very limited Slope Large stones content	1.00 0.01	Very limited Slope Large stones content	1.00 0.01	Very limited Slope Large stones content	1.00 0.01
Bloodyhorse-----	25	Very limited Slope Depth to hard bedrock	1.00 0.03	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.03
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Somewhat limited Slope Large stones content	0.37 0.01	Somewhat limited Slope Large stones content	0.37 0.01	Very limited Slope Large stones content	1.00 0.01
Buzzrock-----	40	Somewhat limited Slope Large stones content	0.37 0.09	Somewhat limited Depth to hard bedrock Slope Large stones content	0.96 0.37 0.09	Very limited Slope Large stones content	1.00 0.09
41D: Mt Rogers-----	45	Very limited Slope Large stones content	1.00 0.01	Very limited Slope Large stones content	1.00 0.01	Very limited Slope Large stones content	1.00 0.01
Buzzrock-----	40	Very limited Slope Large stones content	1.00 0.09	Very limited Slope Depth to hard bedrock Large stones content	1.00 0.96 0.09	Very limited Slope Large stones content	1.00 0.09
42C: Peaks-----	90	Somewhat limited Slope Depth to hard bedrock	0.37 0.29	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Slope Depth to hard bedrock	1.00 0.29
42D: Peaks-----	90	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
42E: Peaks-----	90	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43C: Peaks-----	90	Somewhat limited Slope Depth to hard bedrock	0.37 0.29	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Slope Depth to hard bedrock	1.00 0.29
43D: Peaks-----	90	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
43E: Peaks-----	90	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
43F: Peaks-----	90	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
44C: Pigeonroost-----	85	Somewhat limited Slope	0.37	Somewhat limited Slope Depth to soft bedrock	0.37 0.03	Very limited Slope	1.00
44D: Pigeonroost-----	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.03	Very limited Slope	1.00
44E: Pigeonroost-----	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.03	Very limited Slope	1.00
45D: Pigeonroost-----	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.03	Very limited Slope	1.00
45E: Pigeonroost-----	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.03	Very limited Slope	1.00
46E: Pigeonroost-----	60	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.03	Very limited Slope	1.00
Rock outcrop-----	30	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
47D: Pineola-----	90	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.54	Very limited Slope	1.00
48E: Pineola-----	90	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.54	Very limited Slope	1.00
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
51B: Scales-----	95	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
52C: Sylco-----	50	Somewhat limited Depth to hard bedrock Slope	0.71 0.37	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Slope Depth to hard bedrock	1.00 0.71
Sylvatus-----	35	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Depth to hard bedrock Slope	1.00 1.00
52D: Sylco-----	50	Very limited Slope Depth to hard bedrock	1.00 0.71	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.71
Sylvatus-----	35	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
52E: Sylco-----	50	Very limited Slope Depth to hard bedrock	1.00 0.71	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.71
Sylvatus-----	35	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53B: Tate-----	90	Not limited		Not limited		Somewhat limited Slope	0.12
53C: Tate-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
53D: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
53E: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
54C: Tate-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Very limited Slope	1.00
54D: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
54E: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
55D: Tate-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
56C: Thunder-----	80	Somewhat limited Large stones content Slope	0.42 0.37	Somewhat limited Large stones content Slope	0.42 0.37	Very limited Slope Large stones content	1.00 0.42
56D: Thunder-----	80	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42
56E: Thunder-----	80	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42
57C: Thunder-----	80	Somewhat limited Large stones content Slope	0.42 0.37	Somewhat limited Large stones content Slope	0.42 0.37	Very limited Slope Large stones content	1.00 0.42
57D: Thunder-----	80	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
57E: Thunder-----	80	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42	Very limited Slope Large stones content	1.00 0.42
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
59E: Unicoi-----	85	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
W: Water-----	100	Not rated		Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Somewhat limited Large stones content Frost action Slope	 0.84 0.50 0.04	Somewhat limited Large stones content Cutbanks cave Slope	 0.84 0.10 0.04	Very limited Large stones content Slope	 1.00 0.04
1D: Balsam-----	85	Very limited Slope Large stones content Frost action	 1.00 0.84 0.50	Very limited Slope Large stones content Cutbanks cave	 1.00 0.84 0.10	Very limited Slope Large stones content	 1.00 1.00
1E: Balsam-----	85	Very limited Slope Large stones content Frost action	 1.00 0.84 0.50	Very limited Slope Large stones content Cutbanks cave	 1.00 0.84 0.10	Very limited Slope Large stones content	 1.00 1.00
2D: Balsam-----	70	Very limited Slope Large stones content Frost action	 1.00 0.84 0.50	Very limited Slope Large stones content Cutbanks cave	 1.00 0.84 0.10	Very limited Slope Large stones content	 1.00 1.00
Nopan-----	20	Very limited Depth to saturated zone Slope Frost action	 1.00 1.00 1.00	Very limited Slope Depth to saturated zone Cutbanks cave	 1.00 1.00 1.00	Very limited Slope Depth to saturated zone Large stones content	 1.00 1.00 0.26
2E: Balsam-----	70	Very limited Slope Large stones content Frost action	 1.00 0.84 0.50	Very limited Slope Large stones content Cutbanks cave	 1.00 0.84 0.10	Very limited Slope Large stones content	 1.00 1.00
Nopan-----	20	Very limited Depth to saturated zone Slope Frost action	 1.00 1.00 1.00	Very limited Slope Depth to saturated zone Cutbanks cave	 1.00 1.00 1.00	Very limited Slope Depth to saturated zone Large stones content	 1.00 1.00 0.26
3D: Bloodyhorse-----	80	Very limited Slope Frost action Depth to hard bedrock	 1.00 0.50 0.03	Very limited Depth to hard bedrock Cutbanks cave Slope	 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	 1.00 0.97 0.24

Soil Survey of Grayson County, Virginia

Table 11.--Building Site Development, Part II--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
4F: Bloodyhorse-----	80	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.03	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 0.97 0.24
5B: Braddock-----	90	Very limited Low strength Shrink-swell Frost action	1.00 0.50 0.50	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
5C: Braddock-----	90	Very limited Low strength Shrink-swell Frost action	1.00 0.50 0.50	Somewhat limited Slope Too clayey Cutbanks cave	0.37 0.12 0.10	Somewhat limited Slope	0.37
5D: Braddock-----	90	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Too clayey Cutbanks cave	1.00 0.12 0.10	Very limited Slope	1.00
6E: Braddock-----	90	Very limited Slope Low strength Shrink-swell	1.00 1.00 0.50	Very limited Slope Too clayey Cutbanks cave	1.00 0.12 0.10	Very limited Slope Large stones content	1.00 0.88
7D: Brevard-----	50	Very limited Slope Frost action	1.00 0.50	Very limited Cutbanks cave Slope	1.00 1.00	Very limited Slope Large stones content Gravel content	1.00 0.16 0.11
Greenlee-----	35	Very limited Slope Large stones content Frost action	1.00 0.99 0.50	Very limited Slope Large stones content Cutbanks cave	1.00 0.99 0.10	Very limited Large stones content Slope Droughty	1.00 1.00 0.02
8C: Burton-----	90	Somewhat limited Slope Frost action Depth to hard bedrock	0.63 0.50 0.35	Very limited Depth to hard bedrock Cutbanks cave Depth to soft bedrock	1.00 1.00 0.79	Somewhat limited Depth to bedrock Slope	0.80 0.63
9D: Burton-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.35	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.80

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9E: Burton-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.35	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.80
10D: Peaks-----	20	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Cutbanks cave Slope	1.00 1.00 1.00 1.00	Very limited Gravel content Droughty Slope	1.00 1.00 1.00
Chestnut-----	65	Very limited Slope Frost action	1.00 0.50	Very limited Cutbanks cave Slope Depth to hard bedrock	1.00 1.00 0.84	Very limited Slope Depth to bedrock Gravel content	1.00 0.54 0.07
10E: Chestnut-----	65	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Depth to hard bedrock	1.00 1.00 0.84	Very limited Slope Depth to bedrock Gravel content	1.00 0.54 0.07
Peaks-----	20	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
11F: Chestnut-----	40	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Depth to hard bedrock	1.00 1.00 0.84	Very limited Slope Depth to bedrock Gravel content	1.00 0.54 0.07
Peaks-----	25	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
Tuckasegee-----	20	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope Gravel content	1.00 0.06
12A: Codorus-----	90	Very limited Frost action Flooding Low strength	1.00 1.00 0.78	Very limited Depth to saturated zone Cutbanks cave Flooding	1.00 1.00 0.80	Very limited Flooding Depth to saturated zone	1.00 0.78
13A: Comus-----	90	Very limited Flooding Frost action	1.00 0.50	Very limited Cutbanks cave Flooding	1.00 0.80	Very limited Flooding	1.00

Soil Survey of Grayson County, Virginia

Table 11.--Building Site Development, Part II--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
14C: Cowee-----	90	Somewhat limited Frost action Slope	0.50 0.37	Very limited Cutbanks cave Slope Depth to soft bedrock	1.00 0.37 0.01	Somewhat limited Slope Depth to bedrock	0.37 0.01
14D: Cowee-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.01
14E: Cowee-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.01
15D: Cowee-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Cutbanks cave Slope Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Gravel content Droughty	1.00 0.61 0.16
15E: Cowee-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Gravel content Droughty	1.00 0.61 0.16
16D: Cowee-----	60	Very limited Slope Frost action	1.00 0.50	Very limited Cutbanks cave Slope Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.01
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.01
Rock outcrop-----	35	Not rated		Not rated		Not rated	
17A: Craigsville-----	85	Very limited Flooding Frost action Large stones content	1.00 0.50 0.41	Very limited Cutbanks cave Flooding Large stones content	1.00 0.80 0.41	Very limited Flooding Large stones content Droughty	1.00 0.84 0.44

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18C: Cullasaja-----	85	Somewhat limited Large stones content Frost action Slope	0.88 0.50 0.37	Somewhat limited Large stones content Slope Cutbanks cave	0.88 0.37 0.10	Very limited Large stones content Slope	0.99 0.37
18D: Cullasaja-----	85	Very limited Slope Large stones content Frost action	1.00 0.88 0.50	Very limited Slope Large stones content Cutbanks cave	1.00 0.88 0.10	Very limited Slope Large stones content	1.00 0.99
19A: Delanco-----	90	Very limited Frost action Shrink-swell Depth to saturated zone	1.00 0.50 0.48	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Depth to saturated zone	0.48
19B: Delanco-----	90	Very limited Frost action Shrink-swell Depth to saturated zone	1.00 0.50 0.48	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Depth to saturated zone	0.48
20C: Delanco-----	90	Very limited Frost action Shrink-swell Depth to saturated zone	1.00 0.50 0.48	Very limited Depth to saturated zone Slope Cutbanks cave	1.00 0.37 0.10	Somewhat limited Depth to saturated zone Slope	0.48 0.37
21B: Edneytown-----	90	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited	
21C: Edneytown-----	90	Somewhat limited Frost action Slope	0.50 0.37	Very limited Cutbanks cave Slope	1.00 0.37	Somewhat limited Slope	0.37
21D: Edneytown-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope	1.00
21E: Edneytown-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope	1.00
21F: Edneytown-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
22C: Edneytown-----	60	Somewhat limited Frost action Slope	0.50 0.01	Very limited Cutbanks cave Slope	1.00 0.01	Somewhat limited Slope	0.01
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Somewhat limited Frost action Slope	0.50 0.37	Somewhat limited Slope Cutbanks cave	0.37 0.10	Somewhat limited Slope	0.37
23D: Edneyville-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
23E: Edneyville-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
24D: Edneyville-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
24E: Edneyville-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
24F: Edneyville-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
25B: Elsinboro-----	90	Very limited Low strength Frost action Flooding	1.00 0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
26B: Elsinboro-----	60	Very limited Low strength Frost action Flooding	1.00 0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope Gravel content	1.00 0.05
Cowee-----	35	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 0.01	Very limited Slope Gravel content Droughty	1.00 0.61 0.16

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28B: Glenelg-----	90	Somewhat limited Frost action	0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
28C: Glenelg-----	90	Somewhat limited Frost action Slope	0.50 0.37	Somewhat limited Slope Cutbanks cave	0.37 0.10	Somewhat limited Slope	0.37
28D: Glenelg-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
28E: Glenelg-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
28F: Glenelg-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
29C: Glenelg-----	90	Somewhat limited Frost action Slope	0.50 0.37	Somewhat limited Slope Cutbanks cave	0.37 0.10	Somewhat limited Gravel content Slope	0.79 0.37
29D: Glenelg-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope Gravel content	1.00 0.79
29E: Glenelg-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope Gravel content	1.00 0.79
30C: Glenelg-----	60	Somewhat limited Frost action Slope	0.50 0.01	Somewhat limited Cutbanks cave Slope	0.10 0.01	Somewhat limited Slope	0.01
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Very limited Slope Large stones content Frost action	1.00 0.99 0.50	Very limited Slope Large stones content Cutbanks cave	1.00 0.99 0.10	Very limited Slope Large stones content Droughty	1.00 1.00 0.02
31E: Greenlee-----	90	Very limited Slope Large stones content Frost action	1.00 0.99 0.50	Very limited Slope Large stones content Cutbanks cave	1.00 0.99 0.10	Very limited Slope Large stones content Droughty	1.00 1.00 0.02

Soil Survey of Grayson County, Virginia

Table 11.--Building Site Development, Part II--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
32A: Hatboro-----	90	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.80	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
33B: Hayesville-----	90	Somewhat limited Frost action Low strength	0.50 0.10	Somewhat limited Too clayey Cutbanks cave	0.12 0.10	Not limited	
33C: Hayesville-----	90	Somewhat limited Frost action Slope Low strength	0.50 0.37 0.10	Somewhat limited Slope Too clayey Cutbanks cave	0.37 0.12 0.10	Somewhat limited Slope	0.37
33D: Hayesville-----	90	Very limited Slope Frost action Low strength	1.00 0.50 0.10	Very limited Slope Too clayey Cutbanks cave	1.00 0.12 0.10	Very limited Slope	1.00
34B: Keener-----	90	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited	
34C: Keener-----	90	Somewhat limited Frost action Slope	0.50 0.37	Very limited Cutbanks cave Slope	1.00 0.37	Somewhat limited Slope	0.37
34D: Keener-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope	1.00
35C: Keener-----	90	Somewhat limited Frost action Slope	0.50 0.37	Very limited Cutbanks cave Slope	1.00 0.37	Somewhat limited Slope	0.37
35D: Keener-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope	1.00
36A: Kinkora-----	90	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
37C: Konnarock-----	90	Somewhat limited Depth to hard bedrock Frost action Slope	0.95 0.50 0.37	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 0.37 0.10	Somewhat limited Depth to bedrock Droughty Slope	0.95 0.79 0.37

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
37D: Konnarock-----	90	Very limited Slope Depth to hard bedrock Frost action	1.00 0.95 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.95 0.79
37E: Konnarock-----	90	Very limited Slope Depth to hard bedrock Frost action	1.00 0.95 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.95 0.79
38C: McCamy-----	85	Somewhat limited Frost action Slope Depth to hard bedrock	0.50 0.37 0.35	Very limited Depth to hard bedrock Cutbanks cave Depth to soft bedrock	1.00 1.00 1.00 0.79	Somewhat limited Depth to bedrock Droughty Slope	0.80 0.54 0.37
38D: McCamy-----	85	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.35	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.54
39D: McCamy-----	85	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.35	Very limited Depth to hard bedrock Cutbanks cave Slope	1.00 1.00 1.00 1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.54
39E: McCamy-----	85	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.35	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.80 0.54
40D: Mt Rogers-----	45	Very limited Slope Frost action Large stones content	1.00 0.50 0.01	Very limited Slope Cutbanks cave Large stones content	1.00 0.10 0.01	Very limited Slope Gravel content Large stones content	1.00 0.89 0.08
Bloodyhorse-----	25	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.03	Very limited Depth to hard bedrock Cutbanks cave Slope	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 0.97 0.24
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40F: Mt Rogers-----	45	Very limited Slope Frost action Large stones content	1.00 0.50 0.01	Very limited Slope Cutbanks cave Large stones content	1.00 0.10 0.01	Very limited Slope Gravel content Large stones content	1.00 0.89 0.08
Bloodyhorse-----	25	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.03	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 0.97 0.24
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Somewhat limited Frost action Slope Large stones content	0.50 0.37 0.01	Somewhat limited Slope Cutbanks cave Large stones content	0.37 0.10 0.01	Somewhat limited Gravel content Slope Large stones content	0.89 0.37 0.08
Buzzrock-----	40	Somewhat limited Frost action Slope Large stones content	0.50 0.37 0.09	Somewhat limited Depth to hard bedrock Slope Large stones content	0.96 0.37 0.09	Somewhat limited Droughty Slope Gravel content	0.66 0.37 0.03
41D: Mt Rogers-----	45	Very limited Slope Frost action Large stones content	1.00 0.50 0.01	Very limited Slope Cutbanks cave Large stones content	1.00 0.10 0.01	Very limited Slope Gravel content Large stones content	1.00 0.89 0.08
Buzzrock-----	40	Very limited Slope Frost action Large stones content	1.00 0.50 0.09	Very limited Slope Depth to hard bedrock Large stones content	1.00 0.96 0.09	Very limited Slope Droughty Gravel content	1.00 0.66 0.03
42C: Peaks-----	90	Somewhat limited Frost action Slope Depth to hard bedrock	0.50 0.37 0.29	Very limited Depth to hard bedrock Cutbanks cave Slope	1.00 1.00 0.37	Very limited Gravel content Droughty Slope	1.00 1.00 0.37
42D: Peaks-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42E: Peaks-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
43C: Peaks-----	90	Somewhat limited Frost action Slope Depth to hard bedrock	0.50 0.37 0.29	Very limited Depth to hard bedrock Cutbanks cave Slope	1.00 1.00 1.00 0.37	Very limited Gravel content Droughty Slope	1.00 1.00 0.37
43D: Peaks-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
43E: Peaks-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
43F: Peaks-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
44C: Pigeonroost-----	85	Very limited Low strength Frost action Slope	1.00 0.50 0.37	Somewhat limited Slope Cutbanks cave Depth to soft bedrock	0.37 0.10 0.03	Somewhat limited Slope Depth to bedrock	0.37 0.03
44D: Pigeonroost-----	85	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 0.10 0.03	Very limited Slope Depth to bedrock	1.00 0.03
44E: Pigeonroost-----	85	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 0.10 0.03	Very limited Slope Depth to bedrock	1.00 0.03

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45D: Pigeonroost-----	85	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 0.10 0.03	Very limited Slope Gravel content Depth to bedrock	1.00 0.10 0.03
45E: Pigeonroost-----	85	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 0.10 0.03	Very limited Slope Gravel content Depth to bedrock	1.00 0.10 0.03
46E: Pigeonroost-----	60	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 0.10 0.03	Very limited Slope Depth to bedrock	1.00 0.03
Rock outcrop-----	30	Not rated		Not rated		Not rated	
47D: Pineola-----	90	Very limited Slope Low strength Frost action	1.00 0.78 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 0.54	Very limited Slope Depth to bedrock Droughty	1.00 0.54 0.01
48E: Pineola-----	90	Very limited Slope Low strength Frost action	1.00 0.78 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 1.00 0.54	Very limited Slope Depth to bedrock Droughty	1.00 0.54 0.01
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00	Very limited Slope Gravel content Droughty	1.00 1.00 1.00
51B: Scales-----	95	Very limited Depth to saturated zone Frost action Low strength	1.00 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Dense layer	1.00 1.00 0.50	Not rated	

Soil Survey of Grayson County, Virginia

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52C: Sylco-----	50	Somewhat limited Depth to hard bedrock Frost action Slope	0.71 0.50 0.37	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 0.37 0.10	Somewhat limited Depth to bedrock Droughty Slope	0.71 0.58 0.37
Sylvatus-----	35	Very limited Depth to hard bedrock Frost action Slope	1.00 0.50 0.37	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 0.37 0.10	Very limited Depth to bedrock Droughty Slope	1.00 1.00 0.37
52D: Sylco-----	50	Very limited Slope Depth to hard bedrock Frost action	1.00 0.71 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.71 0.58
Sylvatus-----	35	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 1.00 1.00
52E: Sylco-----	50	Very limited Slope Depth to hard bedrock Frost action	1.00 0.71 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 0.71 0.58
Sylvatus-----	35	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty	1.00 1.00 1.00
53B: Tate-----	90	Very limited Low strength Frost action	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
53C: Tate-----	90	Very limited Low strength Frost action Slope	1.00 0.50 0.37	Somewhat limited Slope Cutbanks cave	0.37 0.10	Somewhat limited Slope	0.37
53D: Tate-----	90	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 11.--Building Site Development, Part II--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53E: Tate-----	90	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
54C: Tate-----	90	Very limited Low strength Frost action Slope	1.00 0.50 0.37	Somewhat limited Slope Cutbanks cave	0.37 0.10	Somewhat limited Slope	0.37
54D: Tate-----	90	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
54E: Tate-----	90	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
55D: Tate-----	90	Very limited Slope Low strength Frost action	1.00 1.00 0.50	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
56C: Thunder-----	80	Somewhat limited Frost action Large stones content Slope	0.50 0.42 0.37	Somewhat limited Large stones content Slope Cutbanks cave	0.42 0.37 0.10	Somewhat limited Large stones content Slope	0.68 0.37
56D: Thunder-----	80	Very limited Slope Frost action Large stones content	1.00 0.50 0.42	Very limited Slope Large stones content Cutbanks cave	1.00 0.42 0.10	Very limited Slope Large stones content	1.00 0.68
56E: Thunder-----	80	Very limited Slope Frost action Large stones content	1.00 0.50 0.42	Very limited Slope Large stones content Cutbanks cave	1.00 0.42 0.10	Very limited Slope Large stones content	1.00 0.68
57C: Thunder-----	80	Somewhat limited Frost action Large stones content Slope	0.50 0.42 0.37	Somewhat limited Large stones content Slope Cutbanks cave	0.42 0.37 0.10	Somewhat limited Large stones content Slope	0.68 0.37

Soil Survey of Grayson County, Virginia

Table 11.--Building Site Development, Part II--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
57D: Thunder-----	80	Very limited Slope Frost action Large stones content	1.00 0.50 0.42	Very limited Slope Large stones content Cutbanks cave	1.00 0.42 0.10	Very limited Slope Large stones content	1.00 0.68
57E: Thunder-----	80	Very limited Slope Frost action Large stones content	1.00 0.50 0.42	Very limited Slope Large stones content Cutbanks cave	1.00 0.42 0.10	Very limited Slope Large stones content	1.00 0.68
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Droughty Depth to bedrock Gravel content	1.00 1.00 1.00
59E: Unicoi-----	85	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Slope Droughty Depth to bedrock	1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Very limited Seepage, bottom layer Large stones content Slope	1.00  0.84 0.04	Very limited Seepage Large stones content Slope	1.00 1.00  1.00
1D: Balsam-----	85	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.84	Very limited Slope Seepage Large stones content	1.00 1.00 1.00
1E: Balsam-----	85	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.84	Very limited Slope Seepage Large stones content	1.00 1.00 1.00
2D: Balsam-----	70	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.84	Very limited Slope Seepage Large stones content	1.00 1.00 1.00
Nopan-----	20	Very limited Slow water movement Depth to saturated zone Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Organic matter content	1.00 1.00 1.00
2E: Balsam-----	70	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.84	Very limited Slope Seepage Large stones content	1.00 1.00 1.00
Nopan-----	20	Very limited Slow water movement Depth to saturated zone Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Organic matter content	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
3D: Bloodyhorse-----	80	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00 1.00
4F: Bloodyhorse-----	80	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00 1.00
5B: Braddock-----	90	Somewhat limited Slow water movement	0.68	Somewhat limited Slope Seepage	0.68 0.68
5C: Braddock-----	90	Somewhat limited Slow water movement Slope	0.68 0.37	Very limited Slope Seepage	1.00 0.68
5D: Braddock-----	90	Very limited Slope Slow water movement	1.00 0.68	Very limited Slope Seepage	1.00 0.68
6E: Braddock-----	90	Very limited Slope Slow water movement	1.00 0.68	Very limited Slope Seepage Large stones content	1.00 0.68 0.01
7D: Brevard-----	50	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
Greenlee-----	35	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.99	Very limited Slope Large stones content Seepage	1.00 1.00 1.00
8C: Burton-----	90	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.63	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
9D: Burton-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
9E: Burton-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
10D: Peaks-----	20	Very limited Seepage, bottom layer Depth to bedrock Slope	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
Chestnut-----	65	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 1.00
10E: Chestnut-----	65	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 1.00
Peaks-----	20	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
11F: Chestnut-----	40	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 1.00
Peaks-----	25	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
Tuckasegee-----	20	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
12A: Codorus-----	90	Very limited Flooding Depth to saturated zone Seepage, bottom layer	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00
13A: Comus-----	90	Very limited Flooding Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Flooding Seepage	1.00 1.00
14C: Cowee-----	90	Very limited Depth to bedrock Slow water movement Slope	1.00 0.50 0.37	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
14D: Cowee-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
14E: Cowee-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
15D: Cowee-----	90	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
15E: Cowee-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
16D: Cowee-----	60	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
Rock outcrop-----	35	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
16E: Cowee-----	60	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
Rock outcrop-----	35	Not rated		Not rated	
17A: Craigsville-----	85	Very limited Flooding Seepage, bottom layer Large stones content	1.00 1.00 0.41	Very limited Flooding Seepage Large stones content	1.00 1.00 0.98
18C: Cullasaja-----	85	Very limited Seepage, bottom layer Large stones content Slope	1.00 0.88 0.37	Very limited Slope Seepage Large stones content	1.00 1.00 1.00
18D: Cullasaja-----	85	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.88	Very limited Slope Seepage Large stones content	1.00 1.00 1.00
19A: Delanco-----	90	Very limited Depth to saturated zone Slow water movement Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Seepage Flooding	1.00 0.50 0.40
19B: Delanco-----	90	Very limited Depth to saturated zone Slow water movement Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Slope Seepage	1.00 0.68 0.50
20C: Delanco-----	90	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.37	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.50

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Edneytown-----	90	Very limited Seepage, bottom layer Slow water movement	1.00  0.50	Very limited Seepage Slope	1.00  0.68
21C: Edneytown-----	90	Very limited Seepage, bottom layer Slow water movement Slope	1.00  0.50  0.37	Very limited Slope Seepage	1.00  1.00
21D: Edneytown-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00  1.00  0.50	Very limited Slope Seepage	1.00  1.00
21E: Edneytown-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00  1.00  0.50	Very limited Slope Seepage	1.00  1.00
21F: Edneytown-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00  1.00  0.50	Very limited Slope Seepage	1.00  1.00
22C: Edneytown-----	60	Very limited Seepage, bottom layer Slow water movement Slope	1.00  0.50  0.01	Very limited Seepage Slope	1.00  1.00
Urban land-----	35	Not rated		Not rated	
23C: Edneyville-----	90	Very limited Seepage, bottom layer Slope	1.00  0.37	Very limited Slope Seepage	1.00  1.00
23D: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00  1.00	Very limited Slope Seepage	1.00  1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
23E: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00
24D: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00
24E: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00
24F: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00
25B: Elsinboro-----	90	Very limited Seepage, bottom layer Slow water movement Flooding	1.00 0.50 0.40	Very limited Seepage Slope Flooding	1.00 0.68 0.40
26B: Elsinboro-----	60	Very limited Seepage, bottom layer Slow water movement Flooding	1.00 0.50 0.40	Very limited Seepage Flooding Slope	1.00 0.40 0.32
Urban land-----	35	Not rated		Not rated	
27D: Evard-----	50	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
Cowee-----	35	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
28B: Glenelg-----	90	Somewhat limited Slow water movement	0.50	Somewhat limited Slope Seepage	0.68 0.50

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
28C: Glenelg-----	90	Somewhat limited Slow water movement Slope	0.50 0.37	Very limited Slope Seepage	1.00 0.50
28D: Glenelg-----	90	Very limited Slope Slow water movement	1.00 0.50	Very limited Slope Seepage	1.00 0.50
28E: Glenelg-----	90	Very limited Slope Slow water movement	1.00 0.50	Very limited Slope Seepage	1.00 0.50
28F: Glenelg-----	90	Very limited Slope Slow water movement	1.00 0.50	Very limited Slope Seepage	1.00 0.50
29C: Glenelg-----	90	Somewhat limited Slow water movement Slope	0.50 0.37	Very limited Slope Seepage	1.00 0.50
29D: Glenelg-----	90	Very limited Slope Slow water movement	1.00 0.50	Very limited Slope Seepage	1.00 0.50
29E: Glenelg-----	90	Very limited Slope Slow water movement	1.00 0.50	Very limited Slope Seepage	1.00 0.50
30C: Glenelg-----	60	Somewhat limited Slow water movement Slope	0.50 0.01	Very limited Slope Seepage	1.00 0.50
Urban land-----	35	Not rated		Not rated	
31D: Greenlee-----	90	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.99	Very limited Slope Large stones content Seepage	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
31E: Greenlee-----	90	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.99	Very limited Slope Large stones content Seepage	1.00 1.00 1.00
32A: Hatboro-----	90	Very limited Flooding Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
33B: Hayesville-----	90	Very limited Seepage, bottom layer Slow water movement	1.00 0.50	Very limited Seepage Slope	1.00 0.68
33C: Hayesville-----	90	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.50 0.37	Very limited Slope Seepage	1.00 1.00
33D: Hayesville-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
34B: Keener-----	90	Very limited Seepage, bottom layer Slow water movement	1.00 0.50	Very limited Seepage Slope	1.00 0.68
34C: Keener-----	90	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.50 0.37	Very limited Slope Seepage	1.00 1.00
34D: Keener-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
35C: Keener-----	90	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.50 0.37	Very limited Slope Seepage	1.00 1.00
35D: Keener-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
36A: Kinkora-----	90	Very limited Slow water movement Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
37C: Konarock-----	90	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.37	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
37D: Konarock-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
37E: Konarock-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
38C: McCamy-----	85	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.37	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
38D: McCamy-----	85	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
39D: McCamy-----	85	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
39E: McCamy-----	85	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Depth to soft bedrock Slope	1.00 1.00 1.00
40D: Mt Rogers-----	45	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.01	Very limited Slope Seepage	1.00 1.00
Bloodyhorse-----	25	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
40F: Mt Rogers-----	45	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.01	Very limited Slope Seepage	1.00 1.00
Bloodyhorse-----	25	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
41C: Mt Rogers-----	45	Very limited Seepage, bottom layer Slope Large stones content	1.00 0.37 0.01	Very limited Slope Seepage	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
41C: Buzzrock-----	40	Very limited Filtering capacity Seepage, bottom layer Depth to bedrock	1.00 1.00 0.99	Very limited Slope Seepage Depth to hard bedrock	1.00 1.00 0.96
41D: Mt Rogers-----	45	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.01	Very limited Slope Seepage	1.00 1.00
Buzzrock-----	40	Very limited Filtering capacity Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to hard bedrock	1.00 1.00 0.96
42C: Peaks-----	90	Very limited Seepage, bottom layer Depth to bedrock Filtering capacity	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
42D: Peaks-----	90	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
42E: Peaks-----	90	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
43C: Peaks-----	90	Very limited Seepage, bottom layer Depth to bedrock Filtering capacity	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
43D: Peaks-----	90	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
43E: Peaks-----	90	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
43F: Peaks-----	90	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
44C: Pigeonroost-----	85	Very limited Depth to bedrock Slow water movement Slope	1.00 0.50 0.37	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
44D: Pigeonroost-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
44E: Pigeonroost-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
45D: Pigeonroost-----	85	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
45E: Pigeonroost-----	85	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
46E: Pigeonroost-----	60	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
Rock outcrop-----	30	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
47D: Pineola-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
48E: Pineola-----	90	Very limited Slope Depth to bedrock Slow water movement	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.50
49: Pits, quarries-----	100	Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated	
Peaks-----	40	Very limited Slope Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
51B: Scales-----	95	Very limited Slow water movement Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Organic matter content Slope	1.00 1.00 0.32
52C: Sylco-----	50	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.37	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
Sylvatus-----	35	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
52D: Sylco-----	50	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
Sylvatus-----	35	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52E: Sylco-----	50	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
Sylvatus-----	35	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
53B: Tate-----	90	Very limited Seepage, bottom layer Slow water movement	1.00 0.50	Very limited Seepage Slope	1.00 0.68
53C: Tate-----	90	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.50 0.37	Very limited Slope Seepage	1.00 1.00
53D: Tate-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
53E: Tate-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
54C: Tate-----	90	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.50 0.37	Very limited Slope Seepage	1.00 1.00
54D: Tate-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
54E: Tate-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
55D: Tate-----	90	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00
56C: Thunder-----	80	Very limited Seepage, bottom layer Slow water movement Large stones content	1.00 0.50 0.42	Very limited Seepage Slope Large stones content	1.00 1.00 0.88
56D: Thunder-----	80	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage Large stones content	1.00 1.00 0.88
56E: Thunder-----	80	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage Large stones content	1.00 1.00 0.88
57C: Thunder-----	80	Very limited Seepage, bottom layer Slow water movement Large stones content	1.00 0.50 0.42	Very limited Seepage Slope Large stones content	1.00 1.00 0.88
57D: Thunder-----	80	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage Large stones content	1.00 1.00 0.88

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
57E: Thunder-----	80	Very limited Slope Seepage, bottom layer Slow water movement	1.00 1.00 0.50	Very limited Slope Seepage Large stones content	1.00 1.00 0.88
58D: Udorthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
59D: Unicoi-----	85	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
59E: Unicoi-----	85	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Very limited Seepage, bottom layer Large stones content Slope	1.00 0.96 0.04	Very limited Seepage Slope	1.00 0.04	Somewhat limited Large stones content Seepage Slope	0.96 0.50 0.04
1D: Balsam-----	85	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.96	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content Seepage	1.00 0.96 0.50
1E: Balsam-----	85	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.96	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content Seepage	1.00 0.96 0.50
2D: Balsam-----	70	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.96	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content Seepage	1.00 0.96 0.50
Nopan-----	20	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00
2E: Balsam-----	70	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.96	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content Seepage	1.00 0.96 0.50
Nopan-----	20	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3D: Bloodyhorse-----	80	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to bedrock Slope Seepage	1.00 1.00 1.00	Very limited Gravel content Depth to bedrock Slope	1.00 1.00 1.00
4F: Bloodyhorse-----	80	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 1.00
5B: Braddock-----	90	Very limited Too clayey	1.00	Not limited		Very limited Too clayey Hard to compact	1.00 1.00
5C: Braddock-----	90	Very limited Too clayey Slope	1.00 0.37	Somewhat limited Slope	0.37	Very limited Too clayey Hard to compact Slope	1.00 1.00 0.37
5D: Braddock-----	90	Very limited Slope Too clayey	1.00 1.00	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact	1.00 1.00 1.00
6E: Braddock-----	90	Very limited Slope Too clayey	1.00 1.00	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact	1.00 1.00 1.00
7D: Brevard-----	50	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.03
Greenlee-----	35	Very limited Large stones Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Large stones Slope Seepage	1.00 1.00 0.50
8C: Burton-----	90	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.63	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.63	Very limited Depth to bedrock Slope Seepage	1.00 0.63 0.09

