United States Department of Agriculture

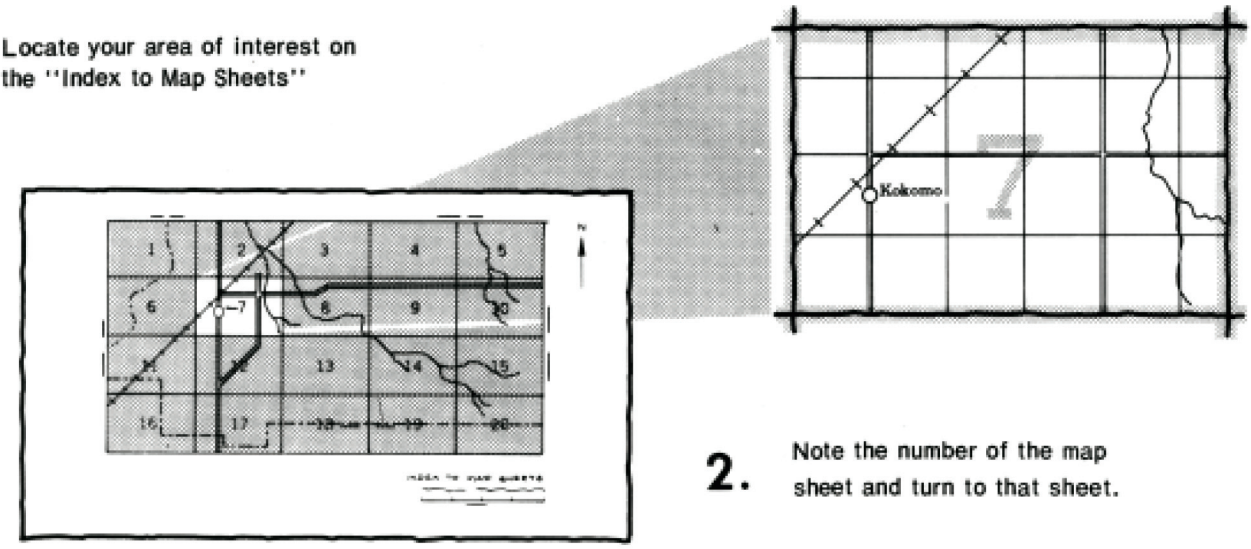
Soil Conservation Service

In Cooperation with Maine Agricultural Experiment Station and Maine Soil and Water Conservation Commission

Soil Survey of Waldo County Maine

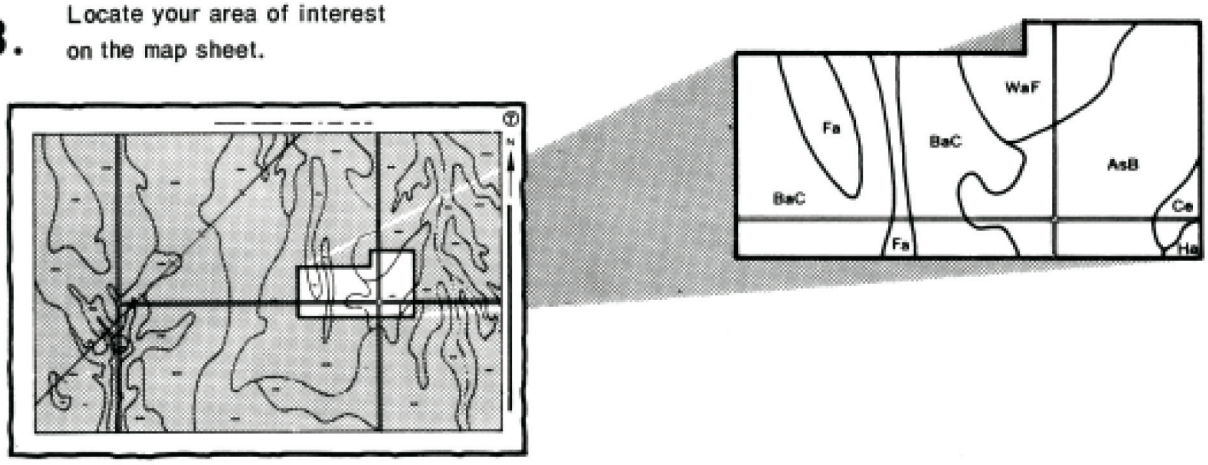
HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets"

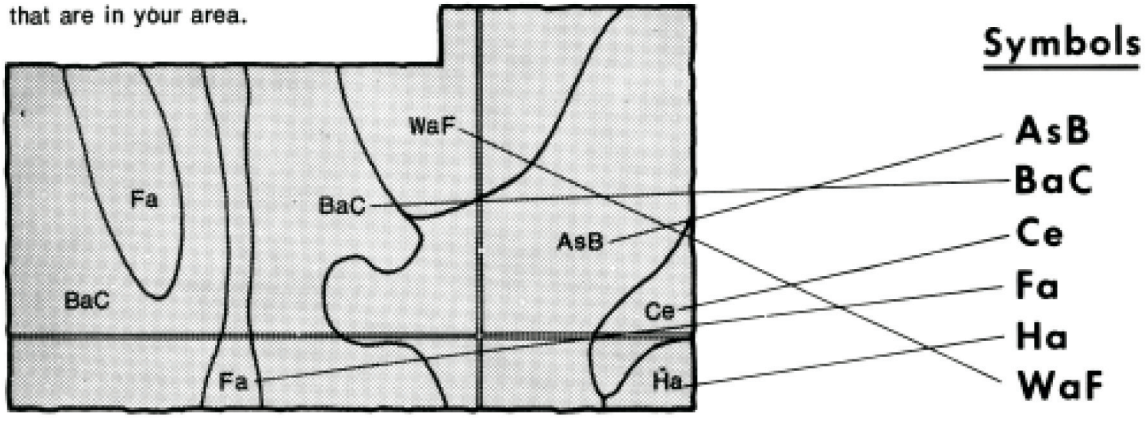


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.