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9D: Burton-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.09
9E: Burton-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.09
10D: Peaks-----	20	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 1.00	Very limited Seepage Depth to bedrock Slope	1.00 1.00 1.00	Very limited Seepage Gravel content Depth to bedrock	1.00 1.00 1.00
Chestnut-----	65	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to bedrock Slope Seepage	1.00 1.00 1.00	Very limited Depth to bedrock Slope Seepage	1.00 1.00 0.50
10E: Chestnut-----	65	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.50
Peaks-----	20	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00
11F: Chestnut-----	40	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.50
Peaks-----	25	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00
Tuckasegee-----	20	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage Gravel content	1.00 0.50 0.23

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12A: Codorus-----	90	Very limited Flooding Depth to saturated zone Seepage, bottom layer	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Depth to saturated zone	1.00
13A: Comus-----	90	Very limited Flooding Seepage, bottom layer	1.00 1.00	Very limited Flooding	1.00	Not limited	
14C: Cowee-----	90	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.37	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.37
14D: Cowee-----	90	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
14E: Cowee-----	90	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
15D: Cowee-----	90	Very limited Depth to bedrock Slope Too clayey	1.00 1.00 0.50	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.61
15E: Cowee-----	90	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.61
16D: Cowee-----	60	Very limited Depth to bedrock Slope Too clayey	1.00 1.00 0.50	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope Too clayey	1.00 1.00 0.50
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
Rock outcrop-----	35	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A: Craigsville-----	85	Very limited Flooding Seepage, bottom layer Large stones content	1.00 1.00 0.54	Very limited Flooding Seepage	1.00 1.00	Very limited Seepage Large stones content Too sandy	1.00 0.54 0.50
18C: Cullasaja-----	85	Very limited Seepage, bottom layer Large stones content Slope	1.00 0.93 0.37	Very limited Seepage Slope	1.00 0.37	Somewhat limited Large stones content Seepage Slope	0.93 0.50 0.37
18D: Cullasaja-----	85	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.93	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content Seepage	1.00 0.93 0.50
19A: Delanco-----	90	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Depth to saturated zone Flooding	1.00 0.40	Somewhat limited Depth to saturated zone	0.96
19B: Delanco-----	90	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Depth to saturated zone Flooding	1.00 0.40	Somewhat limited Depth to saturated zone	0.96
20C: Delanco-----	90	Very limited Depth to saturated zone Slope	1.00 0.37	Very limited Depth to saturated zone Slope	1.00 0.37	Somewhat limited Depth to saturated zone Slope	0.96 0.37
21B: Edneytown-----	90	Very limited Seepage, bottom layer Too sandy	1.00 0.50	Very limited Seepage	1.00	Somewhat limited Seepage Too sandy	0.50 0.50
21C: Edneytown-----	90	Very limited Seepage, bottom layer Too sandy Slope	1.00 0.50 0.37	Very limited Seepage Slope	1.00 0.37	Somewhat limited Seepage Too sandy Slope	0.50 0.50 0.37
21D: Edneytown-----	90	Very limited Slope Seepage, bottom layer Too sandy	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage Too sandy	1.00 0.50 0.50

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21E: Edneytown-----	90	Very limited Slope Seepage, bottom layer Too sandy	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage Too sandy	1.00 0.50 0.50
21F: Edneytown-----	90	Very limited Slope Seepage, bottom layer Too sandy	1.00 1.00 0.50	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage Too sandy	1.00 0.50 0.50
22C: Edneytown-----	60	Very limited Seepage, bottom layer Too sandy Slope	1.00 0.50 0.01	Very limited Seepage Slope	1.00 0.01	Somewhat limited Seepage Too sandy Slope	0.50 0.50 0.01
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Very limited Seepage, bottom layer Slope	1.00 0.37	Very limited Seepage Slope	1.00 0.37	Somewhat limited Seepage Slope	0.50 0.37
23D: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage	1.00 0.50
23E: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage	1.00 0.50
24D: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage	1.00 0.50
24E: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage	1.00 0.50
24F: Edneyville-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage	1.00 0.50

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25B: Elsinboro-----	90	Very limited Seepage, bottom layer Too clayey Flooding	1.00 0.50 0.40	Somewhat limited Flooding	0.40	Somewhat limited Too clayey	0.50
26B: Elsinboro-----	60	Very limited Seepage, bottom layer Too clayey Flooding	1.00 0.50 0.40	Somewhat limited Flooding	0.40	Somewhat limited Too clayey	0.50
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Too clayey Seepage	1.00 0.50 0.31
Cowee-----	35	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.61
28B: Glenelg-----	90	Not limited		Not limited		Not limited	
28C: Glenelg-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
28D: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
28E: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
28F: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
29C: Glenelg-----	90	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
29D: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
29E: Glenelg-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30C: Glenelg-----	60	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Very limited Slope Large stones Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones Seepage	1.00 1.00 0.50
31E: Greenlee-----	90	Very limited Slope Large stones Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones Seepage	1.00 1.00 0.50
32A: Hatboro-----	90	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Flooding Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
33B: Hayesville-----	90	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
33C: Hayesville-----	90	Very limited Seepage, bottom layer Too clayey Slope	1.00 0.50 0.37	Somewhat limited Slope	0.37	Somewhat limited Too clayey Slope	0.50 0.37
33D: Hayesville-----	90	Very limited Slope Seepage, bottom layer Too clayey	1.00 1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
34B: Keener-----	90	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
34C: Keener-----	90	Very limited Seepage, bottom layer Too clayey Slope	1.00 0.50 0.37	Somewhat limited Slope	0.37	Somewhat limited Too clayey Slope	0.50 0.37

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34D: Keener-----	90	Very limited Slope Seepage, bottom layer Too clayey	1.00 1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
35C: Keener-----	90	Very limited Seepage, bottom layer Too clayey Slope	1.00 0.50 0.37	Somewhat limited Slope	0.37	Somewhat limited Too clayey Slope	0.50 0.37
35D: Keener-----	90	Very limited Slope Seepage, bottom layer Too clayey	1.00 1.00 0.50	Very limited Slope	1.00	Very limited Slope Too clayey	1.00 0.50
36A: Kinkora-----	90	Very limited Depth to saturated zone Ponding Seepage, bottom layer	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00 0.40	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
37C: Konnarock-----	90	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 1.00 0.37	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.37	Very limited Depth to bedrock Gravel content Seepage	1.00 0.53 0.50
37D: Konnarock-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.53
37E: Konnarock-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.53
38C: McCamy-----	85	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 1.00 0.37	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.37	Very limited Depth to bedrock Seepage Slope	1.00 0.52 0.37

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
38D: McCamy-----	85	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.52
39D: McCamy-----	85	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to bedrock Slope Seepage	1.00 1.00 1.00	Very limited Depth to bedrock Slope Seepage	1.00 1.00 0.52
39E: McCamy-----	85	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.52
40D: Mt Rogers-----	45	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.23	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage Gravel content	1.00 0.50 0.32
Bloodyhorse-----	25	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to bedrock Slope Seepage	1.00 1.00 1.00	Very limited Gravel content Depth to bedrock Slope	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.23	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage Gravel content	1.00 0.50 0.32
Bloodyhorse-----	25	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Gravel content Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Very limited Seepage, bottom layer Slope Large stones content	1.00 0.37 0.23	Very limited Seepage Slope	1.00 0.37	Somewhat limited Seepage Slope Gravel content	0.50 0.37 0.32

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41C: Buzzrock-----	40	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.37	Very limited Seepage Depth to bedrock Slope	1.00 0.96 0.37	Very limited Seepage Depth to bedrock Gravel content	1.00 0.96 0.53
41D: Mt Rogers-----	45	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.23	Very limited Slope Seepage	1.00 1.00	Very limited Slope Seepage Gravel content	1.00 0.50 0.32
Buzzrock-----	40	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.96	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.96
42C: Peaks-----	90	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.37	Very limited Seepage Depth to bedrock Slope	1.00 1.00 0.37	Very limited Seepage Gravel content Depth to bedrock	1.00 1.00 1.00
42D: Peaks-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00
42E: Peaks-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00
43C: Peaks-----	90	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.37	Very limited Seepage Depth to bedrock Slope	1.00 1.00 0.37	Very limited Seepage Gravel content Depth to bedrock	1.00 1.00 1.00
43D: Peaks-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43E: Peaks-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00
43F: Peaks-----	90	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00
44C: Pigeonroost-----	85	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.37	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.37
44D: Pigeonroost-----	85	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
44E: Pigeonroost-----	85	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
45D: Pigeonroost-----	85	Very limited Depth to bedrock Slope Too clayey	1.00 1.00 0.50	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope Too clayey	1.00 1.00 0.50
45E: Pigeonroost-----	85	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
46E: Pigeonroost-----	60	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
Rock outcrop-----	30	Not rated		Not rated		Not rated	
47D: Pineola-----	90	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48E: Pineola-----	90	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage Depth to bedrock	1.00 1.00 1.00	Very limited Slope Seepage Gravel content	1.00 1.00 1.00
51B: Scales-----	95	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
52C: Sylco-----	50	Very limited Depth to bedrock Seepage, bottom layer Slope	1.00 1.00 0.37	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.37	Very limited Depth to bedrock Gravel content Slope	1.00 0.78 0.37
Sylvatus-----	35	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Gravel content Slope	1.00 0.93 0.37
52D: Sylco-----	50	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.78
Sylvatus-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.93
52E: Sylco-----	50	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.78
Sylvatus-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.93

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53B: Tate-----	90	Very limited Seepage, bottom layer	1.00	Not limited		Not limited	
53C: Tate-----	90	Very limited Seepage, bottom layer Slope	1.00 0.37	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
53D: Tate-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope	1.00	Very limited Slope	1.00
53E: Tate-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope	1.00	Very limited Slope	1.00
54C: Tate-----	90	Very limited Seepage, bottom layer Slope	1.00 0.37	Somewhat limited Slope	0.37	Somewhat limited Slope	0.37
54D: Tate-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope	1.00	Very limited Slope	1.00
54E: Tate-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope	1.00	Very limited Slope	1.00
55D: Tate-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope	1.00	Very limited Slope	1.00
56C: Thunder-----	80	Very limited Seepage, bottom layer Large stones content Slope	1.00 0.56 0.37	Very limited Seepage Slope	1.00 0.37	Somewhat limited Large stones content Slope	0.56 0.37

Soil Survey of Grayson County, Virginia

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
56D: Thunder-----	80	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.56	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content	1.00 0.56
56E: Thunder-----	80	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.56	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content	1.00 0.56
57C: Thunder-----	80	Very limited Seepage, bottom layer Large stones content Slope	1.00 0.56 0.37	Very limited Seepage Slope	1.00 0.37	Somewhat limited Large stones content Slope	0.56 0.37
57D: Thunder-----	80	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.56	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content	1.00 0.56
57E: Thunder-----	80	Very limited Slope Seepage, bottom layer Large stones content	1.00 1.00 0.56	Very limited Slope Seepage	1.00 1.00	Very limited Slope Large stones content	1.00 0.56
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Gravel content Slope	1.00 1.00 1.00
59E: Unicoi-----	85	Very limited Slope Depth to bedrock Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 1.00
W: Water-----	100	Not rated		Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1C: Balsam-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
1D: Balsam-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
1E: Balsam-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
2D: Balsam-----	70	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Nopan-----	20	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
2E: Balsam-----	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nopan-----	20	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
3D: Bloodyhorse-----	80	Fair		Poor	
		Thickest layer	0.15	Bottom layer	0.00
		Bottom layer	0.53	Thickest layer	0.00
4F: Bloodyhorse-----	80	Fair		Poor	
		Thickest layer	0.15	Bottom layer	0.00
		Bottom layer	0.53	Thickest layer	0.00
5B: Braddock-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
5C: Braddock-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
5D: Braddock-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6E: Braddock-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
7D: Brevard-----	50	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.01
Greenlee-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
8C: Burton-----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.05	Bottom layer	0.04
9D: Burton-----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.05	Bottom layer	0.04
9E: Burton-----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.05	Bottom layer	0.04
10D: Peaks-----	20	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04
Chestnut-----	65	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.01
10E: Chestnut-----	65	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.01
Peaks-----	20	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04
11F: Chestnut-----	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.01
Peaks-----	25	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
11F: Tuckasegee-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
12A: Codorus-----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.22	Bottom layer	0.04
13A: Comus-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.02
		Bottom layer	0.00	Bottom layer	0.07
14C: Cowee-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
14D: Cowee-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
14E: Cowee-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
15D: Cowee-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
15E: Cowee-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
16D: Cowee-----	60	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
Rock outcrop-----	35	Not rated		Not rated	
16E: Cowee-----	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
Rock outcrop-----	35	Not rated		Not rated	
17A: Craigsville-----	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
18C: Cullasaja-----	85	Poor Thickest layer Bottom layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
18D: Cullasaja-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
19A: Delanco-----	90	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.03
19B: Delanco-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.03
20C: Delanco-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.03
21B: Edneytown-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.11
21C: Edneytown-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.11
21D: Edneytown-----	90	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.11
21E: Edneytown-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.11
21F: Edneytown-----	90	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.11
22C: Edneytown-----	60	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.11
Urban land-----	35	Not rated		Not rated	
23C: Edneyville-----	90	Poor Thickest layer Bottom layer	0.00 0.00	Fair Bottom layer Thickest layer	0.03 0.03

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
23D: Edneyville-----	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
23E: Edneyville-----	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
24D: Edneyville-----	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
24E: Edneyville-----	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
24F: Edneyville-----	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
25B: Elsinboro-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.04
26B: Elsinboro-----	60	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.04
Urban land-----	35	Not rated		Not rated	
27D: Evard-----	50	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.01
Cowee-----	35	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
28B: Glennelg-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
28C: Glennelg-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.02
28D: Glennelg-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
28E: Glenelg-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
28F: Glenelg-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
29C: Glenelg-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
29D: Glenelg-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
29E: Glenelg-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
30C: Glenelg-----	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
Urban land-----	35	Not rated		Not rated	
31D: Greenlee-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
31E: Greenlee-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
32A: Hatboro-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
33B: Hayesville-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
33C: Hayesville-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
33D: Hayesville-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
34B: Keener-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
34C: Keener-----	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
34D: Keener-----	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
35C: Keener-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
35D: Keener-----	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
36A: Kinkora-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.11
37C: Konarock-----	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.23	Thickest layer	0.00
37D: Konarock-----	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.23	Thickest layer	0.00
37E: Konarock-----	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.23	Thickest layer	0.00
38C: McCamy-----	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
38D: McCamy-----	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
39D: McCamy-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
39E: McCamy-----	85	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.03
40D: Mt Rogers-----	45	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Bloodyhorse-----	25	Fair Thickest layer Bottom layer	0.15 0.53	Poor Bottom layer Thickest layer	0.00 0.00
Rock outcrop-----	15	Not rated		Not rated	
40F: Mt Rogers-----	45	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Bloodyhorse-----	25	Fair Thickest layer Bottom layer	0.15 0.53	Poor Bottom layer Thickest layer	0.00 0.00
Rock outcrop-----	15	Not rated		Not rated	
41C: Mt Rogers-----	45	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Buzzrock-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
41D: Mt Rogers-----	45	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
Buzzrock-----	40	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00
42C: Peaks-----	90	Fair Thickest layer Bottom layer	0.11 0.82	Fair Thickest layer Bottom layer	0.00 0.04
42D: Peaks-----	90	Fair Thickest layer Bottom layer	0.11 0.82	Fair Thickest layer Bottom layer	0.00 0.04
42E: Peaks-----	90	Fair Thickest layer Bottom layer	0.11 0.82	Fair Thickest layer Bottom layer	0.00 0.04

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
43C: Peaks-----	90	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04
43D: Peaks-----	90	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04
43E: Peaks-----	90	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04
43F: Peaks-----	90	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04
44C: Pigeonroost-----	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
44D: Pigeonroost-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
44E: Pigeonroost-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
45D: Pigeonroost-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
45E: Pigeonroost-----	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
46E: Pigeonroost-----	60	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
Rock outcrop-----	30	Not rated		Not rated	
47D: Pineola-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
48E: Pineola-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
49: Pits, quarries-----	100	Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated	
Peaks-----	40	Fair		Fair	
		Thickest layer	0.11	Thickest layer	0.00
		Bottom layer	0.82	Bottom layer	0.04
51B: Scales-----	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
52C: Sylco-----	50	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
Sylvatus-----	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
52D: Sylco-----	50	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
Sylvatus-----	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
52E: Sylco-----	50	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
Sylvatus-----	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
53B: Tate-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
53C: Tate-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
53D: Tate-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
53E: Tate-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
54C: Tate-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
54D: Tate-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
54E: Tate-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
55D: Tate-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
56C: Thunder-----	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
56D: Thunder-----	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
56E: Thunder-----	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
57C: Thunder-----	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
57D: Thunder-----	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
57E: Thunder-----	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
58D: Udorthents-----	50	Not rated		Not rated	
Urban land-----	35	Not rated		Not rated	
59D: Unicoi-----	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.38	Bottom layer	0.03

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
59E: Unicoi-----	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.38	Bottom layer	0.03
W: Water-----	100	Not rated		Not rated	

# Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Fair Cobble content Too acid	0.04 0.20	Poor Cobble content	0.00	Poor Hard to reclaim (rock fragments) Rock fragments Too acid	0.00 0.00 0.76
1D: Balsam-----	85	Fair Cobble content Too acid	0.04 0.20	Poor Cobble content Slope	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
1E: Balsam-----	85	Fair Cobble content Too acid	0.04 0.20	Poor Slope Cobble content	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
2D: Balsam-----	70	Fair Cobble content Too acid	0.04 0.20	Poor Cobble content Slope	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
Nopan-----	20	Fair Too sandy Too acid Water erosion	0.04 0.46 0.90	Poor Wetness depth Slope	0.00 0.00	Poor Slope Wetness depth Too sandy	0.00 0.00 0.04
2E: Balsam-----	70	Fair Cobble content Too acid	0.04 0.20	Poor Slope Cobble content	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
Nopan-----	20	Fair Too sandy Too acid Water erosion	0.04 0.46 0.90	Poor Wetness depth Slope	0.00 0.00	Poor Slope Wetness depth Too sandy	0.00 0.00 0.04
3D: Bloodyhorse-----	80	Fair Droughty Too acid Depth to bedrock	0.02 0.50 0.97	Poor Depth to bedrock Slope	0.00 0.32	Poor Rock fragments Slope Too acid	0.00 0.00 0.59

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
4F: Bloodyhorse-----	80	Fair Droughty Too acid Depth to bedrock	0.02 0.50 0.97	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Too acid	0.00 0.00 0.59
5B: Braddock-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.46	Poor Low strength Shrink-swell	0.00 0.92	Poor Too clayey Too acid	0.00 0.95
5C: Braddock-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.46	Poor Low strength Shrink-swell	0.00 0.92	Poor Too clayey Slope Too acid	0.00 0.63 0.95
5D: Braddock-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.46	Poor Low strength Slope Shrink-swell	0.00 0.50 0.92	Poor Slope Too clayey Too acid	0.00 0.00 0.95
6E: Braddock-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.46	Poor Slope Low strength Shrink-swell	0.00 0.00 0.92	Poor Slope Too clayey Rock fragments	0.00 0.00 0.59
7D: Brevard-----	50	Fair Organic matter content low Too acid	0.12 0.54	Fair Slope	0.92	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.12 0.32
Greenlee-----	35	Poor Cobble content Too acid Droughty	0.00 0.12 0.98	Poor Cobble content Slope	0.00 0.92	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.00
8C: Burton-----	90	Fair Depth to bedrock Droughty Too acid	0.21 0.27 0.50	Poor Depth to bedrock	0.00	Fair Depth to bedrock Slope Too acid	0.21 0.37 0.76
9D: Burton-----	90	Fair Depth to bedrock Droughty Too acid	0.21 0.27 0.50	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Too acid	0.00 0.21 0.76

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9E: Burton-----	90	Fair Depth to bedrock Droughty Too acid	0.21 0.27 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Depth to bedrock Too acid	0.00 0.21 0.76
10D: Peaks-----	20	Poor Droughty Organic matter content low Too acid	0.00 0.12 0.50	Poor Depth to bedrock Slope	0.00 0.92	Poor Rock fragments Slope Depth to bedrock	0.00 0.00 0.71
Chestnut-----	65	Fair Droughty Depth to bedrock Too acid	0.17 0.46 0.50	Poor Depth to bedrock Slope	0.00 0.92	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.46
10E: Chestnut-----	65	Fair Droughty Depth to bedrock Too acid	0.17 0.46 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.46
Peaks-----	20	Poor Droughty Organic matter content low Too acid	0.00 0.12 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.71
11F: Chestnut-----	40	Fair Droughty Depth to bedrock Too acid	0.17 0.46 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.46
Peaks-----	25	Poor Droughty Organic matter content low Too acid	0.00 0.12 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.71
Tuckasegee-----	20	Fair Too acid	0.92	Poor Slope	0.00	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.08
12A: Codorus-----	90	Fair Organic matter content low Too acid Water erosion	0.12 0.46 0.99	Fair Wetness depth Low strength	0.12 0.22	Poor Hard to reclaim (rock fragments) Wetness depth Too acid	0.00 0.12 0.95

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
13A: Comus-----	90	Fair Organic matter content low Too acid Too sandy	0.50 0.54 0.98	Good		Fair Too acid Too sandy	0.98 0.98
14C: Cowee-----	90	Fair Droughty Too acid Organic matter content low	0.45 0.50 0.88	Poor Depth to bedrock	0.00	Fair Slope Rock fragments Too acid	0.63 0.76 0.95
14D: Cowee-----	90	Fair Droughty Too acid Organic matter content low	0.45 0.50 0.88	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Rock fragments Too acid	0.00 0.76 0.95
14E: Cowee-----	90	Fair Droughty Too acid Organic matter content low	0.45 0.50 0.88	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Too acid	0.00 0.76 0.95
15D: Cowee-----	90	Fair Droughty Too acid Organic matter content low	0.05 0.50 0.88	Poor Depth to bedrock Slope	0.00 0.32	Poor Slope Rock fragments Too acid	0.00 0.00 0.95
15E: Cowee-----	90	Fair Droughty Too acid Organic matter content low	0.05 0.50 0.88	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Too acid	0.00 0.00 0.95
16D: Cowee-----	60	Fair Droughty Too acid Organic matter content low	0.45 0.50 0.88	Poor Depth to bedrock Slope	0.00 0.32	Poor Slope Rock fragments Too acid	0.00 0.76 0.95
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Fair Droughty Too acid Organic matter content low	0.45 0.50 0.88	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Too acid	0.00 0.76 0.95
Rock outcrop-----	35	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A: Craigsville-----	85	Fair Droughty Cobble content Too acid	0.22 0.46 0.50	Poor Cobble content	0.00	Poor Hard to reclaim (rock fragments) Rock fragments Too acid	0.00 0.00 0.76
18C: Cullasaja-----	85	Fair Cobble content Too acid	0.07 0.20	Poor Cobble content	0.00	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.63
18D: Cullasaja-----	85	Fair Cobble content Too acid	0.07 0.20	Poor Cobble content Slope	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
19A: Delanco-----	90	Fair Too acid Organic matter content low	0.12 0.12	Fair Wetness depth Shrink-swell	0.29 0.99	Fair Wetness depth Too acid Rock fragments	0.29 0.59 0.76
19B: Delanco-----	90	Fair Too acid Organic matter content low	0.12 0.12	Fair Wetness depth Shrink-swell	0.29 0.99	Fair Wetness depth Too acid Rock fragments	0.29 0.59 0.76
20C: Delanco-----	90	Fair Too acid Organic matter content low	0.12 0.12	Fair Wetness depth Shrink-swell	0.29 0.99	Fair Wetness depth Too acid Slope	0.29 0.59 0.63
21B: Edneytown-----	90	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Good		Fair Too acid	0.95
21C: Edneytown-----	90	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Good		Fair Slope Too acid	0.63 0.95
21D: Edneytown-----	90	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Fair Slope	0.50	Poor Slope Too acid	0.00 0.95

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21E: Edneytown-----	90	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Poor Slope	0.00	Poor Slope Too acid	0.00 0.95
21F: Edneytown-----	90	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Poor Slope	0.00	Poor Slope Too acid	0.00 0.95
22C: Edneytown-----	60	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Good		Fair Too acid	0.95
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Fair Organic matter content low Too acid Water erosion	0.02 0.50 0.99	Good		Fair Slope Too acid	0.63 0.98
23D: Edneyville-----	90	Fair Organic matter content low Too acid Water erosion	0.02 0.50 0.99	Poor Slope	0.00	Poor Slope Too acid	0.00 0.98
23E: Edneyville-----	90	Fair Organic matter content low Too acid Water erosion	0.02 0.50 0.99	Poor Slope	0.00	Poor Slope Too acid	0.00 0.98
24D: Edneyville-----	90	Fair Organic matter content low Too acid Water erosion	0.02 0.50 0.99	Poor Slope	0.00	Poor Slope Too acid	0.00 0.98
24E: Edneyville-----	90	Fair Organic matter content low Too acid Water erosion	0.02 0.50 0.99	Poor Slope	0.00	Poor Slope Too acid	0.00 0.98

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24F: Edneyville-----	90	Fair Organic matter content low Too acid Water erosion	0.02 0.50 0.99	Poor Slope	0.00	Poor Slope Too acid	0.00 0.98
25B: Elsinboro-----	90	Fair Organic matter content low Too acid	0.12 0.46	Poor Low strength	0.00	Fair Hard to reclaim (rock fragments) Too acid	0.02 0.95
26B: Elsinboro-----	60	Fair Organic matter content low Too acid	0.12 0.46	Poor Low strength	0.00	Fair Hard to reclaim (rock fragments) Too acid	0.02 0.95
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Fair Too acid Organic matter content low Too clayey	0.50 0.50 0.92	Fair Slope	0.50	Poor Slope Too clayey Too acid	0.00 0.66 0.88
Cowee-----	35	Fair Droughty Too acid Organic matter content low	0.05 0.50 0.88	Poor Depth to bedrock Slope	0.00 0.50	Poor Slope Rock fragments Too acid	0.00 0.00 0.95
28B: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Good		Good	
28C: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Good		Fair Slope	0.63
28D: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Fair Slope	0.50	Poor Slope	0.00
28E: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Poor Slope	0.00	Poor Slope	0.00

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28F: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Poor Slope	0.00	Poor Slope	0.00
29C: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Good		Fair Slope	0.63
29D: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Poor Slope	0.00	Poor Slope	0.00
29E: Glenelg-----	90	Fair Organic matter content low Too acid	0.12 0.50	Poor Slope	0.00	Poor Slope	0.00
30C: Glenelg-----	60	Fair Organic matter content low Too acid	0.12 0.50	Good		Good	
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Poor Cobble content Too acid Droughty	0.00 0.12 0.98	Poor Cobble content Slope	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
31E: Greenlee-----	90	Poor Cobble content Too acid Droughty	0.00 0.12 0.98	Poor Slope Cobble content	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
32A: Hatboro-----	90	Fair Organic matter content low Too acid	0.12 0.88	Poor Wetness depth	0.00	Poor Wetness depth	0.00
33B: Hayesville-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.46	Fair Low strength	0.10	Poor Too clayey Too acid	0.00 0.95

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
33C: Hayesville-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.46	Fair Low strength	0.10	Poor Too clayey Slope Too acid	0.00 0.63 0.95
33D: Hayesville-----	90	Poor Too clayey Organic matter content low Too acid	0.00 0.12 0.46	Fair Low strength Slope	0.10 0.50	Poor Slope Too clayey Too acid	0.00 0.00 0.95
34B: Keener-----	90	Fair Too acid Organic matter content low Water erosion	0.20 0.50 0.99	Good		Fair Too acid Rock fragments	0.76 0.92
34C: Keener-----	90	Fair Too acid Organic matter content low Water erosion	0.20 0.50 0.99	Good		Fair Slope Too acid Rock fragments	0.63 0.76 0.92
34D: Keener-----	90	Fair Too acid Organic matter content low Water erosion	0.20 0.50 0.99	Fair Slope	0.50	Poor Slope Too acid Rock fragments	0.00 0.76 0.92
35C: Keener-----	90	Fair Too acid Organic matter content low Water erosion	0.20 0.50 0.99	Good		Fair Slope Too acid Rock fragments	0.63 0.76 0.92
35D: Keener-----	90	Fair Too acid Organic matter content low Water erosion	0.20 0.50 0.99	Poor Slope	0.00	Poor Slope Too acid Rock fragments	0.00 0.76 0.92
36A: Kinkora-----	90	Fair Too clayey Organic matter content low Too acid	0.08 0.12 0.46	Poor Wetness depth Low strength Shrink-swell	0.00 0.00 0.92	Poor Wetness depth Too clayey Hard to reclaim (rock fragments)	0.00 0.05 0.05
37C: Konnarock-----	90	Poor Droughty Depth to bedrock Too acid	0.00 0.05 0.50	Poor Depth to bedrock	0.00	Poor Rock fragments Depth to bedrock Too acid	0.00 0.05 0.59

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
37D: Konnarock-----	90	Poor Droughty Depth to bedrock Too acid	0.00 0.05 0.50	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.05
37E: Konnarock-----	90	Poor Droughty Depth to bedrock Too acid	0.00 0.05 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.05
38C: McCamy-----	85	Poor Droughty Organic matter content low Depth to bedrock	0.00 0.12 0.21	Poor Depth to bedrock	0.00	Fair Depth to bedrock Too acid Slope	0.21 0.59 0.63
38D: McCamy-----	85	Poor Droughty Organic matter content low Depth to bedrock	0.00 0.12 0.21	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Too acid	0.00 0.21 0.59
39D: McCamy-----	85	Poor Droughty Organic matter content low Depth to bedrock	0.00 0.12 0.21	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Too acid	0.00 0.21 0.59
39E: McCamy-----	85	Poor Droughty Organic matter content low Depth to bedrock	0.00 0.12 0.21	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Depth to bedrock Too acid	0.00 0.21 0.59
40D: Mt Rogers-----	45	Fair Too acid Droughty Cobble content	0.50 0.71 0.77	Fair Slope Cobble content	0.32 0.42	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.00
Bloodyhorse-----	25	Fair Droughty Too acid Depth to bedrock	0.02 0.50 0.97	Poor Depth to bedrock Slope	0.00 0.32	Poor Rock fragments Slope Too acid	0.00 0.00 0.59
Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Fair Too acid Droughty Cobble content	0.50 0.71 0.77	Poor Slope Cobble content	0.00 0.42	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40F: Bloodyhorse-----	25	Fair Droughty Too acid Depth to bedrock	 0.02 0.50 0.97	Poor Slope Depth to bedrock	 0.00 0.00	Poor Slope Rock fragments Too acid	 0.00 0.00 0.59
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Fair Too acid Droughty Cobble content	 0.50 0.71 0.77	Fair Cobble content	 0.42	Poor Hard to reclaim (rock fragments) Rock fragments Too acid	 0.00 0.00 0.59
Buzzrock-----	40	Poor Droughty Too acid Cobble content	 0.00 0.50 0.84	Fair Depth to bedrock Cobble content	 0.04 0.11	Poor Hard to reclaim (rock fragments) Rock fragments Too acid	 0.00 0.00 0.59
41D: Mt Rogers-----	45	Fair Too acid Droughty Cobble content	 0.50 0.71 0.77	Poor Slope Cobble content	 0.00 0.42	Poor Slope Hard to reclaim (rock fragments) Rock fragments	 0.00 0.00 0.00
Buzzrock-----	40	Poor Droughty Too acid Cobble content	 0.00 0.50 0.84	Poor Slope Depth to bedrock Cobble content	 0.00 0.04 0.11	Poor Slope Hard to reclaim (rock fragments) Rock fragments	 0.00 0.00 0.00
42C: Peaks-----	90	Poor Droughty Organic matter content low Too acid	 0.00 0.12 0.50	Poor Depth to bedrock	 0.00	Poor Rock fragments Slope Depth to bedrock	 0.00 0.63 0.71
42D: Peaks-----	90	Poor Droughty Organic matter content low Too acid	 0.00 0.12 0.50	Poor Depth to bedrock Slope	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock	 0.00 0.00 0.71
42E: Peaks-----	90	Poor Droughty Organic matter content low Too acid	 0.00 0.12 0.50	Poor Slope Depth to bedrock	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock	 0.00 0.00 0.71
43C: Peaks-----	90	Poor Droughty Organic matter content low Too acid	 0.00 0.12 0.50	Poor Depth to bedrock	 0.00	Poor Rock fragments Slope Depth to bedrock	 0.00 0.63 0.71

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43D: Peaks-----	90	Poor Droughty Organic matter content low Too acid	0.00 0.12 0.50	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.71
43E: Peaks-----	90	Poor Droughty Organic matter content low Too acid	0.00 0.12 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.71
43F: Peaks-----	90	Poor Droughty Organic matter content low Too acid	0.00 0.12 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.71
44C: Pigeonroost-----	85	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Poor Depth to bedrock Low strength	0.00 0.00	Fair Slope Too acid Depth to bedrock	0.63 0.76 0.97
44D: Pigeonroost-----	85	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Poor Depth to bedrock Slope Low strength	0.00 0.00 0.00	Poor Slope Too acid Depth to bedrock	0.00 0.76 0.97
44E: Pigeonroost-----	85	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Poor Slope Depth to bedrock Low strength	0.00 0.00 0.00	Poor Slope Too acid Depth to bedrock	0.00 0.76 0.97
45D: Pigeonroost-----	85	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Poor Depth to bedrock Low strength Slope	0.00 0.00 0.32	Poor Slope Too acid Depth to bedrock	0.00 0.86 0.97
45E: Pigeonroost-----	85	Fair Organic matter content low Too acid Water erosion	0.12 0.50 0.68	Poor Slope Depth to bedrock Low strength	0.00 0.00 0.00	Poor Slope Too acid Depth to bedrock	0.00 0.76 0.97

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
46E: Pigeonroost-----	60	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Depth to bedrock	0.00	Too acid	0.76
		Water erosion	0.68	Low strength	0.00	Depth to bedrock	0.97
Rock outcrop-----	30	Not rated		Not rated		Not rated	
47D: Pineola-----	90	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.23	Slope	0.00	Rock fragments	0.12
		Depth to bedrock	0.46	Low strength	0.22	Depth to bedrock	0.46
48E: Pineola-----	90	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Droughty	0.23	Depth to bedrock	0.00	Rock fragments	0.12
		Depth to bedrock	0.46	Low strength	0.22	Depth to bedrock	0.46
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Depth to bedrock	0.71
51B: Scales-----	95	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.88	Low strength	0.00	Too acid	0.59
						Rock fragments	0.95
52C: Sylco-----	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.29			Depth to bedrock	0.29
		Too acid	0.50			Slope	0.63
Sylvatus-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Too acid	0.50			Too acid	0.59
52D: Sylco-----	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.29	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Depth to bedrock	0.29

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52D: Sylvatus-----	35	Poor Droughty Depth to bedrock Too acid	0.00 0.00 0.50	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Rock fragments	0.00 0.00 0.00
52E: Sylco-----	50	Poor Droughty Depth to bedrock Too acid	0.00 0.29 0.50	Poor Slope Depth to bedrock	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.29
Sylvatus-----	35	Poor Droughty Depth to bedrock Too acid	0.00 0.00 0.50	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Rock fragments	0.00 0.00 0.00
53B: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Good		Fair Too acid	0.95
53C: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Good		Fair Slope Too acid	0.63 0.95
53D: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Fair Slope	0.50	Poor Slope Too acid	0.00 0.95
53E: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Poor Slope	0.00	Poor Slope Too acid	0.00 0.95
54C: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Good		Fair Slope Too acid	0.63 0.95
54D: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Poor Slope	0.00	Poor Slope Too acid	0.00 0.95
54E: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Poor Slope	0.00	Poor Slope Too acid	0.00 0.95