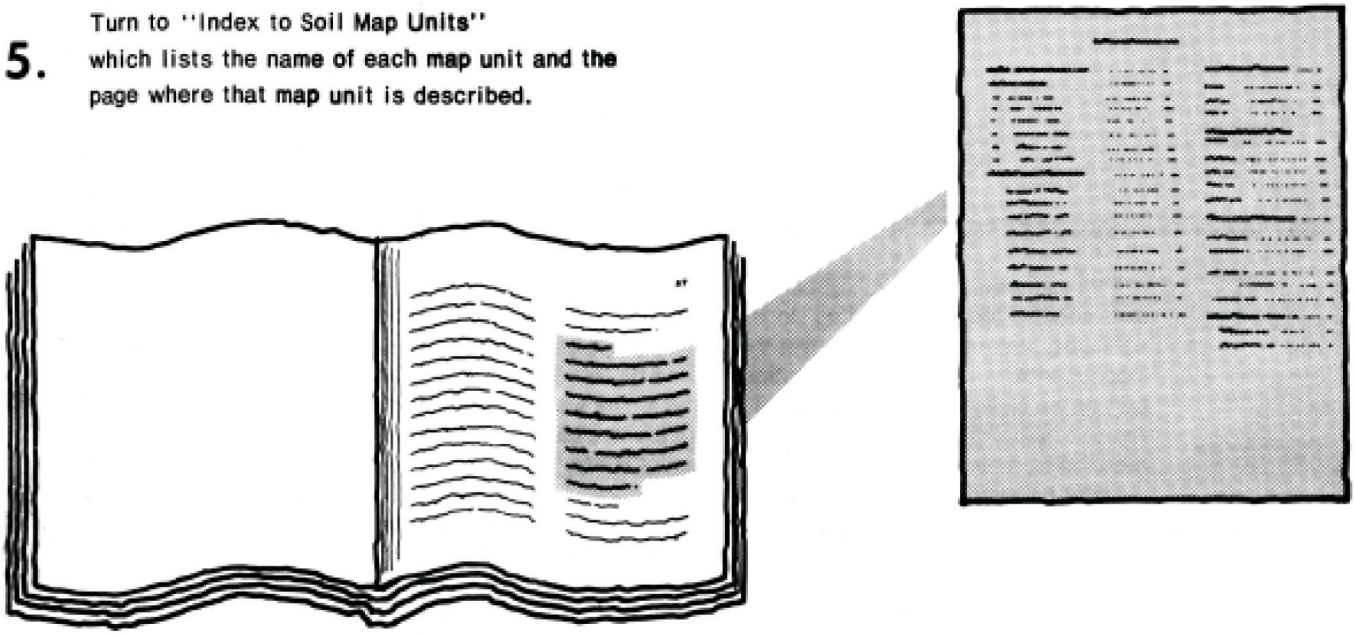


4. List the map unit symbols that are in your area.

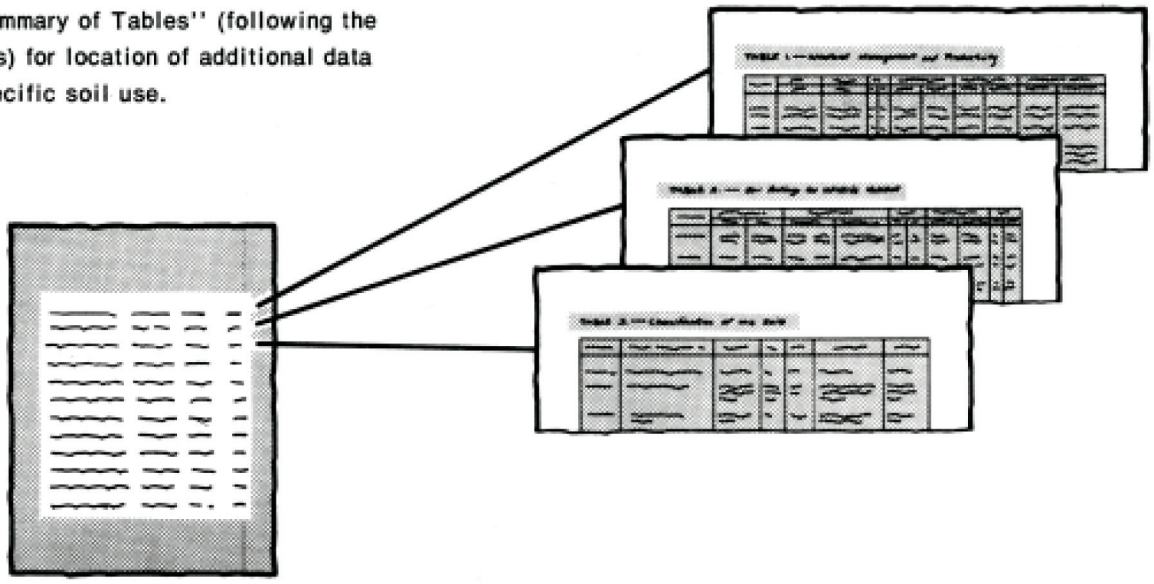


THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; to specialists in wildlife management, waste disposal, or pollution control.

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 Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was performed in the period 1967-78. Soil names and descriptions were approved in 1979. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1978. This survey was made cooperatively by the Soil Conservation Service, the Maine Agricultural Experiment Station, and the Maine Soil and Water Conservation Commission. The survey is part of the technical assistance furnished to the Waldo County Soil and Water Conservation District.

Cover: This area of the Peru-Marlow-Brayton association is on Knox Ridge.

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Issued July 1984

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foreword

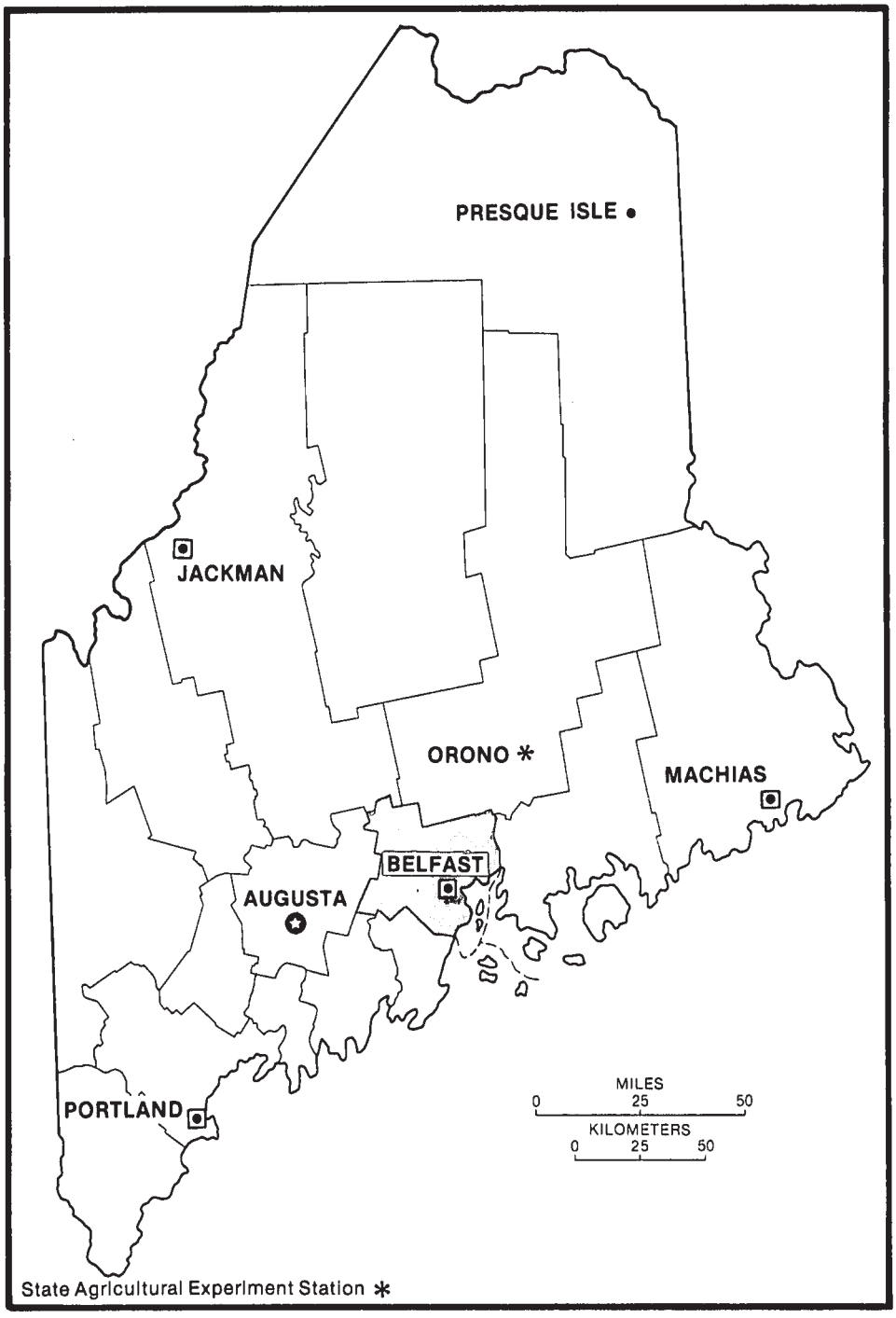
This soil survey contains information that can be used in land-planning programs in Waldo County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it 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 survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding, are shallow to bedrock, or 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. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.

Billy R. Abercrombie
State Conservationist
Soil Conservation Service



Location of Waldo County in Maine.

soil survey of
Waldo County, Maine

By Gary T. Hedstrom and David J. Popp, Soil Conservation Service

Major fieldwork by Richard D. Babcock, Donald O. Clark, J. Peter Crane, Gary T. Hedstrom
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United States Department of Agriculture, Soil Conservation Service
in cooperation with
the Maine Agricultural Experiment Station and
the Maine Soil and Water Conservation Commission

WALDO COUNTY is in the center of coastal Maine. The county has a total land area of 734 square miles, or 469,760 acres, and about 25,000 acres of lakes, rivers, ponds, and streams. The total population of Waldo County is about 25,500. Belfast, the county seat, has a population of about 6,000.

The county is in the coastal region of the New England glaciated uplands. Relief ranges from sea level to 1,140 feet above sea level on Frye Mountain in the central part of the county. The county is characterized by rolling hills and glacially formed ridges. The northeastern and southeastern parts of the county are more mountainous; some peaks are over 1,000 feet in elevation.

Farming is the main enterprise in the county. Dairy and poultry farms are the primary livestock operations. Corn, potatoes, and dry beans are the main cash crops. The intensive farming is done on the deep, well drained, gently sloping soils. The county has about 480 farms that cover about 95,000 acres (*7*). The main nonfarm industries are food processing, shoe manufacturing, chemical processing, and shipping terminals.

This soil survey provides additional information to a survey of the county that was published in 1955 (*4*) and contains maps that show the soils in greater detail. The names and delineations of the soils on these maps do not, in all instances, agree with those on published maps of the surveys of adjacent counties. The differences are the results of changes in soil classification and mapping procedures.

general nature of the survey area

This section provides general information about the history and development of Waldo County, the climate, and the drainage patterns.

history and development

The first settlements in what is now Waldo County were made in 1731 along the Penobscot River in the area of Winterport. Some of the other settlements that followed were in Stockton Springs, Prospect, Searsport, and Islesboro. The abundance of timber and the location of the county led to the development of shipbuilding and lumbering as the first major industries in the area, along with fishing, shipping, and fur trading.

In 1827 Waldo County, originally a part of Hancock County, was organized and incorporated. In 1828 the county consisted of 25 towns and one city and had a population of about 29,000. The estimated population of the county in 1979 was 25,500, and the major industries were manufacturing, the raising and processing of poultry, farming, forestry, fishing, and tourism.

climate

Prepared by the National Climatic Center, Asheville, North Carolina.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Belfast, Maine, in the period 1951 to 1975. Table 2 shows probable dates of

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the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 24 degrees F, and the average daily minimum temperature is 14 degrees. The lowest temperature on record, which occurred at Belfast on January 14, 1957, is -28 degrees. In summer the average temperature is 66 degrees, and the average daily maximum temperature is 78 degrees. The highest recorded temperature, which occurred at Belfast on August 5, 1955, is 98 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 (40 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 48.7 inches. Of this, 21 inches, or 43 percent, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 17 inches. The heaviest 1-day rainfall during the period of record was 4.6 inches at Belfast on November 3, 1966. Thunderstorms occur on about 20 days each year, and most occur in summer.

Average seasonal snowfall is 59 inches. The greatest snow depth at any one time during the period of record was 51 inches. On an average of 40 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 65 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 10 miles per hour, in March.

drainage

Most of the drainage in Waldo County is through short streams and rivers that flow into the Sebasticook River in the northwest, the Penobscot River in the east, or directly to Penobscot Bay in the southeast. Other prominent rivers in the county are the Medomak, originating in Liberty; the St. George in Liberty and Searsmont; the Sheepscot in Palermo; the Passagassawaukeag near Belfast; and the Goose, which flows from Swan Lake to Belfast Harbor.

The streams and rivers are generally post-glacial, and at some point almost all of them flow into or out of glacial lakes. These water courses and lakes, along with connecting bogs and swamps, formed the general pattern of glacial drainage during the recession of the last ice sheet. The general direction of this drainage pattern is northeast-southwest. The size of the main lakes and ponds ranges from 1 to 5 square miles. The largest bodies of water are the St. George, Swan, and Megunticook Lakes and Unity, Sheepscot, Quantabacook, and Pitcher Ponds.

The rivers and streams provide adequate drainage for all areas in Waldo County except for the large flats or bogs west and north of Unity and in and near the towns of Searsmont, Morrill, and Waldo. These swamps and others in isolated areas, such as Herricks Bog south of Belfast and Jones Bog in Monroe, have no pronounced drainage, but streams do pass through them.

how this survey was made

Soil scientists made this survey to learn what soils are in the survey area, where they are, and how they can be used. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; and the kinds of rock. They dug many holes to study soil profiles. A profile is the sequence of natural layers, or horizons, in a soil. It extends from the surface down into the parent material, which has been changed very little by leaching or by plant roots.

The soil scientists recorded the characteristics of the profiles they studied and compared those profiles with others in nearby counties and in more distant places. They classified and named the soils according to nationwide uniform procedures. They drew the boundaries of the soils on aerial photographs. These photographs show trees, buildings, fields, roads, and other details that help in drawing boundaries accurately. The soil maps at the back of this publication were prepared from aerial photographs.

The areas shown on a soil map are called map units. Most map units are made up of one kind of soil. Some are made up of two or more kinds. The map units in this survey area are described under "General soil map units" and "Detailed soil map units."

While a soil survey is in progress, samples of some soils are taken for laboratory measurements and for engineering tests. All soils are field tested to determine their characteristics. Interpretations of those characteristics may be modified during the survey. Data are assembled from other sources, such as test results, records, field experience, and state and local specialists. For example, data on crop yields under defined management are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it can be used by farmers, woodland managers, engineers, planners, developers and builders, home buyers, and others.

general soil map units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each association on the general soil map is a unique natural landscape. Typically, an association consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one association can occur in other associations but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one association differ from place to place in slope, depth, drainage, and other characteristics that affect management.

soil descriptions

1. Peru-Marlow-Brayton association

Deep, nearly level to steep, well drained to poorly drained soils formed in dominantly moderately coarse textured, compact glacial till

Areas of this association are throughout the county on drumlins and glaciated uplands. The association covers about 43 percent of the county. It is about 32 percent Peru soils, 20 percent Marlow soils, 14 percent Brayton soils, and 34 percent soils of minor extent.