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
55D: Tate-----	90	Fair Organic matter content low Too acid	0.12 0.46	Fair Slope	0.32	Poor Slope Too acid	0.00 0.95
56C: Thunder-----	80	Fair Organic matter content low Cobble content Too acid	0.12 0.44 0.46	Poor Cobble content	0.00	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.63
56D: Thunder-----	80	Fair Organic matter content low Cobble content Too acid	0.12 0.44 0.46	Poor Cobble content Slope	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
56E: Thunder-----	80	Fair Organic matter content low Cobble content Too acid	0.12 0.44 0.46	Poor Slope Cobble content	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
57C: Thunder-----	80	Fair Organic matter content low Cobble content Too acid	0.12 0.44 0.46	Poor Cobble content	0.00	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.63
57D: Thunder-----	80	Fair Organic matter content low Cobble content Too acid	0.12 0.44 0.46	Poor Cobble content Slope	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
57E: Thunder-----	80	Fair Organic matter content low Cobble content Too acid	0.12 0.44 0.46	Poor Slope Cobble content	0.00 0.00	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Poor Droughty Depth to bedrock Organic matter content low	0.00 0.00 0.12	Poor Depth to bedrock Slope	0.00 0.32	Poor Rock fragments Depth to bedrock Slope	0.00 0.00 0.00

Soil Survey of Grayson County, Virginia

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59E: Unicoi-----	85	Poor Droughty Depth to bedrock Organic matter content low	0.00 0.00 0.12	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.00
W: Water-----	100	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 14.—Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C: Balsam-----	85	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.84 0.25	Very limited Depth to water	1.00
1D: Balsam-----	85	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.84 0.25	Very limited Depth to water	1.00
1E: Balsam-----	85	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.84 0.25	Very limited Depth to water	1.00
2D: Balsam-----	70	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.84 0.25	Very limited Depth to water	1.00
Nopan-----	20	Very limited Slope Seepage	1.00 0.70	Very limited Depth to saturated zone Seepage	1.00 0.03	Very limited Cutbanks cave Slow refill	1.00 0.30
2E: Balsam-----	70	Very limited Seepage Slope	1.00 1.00 1.00	Somewhat limited Large stones content Seepage	0.84 0.25	Very limited Depth to water	1.00
Nopan-----	20	Very limited Slope Seepage	1.00 0.70	Very limited Depth to saturated zone Seepage	1.00 0.03	Very limited Cutbanks cave Slow refill	1.00 0.30
3D: Bloodyhorse-----	80	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.61	Somewhat limited Thin layer Seepage	0.61 0.53	Very limited Depth to water	1.00
4F: Bloodyhorse-----	80	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.61	Somewhat limited Thin layer Seepage	0.61 0.53	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5B: Braddock-----	90	Somewhat limited Seepage Slope	0.81 0.32	Somewhat limited Hard to pack	0.24	Very limited Depth to water	1.00
5C: Braddock-----	90	Very limited Slope Seepage	1.00 0.81	Somewhat limited Hard to pack	0.24	Very limited Depth to water	1.00
5D: Braddock-----	90	Very limited Slope Seepage	1.00 0.81	Somewhat limited Hard to pack	0.24	Very limited Depth to water	1.00
6E: Braddock-----	90	Very limited Slope Seepage	1.00 0.81	Somewhat limited Hard to pack	0.24	Very limited Depth to water	1.00
7D: Brevard-----	50	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.01	Very limited Depth to water	1.00
Greenlee-----	35	Very limited Seepage Slope	1.00 1.00	Very limited Large stones content Seepage	0.99 0.03	Very limited Depth to water	1.00
8C: Burton-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.83	Somewhat limited Thin layer Seepage	0.95 0.05	Very limited Depth to water	1.00
9D: Burton-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.83	Somewhat limited Thin layer Seepage	0.95 0.05	Very limited Depth to water	1.00
9E: Burton-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.83	Somewhat limited Thin layer Seepage	0.95 0.05	Very limited Depth to water	1.00
10D: Peaks-----	20	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
Chestnut-----	65	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.26	Somewhat limited Thin layer Seepage	0.88 0.01	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
10E: Chestnut-----	65	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.26	Somewhat limited Thin layer Seepage	 0.88 0.01	Very limited Depth to water	 1.00
Peaks-----	20	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.81	Somewhat limited Seepage Thin layer	 0.82 0.81	Very limited Depth to water	 1.00
11F: Chestnut-----	40	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.26	Somewhat limited Thin layer Seepage	 0.88 0.01	Very limited Depth to water	 1.00
Peaks-----	25	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.81	Somewhat limited Seepage Thin layer	 0.82 0.81	Very limited Depth to water	 1.00
Tuckasegee-----	20	Very limited Seepage Slope	 1.00 1.00	Not limited		Very limited Depth to water	 1.00
12A: Codorus-----	90	Very limited Seepage	 1.00	Very limited Depth to saturated zone Seepage	 1.00 0.22	Very limited Cutbanks cave	 1.00
13A: Comus-----	90	Very limited Seepage	 1.00	Somewhat limited Seepage	 0.07	Very limited Depth to water	 1.00
14C: Cowee-----	90	Very limited Slope Seepage Depth to bedrock	 1.00 0.70 0.01	Somewhat limited Thin layer Seepage	 0.52 0.03	Very limited Depth to water	 1.00
14D: Cowee-----	90	Very limited Slope Seepage Depth to bedrock	 1.00 0.70 0.01	Somewhat limited Thin layer Seepage	 0.52 0.03	Very limited Depth to water	 1.00
14E: Cowee-----	90	Very limited Slope Seepage Depth to bedrock	 1.00 0.70 0.01	Somewhat limited Thin layer Seepage	 0.52 0.03	Very limited Depth to water	 1.00
15D: Cowee-----	90	Very limited Slope Seepage Depth to bedrock	 1.00 0.70 0.01	Somewhat limited Thin layer Seepage	 0.52 0.03	Very limited Depth to water	 1.00

Soil Survey of Grayson County, Virginia

Table 14.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15E: Cowee-----	90	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.01	Somewhat limited Thin layer Seepage	0.52 0.03	Very limited Depth to water	1.00
16D: Cowee-----	60	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.01	Somewhat limited Thin layer Seepage	0.52 0.03	Very limited Depth to water	1.00
Rock outcrop-----	35	Not rated		Not rated		Not rated	
16E: Cowee-----	60	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.01	Somewhat limited Thin layer Seepage	0.52 0.03	Very limited Depth to water	1.00
Rock outcrop-----	35	Not rated		Not rated		Not rated	
17A: Craigsville-----	85	Very limited Seepage	1.00	Somewhat limited Large stones content Seepage	0.41 0.22	Very limited Depth to water	1.00
18C: Cullasaja-----	85	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.88 0.04	Very limited Depth to water	1.00
18D: Cullasaja-----	85	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.88 0.04	Very limited Depth to water	1.00
19A: Delanco-----	90	Somewhat limited Seepage	0.70	Very limited Depth to saturated zone Seepage	1.00 0.03	Somewhat limited Slow refill Cutbanks cave	0.30 0.10
19B: Delanco-----	90	Somewhat limited Seepage Slope	0.70 0.32	Very limited Depth to saturated zone Seepage	1.00 0.03	Somewhat limited Slow refill Cutbanks cave	0.30 0.10
20C: Delanco-----	90	Very limited Slope Seepage	1.00 0.70	Very limited Depth to saturated zone Seepage	1.00 0.03	Somewhat limited Slow refill Cutbanks cave	0.30 0.10

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Edneytown-----	90	Very limited Seepage Slope	1.00 0.32	Somewhat limited Seepage	0.11	Very limited Depth to water	1.00
21C: Edneytown-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.11	Very limited Depth to water	1.00
21D: Edneytown-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.11	Very limited Depth to water	1.00
21E: Edneytown-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.11	Very limited Depth to water	1.00
21F: Edneytown-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.11	Very limited Depth to water	1.00
22C: Edneytown-----	60	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.11	Very limited Depth to water	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
23C: Edneyville-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
23D: Edneyville-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
23E: Edneyville-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
24D: Edneyville-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
24E: Edneyville-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24F: Edneyville-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
25B: Elsinboro-----	90	Very limited Seepage Slope	1.00 0.32	Somewhat limited Piping Seepage	0.45 0.04	Very limited Depth to water	1.00
26B: Elsinboro-----	60	Very limited Seepage Slope	1.00 0.08	Somewhat limited Piping Seepage	0.45 0.04	Very limited Depth to water	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
27D: Evard-----	50	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.01	Very limited Depth to water	1.00
Cowee-----	35	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.01	Somewhat limited Thin layer Seepage	0.52 0.03	Very limited Depth to water	1.00
28B: Glenelg-----	90	Somewhat limited Seepage Slope	0.70 0.32	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
28C: Glenelg-----	90	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
28D: Glenelg-----	90	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
28E: Glenelg-----	90	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
28F: Glenelg-----	90	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
29C: Glenelg-----	90	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
29D: Glenelg-----	90	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
29E: Glenelg-----	90	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
30C: Glenelg-----	60	Very limited Slope Seepage	1.00 0.70	Somewhat limited Seepage	0.02	Very limited Depth to water	1.00
Urban land-----	35	Not rated		Not rated		Not rated	
31D: Greenlee-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Large stones content Seepage	0.99 0.03	Very limited Depth to water	1.00
31E: Greenlee-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Large stones content Seepage	0.99 0.03	Very limited Depth to water	1.00
32A: Hatboro-----	90	Somewhat limited Seepage	0.70	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.44	Somewhat limited Cutbanks cave Slow refill	0.50 0.30
33B: Hayesville-----	90	Very limited Seepage Slope	1.00 0.32	Very limited Piping Seepage	1.00 0.03	Very limited Depth to water	1.00
33C: Hayesville-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Piping Seepage	1.00 0.03	Very limited Depth to water	1.00
33D: Hayesville-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Piping Seepage	1.00 0.03	Very limited Depth to water	1.00
34B: Keener-----	90	Very limited Seepage Slope	1.00 0.32	Very limited Piping	0.99	Very limited Depth to water	1.00
34C: Keener-----	90	Very limited Slope Seepage	1.00 1.00	Very limited Piping	0.99	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34D: Keener-----	90	Very limited Slope Seepage	1.00 1.00	Very limited Piping	0.99	Very limited Depth to water	1.00
35C: Keener-----	90	Very limited Slope Seepage	1.00 1.00	Very limited Piping	0.99	Very limited Depth to water	1.00
35D: Keener-----	90	Very limited Slope Seepage	1.00 1.00	Very limited Piping	0.99	Very limited Depth to water	1.00
36A: Kinkora-----	90	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.11	Very limited Cutbanks cave	1.00
37C: Konnarock-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.99	Somewhat limited Thin layer Seepage	0.99 0.53	Very limited Depth to water	1.00
37D: Konnarock-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.99	Somewhat limited Thin layer Seepage	0.99 0.53	Very limited Depth to water	1.00
37E: Konnarock-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.99	Somewhat limited Thin layer Seepage	0.99 0.53	Very limited Depth to water	1.00
38C: McCamy-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.83	Somewhat limited Thin layer Seepage	0.95 0.03	Very limited Depth to water	1.00
38D: McCamy-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.83	Somewhat limited Thin layer Seepage	0.95 0.03	Very limited Depth to water	1.00
39D: McCamy-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.83	Somewhat limited Thin layer Seepage	0.95 0.03	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
39E: McCamy-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.83	Somewhat limited Thin layer Seepage	0.95 0.03	Very limited Depth to water	1.00
40D: Mt Rogers-----	45	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage Large stones content	0.12 0.01	Very limited Depth to water	1.00
Bloodyhorse-----	25	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.61	Somewhat limited Thin layer Seepage	0.61 0.53	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
40F: Mt Rogers-----	45	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage Large stones content	0.12 0.01	Very limited Depth to water	1.00
Bloodyhorse-----	25	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.61	Somewhat limited Thin layer Seepage	0.61 0.53	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
41C: Mt Rogers-----	45	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage Large stones content	0.12 0.01	Very limited Depth to water	1.00
Buzzrock-----	40	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.37	Very limited Seepage Thin layer Large stones content	1.00 0.37 0.09	Very limited Depth to water	1.00
41D: Mt Rogers-----	45	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage Large stones content	0.12 0.01	Very limited Depth to water	1.00
Buzzrock-----	40	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.37	Very limited Seepage Thin layer Large stones content	1.00 0.37 0.09	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42C: Peaks-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
42D: Peaks-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
42E: Peaks-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
43C: Peaks-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
43D: Peaks-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
43E: Peaks-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
43F: Peaks-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
44C: Pigeonroost-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.02	Somewhat limited Piping Thin layer Seepage	0.67 0.61 0.03	Very limited Depth to water	1.00
44D: Pigeonroost-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.02	Somewhat limited Piping Thin layer Seepage	0.67 0.61 0.03	Very limited Depth to water	1.00
44E: Pigeonroost-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.02	Somewhat limited Piping Thin layer Seepage	0.67 0.61 0.03	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45D: Pigeonroost-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.02	Somewhat limited Piping Thin layer Seepage	0.67 0.61 0.03	Very limited Depth to water	1.00
45E: Pigeonroost-----	85	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.02	Somewhat limited Piping Thin layer Seepage	0.67 0.61 0.03	Very limited Depth to water	1.00
46E: Pigeonroost-----	60	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.02	Somewhat limited Piping Thin layer Seepage	0.67 0.61 0.03	Very limited Depth to water	1.00
Rock outcrop-----	30	Not rated		Not rated		Not rated	
47D: Pineola-----	90	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.13	Somewhat limited Thin layer Seepage	0.88 0.03	Very limited Depth to water	1.00
48E: Pineola-----	90	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.13	Somewhat limited Thin layer Seepage	0.88 0.03	Very limited Depth to water	1.00
49: Pits, quarries-----	100	Not rated		Not rated		Not rated	
50F: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Peaks-----	40	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Seepage Thin layer	0.82 0.81	Very limited Depth to water	1.00
51B: Scales-----	95	Somewhat limited Slope Seepage	0.08 0.01	Very limited Depth to saturated zone	1.00	Very limited Cutbanks cave	1.00
52C: Sylco-----	50	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.93	Somewhat limited Thin layer Seepage	0.93 0.57	Very limited Depth to water	1.00
Sylvatus-----	35	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Thin layer Seepage	1.00 0.57	Very limited Depth to water	1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52D: Sylco-----	50	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.93	Somewhat limited Thin layer Seepage	 0.93 0.57	Very limited Depth to water	 1.00
Sylvatus-----	35	Very limited Slope Depth to bedrock	 1.00 1.00	Very limited Thin layer Seepage	 1.00 0.57	Very limited Depth to water	 1.00
52E: Sylco-----	50	Very limited Seepage Slope Depth to bedrock	 1.00 1.00 0.93	Somewhat limited Thin layer Seepage	 0.93 0.57	Very limited Depth to water	 1.00
Sylvatus-----	35	Very limited Slope Depth to bedrock	 1.00 1.00	Very limited Thin layer Seepage	 1.00 0.57	Very limited Depth to water	 1.00
53B: Tate-----	90	Very limited Seepage Slope	 1.00 0.32	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00
53C: Tate-----	90	Very limited Seepage Slope	 1.00 1.00	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00
53D: Tate-----	90	Very limited Seepage Slope	 1.00 1.00	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00
53E: Tate-----	90	Very limited Seepage Slope	 1.00 1.00	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00
54C: Tate-----	90	Very limited Seepage Slope	 1.00 1.00	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00
54D: Tate-----	90	Very limited Seepage Slope	 1.00 1.00	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00
54E: Tate-----	90	Very limited Seepage Slope	 1.00 1.00	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00
55D: Tate-----	90	Very limited Seepage Slope	 1.00 1.00	Somewhat limited Piping Seepage	 0.70 0.03	Very limited Depth to water	 1.00

Soil Survey of Grayson County, Virginia

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
56C: Thunder-----	80	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.42 0.03	Very limited Depth to water	1.00
56D: Thunder-----	80	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.42 0.03	Very limited Depth to water	1.00
56E: Thunder-----	80	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.42 0.03	Very limited Depth to water	1.00
57C: Thunder-----	80	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.42 0.03	Very limited Depth to water	1.00
57D: Thunder-----	80	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.42 0.03	Very limited Depth to water	1.00
57E: Thunder-----	80	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones content Seepage	0.42 0.03	Very limited Depth to water	1.00
58D: Udorthents-----	50	Not rated		Not rated		Not rated	
Urban land-----	35	Not rated		Not rated		Not rated	
59D: Unicoi-----	85	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Thin layer Seepage	1.00 0.38	Very limited Depth to water	1.00
59E: Unicoi-----	85	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.38	Very limited Depth to water	1.00
W: Water-----	100	Not rated		Not rated		Not rated	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
1C: Balsam-----	In 0-19 19-35 35-48 48-62	Cobbly loam Very cobbly loam, cobbly sandy clay loam, very cobbly sandy loam Extremely cobbly loam, cobbly sandy clay loam, very cobbly sandy loam Extremely cobbly sandy loam, very cobbly loam, extremely cobbly fine sandy loam, very stony loamy sand	GM, OH, SM GM, SC-SM, ML CL, GM, GC-GM GM, GP-GM, GC	A-5, A-2, A-7 A-1, A-4, A-7 A-1, A-2, A-7 A-1, A-2	0 0 0 0-10	35-45 30-50 30-50 35-55	70-85 55-90 50-90 20-80	65-85 50-90 50-90 20-80	55-85 40-90 40-90 15-70	35-65 17-47 16-41 5-40	1-17 1-18 1-19 NP-10	
1D: Balsam-----	0-19 19-35 35-48 48-62	Cobbly loam Very cobbly loam, cobbly sandy clay loam, very cobbly sandy loam Extremely cobbly loam, cobbly sandy clay loam, very cobbly sandy loam Extremely cobbly sandy loam, very cobbly loam, extremely cobbly fine sandy loam, very stony loamy sand	GM, OH, SM GM, SC-SM, ML CL, GM, GC-GM GM, GP-GM, GC	A-5, A-2, A-7 A-1, A-4, A-7 A-1, A-2, A-7 A-1, A-2	0 0 0 0-10	35-45 30-50 30-50 35-55	70-85 55-90 50-90 20-80	65-85 50-90 50-90 20-80	55-85 40-90 40-90 15-70	33-79 17-47 16-41 5-40	1-17 1-18 1-19 NP-10	
1E: Balsam-----	0-19 19-35 35-48 48-62	Cobbly loam Very cobbly loam, cobbly sandy clay loam, very cobbly sandy loam Extremely cobbly loam, cobbly sandy clay loam, very cobbly sandy loam Extremely cobbly sandy loam, very cobbly loam, extremely cobbly fine sandy loam, very stony loamy sand	GM, OH, SM GM, SC-SM, ML CL, GM, GC-GM GM, GP-GM, GC	A-5, A-2, A-7 A-1, A-4, A-7 A-1, A-2, A-7 A-1, A-2	0 0 0 0-10	35-45 30-50 30-50 35-55	70-85 55-90 50-90 20-80	65-85 50-90 50-90 20-80	55-85 40-90 40-90 15-70	33-79 17-47 16-41 5-40	1-17 1-18 1-19 NP-10	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct						Pct
2D: Balsam-----	0-19	Cobbly loam	GM, OH, SM	A-5, A-2, A-7	0	35-45	70-85	65-85	55-85	35-65	33-79	1-17
	19-35	Very cobbly loam, cobbly sandy clay loam, very cobbly sandy loam	GM, SC-SM, ML	A-1, A-4, A-7	0	30-50	55-90	50-90	40-90	25-70	17-47	1-18
	35-48	Extremely cobbly loam, cobbly sandy clay loam, very cobbly sandy loam	CL, GM, GC-GM	A-1, A-2, A-7	0	30-50	50-90	50-90	40-90	25-70	16-41	1-19
	48-62	Extremely cobbly sandy loam, very cobbly loam, extremely cobbly fine sandy loam, very stony loamy sand	GM, GP-GM, GC	A-1, A-2	0-10	35-55	20-80	20-80	15-70	5-40	0-28	NP-10
Nopan-----	0-6	Loam	GM, OH	A-1, A-5, A-7	0	0-20	45-100	40-100	35-95	25-70	40-83	3-11
	6-17	Loam, sandy loam, gravelly loamy sand	CL-ML, GM, ML	A-2, A-4	0	0-15	55-100	55-100	45-95	30-70	9-23	NP-6
	17-33	Loamy sand, loam, gravelly sandy loam	GP-GM, SC-SM, SM	A-1, A-2	0	0-15	55-100	55-100	40-90	10-35	9-23	NP-6
	33-50	Sandy loam, loam, gravelly loamy sand	GM, SC-SM, SM	A-1, A-2, A-4	0	0-15	60-100	60-100	40-85	20-50	9-23	NP-6
	50-62	Sandy loam, loam, gravelly loamy sand	SC-SM, SM	A-1, A-2, A-4	0-10	0-15	65-100	65-100	45-85	20-50	9-23	NP-6
2E: Balsam-----	0-19	Cobbly loam	GM, OH, SM	A-5, A-2, A-7	0	35-45	70-85	65-85	55-85	35-65	33-79	1-17
	19-35	Very cobbly loam, cobbly sandy clay loam, very cobbly sandy loam	GM, SC-SM, ML	A-1, A-4, A-7	0	30-50	55-90	50-90	40-90	25-70	17-47	1-18
	35-48	Extremely cobbly loam, cobbly sandy clay loam, very cobbly sandy loam	CL, GM, GC-GM	A-1, A-2, A-7	0	30-50	50-90	50-90	40-90	25-70	16-41	1-19
	48-62	Extremely cobbly sandy loam, very cobbly loam, extremely cobbly fine sandy loam, very stony loamy sand	GM, GP-GM, GC	A-1, A-2	0-10	35-55	20-80	20-80	15-70	5-40	0-28	NP-10
Nopan-----	0-6	Loam	GM, OH	A-1, A-5, A-7	0	0-20	45-100	40-100	35-95	25-70	40-83	3-11
	6-17	Loam, sandy loam, gravelly loamy sand	CL-ML, GM, ML	A-2, A-4	0	0-15	55-100	55-100	45-95	30-70	9-23	NP-6
	17-33	Loamy sand, loam, gravelly sandy loam	GP-GM, SC-SM, SM	A-1, A-2	0	0-15	55-100	55-100	40-90	10-35	9-23	NP-6
	33-50	Sandy loam, loam, gravelly loamy sand	GM, SC-SM, SM	A-1, A-2, A-4	0	0-15	60-100	60-100	40-85	20-50	9-23	NP-6
	50-62	Sandy loam, loam, gravelly loamy sand	SC-SM, SM	A-1, A-2, A-4	0-10	0-15	65-100	65-100	45-85	20-50	9-23	NP-6

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
3D: Bloodyhorse-----	In											
	0-12	Gravelly loam	GM	A-1, A-2, A-7	0	0-10	40-55	35-55	30-55	20-40	35-77	3-16
	12-28	Very gravelly loam, extremely gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-50	10-50	5-50	4-35	12-30	NP-10
	28-37	Extremely gravelly loam, very gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-40	10-35	5-35	4-25	12-30	NP-10
4F: Bloodyhorse-----	37-47	Bedrock			---	---	---	---	---	---	---	---
	0-12	Gravelly loam	GM	A-1, A-2, A-7	0	0-10	40-55	35-55	30-55	20-40	35-77	3-16
	12-28	Very gravelly loam, extremely gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-50	10-50	5-50	4-35	12-30	NP-10
	28-37	Extremely gravelly loam, very gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-40	10-35	5-35	4-25	12-30	NP-10
5B: Braddock-----	37-47	Bedrock			---	---	---	---	---	---	---	---
	0-8	Loam	CL, SC	A-6, A-4	0	0-10	80-100	80-100	65-95	45-95	22-39	6-17
	8-15	Clay loam, clay, gravelly sandy clay loam	CL, SC	A-6	0	0-10	65-100	65-100	55-100	45-95	36-58	18-36
	15-51	Clay, sandy clay, gravelly clay loam, silty clay loam	CH, CL, GC, SC	A-7	0	0-10	65-100	65-100	55-100	45-90	43-63	25-40
51-62	Clay loam, clay, very cobbly silty clay loam, gravelly sandy clay	CL, CH, GC, SC	A-7	0-10	0-20	60-100	60-100	55-100	45-90	43-59	25-36	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			Liquid limit	Plasticity index	
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40			200
5C: Braddock-----	In											
	0-8	Loam	CL, SC	A-6, A-4	0	0-10	80-100	80-100	65-95	45-95	22-39	6-17
	8-15	Clay loam, clay, gravelly sandy clay loam	CL, SC	A-6	0	0-10	65-100	65-100	55-100	45-95	36-58	18-36
	15-51	Clay, sandy clay, gravelly clay loam, silty clay loam	CH, CL, GC, SC	A-7	0	0-10	65-100	65-100	55-100	45-90	43-63	25-40
5D: Braddock-----	51-62	Clay loam, clay, very cobbly silty clay loam, gravelly sandy clay	CL, CH, GC, SC	A-7	0-10	0-20	60-100	60-100	55-100	45-90	43-59	25-36
	0-8	Loam	CL, SC	A-6, A-4	0	0-10	80-100	80-100	65-95	45-95	22-39	6-17
	8-15	Clay loam, clay, gravelly sandy clay loam	CL, SC	A-6	0	0-10	65-100	65-100	55-100	45-95	36-58	18-36
	15-51	Clay, sandy clay, gravelly clay loam, silty clay loam	CH, CL, GC, SC	A-7	0	0-10	65-100	65-100	55-100	45-90	43-63	25-40
6E: Braddock-----	51-62	Clay loam, clay, very cobbly silty clay loam, gravelly sandy clay	CL, CH, GC, SC	A-7	0-10	0-20	60-100	60-100	55-100	45-90	43-59	25-36
	0-8	Cobbly loam	CL	A-6, A-4	0	20-30	90-100	90-100	70-95	50-75	22-39	6-17
	8-15	Cobbly clay loam, cobbly clay, cobbly sandy clay loam	CL	A-6	0	20-30	90-100	90-100	80-100	60-95	36-58	18-36
	15-51	Clay, cobbly sandy clay, cobbly clay loam, silty clay loam	CH, CL	A-7	0	0-30	80-100	80-100	65-100	55-90	43-63	25-40
51-62	Clay loam, very cobbly clay, cobbly silty clay loam, gravelly sandy clay	CL, CH	A-7	0-10	0-30	65-100	65-100	60-100	50-90	43-59	25-36	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
7D: Bravard-----	In 0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, very gravelly fine sandy loam	ML, SC-SM, SM, SP-SM, CL-ML	A-1, A-2, A-4	0-30	0-50	50-100	25-85	15-75	10-55	12-25	NP-7
	8-48	Gravelly sandy clay loam, cobbly clay loam, loam	CL, CL-ML, SC, SC-SM	A-1, A-2, A-4, A-6	0	0-30	70-100	35-100	30-100	15-80	23-38	6-14
	48-60	Very gravelly fine sandy loam, very cobbly loam, gravelly sandy loam, cobbly loamy fine sand	GM, GC, GC-GM, SM, GP-GM, GP-GC	A-1, A-2-4, A-3, A-4	0	5-30	40-80	20-75	15-70	5-55	12-30	NP-10
Greenlee-----	0-7	Very cobbly loam	SM, SC, SC-SM, ML, CL, CL-ML	A-4	0	37-48	65-75	55-75	45-75	30-60	15-30	2-11
	7-53	Very cobbly sandy loam, very cobbly loam, very cobbly sandy clay loam	SM, SC, SC-SM, ML, CL, CL-ML	A-1, A-2-4, A-4	0	36-51	65-85	55-80	35-75	20-60	10-30	NP-11
	53-62	Extremely cobbly sandy loam, very cobbly loam, extremely cobbly sand	SM, SC-SM, SP, SP-SM, ML, CL-ML	A-1, A-2-4, A-4	0	36-65	55-85	40-80	20-75	2-60	8-23	NP-7
8C: Burton-----	0-13 13-21	Loam Loam, gravelly fine sandy loam, cobbly sandy loam	OH, ML CL, GC, ML	A-5, A-7, A-4 A-2, A-6, A-7	0 0	0-15 0-15	90-100 60-100	85-100 60-100	70-95 50-95	50-70 35-70	38-75 26-45	5-14 9-17
	21-26	Very gravelly sandy loam, loam, cobbly fine sandy loam, very gravelly loamy sand	GC, GP-GM, SC	A-1, A-2, A-6	0	0-15	45-100	40-100	25-85	10-45	16-37	2-17
	26-31 31-42	Bedrock Bedrock			---	---	---	---	---	---	---	---
9D: Burton-----	0-13 13-21	Loam Loam, gravelly fine sandy loam, cobbly sandy loam	OH, ML CL, GC, ML	A-5, A-7, A-4 A-2, A-6, A-7	0 0	0-15 0-15	90-100 60-100	85-100 60-100	70-95 50-95	50-70 35-70	38-75 26-45	5-14 9-17
	21-26	Very gravelly sandy loam, loam, cobbly fine sandy loam, very gravelly loamy sand	GC, GP-GM, SC	A-1, A-2, A-6	0	0-15	45-100	40-100	25-85	10-45	16-37	2-17
	26-31 31-42	Bedrock Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In											
9E: Burton-----	0-13 13-21	Loam Loam, gravelly fine sandy loam, cobbly sandy loam	OH, ML CL, GC, ML	A-5, A-7, A-4 A-2, A-6, A-7	0 0	0-15 0-15	90-100 60-100	85-100 60-100	70-95 50-95	50-70 35-70	38-75 26-45	5-14 9-17
	21-26	Very gravelly sandy loam, loam, cobbly fine sandy loam, very gravelly loamy sand	GC, GP-GM, SC	A-1, A-2, A-6	0	0-15	45-100	40-100	25-85	10-45	16-37	2-17
	26-31 31-42	Bedrock Bedrock			---	---	---	---	---	---	---	---
10D: Peaks-----	0-4 4-8	Very gravelly loam Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC-GM, GM GC, GC-GM, GM	A-1, A-2 A-1, A-4	0 0	0-15 0-15	30-50 30-75	25-50 25-75	20-45 20-70	15-30 15-50	20-36 15-28	3-10 1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0-15	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand Bedrock	GC, GP-GC, GP-GM	A-1, A-2	0	0-15	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	---
Chestnut-----	0-3	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4, A-2	0-5	0-15	65-85	45-85	35-80	30-50	12-25	NP-7
	3-21	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, sandy loam, fine sandy loam, loam	CL-ML, SC-SM, SM, ML	A-2-4, A-1, A-4, A-2	0-5	0-15	85-100	45-90	25-85	25-50	12-25	NP-7
	21-29	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, cobbly loamy fine sand, gravelly loamy sand Weathered bedrock Unweathered bedrock	CL-ML, ML, SM, SC-SM	A-2-4, A-1, A-4, A-2	0-5	0-30	85-95	45-85	25-80	25-50	12-25	NP-7

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	<u>In</u>											
10E: Chestnut-----	0-3	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4, A-2	0-5	0-15	65-85	45-85	35-80	30-50	12-25	NP-7
	3-21	Gravelly fine sandy loam, gravelly loam, fine sandy loam, loam	SM, ML, CL-ML, SC-SM	A-2-4, A-1, A-4, A-2	0-5	0-15	85-100	45-90	25-85	25-50	12-25	NP-7
	21-29	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, cobbly loamy fine sand, gravelly loamy sand	SC-SM, CL-ML, SM, ML	A-2-4, A-1, A-4, A-2	0-5	0-30	85-95	45-85	25-80	25-50	12-25	NP-7
	29-45	Weathered bedrock			---	---	---	---	---	---	---	---
	45-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Peaks-----	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
11F: Chestnut-----	In											
	0-3	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SM, CL-ML, ML, SC-SM	A-2-4, A-4, A-2	0-5	0-15	65-85	45-85	35-80	30-50	12-25	NP-7
	3-21	Gravelly fine sandy loam, gravelly loam, sandy loam, fine sandy loam, loam	SM, ML, SC-SM, CL-ML	A-2-4, A-1, A-4, A-2	0-5	0-15	85-100	45-90	25-85	25-50	12-25	NP-7
	21-29	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, cobbly loamy fine sand, gravelly loamy sand	SM, CL-ML, ML, SC-SM	A-2-4, A-1, A-4, A-2	0-5	0-30	85-95	45-85	25-80	25-50	12-25	NP-7
	29-45	Weathered bedrock			---	---	---	---	---	---	---	---
	45-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Peaks-----	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	---
Tuckaseges-----	0-13	Gravelly loam, gravelly sandy loam, gravelly fine sandy loam	CL-ML, SM, SC-SM, ML	A-1, A-2, A-4	0-1	0-15	70-85	60-80	30-75	20-60	12-25	NP-7
	13-47	Gravelly loam, cobbly fine sandy loam, sandy loam, sandy clay loam	SC, CL, CL-ML, ML, SC-SM, SM	A-4, A-2	0-1	0-15	75-100	65-95	55-90	35-65	15-30	2-10
	47-79	Very gravelly loam, gravelly loamy sand, cobbly fine sandy loam, very cobbly loamy fine sand, sandy loam	CL-ML, SC-SM, ML, SM, GM, GC-GM	A-4, A-2	0-1	2-15	65-100	40-75	35-70	30-60	12-25	NP-7