The Peru soils are moderately well drained, the Marlow soils are well drained, and the Brayton soils are somewhat poorly drained to poorly drained. All have a surface layer and subsoil of fine sandy loam and a moderately coarse textured, compact substratum. The permeability of these soils is moderate or moderately rapid in the subsoil and moderately slow to very slow in the compact substratum. The Peru soils are dominantly gently sloping to sloping and are mainly at lower elevations of this association. The Marlow soils are gently sloping to steep and are mainly at the higher elevations. The Brayton soils are nearly level to gently sloping and are mainly in low-lying areas.

The dominant minor soils in this association are somewhat excessively drained Lyman soils, well drained Tunbridge soils, and areas of Rock outcrop. Also of minor extent are well drained to somewhat excessively drained Hermon soils, somewhat excessively drained Masardis and Masardis Variant soils, and very poorly drained Borosaprists.

This association is used mainly for woodland. Some large areas, however, are used for cultivated crops, hay, and pasture, and some areas are used for apple orchards and lowbush blueberries (fig. 1). The slow permeability of the substratum, a seasonal perched water table, and stones on the surface are the major limiting factors of the soils. Slope is also a limitation on the moderately steep to steep soils.

2. Lyman-Peru-Tunbridge association

Shallow to deep, gently sloping to very steep, somewhat excessively drained to moderately well drained soils formed in dominantly moderately coarse textured glacial till

Areas of this association are in all but the northwestern part of the county. The areas are generally in long and narrow bands adjacent to marine sediments or on large glaciated upland ridges. The association covers about 26 percent of the county. It is about 21 percent Lyman soils, 18 percent Peru soils, 13 percent Tunbridge soils, and 48 percent soils of minor extent. The Lyman and Tunbridge soils are mainly on the tops of ridges and in areas at higher elevations of the association. The Peru soils are at the lower elevations.

The Lyman soils are shallow, gently sloping to very steep, and somewhat excessively drained. They have a surface layer and subsoil of fine sandy loam and are underlain by gneiss, schist, or phyllite bedrock.

The Peru soils are deep, gently sloping to moderately steep, and moderately well drained. They have a surface layer of fine sandy loam and a subsoil of gravelly fine sandy loam. They are underlain by a moderately coarse textured, compact substratum.

The Tunbridge soils are moderately deep, gently sloping to moderately steep, and well drained. They consist of fine sandy loam over gneiss, schist, or phyllite bedrock.

The dominant minor soils in this association are somewhat poorly drained to poorly drained Brayton soils, well drained Marlow soils, well drained to somewhat excessively drained Hermon soils, Rock outcrop, and very poorly drained Borosaprists. Also of minor extent are small areas of moderately well drained or somewhat poorly drained Boothbay soils, poorly drained Swanville

Figure 1.—An area of hayland in the Peru-Marlow-Brayton association.

soils, and somewhat excessively drained Masardis and Masardis Variant soils.

This association is used mainly for woodland, but some areas are used for hay, pasture, and cultivated crops and a few small areas are used for lowbush blueberries; some coastal areas are used for seasonal or year-round homesites or for recreation. The depth to bedrock, a seasonal perched water table, slow permeability of the compact substratum, rockiness, and stones on the surface are the major limitations of the soils.

3. Thorndike-Dixmont-Winnecook association

Shallow to deep, gently sloping to steep, somewhat excessively drained to somewhat poorly drained soils formed in medium textured glacial till

This association is on broad, rolling and undulating, glaciated ridges in the northern part of the county. The association covers about 8 percent of the county. It is about 28 percent Thorndike soils, 22 percent Dixmont soils, 17 percent Winnecook soils, and 33 percent soils of minor extent.

The Thorndike soils are shallow, gently sloping to steep, and somewhat excessively drained. They are mainly on the tops of hills and ridges. The Dixmont soils are deep, gently sloping to sloping, and moderately well drained to somewhat poorly drained. They are mainly at the lower elevations of this association. The Winnecook soils are moderately deep, gently sloping to moderately steep, and well drained. They are mainly at the higher elevations of the association.

The Thorndike soils have a surface layer of slaty silt loam and a subsoil of thin slaty silt loam or loam underlain by slate or phyllite bedrock. The Dixmont and Winnecook soils have a surface layer of silt loam and a subsoil of silt loam and slaty silt loam underlain by a medium textured substratum.

The dominant minor soils in the association are well drained Bangor soils, poorly drained Monarda soils, and areas of Rock outcrop. A few areas of Borosaprists are in the association, and small areas of coarse textured and moderately coarse textured Masardis, Madawaska, and Adams soils are near some streams.

This association is used mainly for woodland, but some large areas are used for crops, hay, and pasture

and some areas are used for apple orchards. The depth to bedrock, stones on the surface, a seasonal high water table, and slope are the major limitations of the association for most uses.

4. Dixmont-Borosaprists-Monarda association

Deep, nearly level to sloping, moderately well drained to poorly drained soils formed in medium textured glacial till; deep, level, very poorly drained soils formed in organic material

This association is mostly in the northern part of the county in large swampy areas surrounded by low-lying glaciated uplands. The association covers about 6 percent of the county. It is about 25 percent Dixmont soils, 23 percent Borosaprists, 22 percent Monarda soils, and 30 percent soils of minor extent.

The Dixmont soils are gently sloping to sloping and moderately well drained to somewhat poorly drained. They are at the higher elevations of the association. The Borosaprists are level and very poorly drained. They are in depressional areas. The Monarda soils are nearly level to gently sloping and are poorly drained. They are mainly in low-lying areas.

The Dixmont and Monarda soils have a surface layer of silt loam and a subsoil of silt loam and gravelly silt loam underlain by a medium textured substratum. The Borosaprists consist of organic material.

The dominant minor soils in this association are well drained Bangor and Winnecook soils and somewhat excessively drained Thorndike soils. Small areas of very poorly drained Biddeford soils and somewhat excessively drained Masardis soils and areas of Rock outcrop are in the association.

This association is used mainly for woodland. A few areas are used for pasture and hay, and some are used for wetland wildlife habitat. Wetness and stones on the surface are the major limitations of the soils. The areas of organic material have low strength.

5. Boothbay-Swanville-Lyman association

Deep, nearly level to steep, moderately well drained to poorly drained soils formed in marine and lacustrine sediments; shallow, gently sloping to very steep, somewhat excessively drained soils formed in moderately coarse textured glacial till

This association is in the low-lying parts of the county. The Boothbay and Swanville soils are on marine and lacustrine plains, and the Lyman soils are on glacial till ridges. The association covers about 14 percent of the county. It is about 42 percent Boothbay soils, 26 percent Swanville soils, 10 percent Lyman soils, and 22 percent soils of minor extent.

The Boothbay soils are deep, moderately well drained or somewhat poorly drained, and gently sloping to steep. They are wet for short periods and have poor workability. The Swanville soils are deep, poorly drained, and nearly level. They are seasonally wet and also have poor workability. The Lyman soils are shallow, somewhat excessively drained, and gently sloping to very steep.

The Boothbay and Swanville soils have a surface layer and subsoil of silt loam underlain by a substratum of silt loam and silty clay loam. The Lyman soils have a surface layer and subsoil of fine sandy loam underlain by gneiss, schist, or phyllite bedrock.