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
12A: Codurus-----	In											
	0-7	Loam	CL, SC	A-6, A-7, A-4	0	0	75-100	70-100	60-95	45-70	29-43	9-17
	7-19	Loam, silt loam, silty clay loam, clay loam	CL, SC	A-6, A-7	0	0	75-100	70-100	60-100	45-80	27-44	12-25
	19-37	Loam, silt loam, silty clay loam, clay loam	SC, CL	A-6, A-7	0	0	75-100	70-100	60-100	45-80	27-44	12-25
	37-49	Gravelly sandy loam, loam, silt loam, silty clay loam, clay loam	SC, CL, SC-SM	A-2, A-7, A-1	0	0	60-100	60-100	40-95	15-60	20-44	6-25
	49-62	Very gravelly sandy loam, gravelly loam, silt loam, silty clay loam, clay loam	CL, GC, GP-GC	A-2, A-7, A-1	0	0	20-100	15-100	10-95	5-60	20-44	6-25
13A: Comus-----	0-9	Fine sandy loam	SC-SM, SM	A-2, A-4, A-6	0	0-5	80-100	75-100	65-95	25-45	18-37	2-12
	9-31	Fine sandy loam, loam, silt loam	SM, SC, SC-SM	A-2, A-4, A-6	0	0-5	80-100	75-100	65-95	25-45	16-30	2-12
	31-53	Fine sandy loam, silt loam, gravelly loam, very gravelly sandy loam	GM, SC, SC-SM	A-1, A-4, A-6	0	0-15	55-100	50-100	45-95	15-45	16-30	2-12
	53-62	Gravelly loamy sand, silt loam, very gravelly loam, cobbly sandy loam, very gravelly loamy fine sand	SC, GM, SM	A-1, A-2, A-6	0	0-15	55-100	50-100	40-90	15-45	0-30	NP-12
14C: Cowes-----	0-6	Loam	CL-ML, SM	A-4	0	0-10	80-100	80-100	65-90	45-65	14-25	1-7
	6-27	Clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam	CL, GC-GM	A-6, A-2	0-10	0-10	60-100	60-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
	39-45	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
14D: Cowee-----	In											
	0-6	Loam	CL-ML, SM	A-4	0	0-10	80-100	80-100	65-90	45-65	14-25	1-7
	6-27	Clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam	CL, GC-GM	A-6, A-2	0-10	0-10	60-100	60-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
14E: Cowee-----	39-45	Bedrock			---	---	---	---	---	---	---	---
	0-6	Loam	CL-ML, SM	A-4	0	0-10	80-100	80-100	65-90	45-65	14-25	1-7
	6-27	Clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam	CL, GC-GM	A-6, A-2	0-10	0-10	60-100	60-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
15D: Cowee-----	39-45	Bedrock			---	---	---	---	---	---	---	---
	0-6	Gravelly loam	GC-GM, GM, CL-ML	A-2, A-4	0-10	0-10	60-100	55-100	45-90	30-65	14-25	1-7
	6-27	Gravelly clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam	GC, GC-GM, CL	A-6, A-2	0-10	0-10	60-100	55-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
15E: Cowee-----	39-45	Bedrock			---	---	---	---	---	---	---	---
	0-6	Gravelly loam	GC-GM, GM, CL-ML	A-2, A-4	0-10	0-10	60-100	55-100	45-90	30-65	14-25	1-7
	6-27	Gravelly clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam	GC, GC-GM, CL	A-6, A-2	0-10	0-10	60-100	55-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
15E: Cowee-----	39-45	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
16D: Cowee-----	In											
	0-6	Loam	CL-ML, SM	A-4	0	0-10	80-100	80-100	65-90	45-65	14-25	1-7
	6-27	Clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam, gravelly fine sandy loam, loam	CL, GC-GM	A-6, A-2	0-10	0-10	60-100	60-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
	39-45	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
16E: Cowee-----	0-6	Loam	CL-ML, SM	A-4	0	0-10	80-100	80-100	65-90	45-65	14-25	1-7
	6-27	Clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam, gravelly fine sandy loam, loam	CL, GC-GM	A-6, A-2	0-10	0-10	60-100	60-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
	39-45	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
17A: Craigsville-----	0-6	Cobbly sandy loam	SC-SM, SM	A-2, A-4, A-1	0	15-30	65-90	65-90	50-75	25-40	18-35	2-10
	6-32	Very cobbly sandy loam, very gravelly loam, extremely cobbly loam	GC-GM, GP-GM, SC	A-1, A-2	0	25-45	35-75	35-70	25-60	10-30	16-28	2-10
	32-62	Extremely cobbly loamy sand, very gravelly sandy loam, very cobbly sandy loam	SC-SM, GP-GC, GP-GM	A-1, A-2	0	25-45	35-75	35-70	25-60	5-20	16-24	2-6

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
18C: Cullasaja-----	In											
	0-6 6-21	Cobbly loam Very cobbly loam, gravelly loam, extremely cobbly loam	OL, OH, GM GM, OH	A-5, A-7, A-4 A-5, A-7, A-1	0-10 0-10	20-35 20-50	70-90 35-90	70-85 30-85	55-85 25-85	40-65 20-65	30-67 30-67	4-16 4-16
	21-42	Very cobbly loam, very sandy loam, very cobbly sandy clay loam, extremely cobbly fine sandy loam	GC-GM, GM, CL	A-4, A-6, A-1	0-10	35-50	50-80	45-80	40-80	25-60	17-39	2-17
	42-62	Extremely cobbly sandy loam, very stony loamy sand, extremely cobbly loamy fine sand, very stony coarse sandy loam, very cobbly loam	GC-GM, GP-GM, SC	A-1, A-2	0-15	35-50	30-80	30-80	20-65	10-35	0-28	NP-10
18D: Cullasaja-----	0-6 6-21	Cobbly loam Very cobbly loam, gravelly loam, extremely cobbly loam	OL, OH, GM GM, OH	A-5, A-7, A-4 A-5, A-7, A-1	0-10 0-10	20-35 20-50	70-90 35-90	70-85 30-85	55-85 25-85	40-65 20-65	30-67 30-67	4-16 4-16
	21-42	Very cobbly loam, very stony sandy loam, very cobbly sandy clay loam, extremely cobbly fine sandy loam	GC-GM, GM, CL	A-4, A-6, A-1	0-10	35-50	50-80	45-80	40-80	25-60	17-39	2-17
	42-62	Extremely cobbly sandy loam, very stony loamy sand, extremely cobbly loamy fine sand, very stony coarse sandy loam, very cobbly loam	GC-GM, GP-GM, SC	A-1, A-2	0-15	35-50	30-80	30-80	20-65	10-35	0-28	NP-10
19A: Delanco-----	0-10 10-16	Fine sandy loam Fine sandy loam, gravelly loam	SC-SM, SM SC-SM, SM	A-2, A-4, A-6 A-2, A-4, A-6	0 0	0 0	70-100 65-100	70-100 60-100	60-95 55-95	25-50 25-50	20-37 16-30	2-12 2-12
	16-41	Sandy clay loam, gravelly clay loam	CL, SC	A-2, A-6, A-7	0	0	70-100	65-100	55-90	30-55	29-42	12-21
	41-47	Loam, silt loam, gravelly sandy loam	CL, GC	A-4, A-6	0	0	70-100	65-100	55-95	40-70	26-39	10-19
	47-62	Sandy loam, silt loam, gravelly loam	SM, SC, SC-SM	A-1, A-4, A-6	0	0	65-95	60-95	45-85	20-50	16-36	2-17

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
19B: Delanco-----	In											
	0-10	Fine sandy loam	SC-SM, SM	A-2, A-4, A-6	0	0	70-100	70-100	60-95	25-50	20-37	2-12
	10-16	Fine sandy loam, gravelly loam	SC-SM, SM	A-2, A-4, A-6	0	0	65-100	60-100	55-95	25-50	16-30	2-12
	16-41	Sandy clay loam, gravelly clay loam	CL, SC	A-2, A-6, A-7	0	0	70-100	65-100	55-90	30-55	29-42	12-21
	41-47	Loam, silt loam, gravelly sandy loam	CL, GC	A-4, A-6	0	0	70-100	65-100	55-95	40-70	26-39	10-19
	47-62	Sandy loam, silt loam, gravelly loam	SM, SC, SC-SM	A-1, A-4, A-6	0	0	65-95	60-95	45-85	20-50	16-36	2-17
20C: Delanco-----	0-10	Fine sandy loam	SC-SM, SM	A-2, A-4, A-6	0	0	70-100	70-100	60-95	25-50	20-37	2-12
	10-16	Fine sandy loam, gravelly loam	SC-SM, SM	A-2, A-4, A-6	0	0	65-100	60-100	55-95	25-50	16-30	2-12
	16-41	Sandy clay loam, gravelly clay loam	CL, SC	A-2, A-6, A-7	0	0	70-100	65-100	55-90	30-55	29-42	12-21
	41-47	Loam, silt loam, gravelly sandy loam	CL, GC	A-4, A-6	0	0	70-100	65-100	55-95	40-70	26-39	10-19
	47-62	Sandy loam, silt loam, gravelly loam	SM, SC, SC-SM	A-1, A-4, A-6	0	0	65-95	60-95	45-85	20-50	16-36	2-17
21B: Edneytown-----	0-4	Loam	ML, CL-ML	A-4	0	0	80-100	80-100	65-95	45-75	12-21	1-6
	4-7	Loam, fine sandy loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4, A-2-4	0	0	80-100	80-100	45-95	25-75	12-21	1-6
	7-20	Sandy clay loam, clay loam	SC, CL	A-6, A-2-4	0	0	80-100	75-100	60-100	25-80	25-39	8-16
	20-27	Sandy loam, sandy clay loam	SC, SM, SC-SM	A-2-4, A-4	0	0	80-100	75-100	45-90	25-55	16-30	3-11
	27-62	Loamy sand, fine sandy loam, loam	SC-SM, SM	A-2-4, A-1, A-4	0	0	80-100	75-100	35-85	10-55	11-21	NP-6
21C: Edneytown-----	0-4	Loam	ML, CL-ML	A-4	0	0	80-100	80-100	65-95	45-75	12-21	1-6
	4-7	Loam, fine sandy loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4, A-2-4	0	0	80-100	80-100	45-95	25-75	12-21	1-6
	7-20	Sandy clay loam, clay loam	SC, CL	A-6, A-2-4	0	0	80-100	75-100	60-100	25-80	25-39	8-16
	20-27	Sandy loam, sandy clay loam	SC, SM, SC-SM	A-2-4, A-4	0	0	80-100	75-100	45-90	25-55	16-30	3-11
	27-62	Loamy sand, fine sandy loam, loam	SC-SM, SM	A-2-4, A-1, A-4	0	0	80-100	75-100	35-85	10-55	11-21	NP-6

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
21D: Edneytown-----	In											
	0-4	Loam	ML, CL-ML	A-4	0	0	80-100	80-100	65-95	45-75	12-21	1-6
	4-7	Loam, fine sandy loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4, A-2-4	0	0	80-100	80-100	45-95	25-75	12-21	1-6
	7-20	Sandy clay loam, clay loam	SC, CL	A-6, A-2-4	0	0	80-100	75-100	60-100	25-80	25-39	8-16
	20-27	Sandy loam, sandy clay loam	SC, SM, SC-SM	A-2-4, A-4	0	0	80-100	75-100	45-90	25-55	16-30	3-11
	27-62	Loamy sand, fine sandy loam, loam	SC-SM, SM	A-2-4, A-1, A-4	0	0	80-100	75-100	35-85	10-55	11-21	NP-6
21E: Edneytown-----	0-4	Loam	ML, CL-ML	A-4	0	0	80-100	80-100	65-95	45-75	12-21	1-6
	4-7	Loam, fine sandy loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4, A-2-4	0	0	80-100	80-100	45-95	25-75	12-21	1-6
	7-20	Sandy clay loam, clay loam	SC, CL	A-6, A-2-4	0	0	80-100	75-100	60-100	25-80	25-39	8-16
	20-27	Sandy loam, sandy clay loam	SC, SM, SC-SM	A-2-4, A-4	0	0	80-100	75-100	45-90	25-55	16-30	3-11
	27-62	Loamy sand, fine sandy loam, loam	SC-SM, SM	A-2-4, A-1, A-4	0	0	80-100	75-100	35-85	10-55	11-21	NP-6
21F: Edneytown-----	0-4	Loam	ML, CL-ML	A-4	0	0	80-100	80-100	65-95	45-75	12-21	1-6
	4-7	Loam, fine sandy loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4, A-2-4	0	0	80-100	80-100	45-95	25-75	12-21	1-6
	7-20	Sandy clay loam, clay loam	SC, CL	A-6, A-2-4	0	0	80-100	75-100	60-100	25-80	25-39	8-16
	20-27	Sandy loam, sandy clay loam	SC, SM, SC-SM	A-2-4, A-4	0	0	80-100	75-100	45-90	25-55	16-30	3-11
	27-62	Loamy sand, fine sandy loam, loam	SC-SM, SM	A-2-4, A-1, A-4	0	0	80-100	75-100	35-85	10-55	11-21	NP-6
22C: Edneytown-----	0-4	Loam	ML, CL-ML	A-4	0	0	80-100	80-100	65-95	45-75	12-21	1-6
	4-7	Loam, fine sandy loam, sandy loam	ML, CL-ML, SM, SC-SM	A-4, A-2-4	0	0	80-100	80-100	45-95	25-75	12-21	1-6
	7-20	Sandy clay loam, clay loam	SC, CL	A-6, A-2-4	0	0	80-100	75-100	60-100	25-80	25-39	8-16
	20-27	Sandy loam, sandy clay loam	SC, SM, SC-SM	A-2-4, A-4	0	0	80-100	75-100	45-90	25-55	16-30	3-11
	27-62	Loamy sand, fine sandy loam, loam	SC-SM, SM	A-2-4, A-1, A-4	0	0	80-100	75-100	35-85	10-55	11-21	NP-6
Urban land.												



Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
24E: Edneyville-----	In											
	0-5	Loam	ML, SM	A-4, A-7	0	0-10	80-100	80-100	65-95	45-70	20-43	3-13
	5-11	Loam, fine sandy loam, gravelly sandy loam	CL, CL-ML, GM	A-2, A-4, A-6	0-5	0-5	60-100	55-100	45-95	30-70	17-35	2-13
	11-34	Sandy loam, fine sandy loam, gravelly loam	GM, SC, SC-SM	A-1, A-4, A-6	0-5	0-5	60-100	55-100	40-85	20-50	16-31	2-12
24F: Edneyville-----	34-62	Sandy loam, fine sandy loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-5	0-5	60-100	55-100	40-85	20-50	16-29	2-12
	0-5	Loam	ML, SM	A-4, A-7	0	0-10	80-100	80-100	65-95	45-70	20-43	3-13
	5-11	Loam, fine sandy loam, gravelly sandy loam	CL, CL-ML, GM	A-2, A-4, A-6	0-5	0-5	60-100	55-100	45-95	30-70	17-35	2-13
	11-34	Sandy loam, fine sandy loam, gravelly loam	GM, SC, SC-SM	A-1, A-4, A-6	0-5	0-5	60-100	55-100	40-85	20-50	16-31	2-12
25B: Elsinboro-----	34-62	Sandy loam, fine sandy loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-5	0-5	60-100	55-100	40-85	20-50	16-29	2-12
	0-10	Fine sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0-10	80-100	80-100	70-95	25-45	21-35	4-12
	10-18	Fine sandy loam, loam, silt loam, gravelly sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0-15	70-100	70-100	60-95	25-45	19-30	4-12
	18-45	Clay loam, sandy clay loam, silty clay loam, gravelly silt loam, cobbly loam	CL, GC	A-6, A-7	0	0-15	70-100	70-100	55-95	45-75	27-43	12-24
26B: Elsinboro-----	45-62	Cobbly sandy loam, fine sandy loam, sandy clay loam, gravelly silt loam, cobbly loam	CL, SC, SC-SM	A-2, A-7	0	0-23	80-100	80-100	55-95	25-60	18-43	4-24
	0-10	Fine sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0-10	80-100	80-100	70-95	25-45	21-35	4-12
	10-18	Fine sandy loam, loam, silt loam, gravelly sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0-15	70-100	70-100	60-95	25-45	19-30	4-12
	18-45	Clay loam, sandy clay loam, silty clay loam, gravelly silt loam, cobbly loam	CL, GC	A-6, A-7	0	0-15	70-100	70-100	55-95	45-75	27-43	12-24
26B: Elsinboro-----	45-62	Cobbly sandy loam, fine sandy loam, sandy clay loam, gravelly silt loam, cobbly loam	CL, SC, SC-SM	A-2, A-7	0	0-23	80-100	80-100	55-95	25-60	18-43	4-24

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
26B: Urban land.												
27D: Evard-----	0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, fine sandy loam	SC-SM, SM, SC	A-2-4, A-1, A-4, A-2	0	0-15	75-85	60-80	50-75	15-40	16-30	2-10
	8-35	Clay loam, sandy clay loam, loam	SC-SM, CL, SC, CL-ML	A-6, A-2-4, A-2-6, A-4	0	0-15	80-100	75-100	60-95	25-75	23-38	6-14
	35-79	Channery fine sandy loam, gravelly loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam	SC, SM, ML, SC-SM, CL-ML, CL	A-2-4, A-1, A-4, A-2	0	0-15	80-100	65-100	50-90	10-55	12-27	NP-8
	0-6	Gravelly loam	GC-GM, GM, CL-ML	A-2, A-4	0-10	0-10	60-100	55-100	45-90	30-65	14-25	1-7
	6-27	Gravelly clay loam, loam, sandy clay loam, gravelly fine sandy loam, gravelly sandy loam	GC, GC-GM, CL	A-6, A-2	0-10	0-10	60-100	55-100	45-95	35-80	23-38	6-14
	27-39	Gravelly sandy loam, gravelly fine sandy loam, loam	SC-SM, GM, SC	A-1, A-4	0-10	0-10	60-100	60-100	40-90	20-50	16-30	2-10
	39-45	Bedrock			---	---	---	---	---	---	---	---
28B: Glengel-----	0-4	Loam	CL, GC	A-4, A-6, A-7	0	0	70-100	70-100	60-95	40-70	27-41	9-17
	4-24	Clay loam, silt loam, silty clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	45-95	30-75	29-42	13-22
	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13
	0-4	Loam	CL, GC	A-4, A-6, A-7	0	0	70-100	70-100	60-95	40-70	27-41	9-17
	4-24	Clay loam, silt loam, silty clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	45-95	30-75	29-42	13-22
	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquidity index	
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
28D: Glennelg-----	In											
	0-4	Loam	CL, GC	A-4, A-6, A-7	0	0	70-100	70-100	60-95	40-70	27-41	9-17
	4-24	Clay loam, silt loam, silty clay loam, Gravelly loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	45-95	30-75	29-42	13-22
28E: Glennelg-----	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13
	0-4	Loam	CL, GC	A-4, A-6, A-7	0	0	70-100	70-100	60-95	40-70	27-41	9-17
	4-24	Clay loam, silt loam, silty clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	45-95	30-75	29-42	13-22
28F: Glennelg-----	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13
	0-4	Loam	CL, GC	A-4, A-6, A-7	0	0	70-100	70-100	60-95	40-70	27-41	9-17
	4-24	Clay loam, silt loam, silty clay loam, Gravelly loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	45-95	30-75	29-42	13-22
29C: Glennelg-----	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13
	0-4	Gravelly loam	GC	A-2, A-6, A-7	0	0	45-75	45-75	35-70	25-50	27-41	9-17
	4-24	Clay loam, silt loam, silty clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	45-95	30-75	29-42	13-22
29D: Glennelg-----	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13
	0-4	Gravelly loam	GC	A-2, A-6, A-7	0	0	45-75	45-75	35-70	25-50	27-41	9-17
	4-24	Clay loam, silt loam, silty clay loam, Gravelly loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	45-95	30-75	29-42	13-22
29D: Glennelg-----	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
29E: Glengelg-----	0-4 4-24	Gravelly loam Clay loam, silt loam, silty clay loam, Gravelly loam	GC CL, GC	A-2, A-6, A-7 A-2, A-6, A-7	0 0	0 0-5	45-75 55-100	45-75 50-100	35-70 45-95	25-50 30-75	27-41 29-42	9-17 13-22
30C: Glengelg-----	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13
	0-4 4-24	Loam Clay loam, silt loam, silty clay loam, gravelly loam	CL, GC CL, GC	A-4, A-6, A-7 A-2, A-6, A-7	0 0	0 0-5	70-100 55-100	70-100 50-100	60-95 45-95	40-70 30-75	27-41 29-42	9-17 13-22
	24-62	Fine sandy loam, silt loam, gravelly loam, gravelly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0	0-25	60-90	60-90	50-90	20-45	16-32	2-13
Urban land.												
31D: Greenlee-----	0-7	Very cobbly loam	SM, SC, SC-SM, ML, CL, CL-ML	A-4	0	37-48	65-75	55-75	45-75	30-60	15-30	2-11
	7-53	Very cobbly sandy loam, very cobbly loam, very cobbly sandy clay loam	SM, SC, SC-SM, ML, CL, CL-ML	A-1, A-2-4, A-4	0	36-51	65-85	55-80	35-75	20-60	10-30	NP-11
	53-62	Extremely cobbly sandy loam, very cobbly loam, extremely cobbly sand	SM, SC-SM, SP, SP-SM, ML, CL-ML	A-1, A-2-4, A-4	0	36-65	55-85	40-80	20-75	2-60	8-23	NP-7
31E: Greenlee-----	0-7	Very cobbly loam	SM, SC, SC-SM, ML, CL, CL-ML	A-4	0	37-48	65-75	55-75	45-75	30-60	15-30	2-11
	7-53	Very cobbly sandy loam, very cobbly loam, very cobbly sandy clay loam	SM, SC, SC-SM, ML, CL, CL-ML	A-1, A-2-4, A-4	0	36-51	65-85	55-80	35-75	20-60	10-30	NP-11
	53-62	Extremely cobbly sandy loam, very cobbly loam, extremely cobbly sand	SM, SC-SM, SP, SP-SM, ML, CL-ML	A-1, A-2-4, A-4	0	36-65	55-85	40-80	20-75	2-60	8-23	NP-7

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
32A: Hathboro-----	In											
	0-8	Sandy loam	SM	A-2, A-4, A-7	0	0	80-100	80-100	55-85	25-45	22-42	3-12
	8-45	Sandy clay loam, clay loam, silt loam, silty clay loam	CL, SC	A-2, A-6, A-7	0	0	80-100	80-100	60-95	30-60	24-44	9-25
	45-62	Silt loam, silty clay loam, gravelly clay loam, extremely gravelly sandy clay loam	CH, CL, GP-GM	A-1, A-6, A-7	0	0	15-100	10-100	10-100	5-100	16-53	2-32
33B: Hayesville-----	0-6	Loam	SM, ML	A-4	0	0-8	80-100	80-100	65-95	45-70	11-20	NP-2
	6-11	Loam, gravelly fine sandy loam	ML, GM	A-4, A-2	0	0-23	60-100	60-100	45-95	30-70	9-20	NP-2
	11-43	Clay loam, clay	ML	A-4, A-7	0	0-9	80-100	80-100	65-100	55-85	31-42	7-12
	43-49	Clay loam, sandy clay loam, loam	ML	A-4	0	0-9	80-100	80-100	65-100	50-85	20-34	2-8
	49-62	Sandy loam, loam, sandy clay loam, fine sandy loam	SM, CL-ML	A-4, A-2	0	0-8	80-100	80-100	60-90	30-55	13-24	NP-4
33C: Hayesville-----	0-6	Loam	SM, ML	A-4	0	0-8	80-100	80-100	65-95	45-70	11-20	NP-2
	6-11	Loam, gravelly fine sandy loam	ML, GM	A-4, A-2	0	0-23	60-100	60-100	45-95	30-70	9-20	NP-2
	11-43	Clay loam, clay	ML	A-4, A-7	0	0-9	80-100	80-100	65-100	55-85	31-42	7-12
	43-49	Clay loam, sandy clay loam, loam	ML	A-4	0	0-9	80-100	80-100	65-100	50-85	20-34	2-8
	49-62	Sandy loam, loam, sandy clay loam, fine sandy loam	SM, CL-ML	A-4, A-2	0	0-8	80-100	80-100	60-90	30-55	13-24	NP-4
33D: Hayesville-----	0-6	Loam	SM, ML	A-4	0	0-8	80-100	80-100	65-95	45-70	11-20	NP-2
	6-11	Loam, gravelly fine sandy loam	ML, GM	A-4, A-2	0	0-23	60-100	60-100	45-95	30-70	9-20	NP-2
	11-43	Clay loam, clay	ML	A-4, A-7	0	0-9	80-100	80-100	65-100	55-85	31-42	7-12
	43-49	Clay loam, sandy clay loam, loam	ML	A-4	0	0-9	80-100	80-100	65-100	50-85	20-34	2-8
	49-62	Sandy loam, loam, sandy clay loam, fine sandy loam	SM, CL-ML	A-4, A-2	0	0-8	80-100	80-100	60-90	30-55	13-24	NP-4

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
34B: Keener-----	In											
	0-5	Loam	CL, CL-ML, SM A-4		0	0-5	80-100	80-100	65-95	45-75	13-30	NP-10
	5-14	Loam, fine sandy loam, gravelly loam	CL, CL-ML, GM A-2, A-4		0	0-10	65-100	60-100	45-95	30-70	12-30	NP-10
	14-54	Clay loam, sandy clay loam, gravelly clay loam, cobbly loam	CL, GC-GM	A-4, A-6	0	0-15	65-100	65-100	50-95	40-80	23-38	6-14
34C: Keener-----	54-62	Gravelly sandy clay loam, clay loam, gravelly loam, very cobbly loam	GM, SC	A-1, A-4, A-6	0	0-25	50-85	45-85	35-80	15-50	16-38	2-14
	0-5	Loam	CL, CL-ML, SM A-4		0	0-5	80-100	80-100	65-95	45-75	13-30	NP-10
	5-14	Loam, fine sandy loam, gravelly loam	CL, CL-ML, GM A-2, A-4		0	0-10	65-100	60-100	45-95	30-70	12-30	NP-10
	14-54	Clay loam, sandy clay loam, gravelly clay loam, cobbly loam	CL, GC-GM	A-4, A-6	0	0-15	65-100	65-100	50-95	40-80	23-38	6-14
34D: Keener-----	54-62	Gravelly sandy clay loam, clay loam, gravelly loam, very cobbly loam	GM, SC	A-1, A-4, A-6	0	0-25	50-85	45-85	35-80	15-50	16-38	2-14
	0-5	Loam	CL, CL-ML, SM A-4		0	0-5	80-100	80-100	65-95	45-75	13-30	NP-10
	5-14	Loam, fine sandy loam, gravelly loam	CL, CL-ML, GM A-2, A-4		0	0-10	65-100	60-100	45-95	30-70	12-30	NP-10
	14-54	Clay loam, sandy clay loam, gravelly clay loam, cobbly loam	CL, GC-GM	A-4, A-6	0	0-15	65-100	65-100	50-95	40-80	23-38	6-14
35C: Keener-----	54-62	Gravelly sandy clay loam, clay loam, gravelly loam, very cobbly loam	GM, SC	A-1, A-4, A-6	0	0-25	50-85	45-85	35-80	15-50	16-38	2-14
	0-5	Loam	CL, CL-ML, SM A-4		0	0-5	80-100	80-100	65-95	45-75	13-30	NP-10
	5-14	Loam, fine sandy loam, gravelly loam	CL, CL-ML, GM A-2, A-4		0	0-10	65-100	60-100	45-95	30-70	12-30	NP-10
	14-54	Clay loam, sandy clay loam, gravelly clay loam, cobbly loam	CL, GC-GM	A-4, A-6	0	0-15	65-100	65-100	50-95	40-80	23-38	6-14
54-62	Gravelly sandy clay loam, clay loam, gravelly loam, very cobbly loam	GM, SC	A-1, A-4, A-6	0	0-25	50-85	45-85	35-80	15-50	16-38	2-14	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
35D: Keener-----	In											
	0-5	Loam	CL, CL-ML, SM A-4		0	0-5						
	5-14	Loam, fine sandy loam, gravelly loam	CL, CL-ML, GM A-2, A-4		0	0-10						13-30 NP-10
	14-54	Clay loam, sandy clay loam, gravelly clay loam, cobbly loam	CL, GC-GM A-4, A-6		0	0-15						12-30 NP-10
36A: Kinkora-----	54-62	Gravelly sandy clay loam, clay loam, gravelly loam, very cobbly loam	GM, SC A-1, A-4, A-6		0	0-25						23-38 6-14
	0-7	Fine sandy loam	SC, SC-SM, SM A-2, A-6, A-7		0	0						16-38 2-14
	7-16	Fine sandy loam, silt loam	SC, SC-SM A-2, A-6		0	0						22-41 6-13
	16-38	Clay loam, silty clay loam, silty clay, clay loam, gravelly loam, silt loam, very gravelly loam	CH, CL A-7		0	0						25-45 25-45 21-37 6-13
37C: Konmarock-----	38-48	Gravelly loam, silt loam, very gravelly loam	CL, GC A-2, A-6		0	0						45-65 25-40
	48-62	Gravelly loamy sand, sandy loam, very gravelly loamy sand	GP-GC, SC A-1, A-2		0	0-10						24-38 9-19
	0-4	Channery silt loam	CL, GC-GM A-4, A-6		0	10-20						20-32 6-13
	4-19	Very channery silt loam, channery silt loam, extremely channery loam, very channery loam, very channery silt loam, channers	CL, GC, GP-GC A-2, A-6		0	10-30						21-39 26-37 9-17
37D: Konmarock-----	19-23	Extremely channery silt loam, very channery loam, very channery silt loam, channers	GC, GW-GC A-2, A-6		0	15-35						24-36 9-17
	23-33	Bedrock			---	---						---
	0-4	Channery silt loam	CL, GC-GM A-4, A-6		0	10-20						21-39 6-17
	4-19	Very channery silt loam, channery silt loam, extremely channery loam, very channery loam, very channery silt loam, channers	CL, GC, GP-GC A-2, A-6		0	10-30						26-37 9-17
37D: Konmarock-----	19-23	Extremely channery silt loam, very channery loam, very channery silt loam, channers	GC, GW-GC A-2, A-6		0	15-35						24-36 9-17
	23-33	Bedrock			---	---						---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
37E: Konnarock-----	In											
	0-4	Channey silt loam	CL, GC-GM	A-4, A-6	0	10-20	60-85	55-80	50-80	40-70	21-39	6-17
	4-19	Very channey silt loam, channey silt loam, extremely channey loam	CL, GC, GP-GC	A-2, A-6	0	10-30	20-85	15-85	15-80	10-70	26-37	9-17
	19-23	Extremely channey silt loam, very channey loam, very channey silt loam, channers	GC, GW-GC	A-2, A-6	0	15-35	10-60	5-60	5-60	5-50	24-36	9-17
38C: McCamy-----	23-33	Bedrock			---	---	---	---	---	---	---	---
	0-5	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0-5	80-100	80-100	65-95	25-45	13-25	NP-7
	5-9	Fine sandy loam, loam, gravelly sandy loam	SC, SM, SC-SM	A-1, A-4	0	0-5	60-100	55-100	45-100	15-50	13-31	NP-10
	9-23	Sandy clay loam, clay loam, gravelly loam	CL, GC-GM, SC	A-1, A-4, A-6	0	0-5	60-100	55-100	45-95	25-60	25-38	6-14
	23-26	Gravelly sandy loam, sandy clay loam, clay loam, very gravelly loamy sand, loam, clay	GP-GM, ML, SC-SM	A-1, A-2, A-7	0	0-10	40-90	35-90	25-90	10-65	12-48	NP-20
	26-31	Bedrock			---	---	---	---	---	---	---	---
	31-41	Bedrock			---	---	---	---	---	---	---	---
38D: McCamy-----	0-5	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0-5	80-100	80-100	65-95	25-45	13-25	NP-7
	5-9	Fine sandy loam, loam, gravelly sandy loam	SC, SM, SC-SM	A-1, A-4	0	0-5	60-100	55-100	45-100	15-50	13-31	NP-10
	9-23	Sandy clay loam, clay loam, gravelly loam	CL, GC-GM, SC	A-1, A-4, A-6	0	0-5	60-100	55-100	45-95	25-60	25-38	6-14
	23-26	Gravelly sandy loam, sandy clay loam, clay loam, very gravelly loamy sand, loam, clay	SC-SM, ML, GP-GM	A-1, A-2, A-7	0	0-10	40-90	35-90	25-90	10-65	12-48	NP-20
26-31	Bedrock			---	---	---	---	---	---	---	---	
31-41	Bedrock			---	---	---	---	---	---	---	---	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
39D: McCamy-----	In											
	0-5	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0-5	80-100	80-100	65-95	25-45	13-25	NP-7
	5-9	Fine sandy loam, loam, gravelly sandy loam	SC, SM, SC-SM	A-1, A-4	0	0-5	60-100	55-100	45-100	15-50	13-31	NP-10
	9-23	Sandy clay loam, clay loam, gravelly loam	CL, GC-GM, SC	A-1, A-4, A-6	0	0-5	60-100	55-100	45-95	25-60	25-38	6-14
	23-26	Gravelly sandy loam, sandy clay loam, clay loam, very gravelly loamy sand, loam, clay	GP-GM, ML, SC-SM	A-1, A-2, A-7	0	0-10	40-90	35-90	25-90	10-65	12-48	NP-20
	26-31	Bedrock			---	---	---	---	---	---	---	---
	31-41	Bedrock			---	---	---	---	---	---	---	---
39E: McCamy-----	0-5	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0-5	80-100	80-100	65-95	25-45	13-25	NP-7
	5-9	Fine sandy loam, loam, gravelly sandy loam	SC, SM, SC-SM	A-1, A-4	0	0-5	60-100	55-100	45-100	15-50	13-31	NP-10
	9-23	Sandy clay loam, clay loam, gravelly loam	CL, GC-GM, SC	A-1, A-4, A-6	0	0-5	60-100	55-100	45-95	25-60	25-38	6-14
	23-26	Gravelly sandy loam, sandy clay loam, clay loam, very gravelly loamy sand, loam, clay	GP-GM, ML, SC-SM	A-1, A-2, A-7	0	0-10	40-90	35-90	25-90	10-65	12-48	NP-20
	26-31	Bedrock			---	---	---	---	---	---	---	---
	31-41	Bedrock			---	---	---	---	---	---	---	---
40D: Mt Rogers-----	0-16	Gravelly loam	GM	A-1, A-2, A-7	0	0-20	45-65	40-65	35-60	20-45	35-77	3-16
	16-33	Very cobbly loam, very gravelly silt loam, extremely cobbly sandy loam, very stony fine sandy loam	GC, GC-GM, GP-GM	A-1, A-2, A-4	0-20	20-40	15-65	10-60	10-60	5-45	12-30	NP-10
	33-62	Extremely cobbly coarse sandy loam, very cobbly silt loam, extremely cobbly loam, very stony fine sandy loam	GC, GC-GM, GP-GM	A-1, A-2	0-20	35-50	20-60	15-60	10-45	5-30	12-30	NP-10

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index	
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
40D: Bloodyhorse-----	In												
	0-12	Gravelly loam	GM	A-1, A-2, A-7	0	0-10	40-55	35-55	30-55	20-40	35-77	3-16	
	12-28	Very gravelly loam, extremely gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-50	10-50	5-50	4-35	12-30	NP-10	
	28-37	Extremely gravelly loam, very gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-40	10-35	5-35	4-25	12-30	NP-10	
Rock outcrop.	37-47	Bedrock			---	---	---	---	---	---	---	---	
	40F: Mt Rogers-----	0-16	Gravelly loam	GM	A-1, A-2, A-7	0	0-20	45-65	40-65	35-60	20-45	35-77	3-16
		16-33	Very cobbly loam, very gravelly silt loam, extremely cobbly sandy loam, very stony fine sandy loam	GC, GC-GM, GP-GM	A-1, A-2, A-4	0-20	20-40	15-65	10-60	10-60	5-45	12-30	NP-10
	Bloodyhorse-----	33-62	Extremely cobbly coarse sandy loam, very cobbly silt loam, extremely cobbly loam, very stony fine sandy loam	GC, GC-GM, GP-GM	A-1, A-2	0-20	35-50	20-60	15-60	10-45	5-30	12-30	NP-10
0-12		Gravelly loam	GM	A-1, A-2, A-7	0	0-10	40-55	35-55	30-55	20-40	35-77	3-16	
Rock outcrop.	12-28	Very gravelly loam, extremely gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-50	10-50	5-50	4-35	12-30	NP-10	
	28-37	Extremely gravelly loam, very gravelly sandy loam, very stony silt loam, very cobbly fine sandy loam	GC, GC-GM, GP	A-1, A-2	0-15	0-15	15-40	10-35	5-35	4-25	12-30	NP-10	
	37-47	Bedrock			---	---	---	---	---	---	---	---	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
41C: Mt Rogers-----	In 0-16 16-33	Gravelly loam Very cobbly loam, very gravelly silt loam, extremely cobbly sandy loam, very stony fine sandy loam	GM GC, GC-GM, GP-GM	A-1, A-2, A-7 A-1, A-2, A-4	Pct 0 0-20	Pct 0-20 20-40	45-65 15-65	40-65 10-60	35-60 10-60	20-45 5-45	35-77 12-30	3-16 NP-10
	33-62	Extremely cobbly coarse sandy loam, very cobbly silt loam, extremely cobbly loam, very stony fine sandy loam	GC, GC-GM, GP-GM	A-1, A-2	0-20	35-50	20-60	15-60	10-45	5-30	12-30	NP-10
Buzzrock-----	0-14 14-20	Loam, gravelly loam Very channery loam, extremely channery sandy loam, very channery silt loam, extremely channery fine sandy loam	SM, GM GC, GC-GM, GM	A-1, A-5, A-7 A-1, A-2, A-4	0-10 0-10	0-20 15-35	50-75 35-60	45-75 30-60	35-70 25-55	25-50 20-45	35-77 12-30	3-16 NP-10
	20-42	Channery, channers, cobbles, extremely channery sandy loam, extremely channery fine sandy loam, extremely channery loam, extremely channery silt loam	GP-GC, GW	A-1, A-2	0-10	50-60	10-15	0-15	0-15	0-10	12-30	NP-10
	42-52	Bedrock			---	---	---	---	---	---	---	---
41D: Mt Rogers-----	0-16 16-33	Gravelly loam Very cobbly loam, very gravelly silt loam, extremely cobbly sandy loam, very stony fine sandy loam	GM GC, GC-GM, GP-GM	A-1, A-2, A-7 A-1, A-2, A-4	0 0-20	0-20 20-40	45-65 15-65	40-65 10-60	35-60 10-60	20-45 5-45	35-77 12-30	3-16 NP-10
	33-62	Extremely cobbly coarse sandy loam, very cobbly silt loam, extremely cobbly loam, very stony fine sandy loam	GC, GC-GM, GP-GM	A-1, A-2	0-20	35-50	20-60	15-60	10-45	5-30	12-30	NP-10