The dominant minor soils in this association are well drained Tunbridge soils, moderately well drained Eldridge soils, very poorly drained Biddeford soils and Borosaprists, and areas of Rock outcrop. Areas of moderately coarse textured Adams, Madawaska, and Masardis soils and small areas of Podunk, Limerick, Rumney, and Saco soils are near streams. Areas of Sulfaquents, Sulfihemists, and Beaches are in the association.

Many areas of this association are used for hay, pasture, and some cultivated crops. Some areas are in woodland. Some areas near the coast are used for seasonal and year-round homesites and for recreation. The high water table and poor workability of the Boothbay and Swanville soils and depth to bedrock of the Lyman soils, slow permeability, and slope are the main limitations of the soils.

6. Masardis-Adams-Madawaska association

Deep, nearly level to steep, somewhat excessively drained to moderately well drained soils formed in coarse textured and moderately coarse textured material deposited by glacial meltwater

This association is on deltas, eskers, sand plains, and terraces throughout the county. The association covers about 3 percent of the county. The association is about 46 percent Masardis soils, 17 percent Adams soils, 14 percent Madawaska soils, and 23 percent soils of minor extent.

The Masardis soils are nearly level to steep and are somewhat excessively drained. They have a surface layer of fine sandy loam, a subsoil of gravelly sandy loam, and a substratum of gravelly sand. They are mainly on terraces, deltas, kames, and eskers. The Adams soils are gently sloping to moderately steep and are somewhat excessively drained. They are sandy throughout and are mainly on terraces, kames, deltas, and old beaches. The Madawaska soils are gently sloping and moderately well drained. They have a surface layer of fine sandy loam, a subsoil of sandy loam, and a sandy substratum. They are mainly on outwash plains and terraces.

The dominant minor soils in the association are somewhat excessively drained Masardis Variant soils, very poorly drained Searsport soils, and very poorly drained Borosaprists. Limerick, Podunk, Rumney, and Saco soils on flood plains, and some gravel and sand pits are in the association.

Much of this association is grassland or woodland. Some areas are used for hay, pasture, or cultivated

crops and some for small gardens. A few areas have been excavated for gravel and sand. Droughtiness and slope are the major limitations of the soils. Ground-water contamination is a hazard in areas of these soils used for onsite sewage disposal.

detailed soil map units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and management of the soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil 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 or of the underlying material, 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 or of the underlying material. They also can differ in slope, stoniness, 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, *Peru very stony fine sandy loam* is one of several phases in the *Peru* series.

Some map units are made up of two or more major soils. These map units are called soil complexes or undifferentiated groups.

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. *Tunbridge-Lyman complex, 3 to 8 percent slopes,* is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. *Limerick and Rumney soils* is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. *Rock outcrop* is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of 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.

soil descriptions

AdB—Adams loamy fine sand, 3 to 8 percent slopes. This soil is gently sloping, deep, and somewhat excessively drained. It is on kames, terraces, deltas, outwash plains, and old beaches. Slopes are smooth or convex and are 100 to 400 feet long. Most areas are irregular in shape, but some are oval. The areas range from about 4 to 60 acres, but most range from 8 to 30 acres.

Typically, this soil has a surface layer of dark brown loamy fine sand 8 inches thick. The subsoil is dark yellowish brown, yellowish brown, and olive brown loamy sand 13 inches thick. The substratum is grayish brown sand to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained Madawaska soils and very poorly drained Searsport soils that are in low positions or depressions. Also included are small areas of somewhat excessively drained Masardis soils which have a substratum of stratified sand and gravel and that are at high positions. Some areas are similar to this Adams soil but have a surface layer of loamy sand. Included soils make up about 15 percent of the unit.

This Adams soil has rapid or very rapid permeability. The available water capacity is low. Surface runoff is

slow, and the erosion hazard is slight. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are wooded. Some areas are used for pasture, hay, or cultivated crops.

Droughtiness makes this soil poorly suited to farming. Irrigation is often needed. Increasing the content of organic matter and the available water capacity of the soil and liming and fertilizing are the major management concerns. Rotation grazing and using proper stocking rates help to maintain pastures.

This soil is suitable for woodland, especially eastern white pine, red pine, sugar maple, and red spruce. Productivity is low, however, because of droughtiness and low natural fertility. Machine planting is practical on larger areas, but the rate of seedling mortality is high and natural revegetation is slow.

The rapid permeability of this soil causes a hazard of ground-water contamination in areas used for septic sewage disposal systems. The soil is suitable as a building site and is a desirable source of sand, but excavations are unstable.

The soil is suitable for many recreational uses. Irrigation is needed in some areas to establish and maintain sod.

The capability subclass is IIIs.

AdC—Adams loamy fine sand, 8 to 15 percent slopes. This soil is sloping, deep, and somewhat excessively drained. It is on kames, terraces, and outwash plains. Slopes are smooth or convex and are 100 to 300 feet long. Most areas are irregular in shape, but some are oval or elongated. The areas range from about 4 to 40 acres but are commonly 8 to 20 acres.

Typically, this soil has a surface layer of dark brown loamy fine sand 8 inches thick. The subsoil is dark yellowish brown, yellowish brown, and olive brown loamy sand 13 inches thick. The substratum is grayish brown sand to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained Madawaska soils that are in low positions. Also included are small areas of somewhat excessively drained Masardis soils which have a substratum of stratified sand and gravel and are on high positions, and small areas of moderately deep Masardis Variant soils. Some areas are similar to this Adams soil but have a surface layer of loamy sand. Included soils make up about 15 percent of the unit.

This Adams soil has rapid or very rapid permeability. The available water capacity is low. Surface runoff is medium, and the erosion hazard is slight or moderate. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are wooded. Some small areas are used for pasture, hay, or cultivated crops.

Slope and droughtiness make this soil poorly suited to farming. Irrigation is often needed. Increasing the content of organic matter and the available water capacity of the soil and adding lime and fertilizer are the major management concerns. Stripcropping and contour farming help to control erosion. Rotation grazing and using proper stocking rates help to maintain pastures on this soil.

This soil is suitable for woodland, especially eastern white pine, red pine, sugar maple, and red spruce. Productivity is low, however, because of droughtiness and low natural fertility. Machine planting is practical on larger areas, but the rate of seedling mortality is high and natural revegetation is slow.

Slope, rapid or very rapid permeability, and an unstable substratum limit this soil for community development. The permeability causes a hazard of ground-water contamination in areas used for septic sewage disposal systems. The soil is a desirable source of sand. Droughtiness limits the establishment and maintainance of sod.

The capability subclass is IVs.

AdD—Adams loamy fine sand, 15 to 25 percent slopes. This soil is moderately steep, deep, and somewhat excessively drained. It is on the sides of terraces and outwash plains. Slopes are convex and are 100 to 200 feet long. Most areas are elongated, but some are irregular in shape. The areas range from about 4 to 40 acres, but most are 8 to 20 acres.

Typically, this soil has a surface layer of dark brown loamy fine sand 8 inches thick. The subsoil is dark yellowish brown, yellowish brown, and olive brown loamy sand 13 inches thick. The substratum is grayish brown sand to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained Madawaska soils which are in low positions and small areas of somewhat excessively drained Masardis soils and moderately deep Masardis Variant soils near the tops of ridges. The Masardis and Masardis Variant soils have stratified sand and gravel in the substratum. Some areas are similar to this Adams soil but have a surface layer of loamy sand. Included soils make up about 15 percent of the unit.