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
41D: Buzzrock-----	In											
	0-14	Loam, gravelly loam	SM, GM	A-1, A-5, A-7	0-10	0-20	50-75	45-75	35-70	25-50	35-77	3-16
	14-20	Very channery loam, extremely channery sandy loam, very channery silt loam, extremely channery fine sandy loam	GC, GC-GM, GM	A-1, A-2, A-4	0-10	15-35	35-60	30-60	25-55	20-45	12-30	NP-10
	20-42	Channery, channers, cobbles, extremely channery sandy loam, extremely channery fine sandy loam, extremely channery silt loam	GP-GC, GW	A-1, A-2	0-10	50-60	10-15	0-15	0-15	0-10	12-30	NP-10
	42-52	Bedrock			---	---	---	---	---	---	---	---
42C: Peaks-----	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
42D: Peaks-----	In											
	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
32-42	Bedrock			---	---	---	---	---	---	---	---	
42E: Peaks-----	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
43C: Peaks-----	In											
	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	
43D: Peaks-----	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
		32-42	Bedrock			---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
43E: Peaks-----	In											
	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
32-42	Bedrock			---	---	---	---	---	---	---	---	
43F: Peaks-----	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	---
44C: Pigeonroost-----	0-5	Loam	CL, ML, SC-SM	A-4, A-7	0	0-5	80-100	80-100	65-95	45-70	21-41	4-13
	5-24	Clay loam, sandy clay loam, silty clay loam, loam	CL, SC	A-6, A-7	0	0-5	80-100	80-100	60-95	45-75	27-44	12-25
	24-37	Sandy loam, loam, fine sandy loam, sandy clay loam	CL, SC-SM	A-2, A-4, A-6	0	0-5	80-100	80-100	60-95	30-55	18-36	4-17
	37-72	Bedrock			---	---	---	---	---	---	---	---
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Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
44D: Pigeonroost-----	In											
	0-5	Loam	CL, ML, SC-SM	A-4, A-7	0	0-5	80-100	80-100	65-95	45-70	21-41	4-13
	5-24	Clay loam, sandy clay loam, silty clay loam, loam	CL, SC	A-6, A-7	0	0-5	80-100	80-100	60-95	45-75	27-44	12-25
	24-37	Sandy loam, loam, fine sandy loam, sandy clay loam	CL, SC-SM	A-2, A-4, A-6	0	0-5	80-100	80-100	60-95	30-55	18-36	4-17
	37-72	Bedrock			---	---	---	---	---	---	---	---
44E: Pigeonroost-----	0-5	Loam	CL, ML, SC-SM	A-4, A-7	0	0-5	80-100	80-100	65-95	45-70	21-41	4-13
	5-24	Clay loam, sandy clay loam, silty clay loam, loam	CL, SC	A-6, A-7	0	0-5	80-100	80-100	60-95	45-75	27-44	12-25
	24-37	Sandy loam, loam, fine sandy loam, sandy clay loam	CL, SC-SM	A-2, A-4, A-6	0	0-5	80-100	80-100	60-95	30-55	18-36	4-17
	37-72	Bedrock			---	---	---	---	---	---	---	---
45D: Pigeonroost-----	0-5	Gravelly loam	GC, GC-GM, GM	A-2, A-4, A-7	0	0-10	55-75	55-75	45-70	30-50	21-41	4-13
	5-24	Clay loam, sandy clay loam, silty clay loam, loam	CL, SC	A-6, A-7	0	0-5	80-100	80-100	60-95	45-75	27-44	12-25
	24-37	Sandy loam, loam, fine sandy loam, sandy clay loam	CL, SC-SM	A-2, A-4, A-6	0	0-5	80-100	80-100	60-95	30-55	18-36	4-17
	37-72	Bedrock			---	---	---	---	---	---	---	---
45E: Pigeonroost-----	0-5	Gravelly loam	GC, GC-GM, GM	A-2, A-4, A-7	0	0-10	55-75	55-75	45-70	30-50	21-41	4-13
	5-24	Clay loam, sandy clay loam, silty clay loam, loam	CL, SC	A-6, A-7	0	0-5	80-100	80-100	60-95	45-75	27-44	12-25
	24-37	Sandy loam, loam, fine sandy loam, sandy clay loam	CL, SC-SM	A-2, A-4, A-6	0	0-5	80-100	80-100	60-95	30-55	18-36	4-17
	37-72	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
46E: Pigeonroost-----	In											
	0-5	Loam	CL, ML, SC-SM	A-4, A-7	0	0-5	80-100	80-100	65-95	45-70	21-41	4-13
	5-24	Clay loam, sandy clay loam, silty clay loam, loam	CL, SC	A-6, A-7	0	0-5	80-100	80-100	60-95	45-75	27-44	12-25
	24-37	Sandy loam, loam, fine sandy loam, sandy clay loam	CL, SC-SM	A-2, A-4, A-6	0	0-5	80-100	80-100	60-95	30-55	18-36	4-17
Rock outcrop.	37-72	Bedrock			---	---	---	---	---	---	---	---
	0-10	Loam	ML, SC-SM	A-4, A-7	0	0	75-100	75-100	60-95	40-70	25-48	4-13
	10-15	Loam, silt loam, gravelly sandy loam, gravelly fine sandy loam	CL, GC-GM	A-2, A-4, A-6	0	0-5	55-100	50-100	40-95	30-70	20-33	4-13
	15-26	Gravelly clay loam, gravelly sandy clay loam, loam, silty clay loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	40-95	30-80	27-44	12-25
47D: Pineola-----	26-29	Gravelly sandy loam, gravelly silt loam, loam, very gravelly fine sandy loam	GM, SC, SC-SM	A-1, A-6	0	0-10	40-100	40-100	30-85	15-50	16-30	2-12
	29-72	Bedrock			---	---	---	---	---	---	---	---
	0-10	Loam	ML, SC-SM	A-4, A-7	0	0	75-100	75-100	60-95	40-70	25-48	4-13
	10-15	Loam, silt loam, gravelly sandy loam, gravelly fine sandy loam	CL, GC-GM	A-2, A-4, A-6	0	0-5	55-100	50-100	40-95	30-70	20-33	4-13
48E: Pineola-----	15-26	Gravelly clay loam, gravelly sandy clay loam, loam, silty clay loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	40-95	30-80	27-44	12-25
	26-29	Gravelly sandy loam, gravelly silt loam, loam, very gravelly fine sandy loam	GM, SC, SC-SM	A-1, A-6	0	0-10	40-100	40-100	30-85	15-50	16-30	2-12
	29-72	Bedrock			---	---	---	---	---	---	---	---
	0-10	Loam	ML, SC-SM	A-4, A-7	0	0	75-100	75-100	60-95	40-70	25-48	4-13
49. Pits, quarries	10-15	Loam, silt loam, gravelly sandy loam, gravelly fine sandy loam	CL, GC-GM	A-2, A-4, A-6	0	0-5	55-100	50-100	40-95	30-70	20-33	4-13
	15-26	Gravelly clay loam, gravelly sandy clay loam, loam, silty clay loam	CL, GC	A-2, A-6, A-7	0	0-5	55-100	50-100	40-95	30-80	27-44	12-25
	26-29	Gravelly sandy loam, gravelly silt loam, loam, very gravelly fine sandy loam	GM, SC, SC-SM	A-1, A-6	0	0-10	40-100	40-100	30-85	15-50	16-30	2-12
	29-72	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
50F: Rock outcrop.	In											
Peaks-----	0-4	Very gravelly loam	GC-GM, GM	A-1, A-2	0	0	30-50	25-50	20-45	15-30	20-36	3-10
	4-8	Very gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-4	0	0	30-75	25-75	20-70	15-50	15-28	1-10
	8-23	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GC, GC-GM, GM	A-1, A-2	0	0	25-50	25-50	20-45	15-35	16-30	2-12
	23-32	Extremely gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, extremely gravelly loamy sand	GC, GP-GC, GP-GM	A-1, A-2	0	0	15-50	10-50	10-40	5-20	16-30	2-12
	32-42	Bedrock			---	---	---	---	---	---	---	---
51B: Scales-----	0-2	Peat, muck, gravelly mucky peat	PT	A-8	0-5	0-5	---	---	---	---	---	---
	2-11	Mucky peat, muck, gravelly peat	PT	A-8	0-5	0-5	---	---	---	---	---	---
	11-21	Gravelly sandy clay loam, clay loam, loam, gravelly sandy loam, gravelly loamy sand	MH, GC, SM	A-1, A-2, A-7	0-5	0-5	60-95	60-95	40-90	15-55	17-54	2-24
	21-33	Clay loam, sandy clay loam, loam, gravelly sandy loam	CL, GC	A-6, A-7	0-5	0-5	65-95	65-95	50-90	40-75	28-45	12-25
	33-62	Gravelly clay loam, sandy clay loam, loam, gravelly sandy loam	CL, GC	A-6, A-7	0-5	0-5	65-95	65-95	50-90	40-75	28-45	12-25
52C: Sylco-----	0-4	Channery silt loam	CL, GC-GM	A-2, A-6	0	0	55-80	50-80	45-80	35-65	21-39	6-17
	4-22	Very channery silt loam, very channery loam, channery silty clay loam	CL, GC, GC-GM	A-2, A-6, A-7	0	0	50-85	45-80	40-80	30-70	21-42	6-21
	22-27	Extremely channery silt loam, extremely channery loam, very channery silty clay loam	GC, GC-GM	A-1, A-2, A-7	0	0	25-55	20-55	20-55	15-50	20-41	6-21
	27-37	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
52C: Sylvatus-----	In											
	0-2	Channery silt loam	CL, GC-GM	A-2, A-6	0	5-20	55-80	50-80	45-80	35-65	21-39	6-17
	2-11	Very channery silt loam, very channery clay loam, extremely channery loam, channery silty clay loam	CL, GC, GP-GC	A-1, A-2, A-7	0	5-30	20-85	20-80	15-80	10-70	20-41	6-21
	11-16	Extremely channery silt loam, extremely channery loam, very channery clay loam, very channery silty clay loam	GC, GW-GC	A-1, A-2, A-7	0	15-30	10-50	5-45	5-45	5-45	20-44	6-25
	16-26	Bedrock			---	---	---	---	---	---	---	---
52D: SYLCO-----	0-4	Channery silt loam	CL, GC-GM	A-2, A-6	0	5-20	55-80	50-80	45-80	35-65	21-39	6-17
	4-22	Very channery silt loam, very channery loam, channery silty clay loam	CL, GC, GC-GM	A-2, A-6, A-7	0	5-20	50-85	45-80	40-80	30-70	21-42	6-21
	22-27	Extremely channery silt loam, extremely channery loam, very channery silty clay loam	GC, GC-GM	A-1, A-2, A-7	0	15-30	25-55	20-55	20-55	15-50	20-41	6-21
	27-37	Bedrock			---	---	---	---	---	---	---	---
Sylvatus-----	0-2	Channery silt loam	CL, GC-GM	A-2, A-6	0	5-20	55-80	50-80	45-80	35-65	21-39	6-17
	2-11	Very channery silt loam, very channery clay loam, extremely channery loam, channery silty clay loam	CL, GC, GP-GC	A-1, A-2, A-7	0	5-30	20-85	20-80	15-80	10-70	20-41	6-21
	11-16	Extremely channery silt loam, extremely channery loam, very channery clay loam, very channery silty clay loam	GC, GW-GC	A-1, A-2, A-7	0	15-30	10-50	5-45	5-45	5-45	20-44	6-25
	16-26	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquidity index	
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In											
52E: Sylco-----	0-4 4-22	Channery silt loam Very channery silt loam, very channery loam, channery silty clay loam	CL, GC-GM CL, GC, GC-GM	A-2, A-6 A-2, A-6, A-7	0 0	5-20 5-20	55-80 50-85	50-80 45-80	45-80 40-80	35-65 30-70	21-39 21-42	6-17 6-21
	22-27	Extremely channery silt loam, extremely channery loam, very channery silty clay loam	GC, GC-GM	A-1, A-2, A-7	0	15-30	25-55	20-55	20-55	15-50	20-41	6-21
	27-37	Bedrock			---	---	---	---	---	---	---	---
Sylvatus-----	0-2 2-11	Channery silt loam Very channery silt loam, very channery clay loam, extremely channery loam, channery silty clay loam	CL, GC-GM CL, GC, GP-GC	A-2, A-6 A-1, A-2, A-7	0 0	5-20 5-30	55-80 20-85	50-80 20-80	45-80 15-80	35-65 10-70	21-39 20-41	6-17 6-21
	11-16	Extremely channery silt loam, extremely channery loam, very channery clay loam, very channery silty clay loam	GC, GW-GC	A-1, A-2, A-7	0	15-30	10-50	5-45	5-45	5-45	20-44	6-25
	16-26	Bedrock			---	---	---	---	---	---	---	---
53B: Tate-----	0-6 6-12	Loam Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, SM, ML CL, GC-GM, SC	A-4, A-7 A-1, A-4, A-7	0 0-1	0-5 0-15	80-100 60-100	80-100 55-100	60-95 40-95	45-75 20-60	20-45 20-45	3-17 6-25
	12-27	Clay loam, sandy clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
53C: Tate-----	In											
	0-6	Loam	CL, SM, ML	A-4, A-7	0	0-5	80-100	80-100	60-95	45-75	20-45	3-17
	6-12	Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, GC-GM, SC	A-1, A-4, A-7	0-1	0-15	60-100	55-100	40-95	20-60	20-45	6-25
	12-27	Clay loam, sandy clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17
53D: Tate-----	0-6	Loam	CL, SM, ML	A-4, A-7	0	0-5	80-100	80-100	60-95	45-75	20-45	3-17
	6-12	Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, GC-GM, SC	A-1, A-4, A-7	0-1	0-15	60-100	55-100	40-95	20-60	20-45	6-25
	12-27	Clay loam, sandy clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
53E: Tate-----	In											
	0-6	Loam	CL, SM, ML	A-4, A-7	0	0-5	80-100	80-100	60-95	45-75	20-45	3-17
	6-12	Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, GC-GM, SC	A-1, A-4, A-7	0-1	0-15	60-100	55-100	40-95	20-60	20-45	6-25
	12-27	Clay loam, sandy clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17
54C: Tate-----	0-6	Loam	CL, SM, ML	A-4, A-7	0	0-5	80-100	80-100	60-95	45-75	20-45	3-17
	6-12	Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, GC-GM, SC	A-1, A-4, A-7	0-1	0-15	60-100	55-100	40-95	20-60	20-45	6-25
	12-27	Clay loam, sandy clay loam, gravelly loam, loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
54D: Tate-----	In											
	0-6	Loam	CL, SM, ML	A-4, A-7	0	0-5	80-100	80-100	60-95	45-75	20-45	3-17
	6-12	Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, GC-GM, SC	A-1, A-4, A-7	0-1	0-15	60-100	55-100	40-95	20-60	20-45	6-25
	12-27	Clay loam, sandy clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17
54E: Tate-----	0-6	Loam	CL, SM, ML	A-4, A-7	0	0-5	80-100	80-100	60-95	45-75	20-45	3-17
	6-12	Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, GC-GM, SC	A-1, A-4, A-7	0-1	0-15	60-100	55-100	40-95	20-60	20-45	6-25
	12-27	Clay loam, sandy clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
55D: Tate-----	In											
	0-6	Loam	CL, SM, ML	A-4, A-7	0	0-5	80-100	80-100	60-95	45-75	20-45	3-17
	6-12	Sandy loam, sandy clay loam, clay loam, gravelly loam, gravelly fine sandy loam	CL, GC-GM, SC	A-1, A-4, A-7	0-1	0-15	60-100	55-100	40-95	20-60	20-45	6-25
	12-27	Clay loam, sandy clay loam, gravelly loam	CL, GC	A-2, A-6, A-7	0-1	0-15	60-100	55-100	45-95	35-80	27-45	12-25
	27-47	Sandy clay loam, loam, gravelly fine sandy loam, very gravelly sandy loam	CL, GP-GC, SC	A-2, A-6, A-7	0-1	0-15	30-95	30-95	20-90	10-55	22-44	7-25
	47-62	Sandy loam, loam, sandy clay loam, very gravelly fine sandy loam, very cobbly loamy sand	GM, SC, SC-SM	A-1, A-2, A-6	0-10	0-30	45-90	40-90	30-85	15-50	16-36	2-17
56C: Thunder-----	0-5	Cobbly loam	CL, CL-ML, SM	A-4	0-5	15-30	75-95	75-90	60-90	40-65	13-31	NP-10
	5-12	Very cobbly loam, cobbly loam	CL, CL-ML, GM	A-2, A-4	0-10	15-40	55-95	55-90	40-90	30-65	13-31	NP-10
	12-21	Very cobbly loam, cobbly loam, extremely cobbly sandy loam	CL, CL-ML, GM	A-1, A-4	0-15	25-45	25-90	25-90	15-90	15-65	13-31	NP-10
	21-50	Very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam	CL, GP-GC, SC	A-1, A-2, A-7	0-25	30-45	30-80	25-80	20-80	10-55	20-43	4-17
	50-62	Extremely cobbly sandy loam, very cobbly sandy clay loam, extremely cobbly clay loam, very stony sandy loam	GC, GC-GM, GP-GM	A-1, A-6	0-25	30-45	30-80	25-80	15-80	10-50	12-38	NP-14

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
56D: Thunder-----	In											
	0-5	Cobbly loam	CL, CL-ML, SM A-4		0-5	15-30	75-95	75-90	60-90	40-65	13-31	NP-10
	5-12	Very cobbly loam, cobbly loam	CL, CL-ML, GM A-2, A-4		0-10	15-40	55-95	55-90	40-90	30-65	13-31	NP-10
	12-21	Very cobbly loam, cobbly loam, extremely cobbly sandy loam	CL, CL-ML, GM A-1, A-4		0-15	25-45	25-90	25-90	15-90	15-65	13-31	NP-10
	21-50	Very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam	CL, GP-GC, SC A-1, A-2, A-7		0-25	30-45	30-80	25-80	20-80	10-55	20-43	4-17
56E: Thunder-----	50-62	Extremely cobbly sandy loam, very cobbly sandy clay loam, extremely cobbly clay loam, very stony sandy loam	GC, GC-GM, GP-GM	A-1, A-6	0-25	30-45	30-80	25-80	15-80	10-50	12-38	NP-14
	0-5	Cobbly loam	CL, CL-ML, SM A-4		0-5	15-30	75-95	75-90	60-90	40-65	13-31	NP-10
	5-12	Very cobbly loam, cobbly loam	CL, CL-ML, GM A-2, A-4		0-10	15-40	55-95	55-90	40-90	30-65	13-31	NP-10
	12-21	Very cobbly loam, cobbly loam, extremely cobbly sandy loam	CL, CL-ML, GM A-1, A-4		0-15	25-45	25-90	25-90	15-90	15-65	13-31	NP-10
	21-50	Very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam	CL, GP-GC, SC A-1, A-2, A-7		0-25	30-45	30-80	25-80	20-80	10-55	20-43	4-17
50-62	Extremely cobbly sandy loam, very cobbly sandy clay loam, extremely cobbly clay loam, very stony sandy loam	GC, GC-GM, GP-GM	A-1, A-6	0-25	30-45	30-80	25-80	15-80	10-50	12-38	NP-14	

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	<u>In</u>											
57C: Thunder-----	0-5 5-12	Cobbly loam Very cobbly loam, cobbly loam	CL, CL-ML, SM A-4 CL, CL-ML, GM A-2, A-4		0-5 0-10	15-30 15-40	75-95 55-95	75-90 55-90	60-90 40-90	40-65 30-65	13-31 13-31	NP-10 NP-10
	12-21	Very cobbly loam, cobbly loam, extremely cobbly sandy loam	CL, CL-ML, GM A-1, A-4		0-15	25-45	25-90	25-90	15-90	15-65	13-31	NP-10
	21-50	Very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam	CL, GP-GC, SC A-1, A-2, A-7		0-25	30-45	30-80	25-80	20-80	10-55	20-43	4-17
	50-62	Extremely cobbly sandy loam, very cobbly sandy clay loam, extremely cobbly clay loam, very stony sandy loam	GC, GC-GM, GP-GM	A-1, A-6	0-25	30-45	30-80	25-80	15-80	10-50	12-38	NP-14
57D: Thunder-----	0-5 5-12	Cobbly loam Very cobbly loam, cobbly loam	CL, CL-ML, SM A-4 CL, CL-ML, GM A-2, A-4		0-5 0-10	15-30 15-40	75-95 55-95	75-90 55-90	60-90 40-90	40-65 30-65	13-31 13-31	NP-10 NP-10
	12-21	Very cobbly loam, cobbly loam, extremely cobbly sandy loam	CL, CL-ML, GM A-1, A-4		0-15	25-45	25-90	25-90	15-90	15-65	13-31	NP-10
	21-50	Very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam	CL, GP-GC, SC A-1, A-2, A-7		0-25	30-45	30-80	25-80	20-80	10-55	20-43	4-17
	50-62	Extremely cobbly sandy loam, very cobbly sandy clay loam, extremely cobbly clay loam, very stony sandy loam	GC, GC-GM, GP-GM	A-1, A-6	0-25	30-45	30-80	25-80	15-80	10-50	12-38	NP-14

Soil Survey of Grayson County, Virginia

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
57E: Thunder-----	<u>In</u>											
	0-5	Cobbly loam	CL, CL-ML, SM A-4									
	5-12	Very cobbly loam, cobbly loam	CL, CL-ML, GM A-2, A-4		0-5 0-10	15-30 15-40	75-95 55-95	60-90 40-90	40-65 30-65	13-31 13-31	NP-10 NP-10	
	12-21	Very cobbly loam, cobbly loam, extremely cobbly sandy loam	CL, CL-ML, GM A-1, A-4		0-15	25-45	25-90	15-90	15-65	13-31	NP-10	
58D. Udorthents- Urban land	21-50	Very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam	CL, GP-GC, SC A-1, A-2, A-7		0-25	30-45	30-80	25-80	10-55	20-43	4-17	
	50-62	Extremely cobbly sandy loam, very cobbly sandy clay loam, extremely cobbly clay loam, very stony sandy loam	GC, GC-GM, GP-GM	A-1, A-6	0-25	30-45	30-80	25-80	10-50	12-38	NP-14	
59D: Unicoi-----	0-5	Very gravelly sandy loam	GC, GC-GM, GP-GM	A-1, A-2	0	0-10	30-55	30-50	10-25	17-35	2-13	
	5-14	Very gravelly sandy loam, extremely gravelly fine sandy loam, very gravelly loam	GC, GC-GM, GP-GM	A-1, A-2	0	0-10	30-55	30-50	10-25	16-32	2-13	
	14-19	Extremely gravelly sandy loam, extremely gravelly fine sandy loam, very gravelly loam	GC, GC-GM, GP-GM	A-1, A-2	0	0-10	30-55	30-50	10-25	16-32	2-13	
	19-29	Bedrock			---	---	---	---	---	---	---	

Table 15.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
59E: Unicoi-----	<u>In</u>											
	0-5	Very gravelly sandy loam	GC, GC-GM, GP-GM	A-1, A-2	0	0-10	30-55	30-50	20-45	10-25	17-35	2-13
	5-14	Very gravelly sandy loam, extremely gravelly fine sandy loam, very gravelly loam	GC, GC-GM, GP-GM	A-1, A-2	0	0-10	30-55	30-50	20-45	10-25	16-32	2-13
	14-19	Extremely gravelly sandy loam, extremely gravelly fine sandy loam, very gravelly loam	GC, GC-GM, GP-GM	A-1, A-2	0	0-10	30-55	30-50	20-45	10-25	16-32	2-13
W. Water	19-29	Bedrock			---	---	---	---	---	---	---	---

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility index
	In	Pct									Kw	Kf	T	
1C: Balsam-----	0-19	30-50	25-50	30-50	4-27	0.50-1.00	14.00-42.00	0.20-0.25	0.0-2.9	8.0-20	.10	.20	5	48
	19-35	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.17	0.0-2.9	1.0-5.0	.05	.17		
	35-48	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.15	0.0-2.9	0.5-2.0	.05	.17		
	48-62	10-50	25-85	10-50	2-15	1.20-1.60	14.00-42.00	0.02-0.14	0.0-2.9	0.5-1.0	.05	.20		
1D: Balsam-----	0-19	30-50	25-50	30-50	4-27	0.50-1.00	14.00-42.00	0.20-0.25	0.0-2.9	8.0-20	.10	.20	5	48
	19-35	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.17	0.0-2.9	1.0-5.0	.05	.17		
	35-48	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.15	0.0-2.9	0.5-2.0	.05	.17		
	48-62	10-50	25-85	10-50	2-15	1.20-1.60	14.00-42.00	0.02-0.14	0.0-2.9	0.5-1.0	.05	.20		
1E: Balsam-----	0-19	30-50	25-50	30-50	4-27	0.50-1.00	14.00-42.00	0.20-0.25	0.0-2.9	8.0-20	.10	.20	5	48
	19-35	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.17	0.0-2.9	1.0-5.0	.05	.17		
	35-48	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.15	0.0-2.9	0.5-2.0	.05	.17		
	48-62	10-50	25-85	10-50	2-15	1.20-1.60	14.00-42.00	0.02-0.14	0.0-2.9	0.5-1.0	.05	.20		
2D: Balsam-----	0-19	30-50	25-50	30-50	4-27	0.50-1.00	14.00-42.00	0.20-0.25	0.0-2.9	8.0-20	.10	.20	5	48
	19-35	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.17	0.0-2.9	1.0-5.0	.05	.17		
	35-48	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.15	0.0-2.9	0.5-2.0	.05	.17		
	48-62	10-50	25-85	10-50	2-15	1.20-1.60	14.00-42.00	0.02-0.14	0.0-2.9	0.5-1.0	.05	.20		
Nopan-----	0-6	30-50	35-50	30-50	7-18	0.50-1.00	4.00-14.00	0.10-0.21	0.0-2.9	10-25	.32	.32	4	56
	6-17	40-85	40-85	5-50	2-18	1.00-1.50	4.00-14.00	0.06-0.21	0.0-2.9	0.5-5.0	.43	.43		
	17-33	40-85	40-85	5-50	2-18	1.00-1.50	4.00-14.00	0.06-0.21	0.0-2.9	0.5-5.0	.15	.20		
	33-50	40-85	40-85	5-50	2-18	1.35-1.75	0.01-1.40	0.06-0.21	0.0-2.9	0.5-7.0	.24	.28		
	50-62	40-85	40-85	5-50	2-18	1.35-1.75	0.01-1.40	0.07-0.19	0.0-2.9	0.5-1.0	.24	.32		
2E: Balsam-----	0-19	30-50	25-50	30-50	4-27	0.50-1.00	14.00-42.00	0.20-0.25	0.0-2.9	8.0-20	.10	.20	5	48
	19-35	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.17	0.0-2.9	1.0-5.0	.05	.17		
	35-48	10-50	25-80	10-50	4-27	1.00-1.50	14.00-42.00	0.09-0.15	0.0-2.9	0.5-2.0	.05	.17		
	48-62	10-50	25-85	10-50	2-15	1.20-1.60	14.00-42.00	0.02-0.14	0.0-2.9	0.5-1.0	.05	.20		
Nopan-----	0-6	30-50	35-50	30-50	7-18	0.50-1.00	4.00-14.00	0.10-0.21	0.0-2.9	10-25	.32	.32	4	56
	6-17	40-85	40-85	5-50	2-18	1.00-1.50	4.00-14.00	0.06-0.21	0.0-2.9	0.5-5.0	.43	.43		
	17-33	40-85	40-85	5-50	2-18	1.00-1.50	4.00-14.00	0.06-0.21	0.0-2.9	0.5-5.0	.15	.20		
	33-50	40-85	40-85	5-50	2-18	1.35-1.75	0.01-1.40	0.06-0.21	0.0-2.9	0.5-7.0	.24	.28		
	50-62	40-85	40-85	5-50	2-18	1.35-1.75	0.01-1.40	0.07-0.19	0.0-2.9	0.5-1.0	.24	.32		

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
3D: Bloodyhorse-----														
	0-12	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.09-0.13	0.0-2.9	8.0-20	.17	.28	2	48
	12-28	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.13	0.0-2.9	0.5-5.0	.15	.37		
	28-37	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.01-0.08	0.0-2.9	0.5-1.0	.10	.43		
	37-47	---	---	---	---	0.00-0.07	---	---	---	---	---	---		
4F: Bloodyhorse-----														
	0-12	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.09-0.13	0.0-2.9	8.0-20	.17	.28	2	48
	12-28	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.13	0.0-2.9	0.5-5.0	.15	.37		
	28-37	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.01-0.08	0.0-2.9	0.5-1.0	.10	.43		
	37-47	---	---	---	---	0.00-0.07	---	---	---	---	---	---		
5B: Braddock-----														
	0-8	25-50	25-50	30-50	10-25	1.20-1.50	4.00-42.00	0.15-0.19	0.0-2.9	1.0-2.0	.32	.32	5	56
	8-15	20-60	20-60	10-50	27-50	1.20-1.50	4.00-14.00	0.08-0.13	0.0-2.9	0.5-1.0	.28	.28		
	15-51	10-55	10-55	5-50	35-55	1.20-1.50	4.00-14.00	0.08-0.15	3.0-5.9	0.0-0.5	.20	.20		
	51-62	10-55	5-50	35-50	1.20-1.50	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.28	.28			
5C: Braddock-----														
	0-8	25-50	25-50	30-50	10-25	1.20-1.50	4.00-42.00	0.15-0.19	0.0-2.9	1.0-2.0	.32	.32	5	56
	8-15	20-60	20-60	10-50	27-50	1.20-1.50	4.00-14.00	0.08-0.13	0.0-2.9	0.5-1.0	.28	.28		
	15-51	10-55	10-55	5-50	35-55	1.20-1.50	4.00-14.00	0.08-0.15	3.0-5.9	0.0-0.5	.20	.20		
	51-62	10-55	5-50	35-50	1.20-1.50	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.28	.28			
5D: Braddock-----														
	0-8	25-50	25-50	30-50	10-25	1.20-1.50	4.00-42.00	0.15-0.19	0.0-2.9	1.0-2.0	.32	.32	5	56
	8-15	20-60	20-60	10-50	27-50	1.20-1.50	4.00-14.00	0.08-0.13	0.0-2.9	0.5-1.0	.28	.28		
	15-51	10-55	10-55	5-50	35-55	1.20-1.50	4.00-14.00	0.08-0.15	3.0-5.9	0.0-0.5	.20	.20		
	51-62	10-55	5-50	35-50	1.20-1.50	4.00-14.00	0.07-0.15	3.0-5.9	0.0-0.5	.28	.28			
6E: Braddock-----														
	0-8	25-50	25-50	30-50	10-25	1.20-1.50	4.00-42.00	0.17-0.19	0.0-2.9	1.0-2.0	.20	.32	5	48
	8-15	20-60	20-60	10-50	27-50	1.20-1.50	4.00-14.00	0.11-0.13	0.0-2.9	0.5-1.0	.17	.28		
	15-51	10-55	10-55	5-50	35-55	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.15	.20		
	51-62	10-55	5-50	35-50	1.20-1.50	4.00-14.00	0.08-0.15	3.0-5.9	0.0-0.5	.20	.28			
7D: Brevard-----														
	0-8	30-75	30-75	10-50	5-20	1.30-1.60	14.00-42.00	0.07-0.15	0.0-2.9	1.0-8.0	.15	.24	5	86
	8-48	25-65	25-65	10-50	18-35	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.2-1.0	.20	.32		
	48-60	30-85	5-40	5-25	1.35-1.60	14.00-42.00	0.07-0.15	0.0-2.9	0.1-1.0	.10	.24			
Greenlee-----														
	0-7	25-50	25-50	30-50	8-25	1.30-1.50	14.00-42.00	0.11-0.14	0.0-2.9	0.5-5.0	.10	.28	5	38
	7-53	25-80	25-80	5-50	3-25	1.40-1.60	14.00-42.00	0.07-0.15	0.0-2.9	1.0-2.0	.05	.24		
	53-62	35-90	5-50	1-18	1.40-1.60	14.00-42.00	0.03-0.15	0.0-2.9	0.0-0.5	.05	.28			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility	Organic matter	Erosion factors			Wind erodibility index	
	In	Pct									Kw	T	Kf		
8C: Burton															
	0-13	30-50	25-50	30-50	10-22	1.10-1.30	14.00-42.00	0.18-0.21	0.0-2.9	8.0-20	.24	.28	2	5	56
	13-21	10-50	25-70	10-50	15-25	1.35-1.60	14.00-42.00	0.08-0.19	0.0-2.9	0.5-5.0	.17	.24			
	21-26	5-50	25-85	5-50	5-25	1.45-1.65	14.00-42.00	0.04-0.19	0.0-2.9	0.0-1.0	.10	.24			
	26-31	---	---	---	---	---	0.00-0.42	0.00-0.01	---	---	---	---	---		
31-42	---	---	---	---	---	0.00-0.07	0.00-0.01	---	---	---	---	---			
9D: Burton															
	0-13	30-50	25-50	30-50	10-22	1.10-1.30	14.00-42.00	0.18-0.21	0.0-2.9	8.0-20	.24	.28	2	8	0
	13-21	10-50	25-70	10-50	15-25	1.35-1.60	14.00-42.00	0.08-0.19	0.0-2.9	0.5-5.0	.17	.24			
	21-26	5-50	25-85	5-50	5-25	1.45-1.65	14.00-42.00	0.04-0.19	0.0-2.9	0.0-1.0	.10	.24			
	26-31	---	---	---	---	---	0.00-0.42	0.00-0.01	---	---	---	---	---		
31-42	---	---	---	---	---	0.00-0.07	0.00-0.01	---	---	---	---	---			
9E: Burton															
	0-13	30-50	25-50	30-50	10-22	1.10-1.30	14.00-42.00	0.18-0.21	0.0-2.9	8.0-20	.24	.28	2	8	0
	13-21	10-50	25-70	10-50	15-25	1.35-1.60	14.00-42.00	0.08-0.19	0.0-2.9	0.5-5.0	.17	.24			
	21-26	5-50	25-85	5-50	5-25	1.45-1.65	14.00-42.00	0.04-0.19	0.0-2.9	0.0-1.0	.10	.24			
	26-31	---	---	---	---	---	0.00-0.42	0.00-0.01	---	---	---	---	---		
31-42	---	---	---	---	---	0.00-0.07	0.00-0.01	---	---	---	---	---			
10D: Peaks															
	0-4	35-50	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	5	38
	4-8	15-50	35-70	15-50	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49			
	8-23	30-70	30-70	15-50	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	23-32	5-50	35-85	5-50	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28			
32-42	---	---	---	---	---	0.00-0.42	---	---	---	---	---	---			
Chestnut															
	0-3	10-45	30-75	10-45	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	1.0-8.0	.15	.24	3	4	86
	3-21	10-45	30-75	10-45	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	0.2-1.0	.15	.24			
	21-29	5-45	30-85	5-45	5-20	1.35-1.60	14.00-42.00	0.06-0.15	0.0-2.9	0.1-1.0	.15	.24			
	29-45	---	---	---	---	---	0.01-0.06	0.00-0.01	---	---	---	---	---		
45-80	---	---	---	---	---	0.00-0.01	0.00-0.01	---	---	---	---	---			
10E: Chestnut															
	0-3	10-45	30-75	10-45	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	1.0-8.0	.15	.24	3	4	86
	3-21	10-45	30-75	10-45	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	0.2-1.0	.15	.24			
	21-29	5-45	30-85	5-45	5-20	1.35-1.60	14.00-42.00	0.06-0.15	0.0-2.9	0.1-1.0	.15	.24			
	29-45	---	---	---	---	---	0.01-0.06	0.00-0.01	---	---	---	---	---		
45-80	---	---	---	---	---	0.00-0.01	0.00-0.01	---	---	---	---	---			
Peaks															
	0-4	35-50	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	5	38
	4-8	15-50	35-70	15-50	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49			
	8-23	30-70	30-70	15-50	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	23-32	5-50	35-85	5-50	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28			
32-42	---	---	---	---	---	0.00-0.42	---	---	---	---	---	---			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		Wind erodi- bility group	Wind erodi- bility index
	In	Pct									Kw	T		
11F: Chestnut-----														
	0-3	10-45	30-75	10-45	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	1.0-8.0	.15	.24	3	86
	3-21	10-45	30-75	10-45	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	0.2-1.0	.15	.24		
	21-29	5-45	30-85	5-45	5-20	1.35-1.60	14.00-42.00	0.06-0.15	0.0-2.9	0.1-1.0	.15	.24		
	29-45	---	---	---	---	---	0.01-0.06	0.00-0.01	---	---	---	---		
45-80	---	---	---	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Peaks-----														
	0-4	35-50	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	38
	4-8	15-50	35-70	15-50	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49		
	8-23	15-50	30-70	15-50	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49		
	23-32	5-50	35-85	5-50	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28		
32-42	---	---	---	---	---	0.00-0.42	---	---	---	---	---			
Tuckasegee-----														
	0-13	10-50	30-75	10-50	5-20	1.20-1.50	14.00-42.00	0.11-0.18	0.0-2.9	3.0-8.0	.17	.24	5	48
	13-47	10-50	30-75	10-50	9-25	1.30-1.60	14.00-42.00	0.09-0.19	0.0-2.9	0.5-3.0	.20	.24		
	47-79	5-50	30-85	5-50	5-20	1.30-1.60	14.00-42.00	0.05-0.19	0.0-2.9	0.5-3.0	.20	.24		
12A: Codorus-----														
	0-7	30-50	30-50	30-50	15-25	1.20-1.40	4.00-14.00	0.13-0.21	0.0-2.9	2.0-4.0	.24	.24	5	48
	7-19	25-60	10-45	25-60	18-35	1.20-1.50	4.00-14.00	0.09-0.22	0.0-2.9	0.0-0.5	.37	.37		
	19-37	25-60	10-45	25-60	18-35	1.20-1.50	4.00-14.00	0.09-0.22	0.0-2.9	0.0-0.5	.37	.37		
	37-49	10-70	10-70	10-70	10-35	1.20-1.50	4.00-14.00	0.08-0.22	0.0-2.9	0.0-0.5	.15	.20		
	49-62	10-70	10-70	10-70	10-35	1.20-1.50	4.00-14.00	0.02-0.22	0.0-2.9	0.0-0.5	.10	.20		
13A: Comus-----														
	0-9	10-35	55-75	10-35	5-18	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	1.0-4.0	.17	.17	3	86
	9-31	10-70	20-75	10-70	5-18	1.20-1.40	4.00-14.00	0.12-0.22	0.0-2.9	0.0-0.8	.28	.28		
	31-53	10-70	20-75	10-70	5-18	1.30-1.60	4.00-42.00	0.07-0.22	0.0-2.9	0.0-0.8	.28	.28		
	53-62	5-70	20-95	5-70	2-18	1.30-1.60	4.00-42.00	0.05-0.22	0.0-2.9	0.0-0.8	.17	.28		
14C: Cowee-----														
	0-6	30-50	35-50	30-50	8-20	1.25-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.24	.28	3	56
	6-27	10-50	25-65	10-50	18-35	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.5-1.0	.24	.28		
	27-39	10-50	35-70	10-50	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.17	.24		
	39-45	---	---	---	---	---	0.01-1.40	---	---	---	---	---		
14D: Cowee-----														
	0-6	30-50	35-50	30-50	8-20	1.25-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.24	.28	3	56
	6-27	10-50	25-65	10-50	18-35	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.5-1.0	.24	.28		
	27-39	10-50	35-70	10-50	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.17	.24		
39-45	---	---	---	---	---	0.01-1.40	---	---	---	---	---			
14E: Cowee-----														
	0-6	30-50	35-50	30-50	8-20	1.25-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.24	.28	3	56
	6-27	10-50	25-65	10-50	18-35	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.5-1.0	.24	.28		
	27-39	10-50	35-70	10-50	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.17	.24		
39-45	---	---	---	---	---	0.01-1.40	---	---	---	---	---			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		Wind erodi- bility group	Wind erodi- bility index
	In	Pct									Kw	T		
15D: Cowee-----	0-6	35-50	8-20	1.25-1.60	14.00-42.00	0.11-0.21	0.0-2.9	1.0-5.0	.15	.28	3	5	48	
	6-27	25-65	18-35	1.30-1.60	4.00-14.00	0.07-0.19	0.0-2.9	0.5-1.0	.15	.28				
	27-39	35-70	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.10	.24				
	39-45	---	---	---	0.01-1.40	---	---	---	---	---				
15E: Cowee-----	0-6	35-50	8-20	1.25-1.60	14.00-42.00	0.11-0.21	0.0-2.9	1.0-5.0	.15	.28	3	5	48	
	6-27	25-65	18-35	1.30-1.60	4.00-14.00	0.07-0.19	0.0-2.9	0.5-1.0	.15	.28				
	27-39	35-70	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.10	.24				
	39-45	---	---	---	0.01-1.40	---	---	---	---	---				
16D: Cowee-----	0-6	35-50	8-20	1.25-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.24	.28	3	5	56	
	6-27	25-65	18-35	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.5-1.0	.24	.28				
	27-39	35-70	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.17	.24				
	39-45	---	---	---	0.01-1.40	---	---	---	---	---				
Rock outcrop.														
16E: Cowee-----	0-6	35-50	8-20	1.25-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.24	.28	3	5	56	
	6-27	25-65	18-35	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.5-1.0	.24	.28				
	27-39	35-70	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.17	.24				
	39-45	---	---	---	0.01-1.40	---	---	---	---	---				
Rock outcrop.														
17A: Craigsville-----	0-6	55-75	10-40	1.20-1.40	14.00-141.00	0.09-0.14	0.0-2.9	1.0-4.0	.10	.17	5	3	56	
	6-32	40-75	10-50	1.30-1.60	14.00-141.00	0.05-0.13	0.0-2.9	0.0-0.8	.10	.28				
	32-62	55-85	5-40	1.35-1.55	42.00-141.00	0.04-0.09	0.0-2.9	0.0-0.8	.05	.17				
	0-6	30-50	30-45	0.50-1.20	14.00-42.00	0.15-0.18	0.0-2.9	5.0-15	.15	.20	5	5	48	
18C: Cullasaja-----	6-21	30-50	30-45	0.50-1.20	14.00-42.00	0.08-0.18	0.0-2.9	5.0-15	.10	.24				
	21-42	30-70	10-45	1.00-1.60	14.00-42.00	0.06-0.15	0.0-2.9	0.5-2.0	.10	.37				
	42-62	40-85	5-45	1.00-1.60	14.00-42.00	0.03-0.15	0.0-2.9	0.5-1.0	.05	.24				
	0-6	30-50	30-45	0.50-1.20	14.00-42.00	0.15-0.18	0.0-2.9	5.0-15	.15	.20	5	5	48	
18D: Cullasaja-----	6-21	30-50	30-45	0.50-1.20	14.00-42.00	0.08-0.18	0.0-2.9	5.0-15	.10	.24				
	21-42	30-70	10-45	1.00-1.60	14.00-42.00	0.06-0.15	0.0-2.9	0.5-2.0	.10	.37				
	42-62	40-85	5-45	1.00-1.60	14.00-42.00	0.03-0.15	0.0-2.9	0.5-1.0	.05	.24				
	0-6	30-50	30-45	0.50-1.20	14.00-42.00	0.15-0.18	0.0-2.9	5.0-15	.15	.20	5	5	48	

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity		Linear extensibility	Organic matter	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct						In/in	Pct			Kw	T		
19A: Delanco-----															
	0-10	55-75	10-40	5-18	1.10-1.30	4.00-14.00	0.11-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86	
	10-16	35-75	10-45	5-18	1.10-1.30	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.8	.28	.28				
	16-41	30-65	10-40	18-30	1.40-1.60	1.40-4.00	0.09-0.13	3.0-5.9	0.0-0.5	.17	.20				
	41-47	20-75	10-60	15-27	1.40-1.60	1.40-4.00	0.09-0.22	3.0-5.9	0.0-0.5	.37	.37				
47-62	20-75	10-65	5-25	1.50-1.70	4.00-14.00	0.08-0.21	0.0-2.9	0.0-0.5	.28	.28					
19B: Delanco-----															
	0-10	55-75	10-40	5-18	1.10-1.30	4.00-14.00	0.11-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86	
	10-16	35-75	10-45	5-18	1.10-1.30	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.8	.28	.28				
	16-41	30-65	10-40	18-30	1.40-1.60	1.40-4.00	0.09-0.13	3.0-5.9	0.0-0.5	.17	.20				
	41-47	20-75	10-60	15-27	1.40-1.60	1.40-4.00	0.09-0.22	3.0-5.9	0.0-0.5	.37	.37				
47-62	20-75	10-65	5-25	1.50-1.70	4.00-14.00	0.08-0.21	0.0-2.9	0.0-0.5	.28	.28					
20C: Delanco-----															
	0-10	55-75	10-40	5-18	1.10-1.30	4.00-14.00	0.11-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86	
	10-16	35-75	10-45	5-18	1.10-1.30	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.8	.28	.28				
	16-41	30-65	10-40	18-30	1.40-1.60	1.40-4.00	0.09-0.13	3.0-5.9	0.0-0.5	.17	.20				
	41-47	20-75	10-60	15-27	1.40-1.60	1.40-4.00	0.09-0.22	3.0-5.9	0.0-0.5	.37	.37				
47-62	20-75	10-65	5-25	1.50-1.70	4.00-14.00	0.08-0.21	0.0-2.9	0.0-0.5	.28	.28					
21B: Edneytown-----															
	0-4	35-50	35-50	5-15	1.40-1.60	14.00-42.00	0.14-0.19	0.0-2.9	0.5-5.0	.37	.37	5	5	56	
	4-7	35-80	5-50	5-15	1.30-1.40	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49				
	7-20	20-80	5-50	20-35	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24				
	20-27	45-80	5-40	10-25	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20				
27-62	50-85	2-40	5-15	1.30-1.50	14.00-42.00	0.08-0.19	0.0-2.9	0.0-0.5	.15	.15					
21C: Edneytown-----															
	0-4	35-50	35-50	5-15	1.40-1.60	14.00-42.00	0.14-0.19	0.0-2.9	0.5-5.0	.37	.37	5	5	56	
	4-7	35-80	5-50	5-15	1.30-1.40	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49				
	7-20	20-80	5-50	20-35	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24				
	20-27	45-80	5-40	10-25	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20				
27-62	50-85	2-40	5-15	1.30-1.50	14.00-42.00	0.08-0.19	0.0-2.9	0.0-0.5	.15	.15					
21D: Edneytown-----															
	0-4	35-50	35-50	5-15	1.40-1.60	14.00-42.00	0.14-0.19	0.0-2.9	0.5-5.0	.37	.37	5	5	56	
	4-7	35-80	5-50	5-15	1.30-1.40	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49				
	7-20	20-80	5-50	20-35	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24				
	20-27	45-80	5-40	10-25	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20				
27-62	50-85	2-40	5-15	1.30-1.50	14.00-42.00	0.08-0.19	0.0-2.9	0.0-0.5	.15	.15					
21E: Edneytown-----															
	0-4	35-50	35-50	5-15	1.40-1.60	14.00-42.00	0.14-0.19	0.0-2.9	0.5-5.0	.37	.37	5	5	56	
	4-7	35-80	5-50	5-15	1.30-1.40	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49				
	7-20	20-80	5-50	20-35	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24	.24				
	20-27	45-80	5-40	10-25	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20	.20				
27-62	50-85	2-40	5-15	1.30-1.50	14.00-42.00	0.08-0.19	0.0-2.9	0.0-0.5	.15	.15					

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility Pct	Organic matter Pct	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
21F: Edneytown-----	0-4	35-50	35-50	5-50	5-15	1.40-1.60	14.00-42.00	0.14-0.19	0.0-2.9	0.5-5.0	.37	5	56	
	4-7	35-80	5-50	5-50	5-15	1.30-1.40	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49			
	7-20	20-80	5-50	5-50	20-35	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24			
	20-27	45-80	5-40	5-40	10-25	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20			
	27-62	50-85	2-40	2-40	5-15	1.30-1.50	14.00-42.00	0.08-0.19	0.0-2.9	0.0-0.5	.15			
22C: Edneytown-----	0-4	35-50	35-50	5-50	5-15	1.40-1.60	14.00-42.00	0.14-0.19	0.0-2.9	0.5-5.0	.37	5	56	
	4-7	35-80	5-50	5-50	5-15	1.30-1.40	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49			
	7-20	20-80	5-50	5-50	20-35	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.24			
	20-27	45-80	5-40	5-40	10-25	1.30-1.50	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20			
	27-62	50-85	2-40	2-40	5-15	1.30-1.50	14.00-42.00	0.08-0.19	0.0-2.9	0.0-0.5	.15			
Urban land.														
23C: Edneyville-----	0-5	30-50	30-50	30-50	7-20	1.40-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-6.0	.24	5	56	
	5-11	30-75	10-50	10-50	5-20	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.5-2.0	.37			
	11-34	30-75	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.2-1.0	.24			
	34-62	30-85	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.2	.24			
23D: Edneyville-----	0-5	30-50	30-50	30-50	7-20	1.40-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-6.0	.24	5	56	
	5-11	30-75	10-50	10-50	5-20	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.5-2.0	.37			
	11-34	30-75	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.2-1.0	.24			
	34-62	30-85	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.2	.24			
23E: Edneyville-----	0-5	30-50	30-50	30-50	7-20	1.40-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-6.0	.24	5	56	
	5-11	30-75	10-50	10-50	5-20	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.5-2.0	.37			
	11-34	30-75	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.2-1.0	.24			
	34-62	30-85	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.2	.24			
24D: Edneyville-----	0-5	30-50	30-50	30-50	7-20	1.40-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-6.0	.24	5	56	
	5-11	30-75	10-50	10-50	5-20	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.5-2.0	.37			
	11-34	30-75	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.2-1.0	.24			
	34-62	30-85	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.2	.24			
24E: Edneyville-----	0-5	30-50	30-50	30-50	7-20	1.40-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-6.0	.24	5	56	
	5-11	30-75	10-50	10-50	5-20	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.5-2.0	.37			
	11-34	30-75	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.2-1.0	.24			
	34-62	30-85	10-50	10-50	5-18	1.40-1.60	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.2	.24			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water		Linear extensibility	Organic matter	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct						In/in	Pct			Kw	T		
24F: Edneyville-----															
	0-5	30-50	30-50	30-50	7-20	1.40-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-6.0	.24	.24	5	56	
	5-11	10-50	30-75	10-50	5-20	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.5-2.0	.37	.37			
	11-34	10-50	30-75	10-50	5-18	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.2-1.0	.24	.24			
	34-62	10-50	30-85	10-50	5-18	1.40-1.60	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.2	.20	.24			
25B: Elsinboro-----															
	0-10	10-40	55-75	10-40	8-18	1.25-1.40	4.00-14.00	0.13-0.18	0.0-2.9	1.0-3.0	.20	.20	5	56	
	10-18	10-75	15-75	10-75	8-18	1.25-1.40	4.00-14.00	0.09-0.22	0.0-2.9	0.2-0.8	.28	.28			
	18-45	10-75	10-75	10-65	18-34	1.30-1.50	4.00-14.00	0.09-0.22	0.0-2.9	0.0-0.5	.32	.32			
	45-62	10-75	15-75	10-75	8-34	1.35-1.55	4.00-42.00	0.10-0.22	0.0-2.9	0.0-0.5	.15	.20			
26B: Elsinboro-----															
	0-10	10-40	55-75	10-40	8-18	1.25-1.40	4.00-14.00	0.13-0.18	0.0-2.9	1.0-3.0	.20	.20	5	56	
	10-18	10-75	15-75	10-75	8-18	1.25-1.40	4.00-14.00	0.09-0.22	0.0-2.9	0.2-0.8	.28	.28			
	18-45	10-75	10-75	10-65	18-34	1.30-1.50	4.00-14.00	0.09-0.22	0.0-2.9	0.0-0.5	.32	.32			
	45-62	10-75	15-75	10-75	8-34	1.35-1.55	4.00-42.00	0.10-0.22	0.0-2.9	0.0-0.5	.15	.20			
Urban land.															
27D: Evard-----	0-8	10-45	30-75	10-45	10-25	1.20-1.50	14.00-42.00	0.10-0.20	0.0-2.9	1.0-8.0	.15	.24	5	86	
	8-35	10-50	25-70	10-50	18-35	1.30-1.50	4.00-14.00	0.14-0.17	0.0-2.9	0.2-1.0	.24	.28			
	35-79	5-45	35-95	5-45	5-22	1.30-1.60	4.00-42.00	0.08-0.17	0.0-2.9	0.1-1.0	.24	.32			
Cowee-----	0-6	30-50	35-50	30-50	8-20	1.25-1.60	14.00-42.00	0.11-0.21	0.0-2.9	1.0-5.0	.15	.28	3	48	
	6-27	10-50	25-65	10-50	18-35	1.30-1.60	4.00-14.00	0.07-0.19	0.0-2.9	0.5-1.0	.15	.28			
	27-39	10-50	35-70	10-50	10-25	1.30-1.60	4.00-14.00	0.08-0.19	0.0-2.9	0.0-0.8	.10	.24			
	39-45	---	---	---	---	---	0.01-1.40	---	---	---	---	---			
28B: Gleneleg-----	0-4	30-50	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.13-0.21	0.0-2.9	1.0-3.0	.28	.28	5	48	
	4-24	25-65	10-45	25-65	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-70	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
28C: Gleneleg-----	0-4	30-50	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.13-0.21	0.0-2.9	1.0-3.0	.28	.28	5	48	
	4-24	25-65	10-45	25-65	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-70	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
28D: Gleneleg-----	0-4	30-50	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.13-0.21	0.0-2.9	1.0-3.0	.28	.28	5	48	
	4-24	25-65	10-45	25-65	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-70	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility Pct	Organic matter Pct	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
28E: Glennelg-----	0-4	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.13-0.21	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	4-24	25-65	10-45	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
28F: Glennelg-----	0-4	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.13-0.21	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	4-24	25-65	10-45	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
29C: Glennelg-----	0-4	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.09-0.16	0.0-2.9	1.0-3.0	.15	.28	5	6	38
	4-24	25-65	10-45	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
29D: Glennelg-----	0-4	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.09-0.16	0.0-2.9	1.0-3.0	.15	.28	5	6	38
	4-24	25-65	10-45	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
29E: Glennelg-----	0-4	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.09-0.16	0.0-2.9	1.0-3.0	.15	.28	5	6	38
	4-24	25-65	10-45	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
30C: Glennelg-----	0-4	30-50	30-50	15-25	1.10-1.40	4.00-14.00	0.13-0.21	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	4-24	25-65	10-45	20-32	1.20-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.32	.32			
	24-62	5-70	20-80	5-20	1.20-1.40	4.00-14.00	0.06-0.20	0.0-2.9	0.0-0.5	.24	.28			
Urban land.														
31D: Greenlee-----	0-7	25-50	30-50	8-25	1.30-1.50	14.00-42.00	0.11-0.14	0.0-2.9	0.5-5.0	.10	.28	5	5	38
	7-53	25-80	5-50	3-25	1.40-1.60	14.00-42.00	0.07-0.15	0.0-2.9	1.0-2.0	.05	.24			
	53-62	35-90	5-50	1-18	1.40-1.60	14.00-42.00	0.03-0.15	0.0-2.9	0.0-0.5	.05	.28			
31E: Greenlee-----	0-7	25-50	30-50	8-25	1.30-1.50	14.00-42.00	0.11-0.14	0.0-2.9	0.5-5.0	.10	.28	5	5	38
	7-53	25-80	5-50	3-25	1.40-1.60	14.00-42.00	0.07-0.15	0.0-2.9	1.0-2.0	.05	.24			
	53-62	35-90	5-50	1-18	1.40-1.60	14.00-42.00	0.03-0.15	0.0-2.9	0.0-0.5	.05	.28			
32A: Hatboro-----	0-8	55-80	5-40	7-18	1.20-1.40	4.00-14.00	0.10-0.15	0.0-2.9	2.0-6.0	.15	.15	5	3	86
	8-45	10-65	10-65	15-35	1.20-1.40	4.00-14.00	0.10-0.22	0.0-2.9	0.0-0.5	.20	.20			
	45-62	5-95	5-90	5-45	1.20-1.50	4.00-14.00	0.01-0.22	0.0-2.9	0.0-0.5	.43	.43			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility Pct	Organic matter Pct	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
33B: Hayesville-----														
	0-6	30-50	30-50	30-50	7-20	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	0.5-1.0	.32	5	56	
	6-11	30-70	15-50	15-50	5-20	1.20-1.35	14.00-42.00	0.10-0.19	0.0-2.9	0.0-0.5	.37			
	11-43	20-45	10-40	10-40	35-50	1.20-1.35	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20			
	43-49	25-60	10-50	10-50	20-40	1.30-1.40	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.28			
49-62	30-75	5-50	5-50	10-25	1.45-1.65	14.00-42.00	0.10-0.19	0.0-2.9	0.0-0.5	.20				
33C: Hayesville-----														
	0-6	30-50	30-50	30-50	7-20	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	0.5-1.0	.32	5	56	
	6-11	30-70	15-50	15-50	5-20	1.20-1.35	14.00-42.00	0.10-0.19	0.0-2.9	0.0-0.5	.37			
	11-43	20-45	10-40	10-40	35-50	1.20-1.35	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20			
	43-49	25-60	10-50	10-50	20-40	1.30-1.40	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.28			
49-62	30-75	5-50	5-50	10-25	1.45-1.65	14.00-42.00	0.10-0.19	0.0-2.9	0.0-0.5	.20				
33D: Hayesville-----														
	0-6	30-50	30-50	30-50	7-20	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	0.5-1.0	.32	5	56	
	6-11	30-70	15-50	15-50	5-20	1.20-1.35	14.00-42.00	0.10-0.19	0.0-2.9	0.0-0.5	.37			
	11-43	20-45	10-40	10-40	35-50	1.20-1.35	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.20			
	43-49	25-60	10-50	10-50	20-40	1.30-1.40	4.00-14.00	0.10-0.13	0.0-2.9	0.0-0.5	.28			
49-62	30-75	5-50	5-50	10-25	1.45-1.65	14.00-42.00	0.10-0.19	0.0-2.9	0.0-0.5	.20				
34B: Keener-----														
	0-5	30-50	30-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	2.0-8.0	.24	5	56	
	5-14	30-70	15-50	15-50	5-25	1.35-1.60	14.00-42.00	0.10-0.19	0.0-2.9	1.0-2.0	.37			
	14-54	25-60	10-45	10-45	18-35	1.30-1.45	4.00-14.00	0.09-0.19	0.0-2.9	0.2-1.0	.28			
	54-62	25-70	5-45	5-45	10-35	1.30-1.45	4.00-42.00	0.06-0.16	0.0-2.9	0.1-0.5	.17			
34C: Keener-----														
	0-5	30-50	30-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	2.0-8.0	.24	5	56	
	5-14	30-70	15-50	15-50	5-25	1.35-1.60	14.00-42.00	0.10-0.19	0.0-2.9	1.0-2.0	.37			
	14-54	25-60	10-45	10-45	18-35	1.30-1.45	4.00-14.00	0.09-0.19	0.0-2.9	0.2-1.0	.28			
	54-62	25-70	5-45	5-45	10-35	1.30-1.45	4.00-42.00	0.06-0.16	0.0-2.9	0.1-0.5	.17			
34D: Keener-----														
	0-5	30-50	30-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	2.0-8.0	.24	5	56	
	5-14	30-70	15-50	15-50	5-25	1.35-1.60	14.00-42.00	0.10-0.19	0.0-2.9	1.0-2.0	.37			
	14-54	25-60	10-45	10-45	18-35	1.30-1.45	4.00-14.00	0.09-0.19	0.0-2.9	0.2-1.0	.28			
	54-62	25-70	5-45	5-45	10-35	1.30-1.45	4.00-42.00	0.06-0.16	0.0-2.9	0.1-0.5	.17			
35C: Keener-----														
	0-5	30-50	30-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	2.0-8.0	.24	5	56	
	5-14	30-70	15-50	15-50	5-25	1.35-1.60	14.00-42.00	0.10-0.19	0.0-2.9	1.0-2.0	.37			
	14-54	25-60	10-45	10-45	18-35	1.30-1.45	4.00-14.00	0.09-0.19	0.0-2.9	0.2-1.0	.28			
	54-62	25-70	5-45	5-45	10-35	1.30-1.45	4.00-42.00	0.06-0.16	0.0-2.9	0.1-0.5	.17			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
35D: Keener-----														
	0-5	30-50	30-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	2.0-8.0	.24	.24	5	56
	5-14	15-50	30-70	15-50	5-25	1.35-1.60	14.00-42.00	0.10-0.19	0.0-2.9	1.0-2.0	.37	.37		
	14-54	10-45	25-60	10-45	18-35	1.30-1.45	4.00-14.00	0.09-0.19	0.0-2.9	0.2-1.0	.28	.32		
	54-62	25-70	5-45	10-35	1.30-1.45	4.00-42.00	0.06-0.16	0.0-2.9	0.1-0.5	.17	.24			
36A: Kinkora-----	0-7	10-35	55-75	10-35	10-20	1.25-1.55	1.40-14.00	0.12-0.18	0.0-2.9	1.0-5.0	.20	.20	5	86
	7-16	10-65	20-75	10-65	10-20	1.25-1.55	1.40-14.00	0.12-0.22	0.0-2.9	0.5-3.0	.28	.28		
	16-38	10-45	10-45	10-55	35-55	1.20-1.50	0.42-1.40	0.09-0.15	6.0-8.9	0.0-0.5	.28	.28		
	38-48	20-50	30-65	30-65	15-27	1.25-1.50	4.00-14.00	0.07-0.22	0.0-2.9	0.0-0.5	.28	.43		
	48-62	55-85	2-35	2-35	10-20	1.25-1.50	4.00-42.00	0.04-0.13	0.0-2.9	0.0-0.5	.10	.20		
37C: Konmarock-----	0-4	10-35	10-35	50-80	10-25	1.20-1.40	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.24	.43	2	48
	4-19	10-50	30-75	30-75	15-25	1.20-1.60	14.00-42.00	0.03-0.19	0.0-2.9	0.5-1.0	.17	.43		
	19-23	10-50	30-75	30-75	15-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.0-0.5	.10	.49		
	23-33	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
37D: Konmarock-----	0-4	10-35	10-35	50-80	10-25	1.20-1.40	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.24	.43	2	48
	4-19	10-50	30-75	30-75	15-25	1.20-1.60	14.00-42.00	0.03-0.19	0.0-2.9	0.5-1.0	.17	.43		
	19-23	10-50	30-75	30-75	15-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.0-0.5	.10	.49		
	23-33	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
37E: Konmarock-----	0-4	10-35	10-35	50-80	10-25	1.20-1.40	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.24	.43	2	48
	4-19	10-50	30-75	30-75	15-25	1.20-1.60	14.00-42.00	0.03-0.19	0.0-2.9	0.5-1.0	.17	.43		
	19-23	10-50	30-75	30-75	15-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.0-0.5	.10	.49		
	23-33	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
38C: McCamy-----	0-5	10-35	55-75	10-35	7-20	1.20-1.40	4.00-42.00	0.13-0.16	0.0-2.9	0.5-4.0	.24	.24	2	86
	5-9	10-50	30-75	10-50	7-27	1.20-1.40	4.00-42.00	0.07-0.19	0.0-2.9	0.1-1.0	.32	.32		
	9-23	10-50	25-75	10-50	18-35	1.25-1.35	14.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24	.28		
	23-26	25-85	25-85	5-45	5-45	1.25-1.35	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.32		
	26-31	---	---	---	---	---	0.01-4.00	---	---	---	---	---		
	31-41	---	---	---	---	---	0.00-1.40	---	---	---	---	---		
38D: McCamy-----	0-5	10-35	55-75	10-35	7-20	1.20-1.40	4.00-42.00	0.13-0.16	0.0-2.9	0.5-4.0	.24	.24	2	86
	5-9	10-50	30-75	10-50	7-27	1.20-1.40	4.00-42.00	0.07-0.19	0.0-2.9	0.1-1.0	.32	.32		
	9-23	10-50	25-75	10-50	18-35	1.25-1.35	14.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24	.28		
	23-26	25-85	25-85	5-45	5-45	1.25-1.35	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20	.32		
	26-31	---	---	---	---	---	0.01-4.00	---	---	---	---	---		
	31-41	---	---	---	---	---	0.00-1.40	---	---	---	---			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		Wind erodi- bility group	Wind erodi- bility index
	In	Pct									Kw	T		
39D: McCamy-----														
	0-5	10-35	55-75	10-35	7-20	1.20-1.40	4.00-42.00	0.13-0.16	0.0-2.9	0.5-4.0	.24	2	3	86
	5-9	10-50	30-75	10-50	7-27	1.20-1.40	4.00-42.00	0.07-0.19	0.0-2.9	0.1-1.0	.32			
	9-23	10-50	25-75	10-50	18-35	1.25-1.35	14.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24			
	23-26	5-45	25-85	5-45	5-45	1.25-1.35	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20			
	26-31	---	---	---	---	---	0.01-4.00	---	---	---	---			
31-41	---	---	---	---	---	0.00-1.40	---	---	---	---				
39E: McCamy-----														
	0-5	10-35	55-75	10-35	7-20	1.20-1.40	4.00-42.00	0.13-0.16	0.0-2.9	0.5-4.0	.24	2	3	86
	5-9	10-50	30-75	10-50	7-27	1.20-1.40	4.00-42.00	0.07-0.19	0.0-2.9	0.1-1.0	.32			
	9-23	10-50	25-75	10-50	18-35	1.25-1.35	14.00-42.00	0.07-0.19	0.0-2.9	0.0-0.5	.24			
	23-26	5-45	25-85	5-45	5-45	1.25-1.35	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.20			
	26-31	---	---	---	---	---	0.01-4.00	---	---	---	---			
31-41	---	---	---	---	---	0.00-1.40	---	---	---	---				
40D: Mt Rogers-----														
	0-16	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.10-0.14	0.0-2.9	8.0-20	.10	4	5	48
	16-33	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.15	0.0-2.9	0.5-5.0	.10			
	33-62	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.5-1.0	.05			
Bloodyhorse-----														
	0-12	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.09-0.13	0.0-2.9	8.0-20	.17	2	5	48
	12-28	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.13	0.0-2.9	0.5-5.0	.15			
	28-37	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.01-0.08	0.0-2.9	0.5-1.0	.10			
37-47	---	---	---	---	---	0.00-0.07	---	---	---	---				
Rock outcrop.														
	0-16	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.10-0.14	0.0-2.9	8.0-20	.10	4	5	48
	16-33	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.15	0.0-2.9	0.5-5.0	.10			
	33-62	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.5-1.0	.05			
40F: Mt Rogers-----														
	0-12	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.09-0.13	0.0-2.9	8.0-20	.17	2	5	48
	12-28	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.13	0.0-2.9	0.5-5.0	.15			
	28-37	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.01-0.08	0.0-2.9	0.5-1.0	.10			
37-47	---	---	---	---	---	0.00-0.07	---	---	---	---				
Rock outcrop.														
	0-16	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.10-0.14	0.0-2.9	8.0-20	.10	4	5	48
	16-33	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.15	0.0-2.9	0.5-5.0	.10			
	33-62	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.5-1.0	.05			
41C: Mt Rogers-----														
	0-16	30-50	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.10-0.14	0.0-2.9	8.0-20	.10	4	5	48
	16-33	20-75	20-75	5-75	5-25	1.00-1.50	14.00-42.00	0.01-0.15	0.0-2.9	0.5-5.0	.10			
	33-62	20-75	20-75	5-75	5-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.5-1.0	.05			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility Pct	Organic matter Pct	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
41C: Buzzrock-----	0-14	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.11-0.16	0.0-2.9	8.0-20	.17	.20	2	5	56
	14-20	5-75	20-75	5-25	1.00-1.50	14.00-42.00	0.04-0.15	0.0-2.9	0.5-5.0	.10	.28			
	20-42	5-75	20-75	5-25	1.20-1.60	141.00-705	0.00-0.03	0.0-2.9	0.5-1.0	.02	.49			
	42-52	---	---	---	---	0.00-0.07	---	---	---	---	---			
41D: Mt Rogers-----	0-16	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.10-0.14	0.0-2.9	8.0-20	.10	.20	4	5	48
	16-33	5-75	20-75	5-25	1.00-1.50	14.00-42.00	0.01-0.15	0.0-2.9	0.5-5.0	.10	.28			
	33-62	5-75	20-75	5-25	1.20-1.60	14.00-42.00	0.02-0.13	0.0-2.9	0.5-1.0	.05	.17			
	0-14	30-50	30-50	7-25	0.50-1.00	14.00-42.00	0.11-0.16	0.0-2.9	8.0-20	.17	.20	2	5	56
42C: Peaks-----	0-4	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	5	38
	4-8	15-50	35-70	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49			
	8-23	15-50	30-70	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	23-32	5-50	35-85	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28			
42E: Peaks-----	0-4	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	5	38
	4-8	15-50	35-70	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49			
	8-23	15-50	30-70	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	23-32	5-50	35-85	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28			
43C: Peaks-----	0-4	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	5	38
	4-8	15-50	35-70	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49			
	8-23	15-50	30-70	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	23-32	5-50	35-85	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28			
43C: Peaks-----	0-4	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	5	38
	4-8	15-50	35-70	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49			
	8-23	15-50	30-70	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49			
	23-32	5-50	35-85	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility	Organic matter	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
43D: Peaks-----	0-4	35-50	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	38
	4-8	35-70	15-50	15-50	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49		
	8-23	30-70	15-50	15-50	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49		
	23-32	35-85	5-50	5-50	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28		
	32-42	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
43E: Peaks-----	0-4	35-50	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	38
	4-8	35-70	15-50	15-50	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49		
	8-23	30-70	15-50	15-50	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49		
	23-32	35-85	5-50	5-50	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28		
	32-42	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
43F: Peaks-----	0-4	35-50	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	38
	4-8	35-70	15-50	15-50	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49		
	8-23	30-70	15-50	15-50	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49		
	23-32	35-85	5-50	5-50	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28		
	32-42	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
44C: Pigeonroost-----	0-5	30-50	30-50	30-50	8-20	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.32	.32	3	56
	5-24	10-65	10-60	10-60	18-35	1.30-1.50	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.37	.37		
	24-37	30-75	5-45	5-45	8-25	1.35-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49		
	37-72	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
	0-5	30-50	30-50	30-50	8-20	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.32	.32	3	56
44D: Pigeonroost-----	5-24	10-65	10-60	10-60	18-35	1.30-1.50	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.37	.37		
	24-37	30-75	5-45	5-45	8-25	1.35-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49		
	37-72	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
	0-5	30-50	30-50	30-50	8-20	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.32	.32	3	56
	5-24	10-65	10-60	10-60	18-35	1.30-1.50	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.37	.37		
44E: Pigeonroost-----	24-37	30-75	5-45	5-45	8-25	1.35-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49		
	37-72	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
	0-5	30-50	30-50	30-50	8-20	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.32	.32	3	56
	5-24	10-65	10-60	10-60	18-35	1.30-1.50	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.37	.37		
	24-37	30-75	5-45	5-45	8-25	1.35-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49		
45D: Pigeonroost-----	37-72	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
	0-5	30-50	30-50	30-50	8-20	1.35-1.60	14.00-42.00	0.11-0.16	0.0-2.9	1.0-5.0	.17	.32	3	56
	5-24	10-65	10-60	10-60	18-35	1.30-1.50	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.37	.37		
	24-37	30-75	5-45	5-45	8-25	1.35-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49		
	37-72	---	---	---	---	---	0.00-0.42	---	---	---	---	---		