This Adams soil has rapid or very rapid permeability. The available water capacity is low. Surface runoff is medium, and the erosion hazard is severe. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are wooded. A few small areas are used for pasture or hay.

Slope makes this soil unsuited to cultivated crops and poorly suited to hay and pasture. The soil is droughty and highly susceptible to erosion. The use of farm machinery is impractical.

This soil is suitable for woodland, especially eastern white pine, red pine, sugar maple, and red spruce. Productivity is low, however, because of droughtiness and low natural fertility. Slope makes machine planting impractical. The rate of seedling mortality is high, and natural revegetation is low.

Slope, rapid or very rapid permeability, and an unstable substratum limit the soil for community development. The permeability causes a hazard of

ground-water contamination in areas used for septic sewage disposal systems. The soil is a desirable source of sand, but droughtiness limits the establishment and maintainance of sod.

BaB—Bangor silt loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and well drained. It is on glacial till plains, on the tops of glacial till hills, and on ridgetops. Slopes are generally smooth and convex and less than 200 feet long. The areas are generally oval and range from 5 to 40 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of brown silt loam 9 inches thick. The subsoil is dark yellowish brown, light olive brown, and light yellowish brown gravelly silt loam 26 inches thick. The substratum is firm, light olive brown silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained to somewhat poorly drained Dixmont soils, poorly drained Monarda soils, shallow Thorndike soils, and moderately deep Winnecook soils. The Dixmont and Monarda soils are in low positions and depressions, and the Thorndike and Winnecook soils are at high positions. Also included are a few areas with slopes of less than 3 percent and areas of very stony soils. Some areas are similar to this Bangor soil but have a surface layer of loam, gravelly silt loam, or gravelly loam. Included areas make up about 20 percent of the unit.

This Bangor soil has moderate permeability. The available water capacity is high. Surface runoff is medium, and the erosion hazard is moderate. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are used for forage, corn, or potatoes. Some areas are used for pasture or hay.

This soil has fair suitability for cultivated crops such as corn silage and potatoes and good suitability for apples. Erosion is the major management concern. Contour stripcropping and using winter cover crops, grassed waterways, and diversions help to control erosion and surface runoff.

The soil has good suitability for hay and pasture. It is suited to alfalfa hay, grass hay, and legume hay. Rotation grazing, use of proper stocking rates, and weed control are the chief management needs. Land smoothing to control ice sheet damage is needed in some areas before alfalfa is planted.

This soil is suitable for woodland, especially eastern white pine, white spruce, balsam fir, red spruce, and northern red oak. Productivity is good, and machine planting is practical.

This soil is generally suitable for most types of community development, including use as a site for septic sewage disposal systems. The frost-action potential is a hazard for roads and foundations.

The capability subclass is IIe.

BaC—Bangor silt loam, 8 to 15 percent slopes. This soil is sloping, deep, and well drained. It is on the sides of glacial till ridges. Slopes are generally smooth and convex and less than 200 feet long. The areas are generally oval and range from 5 to 40 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of brown silt loam 9 inches thick. The subsoil is dark yellowish brown, light olive brown, and light yellowish brown gravelly silt loam 26 inches thick. The substratum is firm, light olive brown silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained to somewhat poorly drained Dixmont soils, shallow Thorndike soils, and moderately deep Winnecook soils. The Dixmont soils are lower on the landscape than the Thorndike or Winnecook soils. Also included are a few areas of very stony soils. Some areas are similar to this Bangor soil but have a surface layer of loam, gravelly silt loam, or gravelly loam. Inclusions make up about 20 percent of the unit.

This Bangor soil has moderate permeability. The available water capacity is high. Surface runoff is rapid, and the erosion hazard is severe. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are used for forage or corn. Some areas are used for pasture or hay, and some are used for potatoes.

This soil has fair suitability for silage corn and potatoes and good suitability for apples. Erosion is the major management concern. Contour stripcropping and using winter cover crops, grassed waterways, and diversions help to control erosion and surface runoff.

The soil has good suitability for hay and pasture. It is suited to alfalfa hay, grass hay, and legume hay. Rotation grazing, use of proper stocking rates, and weed control are the chief management needs.

This soil is suitable for woodland, especially eastern white pine, white spruce, balsam fir, red spruce, and northern red oak. Productivity is good, and machine planting is practical. Erosion is a hazard on skid trails.

Slope and a frost-action potential are the main limitations of this soil for community development.

The capability subclass is IIIe.

BaD—Bangor silt loam, 15 to 25 percent slopes. This soil is moderately steep, deep, and well drained. It is on the sides of glacial till hills and ridges in the northern part of the county. Slopes are mainly smooth, convex, and short. The areas are generally elongated and range from 5 to 40 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of brown silt loam 9 inches thick. The subsoil is dark yellowish brown, light olive brown, and light yellowish brown gravelly silt loam 26 inches thick. The substratum is firm, light olive brown silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Thorndike soils, moderately deep Winnecook soils, and exposed bedrock. These areas are generally at high positions. Also included are areas with short

slopes of more than 25 percent and areas of very stony soils. Some areas are similar to this Bangor soil but have a surface layer of loam, gravelly silt loam, or gravelly loam. Included areas make up about 15 percent of the unit.

This Bangor soil has moderate permeability. The available water capacity is high. Surface runoff is rapid, and the erosion hazard is very severe. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are used for hay or pasture. Some areas are wooded.

Slope and the hazard of erosion make this soil very poorly suited to farming. Slope especially restricts the use of machinery for reseeding and harvesting. Rotation grazing and the use of proper stocking rates are the chief pasture management needs. This soil is suitable for woodland, especially eastern white pine, white spruce, balsam fir, red spruce, and northern red oak. Productivity is good, but slope limits machine planting. Placing roads and trails on the contour helps to control erosion.

Slope and a frost-action potential limit this soil for most nonfarm uses.

The capabiltiy subclass is IVe.

BbB—Bangor very stony silt loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and well drained. It is on glacial till plains and on the tops of glacial till hills and ridges in the northern part of the county. Slopes are generally smooth and convex and less than 400 feet long. The areas are irregular in shape and range from about 4 to 60 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a thin layer of partially decomposed and well decomposed leaves over a surface and subsurface layer of dark grayish brown and gray silt loam 3 inches thick. The subsoil is 32 inches thick. It is dark brown silt loam in the upper part and light olive brown gravelly silt loam in the lower part. The substratum is firm, light olive brown silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained to somewhat poorly drained Dixmont soils, poorly drained Monarda soils, shallow Thorndike soils, and moderately deep Winnecook soils. The Dixmont and Monarda soils are in low positions and depressions. The Thorndike and Winnecook soils are at high positions. Also included are small areas with slopes of less than 3 percent and areas of extremely stony soils. Some areas are similar to this Bangor soil but have a surface and subsurface layer of loam, gravelly silt loam, or gravelly loam. Included areas make up about 20 percent of the unit.

This Bangor soil has moderate permeability. The available water capacity is high. Surface runoff is medium, and the erosion hazard is slight or moderate. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are used for woodland. Some areas are in unimproved pasture.

The stones on the surface make this soil very poorly suited to farming. If the stones are removed, however, the soil is suitable for most cultivated crops and for hay and pasture.

This soil is suitable for woodland, especially eastern white pine, white spruce, balsam fir, red spruce, and northern red oak. Productivity is good, but machine planting is not practical in some areas because of surface stones.

The stones on the surface and a frost-action potential limit this soil for some nonfarm uses.

The capability subclass is VIs.

BbC—Bangor very stony silt loam, 8 to 15 percent slopes. This soil is sloping, deep, and well drained. It is on the sides of glacial till hills and wide ridges in the northern part of the county. Slopes are generally smooth and convex and less than 400 feet long. The areas are irregular in shape and range from about 5 to 60 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a thin layer of partially decomposed and well decomposed leaves over a surface and subsurface layer of dark grayish brown and gray silt loam 3 inches thick. The subsoil is 32 inches thick. It is dark brown silt loam in the upper part and light olive brown gravelly silt loam in the lower part. The substratum is firm, light olive brown silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained to somewhat poorly drained Dixmont soils, shallow Thorndike soils, and moderately deep Winnecook soils. The Dixmont soils are lower on the landscape than the Thorndike and Winnecook soils. Also included are small areas of extremely stony soils. Some areas are similar to this Bangor soil but have a surface and subsurface layer of loam, gravelly silt loam, or gravelly loam. Included areas make up about 20 percent of the unit.

This Bangor soil has moderate permeability. The available water capacity is high. Surface runoff is rapid, and the erosion hazard is moderate. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are used for woodland. Some areas are in unimproved pasture.

The stones on the surface and the slope make this soil very poorly suited to farming. If the stones are removed, however, the soil is suitable for some cultivated crops and for hay and pasture.

This soil is suitable for woodland, especially eastern white pine, white spruce, balsam fir, red spruce, and northern red oak. Productivity is good, but the stones on the surface limit machine planting and erosion is a hazard on skid trails.

This soil is suitable for some nonfarm uses, but the stones on the surface, slope, and a frost-action potential are major limitations.

The capability subclass is VIs.

BbD—Bangor very stony silt loam, 15 to 25 percent slopes. This soil is moderately steep, deep, and well drained. It is on the upper slopes of glacial till hills and ridges in the northern part of the county. Slopes are generally short and are adjacent to less sloping areas. The areas are irregular in shape and range from about 5 to 50 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a thin layer of partially decomposed and well decomposed leaves over a surface and subsurface layer of dark grayish brown and gray silt loam 3 inches thick. The subsoil is 32 inches thick. It is dark brown silt loam in the upper part and light olive brown gravelly silt loam in the lower part. The substratum is firm, light olive brown silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Thorndike soils and moderately deep Winnecook soils at high positions. Also included are small areas of extremely stony soils, areas of exposed bedrock, and areas with slopes of more than 25 percent. Some areas are similar to this Bangor soil but have a surface and subsurface layer of loam, gravelly silt loam, or gravelly loam. Included areas make up about 20 percent of the unit.

This Bangor soil has moderate permeability. The available water capacity is high. Surface runoff is rapid, and the erosion hazard is severe. Bedrock is generally at a depth of more than 5 feet.

Slope and the stones on the surface restrict the use of equipment and make this soil very poorly suited to farming.

This soil is suitable for woodland, especially eastern white pine, white spruce, balsam fir, red spruce, and northern red oak, and most areas are wooded. Productivity is good, but slope and stoniness limit equipment use. Erosion is a hazard on skid trails.

Slope and the stones on the surface limit the soil for most types of nonfarm use.

The capability subclass is VIs.

Be—Beaches. This unit consists of long, narrow areas of loose, mainly deep sand, gravel, or cobbly material. The areas are on the shores of lakes and ponds and on coastal shores of the mainland and the offshore islands. The areas range from 4 to 10 acres and are nearly level or gently sloping.

The areas along the coastal shores are often reshaped by high tides or storms and extend from the waterline at low tide to a distance of up to 200 feet beyond the waterline at high tide. In some areas ridges of cobblestones and stones have been formed by tidal action.

Included with this unit in mapping are small areas of Sulfaquents and Sulfihemists. Also included are a few areas of exposed bedrock and small areas of shallow Lyman soils. Included areas make up about 10 percent of the unit.

Permeability in this unit ranges from very slow to rapid. Surface runoff is variable, and the available water capacity is very low. These areas are subject to frequent flooding. Vegetation is sparse and mostly consists of salt-tolerant grasses such as American beachgrass.

This unit is poorly suited to most uses other than recreation and wildlife habitat.

The capability subclass is VIIIs.

Bf—Biddeford mucky peat. This soil is nearly level, deep, and very poorly drained. It is on lowlands and in slightly depressional areas in the coastal sections and inland valleys. Most areas are circular or elongated and range from 4 to 30 acres. Slopes range from 0 to 3 percent and are generally smooth, concave, or flat.

Typically, this soil has a surface layer of black mucky peat 10 inches thick. The subsurface layer is 4 inches of dark greenish gray silty clay loam. The subsoil is mottled, dark greenish gray and gray silty clay 36 inches thick. The substratum is mottled, dark greenish gray silty clay to a depth of 60 inches.

Included with this soil in mapping are small areas of moderately well drained or somewhat poorly drained Boothbay soils, poorly drained Swanville soils, coarser textured Saco soils, and very poorly drained Borosaprists. The Boothbay and Swanville soils are at high positions. The Saco soils are along streams, and Borosaprists are organic soils in depressions. Some areas of soils are similar to this Biddeford soil but have an organic surface layer less than 8 inches thick or a subsurface layer of silt loam or silty clay. Included areas make up about 15 percent of the unit.

This Biddeford soil has moderately rapid permeability in the surface layer, moderately slow permeability in the subsurface layer, and slow or very slow permeability in the subsoil and substratum. Surface runoff is very slow, and water is ponded on the surface of some areas. The water table is at or near the surface most of the year. The available water capacity of the soil is high. The depth to bedrock is generally more than 5 feet, but rooting is restricted by the high water table.

Most areas of this soil are in bushy vegetation. Some areas are in idle grassland or in pasture. A few small areas are wooded.

This soil is very poorly suited to farming. The high water table, low natural fertility, and shallow rooting depth are the major limitations. The soil is difficult to drain because of the slow or very slow permeability, very slow surface runoff, and lack of suitable outlets. Excess wetness also causes this soil to warm slowly in the spring. Some areas can be used for unimproved pasture.

This soil is poorly suited to woodland. The shallow rooting depth, high water table, unstable surface, and difficulty of operating equipment are the major limiting factors. Water-tolerant species, such as red maple, white ash, white spruce, and black spruce, are suitable, but productivity is low.

This soil is generally poorly suited to most nonfarm uses other than some types of recreation or wildlfie

habitat. The high water table and slow permeability and a high frost-action potential are the major limitations.

The capability subclass is VIw.

BoB—Boothbay silt loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained to somewhat poorly drained. It is on plains and terraces of lacustrine and marine sediments in the coastal sections and inland valleys. Slopes are generally smooth and convex and less than 500 feet long. Most areas are irregular in shape and range from 4 to 70 acres.

Typically, this soil has a surface layer of dark brown silt loam 5 inches thick. The subsoil is 17 inches thick. The upper part of the subsoil is olive brown silt loam, and the lower part is mottled, light olive brown and olive silt loam. The substratum is mottled, olive silty clay loam to a depth of 60 inches.