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility Pct	Organic matter Pct	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
45E: Pigeonroost-----	0-5	30-50	30-50	30-50	8-20	1.35-1.60	14.00-42.00	0.11-0.16	0.0-2.9	1.0-5.0	.17	.32	3	56
	5-24	10-60	10-65	10-60	18-35	1.30-1.50	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.37	.37		
	24-37	5-45	30-75	5-45	8-25	1.35-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49		
	37-72	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
46E: Pigeonroost-----	0-5	30-50	30-50	30-50	8-20	1.35-1.60	14.00-42.00	0.15-0.21	0.0-2.9	1.0-5.0	.32	.32	3	56
	5-24	10-60	10-65	10-60	18-35	1.30-1.50	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.37	.37		
	24-37	5-45	30-75	5-45	8-25	1.35-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.0-0.5	.49	.49		
	37-72	---	---	---	---	---	0.00-0.42	---	---	---	---	---		
Rock outcrop.														
47D: Pineola-----	0-10	30-50	30-50	30-50	8-20	1.30-1.60	14.00-42.00	0.14-0.21	0.0-2.9	3.0-8.0	.24	.24	3	56
	10-15	15-70	20-65	15-70	8-20	1.30-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.5-1.0	.43	.43		
	15-26	10-60	10-65	10-60	18-35	1.20-1.60	4.00-14.00	0.07-0.19	0.0-2.9	0.0-0.5	.28	.37		
	26-29	10-70	20-75	10-70	5-18	1.30-1.60	4.00-14.00	0.05-0.22	0.0-2.9	0.0-0.5	.17	.32		
	29-72	---	---	---	---	---	0.00-14.00	---	---	---	---	---		
48E: Pineola-----	0-10	30-50	30-50	30-50	8-20	1.30-1.60	14.00-42.00	0.14-0.21	0.0-2.9	3.0-8.0	.24	.24	3	56
	10-15	15-70	20-65	15-70	8-20	1.30-1.60	4.00-14.00	0.07-0.22	0.0-2.9	0.5-1.0	.43	.43		
	15-26	10-60	10-65	10-60	18-35	1.20-1.60	4.00-14.00	0.07-0.19	0.0-2.9	0.0-0.5	.28	.37		
	26-29	10-70	20-75	10-70	5-18	1.30-1.60	4.00-14.00	0.05-0.22	0.0-2.9	0.0-0.5	.17	.32		
	29-72	---	---	---	---	---	0.00-14.00	---	---	---	---	---		
49. Pits, quarries														
50F: Rock outcrop.	0-4	35-50	35-50	35-50	7-16	1.20-1.40	42.00-141.00	0.05-0.10	0.0-2.9	1.0-4.0	.15	.37	2	38
	4-8	35-70	35-70	15-50	4-16	1.20-1.40	42.00-141.00	0.03-0.14	0.0-2.9	0.0-0.5	.17	.49		
	8-23	30-70	30-70	15-50	5-18	1.20-1.40	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.15	.49		
	23-32	35-85	35-85	5-50	5-18	1.20-1.40	42.00-141.00	0.01-0.10	0.0-2.9	0.0-0.5	.05	.28		
32-42	---	---	---	---	---	0.00-0.42	---	---	---	---	---			
51B: Scales-----	0-2	---	---	---	---	0.05-0.20	14.00-42.00	0.30-0.40	---	30-90	---	---	1	38
	2-11	---	---	---	---	0.10-0.35	14.00-42.00	0.30-0.40	---	30-90	---	---		
	11-21	25-85	25-85	5-50	5-35	1.35-1.75	1.40-14.00	0.06-0.20	0.0-2.9	0.5-5.0	.10	.20		
	21-33	25-75	25-75	5-50	18-35	1.80-2.00	0.42-1.40	0.03-0.06	0.0-2.9	0.5-1.0	.24	.32		
	33-62	25-75	25-75	5-50	18-35	1.80-2.00	0.42-1.40	0.03-0.06	0.0-2.9	0.5-1.0	.20	.32		

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand		Silt		Clay		Moist bulk density		Saturated hydraulic conductivity		Available water capacity		Linear extensi- bility		Organic matter		Erosion factors			Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	g/cc	um/sec	In/in	Pct	Pct	Kw	Kf	T					
52C: Sylco-----	0-4	5-40	50-80	10-25	1.00-1.20	14.00-42.00	0.11-0.18	0.0-2.9	.28	.43	2	5	48										
	4-22	5-50	30-80	10-30	1.20-1.50	14.00-42.00	0.07-0.18	0.0-2.9	.17	.49													
	22-27	5-50	30-80	10-30	1.20-1.50	14.00-42.00	0.04-0.12	0.0-2.9	.10	.49													
	27-37	---	---	---	---	0.00-0.42	---	---	---	---													
Sylvatus-----	0-2	5-40	50-80	10-25	1.00-1.20	4.00-14.00	0.11-0.18	0.0-2.9	.28	.43	1	5	48										
	2-11	5-50	30-80	10-30	1.20-1.50	4.00-14.00	0.03-0.18	0.0-2.9	.15	.49													
	11-16	5-50	30-80	10-35	1.20-1.40	4.00-14.00	0.01-0.10	0.0-2.9	.10	.49													
	16-26	---	---	---	---	0.00-0.42	---	---	---	---													
52D: Sylco-----	0-4	5-40	50-80	10-25	1.00-1.20	14.00-42.00	0.11-0.18	0.0-2.9	.28	.43	2	5	48										
	4-22	5-50	30-80	10-30	1.20-1.50	14.00-42.00	0.07-0.18	0.0-2.9	.17	.49													
	22-27	5-50	30-80	10-30	1.20-1.50	14.00-42.00	0.04-0.12	0.0-2.9	.10	.49													
	27-37	---	---	---	---	0.00-0.42	---	---	---	---													
Sylvatus-----	0-2	5-40	50-80	10-25	1.00-1.20	4.00-14.00	0.11-0.18	0.0-2.9	.28	.43	1	5	48										
	2-11	5-50	30-80	10-30	1.20-1.50	4.00-14.00	0.03-0.18	0.0-2.9	.15	.49													
	11-16	5-50	30-80	10-35	1.20-1.40	4.00-14.00	0.01-0.10	0.0-2.9	.10	.49													
	16-26	---	---	---	---	0.00-0.42	---	---	---	---													
52E: Sylco-----	0-4	5-40	50-80	10-25	1.00-1.20	14.00-42.00	0.11-0.18	0.0-2.9	.28	.43	2	5	48										
	4-22	5-50	30-80	10-30	1.20-1.50	14.00-42.00	0.07-0.18	0.0-2.9	.17	.49													
	22-27	5-50	30-80	10-30	1.20-1.50	14.00-42.00	0.04-0.12	0.0-2.9	.10	.49													
	27-37	---	---	---	---	0.00-0.42	---	---	---	---													
Sylvatus-----	0-2	5-40	50-80	10-25	1.00-1.20	4.00-14.00	0.11-0.18	0.0-2.9	.28	.43	1	5	48										
	2-11	5-50	30-80	10-30	1.20-1.50	4.00-14.00	0.03-0.18	0.0-2.9	.15	.49													
	11-16	5-50	30-80	10-35	1.20-1.40	4.00-14.00	0.01-0.10	0.0-2.9	.10	.49													
	16-26	---	---	---	---	0.00-0.42	---	---	---	---													
53B: Tate-----	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	.28	.28	5	5	56										
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	.20	.20													
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	.28	.28													
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	.20	.20													
47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	.24	.28														
53C: Tate-----	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	.28	.28	5	5	56										
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	.20	.20													
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	.28	.28													
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	.20	.20													
47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	.24	.28														

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity um/sec	Available water capacity In/in	Linear extensibility Pct	Organic matter Pct	Erosion factors		Wind erodibility group	Wind erodibility index
	In	Pct									Kw	T		
53D: Tate	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	1.0-5.0	.28	.28	5	56	
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.20	.20			
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.28	.28			
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	0.0-0.5	.20	.20			
	47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.28			
53E: Tate	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	1.0-5.0	.28	.28	5	56	
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.20	.20			
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.28	.28			
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	0.0-0.5	.20	.20			
	47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.28			
54C: Tate	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	1.0-5.0	.28	.28	5	56	
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.20	.20			
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.28	.28			
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	0.0-0.5	.20	.20			
	47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.28			
54D: Tate	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	1.0-5.0	.28	.28	5	56	
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.20	.20			
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.28	.28			
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	0.0-0.5	.20	.20			
	47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.28			
54E: Tate	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	1.0-5.0	.28	.28	5	56	
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.20	.20			
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.28	.28			
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	0.0-0.5	.20	.20			
	47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.28			
55D: Tate	0-6	25-50	30-50	7-25	1.35-1.60	14.00-42.00	0.15-0.19	0.0-2.9	1.0-5.0	.28	.28	5	56	
	6-12	20-70	10-50	10-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.20	.20			
	12-27	20-60	10-50	18-35	1.30-1.45	4.00-14.00	0.07-0.19	0.0-2.9	0.0-1.0	.28	.28			
	27-47	25-70	10-50	12-35	1.30-1.45	4.00-14.00	0.05-0.18	0.0-2.9	0.0-0.5	.20	.20			
	47-62	35-85	5-50	5-25	1.35-1.60	14.00-42.00	0.04-0.17	0.0-2.9	0.0-0.5	.24	.28			
56C: Thunder	0-5	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.16-0.19	0.0-2.9	6.0-14	.10	.20	5	38	
	5-12	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.13-0.19	0.0-2.9	5.0-12	.10	.24			
	12-21	25-70	10-50	7-27	1.45-1.55	14.00-42.00	0.03-0.17	0.0-2.9	0.0-0.5	.15	.37			
	21-50	25-65	10-45	15-40	1.45-1.55	14.00-14.00	0.03-0.15	0.0-2.9	0.0-0.5	.10	.20			
	50-62	25-70	10-45	5-35	1.45-1.55	14.00-42.00	0.03-0.10	0.0-2.9	0.0-0.5	.05	.20			

Soil Survey of Grayson County, Virginia

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density g/cc	Saturated hydraulic conductivity $\mu\text{m}/\text{sec}$	Available water capacity In/in	Linear extensibility Pct	Organic matter Pct	Erosion factors			Wind erodibility index		
	In	Pct									Kw	Kf	T		Wind erodibility group	
56D: Thunder	0-5	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.16-0.19	0.0-2.9	6.0-14	.10	.20	5	6	38	
	5-12	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.13-0.19	0.0-2.9	5.0-12	.10	.24				
	12-21	10-50	25-70	10-50	7-27	1.45-1.55	14.00-42.00	0.03-0.17	0.0-2.9	0.0-0.5	.15	.37				
	21-50	10-45	25-65	10-45	15-40	1.45-1.55	4.00-14.00	0.03-0.15	0.0-2.9	0.0-0.5	.10	.20				
	50-62	10-45	25-70	10-45	5-35	1.45-1.55	14.00-42.00	0.03-0.10	0.0-2.9	0.0-0.5	.05	.20				
56E: Thunder	0-5	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.16-0.19	0.0-2.9	6.0-14	.10	.20	5	6	38	
	5-12	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.13-0.19	0.0-2.9	5.0-12	.10	.24				
	12-21	10-50	25-70	10-50	7-27	1.45-1.55	14.00-42.00	0.03-0.17	0.0-2.9	0.0-0.5	.15	.37				
	21-50	10-45	25-65	10-45	15-40	1.45-1.55	4.00-14.00	0.03-0.15	0.0-2.9	0.0-0.5	.10	.20				
	50-62	10-45	25-70	10-45	5-35	1.45-1.55	14.00-42.00	0.03-0.10	0.0-2.9	0.0-0.5	.05	.20				
57C: Thunder	0-5	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.16-0.19	0.0-2.9	6.0-14	.10	.20	5	6	38	
	5-12	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.13-0.19	0.0-2.9	5.0-12	.10	.24				
	12-21	10-50	25-70	10-50	7-27	1.45-1.55	14.00-42.00	0.03-0.17	0.0-2.9	0.0-0.5	.15	.37				
	21-50	10-45	25-65	10-45	15-40	1.45-1.55	4.00-14.00	0.03-0.15	0.0-2.9	0.0-0.5	.10	.20				
	50-62	10-45	25-70	10-45	5-35	1.45-1.55	14.00-42.00	0.03-0.10	0.0-2.9	0.0-0.5	.05	.20				
57D: Thunder	0-5	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.16-0.19	0.0-2.9	6.0-14	.10	.20	5	6	38	
	5-12	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.13-0.19	0.0-2.9	5.0-12	.10	.24				
	12-21	10-50	25-70	10-50	7-27	1.45-1.55	14.00-42.00	0.03-0.17	0.0-2.9	0.0-0.5	.15	.37				
	21-50	10-45	25-65	10-45	15-40	1.45-1.55	4.00-14.00	0.03-0.15	0.0-2.9	0.0-0.5	.10	.20				
	50-62	10-45	25-70	10-45	5-35	1.45-1.55	14.00-42.00	0.03-0.10	0.0-2.9	0.0-0.5	.05	.20				
57E: Thunder	0-5	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.16-0.19	0.0-2.9	6.0-14	.10	.20	5	6	38	
	5-12	30-50	25-50	30-50	7-27	1.45-1.55	14.00-42.00	0.13-0.19	0.0-2.9	5.0-12	.10	.24				
	12-21	10-50	25-70	10-50	7-27	1.45-1.55	14.00-42.00	0.03-0.17	0.0-2.9	0.0-0.5	.15	.37				
	21-50	10-45	25-65	10-45	15-40	1.45-1.55	4.00-14.00	0.03-0.15	0.0-2.9	0.0-0.5	.10	.20				
	50-62	10-45	25-70	10-45	5-35	1.45-1.55	14.00-42.00	0.03-0.10	0.0-2.9	0.0-0.5	.05	.20				
58D: Udorthents-Urban land	0-5	55-80	55-80	5-40	5-20	1.45-1.55	14.00-42.00	0.04-0.07	0.0-2.9	0.5-2.0	.10	.24	1	3	48	
	5-14	35-80	35-80	5-45	5-20	1.45-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.37				
	14-19	35-80	35-80	5-45	5-20	1.45-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.37				
	19-29	---	---	---	---	---	0.00-0.07	---	---	---	---	---				

Table 16.--Physical Soil Properties--Continued

Map symbol and soil name	Depth <u>In</u>	Sand <u>Pct</u>	Silt <u>Pct</u>	Clay <u>Pct</u>	Moist bulk density <u>g/cc</u>	Saturated hydraulic conductivity <u>um/sec</u>	Available water capacity <u>In/in</u>	Linear extensi- bility <u>Pct</u>	Organic matter <u>Pct</u>	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
59E: Unicoi-----	0-5	55-80	5-40	5-20	1.45-1.55	14.00-42.00	0.04-0.07	0.0-2.9	0.5-2.0	.10	.24	1	3	48
	5-14	35-80	5-45	5-20	1.45-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.37			
	14-19	35-80	5-45	5-20	1.45-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.37			
	19-29	---	---	---	---	0.00-0.07	---	---	---	---	---			
W. Water														

# Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
1C: Balsam-----	0-19	19-54	14-41	3.5-6.0
	19-35	3.2-21	2.4-16	3.5-6.0
	35-48	2.1-14	1.6-10	3.5-6.0
	48-62	1.6-7.5	1.2-5.6	3.5-6.0
1D: Balsam-----	0-19	19-54	14-41	3.5-6.0
	19-35	3.2-21	2.4-16	3.5-6.0
	35-48	2.1-14	1.6-10	3.5-6.0
	48-62	1.6-7.5	1.2-5.6	3.5-6.0
1E: Balsam-----	0-19	19-54	14-41	3.5-6.0
	19-35	3.2-21	2.4-16	3.5-6.0
	35-48	2.1-14	1.6-10	3.5-6.0
	48-62	1.6-7.5	1.2-5.6	3.5-6.0
2D: Balsam-----	0-19	19-54	14-41	3.5-6.0
	19-35	3.2-21	2.4-16	3.5-6.0
	35-48	2.1-14	1.6-10	3.5-6.0
	48-62	1.6-7.5	1.2-5.6	3.5-6.0
Nopan-----	0-6	24-61	18-46	3.5-5.5
	6-17	1.6-16	1.2-12	3.5-5.5
	17-33	1.6-16	1.2-12	3.5-5.5
	33-50	1.6-20	1.2-15	3.5-5.5
	50-62	1.6-6.8	1.2-5.1	3.5-5.5
2E: Balsam-----	0-19	19-54	14-41	3.5-6.0
	19-35	3.2-21	2.4-16	3.5-6.0
	35-48	2.1-14	1.6-10	3.5-6.0
	48-62	1.6-7.5	1.2-5.6	3.5-6.0
Nopan-----	0-6	24-61	18-46	3.5-5.5
	6-17	1.6-16	1.2-12	3.5-5.5
	17-33	1.6-16	1.2-12	3.5-5.5
	33-50	1.6-20	1.2-15	3.5-5.5
	50-62	1.6-6.8	1.2-5.1	3.5-5.5
3D: Bloodyhorse-----	0-12	20-51	15-38	3.5-6.0
	12-28	2.4-18	1.8-13	3.5-6.0
	28-37	2.4-8.5	1.8-6.4	3.5-6.0
	37-47	---	---	---
4F: Bloodyhorse-----	0-12	20-51	15-38	3.5-6.0
	12-28	2.4-18	1.8-13	3.5-6.0
	28-37	2.4-8.5	1.8-6.4	3.5-6.0
	37-47	---	---	---

# Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
5B:				
Braddock-----	0-8	4.8-11	3.6-8.1	3.5-6.5
	8-15	7.9-15	5.9-11	3.5-6.0
	15-51	8.8-15	6.6-11	3.5-5.5
	51-62	8.8-14	6.6-10	3.5-5.5
5C:				
Braddock-----	0-8	4.8-11	3.6-8.1	3.5-6.5
	8-15	7.9-15	5.9-11	3.5-6.0
	15-51	8.8-15	6.6-11	3.5-5.5
	51-62	8.8-14	6.6-10	3.5-5.5
5D:				
Braddock-----	0-8	4.8-11	3.6-8.1	3.5-6.5
	8-15	7.9-15	5.9-11	3.5-6.0
	15-51	8.8-15	6.6-11	3.5-5.5
	51-62	8.8-14	6.6-10	3.5-5.5
6E:				
Braddock-----	0-8	4.8-11	3.6-8.1	3.5-6.5
	8-15	7.9-15	5.9-11	3.5-6.0
	15-51	8.8-15	6.6-11	3.5-5.5
	51-62	8.8-14	6.6-10	3.5-5.5
7D:				
Brevard-----	0-8	3.5-12	2.6-8.8	4.5-6.0
	8-48	5.0-9.9	3.8-7.4	4.5-6.0
	48-60	2.0-7.4	1.5-5.5	4.5-6.0
Greenlee-----	0-7	3.0-15	2.0-11	3.6-6.0
	7-53	3.0-11	2.0-8.0	3.6-6.0
	53-62	1.0-6.0	1.0-4.0	3.6-6.0
8C:				
Burton-----	0-13	22-53	16-40	3.5-6.0
	13-21	6.4-20	4.8-15	3.5-6.0
	21-26	1.8-11	1.3-8.2	3.5-6.0
	26-31	---	---	---
	31-42	---	---	---
9D:				
Burton-----	0-13	22-53	16-40	3.5-6.0
	13-21	6.4-20	4.8-15	3.5-6.0
	21-26	1.8-11	1.3-8.2	3.5-6.0
	26-31	---	---	---
	31-42	---	---	---
9E:				
Burton-----	0-13	22-53	16-40	3.5-6.0
	13-21	6.4-20	4.8-15	3.5-6.0
	21-26	1.8-11	1.3-8.2	3.5-6.0
	26-31	---	---	---
	31-42	---	---	---
10D:				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
10D:				
Chestnut-----	0-3	3.5-23	2.6-17	3.5-6.0
	3-21	1.2-11	0.9-8.1	3.5-6.0
	21-29	1.2-11	0.9-8.1	3.5-6.0
	29-45	---	---	---
	45-80	---	---	---
10E:				
Chestnut-----	0-3	3.5-23	2.6-17	3.5-6.0
	3-21	1.2-11	0.9-8.1	3.5-6.0
	21-29	1.2-11	0.9-8.1	3.5-6.0
	29-45	---	---	---
	45-80	---	---	---
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
11F:				
Chestnut-----	0-3	3.5-23	2.6-17	3.5-6.0
	3-21	1.2-11	0.9-8.1	3.5-6.0
	21-29	1.2-11	0.9-8.1	3.5-6.0
	29-45	---	---	---
	45-80	---	---	---
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
Tuckasegee-----	0-13	8.0-23	6.0-17	4.5-6.5
	13-47	2.9-11	2.2-8.4	4.5-6.0
	47-79	1.2-7.2	0.9-5.4	4.5-6.0
12A:				
Codorus-----	0-7	10-18	7.0-13	4.5-6.0
	7-19	6.0-13	5.0-10	4.5-6.0
	19-37	6.0-13	5.0-10	5.1-6.5
	37-49	4.0-13	3.0-10	5.1-6.5
	49-62	4.0-13	3.0-10	5.1-6.5
13A:				
Comus-----	0-9	3.5-14	2.6-10	4.5-6.0
	9-31	1.2-5.6	0.9-4.2	4.5-6.0
	31-53	1.2-5.6	0.9-4.2	4.5-6.0
	53-62	0.5-5.6	0.4-4.2	4.5-6.0
14C:				
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
14D:				
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---
14E:				
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---
15D:				
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---
15E:				
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---
16D:				
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---
Rock outcrop.				
16E:				
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---
Rock outcrop.				
17A:				
Craigsville-----	0-6	3.8-13	2.6-9.6	4.5-5.5
	6-32	1.2-5.4	0.9-4.1	4.5-5.5
	32-62	1.2-4.2	0.9-3.1	4.5-5.5
18C:				
Cullasaja-----	0-6	13-40	9.9-30	4.5-6.0
	6-21	13-40	9.9-30	4.5-6.0
	21-42	2.4-11	1.8-8.1	4.5-6.0
	42-62	1.6-6.0	1.2-4.5	4.5-6.0
18D:				
Cullasaja-----	0-6	13-40	9.9-30	4.5-6.0
	6-21	13-40	9.9-30	4.5-6.0
	21-42	2.4-11	1.8-8.1	4.5-6.0
	42-62	1.6-6.0	1.2-4.5	4.5-6.0

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
19A: Delanco-----	0-10	6.2-15	4.7-12	3.5-5.5
	10-16	1.8-8.0	1.3-6.0	3.5-5.5
	16-41	6.3-12	4.7-8.7	3.5-5.5
	41-47	5.2-11	3.9-7.9	3.5-5.5
	47-62	1.8-9.9	1.3-7.4	3.5-5.5
19B: Delanco-----	0-10	6.2-15	4.7-12	3.5-5.5
	10-16	1.8-8.0	1.3-6.0	3.5-5.5
	16-41	6.3-12	4.7-8.7	3.5-5.5
	41-47	5.2-11	3.9-7.9	3.5-5.5
	47-62	1.8-9.9	1.3-7.4	3.5-5.5
20C: Delanco-----	0-10	6.2-15	4.7-12	3.5-5.5
	10-16	1.8-8.0	1.3-6.0	3.5-5.5
	16-41	6.3-12	4.7-8.7	3.5-5.5
	41-47	5.2-11	3.9-7.9	3.5-5.5
	47-62	1.8-9.9	1.3-7.4	3.5-5.5
21B: Edneytown-----	0-4	2.0-11	2.0-8.0	4.5-5.5
	4-7	1.0-5.0	1.0-4.0	4.5-5.5
	7-20	5.0-10	4.0-7.0	4.5-5.5
	20-27	3.0-7.0	2.0-6.0	4.5-5.5
	27-62	1.0-5.0	1.0-4.0	4.5-5.5
21C: Edneytown-----	0-4	2.0-11	2.0-8.0	4.5-5.5
	4-7	1.0-5.0	1.0-4.0	4.5-5.5
	7-20	5.0-10	4.0-7.0	4.5-5.5
	20-27	3.0-7.0	2.0-6.0	4.5-5.5
	27-62	1.0-5.0	1.0-4.0	4.5-5.5
21D: Edneytown-----	0-4	2.0-11	2.0-8.0	4.5-5.5
	4-7	1.0-5.0	1.0-4.0	4.5-5.5
	7-20	5.0-10	4.0-7.0	4.5-5.5
	20-27	3.0-7.0	2.0-6.0	4.5-5.5
	27-62	1.0-5.0	1.0-4.0	4.5-5.5
21E: Edneytown-----	0-4	2.0-11	2.0-8.0	4.5-5.5
	4-7	1.0-5.0	1.0-4.0	4.5-5.5
	7-20	5.0-10	4.0-7.0	4.5-5.5
	20-27	3.0-7.0	2.0-6.0	4.5-5.5
	27-62	1.0-5.0	1.0-4.0	4.5-5.5
21F: Edneytown-----	0-4	2.0-11	2.0-8.0	4.5-5.5
	4-7	1.0-5.0	1.0-4.0	4.5-5.5
	7-20	5.0-10	4.0-7.0	4.5-5.5
	20-27	3.0-7.0	2.0-6.0	4.5-5.5
	27-62	1.0-5.0	1.0-4.0	4.5-5.5

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
22C:				
Edneytown-----	0-4	2.0-11	2.0-8.0	4.5-5.5
	4-7	1.0-5.0	1.0-4.0	4.5-5.5
	7-20	5.0-10	4.0-7.0	4.5-5.5
	20-27	3.0-7.0	2.0-6.0	4.5-5.5
	27-62	1.0-5.0	1.0-4.0	4.5-5.5
Urban land.				
23C:				
Edneyville-----	0-5	4.0-18	3.0-14	4.5-6.0
	5-11	2.4-9.5	1.8-7.1	4.5-6.0
	11-34	1.7-6.8	1.3-5.1	4.5-6.0
	34-62	1.2-5.0	0.9-3.7	4.5-6.0
23D:				
Edneyville-----	0-5	4.0-18	3.0-14	4.5-6.0
	5-11	2.4-9.5	1.8-7.1	4.5-6.0
	11-34	1.7-6.8	1.3-5.1	4.5-6.0
	34-62	1.2-5.0	0.9-3.7	4.5-6.0
23E:				
Edneyville-----	0-5	4.0-18	3.0-14	4.5-6.0
	5-11	2.4-9.5	1.8-7.1	4.5-6.0
	11-34	1.7-6.8	1.3-5.1	4.5-6.0
	34-62	1.2-5.0	0.9-3.7	4.5-6.0
24D:				
Edneyville-----	0-5	4.0-18	3.0-14	4.5-6.0
	5-11	2.4-9.5	1.8-7.1	4.5-6.0
	11-34	1.7-6.8	1.3-5.1	4.5-6.0
	34-62	1.2-5.0	0.9-3.7	4.5-6.0
24E:				
Edneyville-----	0-5	4.0-18	3.0-14	4.5-6.0
	5-11	2.4-9.5	1.8-7.1	4.5-6.0
	11-34	1.7-6.8	1.3-5.1	4.5-6.0
	34-62	1.2-5.0	0.9-3.7	4.5-6.0
24F:				
Edneyville-----	0-5	4.0-18	3.0-14	4.5-6.0
	5-11	2.4-9.5	1.8-7.1	4.5-6.0
	11-34	1.7-6.8	1.3-5.1	4.5-6.0
	34-62	1.2-5.0	0.9-3.7	4.5-6.0
25B:				
Elsinboro-----	0-10	4.2-11	3.2-8.4	4.5-5.5
	10-18	2.6-6.2	1.9-4.6	4.5-5.5
	18-45	4.5-9.6	3.4-7.2	4.5-5.5
	45-62	2.0-9.6	1.5-7.2	4.5-5.5
26B:				
Elsinboro-----	0-10	4.2-11	3.2-8.4	4.5-5.5
	10-18	2.6-6.2	1.9-4.6	4.5-5.5
	18-45	4.5-9.6	3.4-7.2	4.5-5.5
	45-62	2.0-9.6	1.5-7.2	4.5-5.5
Urban land.				

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
27D:				
Evard-----	0-8	3.5-16	5.0-12	3.5-6.0
	8-35	4.5-9.9	3.4-7.4	4.5-5.5
	35-79	1.2-6.1	0.9-4.6	4.5-5.5
Cowee-----	0-6	4.2-16	3.2-12	3.5-6.0
	6-27	5.6-11	4.2-8.2	3.5-6.0
	27-39	2.5-8.1	1.9-6.0	3.5-6.0
	39-45	---	---	---
28B:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
28C:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
28D:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
28E:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
28F:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
29C:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
29D:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
29E:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
30C:				
Glenelg-----	0-4	6.0-13	4.5-9.8	4.5-6.5
	4-24	5.0-9.1	3.8-6.8	4.5-6.5
	24-62	1.2-6.1	0.9-4.6	4.5-6.5
Urban land.				

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
31D: Greenlee-----	0-7	3.0-15	2.0-11	3.6-6.0
	7-53	3.0-11	2.0-8.0	3.6-6.0
	53-62	1.0-6.0	1.0-4.0	3.6-6.0
31E: Greenlee-----	0-7	3.0-15	2.0-11	3.6-6.0
	7-53	3.0-11	2.0-8.0	3.6-6.0
	53-62	1.0-6.0	1.0-4.0	3.6-6.0
32A: Hatboro-----	0-8	7.0-20	5.2-15	4.5-7.3
	8-45	5.2-13	3.9-10	4.5-7.3
	45-62	1.8-17	1.3-13	5.6-6.5
33B: Hayesville-----	0-6	1.8-4.2	1.4-3.2	4.5-6.0
	6-11	0.5-3.1	0.4-2.3	4.5-6.0
	11-43	3.5-6.1	2.6-4.6	4.5-6.0
	43-49	2.0-5.1	1.5-3.8	4.5-6.0
	49-62	1.0-3.6	0.8-2.7	4.5-6.0
33C: Hayesville-----	0-6	1.8-4.2	1.4-3.2	4.5-6.0
	6-11	0.5-3.1	0.4-2.3	4.5-6.0
	11-43	3.5-6.1	2.6-4.6	4.5-6.0
	43-49	2.0-5.1	1.5-3.8	4.5-6.0
	49-62	1.0-3.6	0.8-2.7	4.5-6.0
33D: Hayesville-----	0-6	1.8-4.2	1.4-3.2	4.5-6.0
	6-11	0.5-3.1	0.4-2.3	4.5-6.0
	11-43	3.5-6.1	2.6-4.6	4.5-6.0
	43-49	2.0-5.1	1.5-3.8	4.5-6.0
	49-62	1.0-3.6	0.8-2.7	4.5-6.0
34B: Keener-----	0-5	6.2-24	4.7-18	3.5-6.0
	5-14	3.5-11	2.6-8.1	3.5-6.0
	14-54	5.1-11	3.8-8.2	3.5-6.0
	54-62	2.7-9.9	2.0-7.6	3.5-6.0
34C: Keener-----	0-5	6.2-24	4.7-18	3.5-6.0
	5-14	3.5-11	2.6-8.1	3.5-6.0
	14-54	5.1-11	3.8-8.2	3.5-6.0
	54-62	2.7-9.9	2.0-7.6	3.5-6.0
34D: Keener-----	0-5	6.2-24	4.7-18	3.5-6.0
	5-14	3.5-11	2.6-8.1	3.5-6.0
	14-54	5.1-11	3.8-8.2	3.5-6.0
	54-62	2.7-9.9	2.0-7.6	3.5-6.0
35C: Keener-----	0-5	6.2-24	4.7-18	3.5-6.0
	5-14	3.5-11	2.6-8.1	3.5-6.0
	14-54	5.1-11	3.8-8.2	3.5-6.0
	54-62	2.7-9.9	2.0-7.6	3.5-6.0

# Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
35D: Keener-----	0-5	6.2-24	4.7-18	3.5-6.0
	5-14	3.5-11	2.6-8.1	3.5-6.0
	14-54	5.1-11	3.8-8.2	3.5-6.0
	54-62	2.7-9.9	2.0-7.6	3.5-6.0
36A: Kinkora-----	0-7	5.8-18	4.3-14	3.5-5.5
	7-16	4.6-14	3.5-10	3.5-5.5
	16-38	12-20	9.2-15	3.5-5.5
	38-48	5.2-11	3.9-7.9	3.5-5.5
	48-62	3.5-8.1	2.6-6.1	3.5-5.5
37C: Konarock-----	0-4	3.6-11	2.7-8.1	3.5-6.0
	4-19	4.9-8.5	3.7-6.4	3.5-6.0
	19-23	3.8-7.4	2.8-5.5	3.5-6.0
	23-33	---	---	---
37D: Konarock-----	0-4	3.6-11	2.7-8.1	3.5-6.0
	4-19	4.9-8.5	3.7-6.4	3.5-6.0
	19-23	3.8-7.4	2.8-5.5	3.5-6.0
	23-33	---	---	---
37E: Konarock-----	0-4	3.6-11	2.7-8.1	3.5-6.0
	4-19	4.9-8.5	3.7-6.4	3.5-6.0
	19-23	3.8-7.4	2.8-5.5	3.5-6.0
	23-33	---	---	---
38C: McCamy-----	0-5	2.9-14	2.2-11	3.5-5.5
	5-9	2.0-9.0	1.8-6.8	3.5-5.5
	9-23	4.5-9.9	3.4-7.4	3.5-5.5
	23-26	1.2-12	0.9-9.3	3.5-5.5
	26-31	---	---	---
	31-41	---	---	---
38D: McCamy-----	0-5	2.9-14	2.2-11	3.5-5.5
	5-9	2.0-9.0	1.8-6.8	3.5-5.5
	9-23	4.5-9.9	3.4-7.4	3.5-5.5
	23-26	1.2-12	0.9-9.3	3.5-5.5
	26-31	---	---	---
	31-41	---	---	---
39D: McCamy-----	0-5	2.9-14	2.2-11	3.5-5.5
	5-9	2.0-9.0	1.8-6.8	3.5-5.5
	9-23	4.5-9.9	3.4-7.4	3.5-5.5
	23-26	1.2-12	0.9-9.3	3.5-5.5
	26-31	---	---	---
	31-41	---	---	---

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
<b>39E:</b>				
McCamy-----	0-5	2.9-14	2.2-11	3.5-5.5
	5-9	2.0-9.0	1.8-6.8	3.5-5.5
	9-23	4.5-9.9	3.4-7.4	3.5-5.5
	23-26	1.2-12	0.9-9.3	3.5-5.5
	26-31	---	---	---
	31-41	---	---	---
<b>40D:</b>				
Mt Rogers-----	0-16	20-51	15-38	3.5-6.0
	16-33	2.4-18	1.8-13	3.5-6.0
	33-62	2.4-8.5	1.8-6.4	3.5-6.0
Bloodyhorse-----	0-12	20-51	15-38	3.5-6.0
	12-28	2.4-18	1.8-13	3.5-6.0
	28-37	2.4-8.5	1.8-6.4	3.5-6.0
	37-47	---	---	---
Rock outcrop.				
<b>40F:</b>				
Mt Rogers-----	0-16	20-51	15-38	3.5-6.0
	16-33	2.4-18	1.8-13	3.5-6.0
	33-62	2.4-8.5	1.8-6.4	3.5-6.0
Bloodyhorse-----	0-12	20-51	15-38	3.5-6.0
	12-28	2.4-18	1.8-13	3.5-6.0
	28-37	2.4-8.5	1.8-6.4	3.5-6.0
	37-47	---	---	---
Rock outcrop.				
<b>41C:</b>				
Mt Rogers-----	0-16	20-51	15-38	3.5-6.0
	16-33	2.4-18	1.8-13	3.5-6.0
	33-62	2.4-8.5	1.8-6.4	3.5-6.0
Buzzrock-----	0-14	20-51	15-38	3.5-6.0
	14-20	2.4-18	1.8-13	3.5-6.0
	20-42	2.4-8.5	1.8-6.4	3.5-6.0
	42-52	---	---	---
<b>41D:</b>				
Mt Rogers-----	0-16	20-51	15-38	3.5-6.0
	16-33	2.4-18	1.8-13	3.5-6.0
	33-62	2.4-8.5	1.8-6.4	3.5-6.0
Buzzrock-----	0-14	20-51	15-38	3.5-6.0
	14-20	2.4-18	1.8-13	3.5-6.0
	20-42	2.4-8.5	1.8-6.4	3.5-6.0
	42-52	---	---	---
<b>42C:</b>				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
42D:				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
42E:				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
43C:				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
43D:				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
43E:				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
43F:				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
44C:				
Pigeonroost-----	0-5	4.2-16	3.2-12	3.5-6.0
	5-24	4.5-9.9	3.4-7.4	3.5-6.0
	24-37	2.0-7.4	1.5-5.5	3.5-6.0
	37-72	---	---	---
44D:				
Pigeonroost-----	0-5	4.2-16	3.2-12	3.5-6.0
	5-24	4.5-9.9	3.4-7.4	3.5-6.0
	24-37	2.0-7.4	1.5-5.5	3.5-6.0
	37-72	---	---	---
44E:				
Pigeonroost-----	0-5	4.2-16	3.2-12	3.5-6.0
	5-24	4.5-9.9	3.4-7.4	3.5-6.0
	24-37	2.0-7.4	1.5-5.5	3.5-6.0
	37-72	---	---	---

Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
		meq/100 g	meq/100 g	
	Inches			pH
45D:				
Pigeonroost-----	0-5	4.2-16	3.2-12	3.5-6.0
	5-24	4.5-9.9	3.4-7.4	3.5-6.0
	24-37	2.0-7.4	1.5-5.5	3.5-6.0
	37-72	---	---	---
45E:				
Pigeonroost-----	0-5	4.2-16	3.2-12	3.5-6.0
	5-24	4.5-9.9	3.4-7.4	3.5-6.0
	24-37	2.0-7.4	1.5-5.5	3.5-6.0
	37-72	---	---	---
46E:				
Pigeonroost-----	0-5	4.2-16	3.2-12	3.5-6.0
	5-24	4.5-9.9	3.4-7.4	3.5-6.0
	24-37	2.0-7.4	1.5-5.5	3.5-6.0
	37-72	---	---	---
Rock outcrop.				
47D:				
Pineola-----	0-10	8.8-23	6.6-17	3.5-6.0
	10-15	3.1-7.2	2.3-5.4	3.5-6.0
	15-26	4.5-9.9	3.4-7.4	3.5-6.0
	26-29	1.2-5.6	0.9-4.2	3.5-6.0
	29-72	---	---	---
48E:				
Pineola-----	0-10	8.8-23	6.6-17	3.5-6.0
	10-15	3.1-7.2	2.3-5.4	3.5-6.0
	15-26	4.5-9.9	3.4-7.4	3.5-6.0
	26-29	1.2-5.6	0.9-4.2	3.5-6.0
	29-72	---	---	---
49.				
Pits, quarries				
50F:				
Rock outcrop.				
Peaks-----	0-4	4.0-13	3.0-9.8	4.5-6.0
	4-8	1.0-5.1	0.8-3.8	4.5-6.0
	8-23	1.2-5.6	0.9-4.2	4.5-6.0
	23-32	1.2-5.6	0.9-4.2	4.5-6.0
	32-42	---	---	---
51B:				
Scales-----	0-2	65-200	50-150	4.5-6.0
	2-11	65-200	50-150	4.5-6.0
	11-21	2.4-20	1.8-15	4.5-6.0
	21-33	5.6-11	4.2-8.2	4.5-6.0
	33-62	5.6-11	4.2-8.2	4.5-6.0
52C:				
Sylco-----	0-4	3.6-11	2.7-8.1	3.5-5.5
	4-22	3.1-11	2.3-8.2	3.5-5.5
	22-27	2.7-9.8	2.0-7.3	3.5-5.5
	27-37	---	---	---

# Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
52C:				
Sylvatus-----	0-2	3.6-11	2.7-8.1	3.5-5.0
	2-11	2.7-9.8	2.0-7.3	3.5-5.0
	11-16	2.6-9.9	1.9-7.4	3.5-5.0
	16-26	---	---	---
52D:				
Sylco-----	0-4	3.6-11	2.7-8.1	3.5-5.5
	4-22	3.1-11	2.3-8.2	3.5-5.5
	22-27	2.7-9.8	2.0-7.3	3.5-5.5
	27-37	---	---	---
Sylvatus-----	0-2	3.6-11	2.7-8.1	3.5-5.0
	2-11	2.7-9.8	2.0-7.3	3.5-5.0
	11-16	2.6-9.9	1.9-7.4	3.5-5.0
	16-26	---	---	---
52E:				
Sylco-----	0-4	3.6-11	2.7-8.1	3.5-5.5
	4-22	3.1-11	2.3-8.2	3.5-5.5
	22-27	2.7-9.8	2.0-7.3	3.5-5.5
	27-37	---	---	---
Sylvatus-----	0-2	3.6-11	2.7-8.1	3.5-5.0
	2-11	2.7-9.8	2.0-7.3	3.5-5.0
	11-16	2.6-9.9	1.9-7.4	3.5-5.0
	16-26	---	---	---
53B:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5
53C:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5
53D:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5
53E:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5

# Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
54C:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5
54D:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5
54E:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5
55D:				
Tate-----	0-6	4.0-18	3.0-13	4.5-6.5
	6-12	2.8-11	1.9-8.2	4.5-6.5
	12-27	4.5-11	3.4-8.2	4.5-6.5
	27-47	3.0-9.9	2.2-7.4	4.5-6.5
	47-62	1.2-7.4	0.9-5.5	4.5-6.5
56C:				
Thunder-----	0-5	15-38	11-29	5.1-6.5
	5-12	13-34	9.8-25	5.1-6.5
	12-21	1.8-7.9	1.3-5.9	5.1-6.5
	21-50	3.8-11	2.8-8.3	5.1-6.5
	50-62	1.2-9.9	0.9-7.4	5.1-6.5
56D:				
Thunder-----	0-5	15-38	11-29	5.1-6.5
	5-12	13-34	9.8-25	5.1-6.5
	12-21	1.8-7.9	1.3-5.9	5.1-6.5
	21-50	3.8-11	2.8-8.3	5.1-6.5
	50-62	1.2-9.9	0.9-7.4	5.1-6.5
56E:				
Thunder-----	0-5	15-38	11-29	5.1-6.5
	5-12	13-34	9.8-25	5.1-6.5
	12-21	1.8-7.9	1.3-5.9	5.1-6.5
	21-50	3.8-11	2.8-8.3	5.1-6.5
	50-62	1.2-9.9	0.9-7.4	5.1-6.5
57C:				
Thunder-----	0-5	15-38	11-29	5.1-6.5
	5-12	13-34	9.8-25	5.1-6.5
	12-21	1.8-7.9	1.3-5.9	5.1-6.5
	21-50	3.8-11	2.8-8.3	5.1-6.5
	50-62	1.2-9.9	0.9-7.4	5.1-6.5

# Soil Survey of Grayson County, Virginia

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
57D:				
Thunder-----	0-5	15-38	11-29	5.1-6.5
	5-12	13-34	9.8-25	5.1-6.5
	12-21	1.8-7.9	1.3-5.9	5.1-6.5
	21-50	3.8-11	2.8-8.3	5.1-6.5
	50-62	1.2-9.9	0.9-7.4	5.1-6.5
57E:				
Thunder-----	0-5	15-38	11-29	5.1-6.5
	5-12	13-34	9.8-25	5.1-6.5
	12-21	1.8-7.9	1.3-5.9	5.1-6.5
	21-50	3.8-11	2.8-8.3	5.1-6.5
	50-62	1.2-9.9	0.9-7.4	5.1-6.5
58D.				
Udorthents-Urban land				
59D:				
Unicoi-----	0-5	2.4-9.5	1.8-7.1	3.5-5.5
	5-14	1.2-6.4	0.9-4.6	3.5-5.5
	14-19	1.2-6.1	0.9-4.6	3.5-5.5
	19-29	---	---	---
59E:				
Unicoi-----	0-5	2.4-9.5	1.8-7.1	3.5-5.5
	5-14	1.2-6.4	0.9-4.6	3.5-5.5
	14-19	1.2-6.1	0.9-4.6	3.5-5.5
	19-29	---	---	---
W.				
Water				

Soil Survey of Grayson County, Virginia

Table 18.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table			Ponding			Flooding		
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft						
1C: Balsam-----	B	Low	Jan-Dec	---	---	---	---	---	None	---	None	
1D: Balsam-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
1E: Balsam-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
2D: Balsam-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
Nopan-----	D	Very high	Jan-May June-Sept Oct-Dec	0.0-0.5 0.5-6.0 0.0-0.5	>6.0 >6.0 >6.0	---	---	---	None None None	---	None None None	
2E: Balsam-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
Nopan-----	D	Very high	Jan-May June-Sept Oct-Dec	0.0-0.5 0.5-6.0 0.0-0.5	>6.0 >6.0 >6.0	---	---	---	None None None	---	None None None	
3D: Bloodyhorse-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	
4F: Bloodyhorse-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	
5B: Braddock-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
5C: Braddock-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
5D: Braddock-----	B	High	Jan-Dec	---	---	---	---	---	None	---	None	
6E: Braddock-----	B	High	Jan-Dec	---	---	---	---	---	None	---	None	

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration
				Ft	Ft	Ft			
7D: Brevard-----	B	Medium	Jan-Dec	---	---	---	---	None	None
Greenlee-----	B	Low	Jan-Dec	---	---	---	---	None	None
8C: Burton-----	B	Very high	Jan-Dec	---	---	---	---	None	None
9D: Burton-----	B	Very high	Jan-Dec	---	---	---	---	None	None
9E: Burton-----	B	Very high	Jan-Dec	---	---	---	---	None	None
10D: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	None	None
Chestnut-----	C	Very high	Jan-Dec	---	---	---	---	None	None
10E: Chestnut-----	C	Very high	Jan-Dec	---	---	---	---	None	None
Peaks-----	C	Very high	Jan-Dec	---	---	---	---	None	None
11F: Chestnut-----	C	Very high	Jan-Dec	---	---	---	---	None	None
Peaks-----	C	Very high	Jan-Dec	---	---	---	---	None	None
Tuckasegee-----	A	Medium	Jan-Dec	---	---	---	---	None	None
12A: Codorus-----	C	Very high	Jan-May June-Sept Oct-Nov	1.0-2.0 2.0-6.6 1.0-2.0	>6.0 >6.0 >6.0	---	---	None None None	Frequent Frequent Frequent
13A: Comus-----	B	Low	Jan-Dec	---	---	---	---	None	Frequent
14C: Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	None
14D: Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	None
14E: Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	None

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding		Flooding		
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
15D: Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	---	None
15E: Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	---	None
16D: Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----	D	---	Jan-Dec	---	---	---	---	None	---	None
16E: Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----	D	---	Jan-Dec	---	---	---	---	None	---	None
17A: Craigs ville-----	B	Very low	Jan-Dec	---	---	---	---	None	Brief	Frequent
18C: Cullasaja-----	B	Low	Jan-Dec	---	---	---	---	None	---	None
18D: Cullasaja-----	B	Medium	Jan-Dec	---	---	---	---	None	---	None
19A: Delanco-----	C	Low	Jan-May June July-Aug September Oct-Dec	1.0-2.5 2.5-6.0 --- 2.5-6.0 1.0-2.5	>6.0 >6.0 --- >6.0 >6.0	---	---	None None None None None	Very brief Very brief Very brief Very brief Very brief	Rare Rare Rare Rare Rare
19B: Delanco-----	C	Medium	Jan-May June July-Aug September Oct-Dec	1.0-2.5 2.5-6.0 --- 2.5-6.0 1.0-2.5	>6.0 >6.0 --- >6.0 >6.0	---	---	None None None None None	Very brief Very brief Very brief Very brief Very brief	Rare Rare Rare Rare Rare
20C: Delanco-----	C	Medium	Jan-May June July-Aug September Oct-Dec	1.0-2.5 2.5-6.0 --- 2.5-6.0 1.0-2.5	>6.0 >6.0 --- >6.0 >6.0	---	---	None None None None None	---	None None None None None

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table			Ponding			Flooding			
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency	Duration	Frequency	
				Ft	Ft	Ft							
21B: Edneytown-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
21C: Edneytown-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
21D: Edneytown-----	B	High	Jan-Dec	---	---	---	---	---	None	---	---	None	
21E: Edneytown-----	B	High	Jan-Dec	---	---	---	---	---	None	---	---	None	
21F: Edneytown-----	B	High	Jan-Dec	---	---	---	---	---	None	---	---	None	
22C: Edneytown-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
Urban land.													
23C: Edneyville-----	B	Low	Jan-Dec	---	---	---	---	---	None	---	---	None	
23D: Edneyville-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
23E: Edneyville-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
24D: Edneyville-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
24E: Edneyville-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
24F: Edneyville-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	---	None	
25B: Elsinboro-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	Very brief	Rare	
26B: Elsinboro-----	B	Low	Jan-Dec	---	---	---	---	---	None	---	Very brief	Rare	
Urban land.													

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration
				Ft	Ft	Ft			
27D: Evard-----	B	High	Jan-Dec	---	---	---	---	None	None
Cowee-----	B	Very high	Jan-Dec	---	---	---	---	None	None
28B: Glenelg-----	B	Medium	Jan-Dec	---	---	---	---	None	None
28C: Glenelg-----	B	Medium	Jan-Dec	---	---	---	---	None	None
28D: Glenelg-----	B	High	Jan-Dec	---	---	---	---	None	None
28E: Glenelg-----	B	High	Jan-Dec	---	---	---	---	None	None
28F: Glenelg-----	B	High	Jan-Dec	---	---	---	---	None	None
29C: Glenelg-----	B	Medium	Jan-Dec	---	---	---	---	None	None
29D: Glenelg-----	B	High	Jan-Dec	---	---	---	---	None	None
29E: Glenelg-----	B	High	Jan-Dec	---	---	---	---	None	None
30C: Glenelg-----	B	Medium	Jan-Dec	---	---	---	---	None	None
Urban land.									
31D: Greenlee-----	B	Medium	Jan-Dec	---	---	---	---	None	None
31E: Greenlee-----	B	Medium	Jan-Dec	---	---	---	---	None	None
32A: Hatboro-----	D	Negligible	Jan-May June-Sept Oct-Dec	0.0-0.5 0.5-6.0 0.0-0.5	>6.0 >6.0 >6.0	0.1-0.5 0.1-0.5 0.1-0.5	Brief Brief Brief	Frequent Frequent Frequent	Frequent Frequent Frequent
33B: Hayesville-----	B	Medium	Jan-Dec	---	---	---	---	None	None

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table			Ponding			Flooding		
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft						
33C: Hayesville-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
33D: Hayesville-----	B	High	Jan-Dec	---	---	---	---	---	None	---	None	
34B: Keener-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
34C: Keener-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
34D: Keener-----	B	High	Jan-Dec	---	---	---	---	---	None	---	None	
35C: Keener-----	B	Medium	Jan-Dec	---	---	---	---	---	None	---	None	
35D: Keener-----	B	High	Jan-Dec	---	---	---	---	---	None	---	None	
36A: Kinkora-----	D	Negligible	Jan-May June July-Sept Oct-Dec	0.0-0.5 0.5-6.0 0.5-6.0 0.0-0.5	>6.0 >6.0 >6.0 >6.0	0.1-0.5 0.1-0.5 0.1-0.5 0.1-0.5	Brief Brief Brief Brief	Occasional Occasional Occasional Occasional	Very brief Very brief Very brief Very brief	Rare Rare Rare Rare		
37C: Konnarock-----	C	High	Jan-Dec	---	---	---	---	---	None	---	None	
37D: Konnarock-----	C	Very high	Jan-Dec	---	---	---	---	---	None	---	None	
37E: Konnarock-----	C	Very high	Jan-Dec	---	---	---	---	---	None	---	None	
38C: McCamy-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	
38D: McCamy-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	
39D: McCamy-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	
39E: McCamy-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
40D: Mt Rogers-----	B	Medium	Jan-Dec	---	---	---	---	---	None	None
Bloodyhorse----- Rock outcrop.	B	Very high	Jan-Dec	---	---	---	---	---	None	None
40F: Mt Rogers-----	B	Medium	Jan-Dec	---	---	---	---	---	None	None
Bloodyhorse----- Rock outcrop.	B	Very high	Jan-Dec	---	---	---	---	---	None	None
41C: Mt Rogers-----	B	Low	Jan-Dec	---	---	---	---	---	None	None
Buzzrock-----	B	Low	Jan-Dec	---	---	---	---	---	None	None
41D: Mt Rogers-----	B	Medium	Jan-Dec	---	---	---	---	---	None	None
Buzzrock-----	B	Medium	Jan-Dec	---	---	---	---	---	None	None
42C: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	None
42D: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	None
42E: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	None
43C: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	None
43D: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	None
43E: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	None
43F: Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	None
44C: Pigeonroost-----	B	Very high	Jan-Dec	---	---	---	---	---	None	None

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table			Ponding			Flooding			
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency	Duration	Frequency	
				Ft	Ft	Ft							
44D: Pigeonroost-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
44E: Pigeonroost-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
45D: Pigeonroost-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
45E: Pigeonroost-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
46E: Pigeonroost-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
Rock outcrop.													
47D: Pineola-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
48E: Pineola-----	B	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
49. Pits, quarries													
50F: Rock outcrop.													
Peaks-----	C	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
51B: Scales-----	D	Very high	Jan-June	0.0-0.5	>6.0	---	---	---	None	---	None	---	None
			July-Aug	0.5-6.0	>6.0	---	---	---	None	---	None	---	None
			Sep-Dec	0.0-0.5	>6.0	---	---	---	None	---	None	---	None
52C: Sylco-----	C	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
Sylvatus-----	D	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
52D: Sylco-----	C	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None
Sylvatus-----	D	Very high	Jan-Dec	---	---	---	---	---	None	---	None	---	None

Soil Survey of Grayson County, Virginia

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration
				Ft	Ft	Ft			
52E: Sylco-----	C	Very high	Jan-Dec	---	---	---	---	None	None
Sylvatus-----	D	Very high	Jan-Dec	---	---	---	---	None	None
53B: Tate-----	B	Medium	Jan-Dec	---	---	---	---	None	None
53C: Tate-----	B	Medium	Jan-Dec	---	---	---	---	None	None
53D: Tate-----	B	High	Jan-Dec	---	---	---	---	None	None
53E: Tate-----	B	High	Jan-Dec	---	---	---	---	None	None
54C: Tate-----	B	Medium	Jan-Dec	---	---	---	---	None	None
54D: Tate-----	B	High	Jan-Dec	---	---	---	---	None	None
54E: Tate-----	B	High	Jan-Dec	---	---	---	---	None	None
55D: Tate-----	B	High	Jan-Dec	---	---	---	---	None	None
56C: Thunder-----	B	Medium	Jan-Dec	---	---	---	---	None	None
56D: Thunder-----	B	High	Jan-Dec	---	---	---	---	None	None
56E: Thunder-----	B	High	Jan-Dec	---	---	---	---	None	None
57C: Thunder-----	B	Medium	Jan-Dec	---	---	---	---	None	None
57D: Thunder-----	B	High	Jan-Dec	---	---	---	---	None	None
57E: Thunder-----	B	High	Jan-Dec	---	---	---	---	None	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding			Flooding			
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency	Duration	Frequency	
				Ft	Ft	Ft							
58D: Udorthents----- Urban land.	D	Very high	Jan-Dec	---	---	---	---	---	None	---	---	None	---
59D: Unicoi-----	C	Very high	Jan-Dec	---	---	---	---	---	None	---	---	None	---
59E: Unicoi----- W. Water	C	Very high	Jan-Dec	---	---	---	---	---	None	---	---	None	---

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Table 19.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top In		Uncoated steel	Concrete
1C: Balsam-----	---	---	Moderate	High	High
1D: Balsam-----	---	---	Moderate	High	High
1E: Balsam-----	---	---	Moderate	High	High
2D: Balsam-----	---	---	Moderate	High	High
Nopan-----	---	---	High	High	High
2E: Balsam-----	---	---	Moderate	High	High
Nopan-----	---	---	High	High	High
3D: Bloodyhorse-----	Lithic bedrock	20-40 Indurated	Moderate	Moderate	High
4F: Bloodyhorse-----	Lithic bedrock	20-40 Indurated	Moderate	Moderate	High
5B: Braddock-----	---	---	Moderate	High	Moderate
5C: Braddock-----	---	---	Moderate	High	Moderate
5D: Braddock-----	---	---	Moderate	High	Moderate
6E: Braddock-----	---	---	Moderate	High	Moderate
7D: Brevard-----	---	---	Moderate	Moderate	Moderate
Greenlee-----	---	---	Moderate	Low	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top in		Uncoated steel	Concrete
8C: Burton-----	Paralithic bedrock	20-40	Moderate	High	High
	Lithic bedrock	20-40			
9D: Burton-----	Paralithic bedrock	20-40	Moderate	High	High
	Lithic bedrock	20-40			
9E: Burton-----	Paralithic bedrock	20-40	Moderate	High	High
	Lithic bedrock	20-40			
10D: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
Chestnut-----	Paralithic bedrock	20-40	Moderate	Low	High
	Lithic bedrock	40-180			
10E: Chestnut-----	Paralithic bedrock	20-40	Moderate	Low	High
	Lithic bedrock	40-180			
Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
11F: Chestnut-----	Paralithic bedrock	20-40	Moderate	Low	High
	Lithic bedrock	40-180			
Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
Tuckasegee-----	---	---	Moderate	Moderate	Moderate
12A: Codorus-----	---	---	High	High	Moderate
13A: Comus-----	---	---	Moderate	Low	High
14C: Cowee-----	Paralithic bedrock	20-40	Moderate	Moderate	High

Soil Survey of Grayson County, Virginia

Table 19.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top In		Uncoated steel	Concrete
14D: Cowee-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
14E: Cowee-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
15D: Cowee-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
15E: Cowee-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
16D: Cowee-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
Rock outcrop-----	Lithic bedrock	0-0 Indurated	None	---	---
16E: Cowee-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
Rock outcrop-----	Lithic bedrock	0-0 Indurated	None	---	---
17A: Craigsville-----	---	---	Moderate	Moderate	Moderate
18C: Cullasaja-----	---	---	Moderate	High	High
18D: Cullasaja-----	---	---	Moderate	High	High
19A: Delanco-----	---	---	High	High	High
19B: Delanco-----	---	---	High	High	High
20C: Delanco-----	---	---	High	High	High
21B: Edneytown-----	---	---	Moderate	Moderate	Moderate

Soil Survey of Grayson County, Virginia

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top in		Hardness	Uncoated steel
21C: Edneytown-----	---	---	Moderate	Moderate	Moderate
21D: Edneytown-----	---	---	Moderate	Moderate	Moderate
21E: Edneytown-----	---	---	Moderate	Moderate	Moderate
21F: Edneytown-----	---	---	Moderate	Moderate	Moderate
22C: Edneytown-----	---	---	Moderate	Moderate	Moderate
Urban land.					
23C: Edneyville-----	---	---	Moderate	Low	High
23D: Edneyville-----	---	---	Moderate	Low	High
23E: Edneyville-----	---	---	Moderate	Low	High
24D: Edneyville-----	---	---	Moderate	Low	High
24E: Edneyville-----	---	---	Moderate	Low	High
24F: Edneyville-----	---	---	Moderate	Low	High
25B: Elsinboro-----	---	---	Moderate	Moderate	High
26B: Elsinboro-----	---	---	Moderate	Moderate	High
Urban land.					
27D: Evard-----	---	---	Moderate	Moderate	High
Cowee-----	Paralithic bedrock	20-40	Moderate	Moderate	High
		Moderately cemented			

Soil Survey of Grayson County, Virginia

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top In		Uncoated steel	Concrete
28B: Glengelg-----	---	---	Moderate	Low	High
28C: Glengelg-----	---	---	Moderate	Low	High
28D: Glengelg-----	---	---	Moderate	Low	High
28E: Glengelg-----	---	---	Moderate	Low	High
28F: Glengelg-----	---	---	Moderate	Low	High
29C: Glengelg-----	---	---	Moderate	Low	High
29D: Glengelg-----	---	---	Moderate	Low	High
29E: Glengelg-----	---	---	Moderate	Low	High
30C: Glengelg-----	---	---	Moderate	Low	High
Urban land.					
31D: Greenlee-----	---	---	Moderate	Low	High
31E: Greenlee-----	---	---	Moderate	Low	High
32A: Hatboro-----	---	---	High	High	Moderate
33B: Hayesville-----	---	---	Moderate	Moderate	Moderate
33C: Hayesville-----	---	---	Moderate	Moderate	Moderate
33D: Hayesville-----	---	---	Moderate	Moderate	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top in		Hardness	Uncoated steel
34B: Keener-----	---	---	Moderate	Moderate	Moderate
34C: Keener-----	---	---	Moderate	Moderate	Moderate
34D: Keener-----	---	---	Moderate	Moderate	Moderate
35C: Keener-----	---	---	Moderate	Moderate	Moderate
35D: Keener-----	---	---	Moderate	Moderate	Moderate
36A: Kinkora-----	---	---	High	High	High
37C: Konarock-----	Lithic bedrock	20-40	Indurated	Low	Moderate
37D: Konarock-----	Lithic bedrock	20-40	Indurated	Low	Moderate
37E: Konarock-----	Lithic bedrock	20-40	Indurated	Low	Moderate
38C: McCamy-----	Paralithic bedrock Lithic bedrock	20-40 20-40	Moderately cemented Indurated	Moderate	High
38D: McCamy-----	Paralithic bedrock Lithic bedrock	20-40 20-40	Moderately cemented Indurated	Moderate	High
39D: McCamy-----	Paralithic bedrock Lithic bedrock	20-40 20-40	Moderately cemented Indurated	Moderate	High
39E: McCamy-----	Paralithic bedrock Lithic bedrock	20-40 20-40	Moderately cemented Indurated	Moderate	High

Soil Survey of Grayson County, Virginia

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top In		Uncoated steel	Concrete
40D: Mt Rogers-----	---	---	Moderate	Moderate	High
Bloodyhorse-----	Lithic bedrock	20-40	Moderate	Moderate	High
Rock outcrop-----	Lithic bedrock	0-0	None	---	---
40F: Mt Rogers-----	---	---	Moderate	Moderate	High
Bloodyhorse-----	Lithic bedrock	20-40	Moderate	Moderate	High
Rock outcrop-----	Lithic bedrock	0-0	None	---	---
41C: Mt Rogers-----	---	---	Moderate	Moderate	High
Buzzrock-----	Lithic bedrock	40-60	Moderate	Moderate	High
41D: Mt Rogers-----	---	---	Moderate	Moderate	High
Buzzrock-----	Lithic bedrock	40-60	Moderate	Moderate	High
42C: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
42D: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
42E: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
43C: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
43D: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
43E: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
43F: Peaks-----	Lithic bedrock	20-40	Moderate	Low	High
44C: Pigeonroost-----	Paralithic bedrock	20-40	Moderate	Moderate	High

Soil Survey of Grayson County, Virginia

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top in		Uncoated steel	Concrete
44D: Pigeonroost-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
44E: Pigeonroost-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
45D: Pigeonroost-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
45E: Pigeonroost-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
46E: Pigeonroost-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
47D: Pineola-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
Rock outcrop-----	Lithic bedrock	0-0 Indurated	None	---	---
48E: Pineola-----	Paralithic bedrock	20-40 Moderately cemented	Moderate	Moderate	High
49: Pits, quarries-----	Lithic bedrock	0-0 ---	None	---	---
50F: Rock outcrop-----	Lithic bedrock	0-0 Indurated	None	---	---
Peaks-----	Lithic bedrock	20-40 Indurated	Moderate	Low	High
51B: Scales-----	Dense material	11-40 Noncemented	High	High	High
52C: Sylco-----	Lithic bedrock	20-40 Indurated	Moderate	Low	Moderate
Sylvatus-----	Lithic bedrock	10-20 Indurated	Moderate	Moderate	Moderate

Soil Survey of Grayson County, Virginia

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top in		Uncoated steel	Concrete
52D: Sylco-----	Lithic bedrock	20-40	Moderate	Low	Moderate
Sylvatus-----	Lithic bedrock	10-20	Moderate	Moderate	Moderate
52E: Sylco-----	Lithic bedrock	20-40	Moderate	Low	Moderate
Sylvatus-----	Lithic bedrock	10-20	Moderate	Moderate	Moderate
53B: Tate-----	---	---	Moderate	Moderate	Moderate
53C: Tate-----	---	---	Moderate	Moderate	Moderate
53D: Tate-----	---	---	Moderate	Moderate	Moderate
53E: Tate-----	---	---	Moderate	Moderate	Moderate
54C: Tate-----	---	---	Moderate	Moderate	Moderate
54D: Tate-----	---	---	Moderate	Moderate	Moderate
54E: Tate-----	---	---	Moderate	Moderate	Moderate
55D: Tate-----	---	---	Moderate	Moderate	Moderate
56C: Thunder-----	---	---	Moderate	Moderate	Moderate
56D: Thunder-----	---	---	Moderate	Moderate	Moderate
56E: Thunder-----	---	---	Moderate	Moderate	Moderate
57C: Thunder-----	---	---	Moderate	Moderate	Moderate
57D: Thunder-----	---	---	Moderate	Moderate	Moderate

Table 19.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top in		Hardness	Uncoated steel
57E: Thunder-----	---	---	Moderate	Moderate	Moderate
58D. Udorthents-Urban land					
59D: Unicoi-----	Lithic bedrock	10-20	Indurated	Low	Moderate
59E: Unicoi-----	Lithic bedrock	10-20	Indurated	Low	Moderate
W. Water					

Soil Survey of Grayson County, Virginia

Table 20.—Classification of the Soils

Soil name	Family or higher taxonomic class
Balsam-----	Loamy-skeletal, isotic, frigid Humic Dystrudepts
Bloodyhorse-----	Loamy-skeletal, isotic, frigid Humic Dystrudepts
Braddock-----	Fine, mixed, semiactive, mesic Typic Hapludults
Brevard-----	Fine-loamy, parasesquic, mesic Typic Hapludults
Burton-----	Fine-loamy, isotic, frigid Humic Dystrudepts
Buzzrock-----	Loamy-skeletal over fragmental, isotic over mixed, frigid Humic Dystrudepts
Chestnut-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Codorus-----	Fine-loamy, mixed, active, mesic Fluvaquentic Dystrudepts
Comus-----	Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts
Cowee-----	Fine-loamy, parasesquic, mesic Typic Hapludults
Craigsville-----	Loamy-skeletal, mixed, superactive, mesic Fluventic Dystrudepts
Cullasaja-----	Loamy-skeletal, isotic, mesic Humic Dystrudepts
Delanco-----	Fine-loamy, mixed, semiactive, mesic Aquic Hapludults
Edneytown-----	Fine-loamy, mixed, active, mesic Typic Hapludults
Edneyville-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Elsinboro-----	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Evard-----	Fine-loamy, parasesquic, mesic Typic Hapludults
Glenelg-----	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Greenlee-----	Loamy-skeletal, mixed, semiactive, mesic Typic Dystrudepts
Hatboro-----	Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Hayesville-----	Fine, kaolinitic, mesic Typic Kanhapludults
Keener-----	Fine-loamy, siliceous, semiactive, mesic Typic Hapludults
Kinkora-----	Fine, mixed, semiactive, mesic Typic Endoaquults
Konnarock-----	Loamy-skeletal, mixed, semiactive, mesic Typic Dystrudepts
McCamy-----	Fine-loamy, siliceous, semiactive, mesic Typic Hapludults
Mt Rogers-----	Loamy-skeletal, isotic, frigid Humic Dystrudepts
Nopan-----	Coarse-loamy, mixed, active, acid, frigid Typic Epiaquepts
Peaks-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Pigeonroost-----	Fine-loamy, mixed, active, mesic Typic Hapludults
Pineola-----	Fine-loamy, mixed, active, mesic Humic Hapludults
Scales-----	Loamy, mixed, superactive, acid, frigid, shallow Histic Humaquepts
Sylco-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Sylvatus-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Tate-----	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Thunder-----	Loamy-skeletal, mixed, active, mesic Humic Hapludults
Tuckasegee-----	Fine-loamy, isotic, mesic Humic Dystrudepts
Udorthents-----	Udorthents
Unicoi-----	Loamy-skeletal, mixed, semiactive, mesic Lithic Dystrudepts

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