Included with this soil in mapping are small areas of poorly drained Swanville soils and very poorly drained Biddeford soils commonly in low positions and depressions. Also included are small areas of shallow Lyman soils, moderately deep Tunbridge soils, and soils with slopes of less than 3 percent. Some areas are similar to this Boothbay soil but have a surface layer of very fine sandy loam. Included areas make up about 20 percent of the unit.

This Boothbay soil has moderate permeability in the surface layer and moderately slow or slow permeability in the subsoil and substratum. The available water capacity is high. Surface runoff is moderate, and the erosion hazard is moderate. A seasonal high water table at a depth of 1 to 2 feet in the spring restricts rooting. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are used for hay or pasture. Some areas are used for woodland, silage corn, or residential development.

This soil has fair suitability for farming. The seasonal high water table is the major limitation. The soil dries slowly in the spring and after heavy rains and is sticky when wet. Drainageways will help to reduce wetness if adequate outlets are available. Cover crops and contour plowing help to control erosion, and green-manure crops improve tilth. Frost heaving is a hazard for tap-rooted plants such as alfalfa. Restricted grazing and rotational grazing help to control erosion and compaction. Pasture grasses on this soil respond well to applications of lime and fertilizer.

This soil has fair to good suitability for woodland. Productivity is fair for most native softwoods and hardwoods. The high water table restricts the use of equipment for short periods. Erosion on skid trails and access roads is a concern on this soil.

The slow permeability in the lower part of the soil, a frost-action potential, and the seasonal high water table are the major limitations of the soil for nonfarm use.

The capability subclass is IIw.

BoC—Boothbay silt loam, 8 to 15 percent slopes. This soil is sloping, deep, and moderately well drained to somewhat poorly drained. It is on plains and terraces of lacustrine and marine sediments in the coastal sections and inland valleys. Slopes are generally smooth and convex and less than 400 feet long. Most areas are irregular in shape and range from 4 to 70 acres.

Typically, this soil has a surface layer of dark brown silt loam 5 inches thick. The subsoil is 17 inches thick. The upper part of the subsoil is olive brown silt loam, and the lower part is mottled, light olive brown and olive silt loam. The substratum is mottled, olive silty clay loam to a depth of 60 inches.

Included with this soil in mapping are small areas of poorly drained Swanville soils in low positions and moderately well drained Eldridge soils. Also included are small areas of shallow Lyman soils and moderately deep Tunbridge soils at high positions. Some areas are similar to this Boothbay soil but have a surface layer of very fine sandy loam. Included areas make up about 20 percent of the unit.

This Boothbay soil has moderate permeability in the surface layer and moderately slow or slow permeability in the subsoil and substratum. The available water capacity is high. Surface runoff is moderate, and the erosion hazard is severe. A seasonal high water table at a depth of 1 to 2 feet in spring restricts rooting. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are used for hay or pasture. Some areas are in woodland, silage corn, or residential development.

This soil has poor suitability for most cultivated crops but has fair suitability for silage corn and potatoes. Slope and the seasonal high water table are the major limitations for crops. Cover crops and contour stripcropping help to control erosion. Green-manure crops help to improve tilth. The soil dries slowly in the spring and after heavy rains and is sticky when wet. Drainageways help to reduce wetness.

This soil has fair suitability for hay and pasture. The seasonal high water table is the major limitation. Frost heaving is a hazard for tap-rooted plants such as alfalfa. Restricted grazing and rotational grazing help to control erosion and compaction. Grasses on this soil respond well to applications of lime and fertilizer.

This soil has fair to good suitability for woodland. Productivity is fair for most native softwoods and hardwoods. Wetness and slope are the major limitations. The use of equipment is restricted for short periods when the soil is wet, and erosion is a hazard on skid trails and access roads. Building trails and roads on the contour helps to control erosion.

The slow permeability in the lower part of the soil, slope, a frost-action potential, and the seasonal high water table are the major limitations of the soil for nonfarm use.

The capability subclass is IIIe.

BoD—Boothbay silt loam, 15 to 25 percent slopes. This soil is moderately steep, deep, and moderately well drained. It is on hilly plains and terraces of lacustrine and marine sediments in the coastal areas and inland valleys. Slopes are generally smooth and convex and less than 200 feet long. Most areas are irregular in shape and range from 4 to 40 acres.

Typically, this soil has a surface layer of dark brown silt loam 5 inches thick. The subsoil is 17 inches thick. The upper part of the subsoil is olive brown silt loam, and the lower part is mottled, light olive brown and olive silt loam. The substratum is mottled, olive silty clay loam to a depth of 60 inches.

Included with this soil in mapping are small areas of poorly drained Swanville soils in low positions and moderately well drained Eldridge soils. Also included are small areas of shallow Lyman soils and moderately deep Tunbridge soils at high positions. Some areas are similar to this Boothbay soil but have a surface layer of very fine sandy loam. Included areas make up about 20 percent of the unit.

This Boothbay soil has moderate permeability in the surface layer and moderately slow or slow permeability in the subsoil and substratum. The available water capacity is high. Surface runoff is rapid, and the erosion hazard is very severe. A seasonal high water table at a depth of 1 to 2 feet in the spring restricts rooting. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland. Some areas are used for hay, pasture, silage corn, or residential development.

This soil has very poor suitability for most cultivated crops. Slope and the seasonal high water table are the major limitations. Cover crops and contour stripcropping help to control erosion. Green-manure crops improve tilth. The soil dries slowly in the spring and after heavy rains and is sticky when wet. Drainageways help to reduce wetness.

This soil has poor suitability for hay and pasture. Slope is the major limitation, and erosion is a hazard, especially when reseeding. Frost heaving is a hazard for tap-rooted plants such as alfalfa. Slope limits the use of machinery. Restricted grazing and rotational grazing help to control erosion and compaction. Grasses on this soil respond well to applications of lime and fertilizer.

The soil has fair to good suitability for woodland. Productivity is fair for most native softwoods and hardwoods. Some types of management are limited by slope and an erosion hazard and by wetness, especially in the spring. Building skid trails and access roads on the contour helps to control erosion.

Slope, the slow permeability in the lower part of the soil, a frost-action potential, and the seasonal high water table are the major limitations of the soil for nonfarm use.

The capability subclass is IVe.

BoE3—Boothbay silt loam, 25 to 45 percent slopes, severely eroded. This soil is steep, deep, and moderately well drained. It is in coastal sections and inland valleys on the sides of drainageways in plains and terraces of lacustrine and marine sediments. Slopes are generally smooth and concave or complex and less than 200 feet long. Most areas are irregular in shape and range from 4 to 30 acres.

Typically, this soil has a surface layer of dark brown silt loam 3 inches thick. The subsoil is 17 inches thick. The upper part of the subsoil is olive brown silt loam, and the lower part is mottled, light olive brown and olive silt loam. The substratum is mottled, olive silty clay loam to a depth of 60 inches.

Included with this soil in mapping are small areas of poorly drained Swanville soils in drainageways. Also included are small areas of shallow Lyman soils and moderately deep Tunbridge soils at high positions. Some areas are similar to this Boothbay soil but have a surface layer of very fine sandy loam or have had the surface layer removed by erosion. Included areas make up about 15 percent of the unit.

This Boothbay soil has moderate permeability in the surface layer and moderately slow or slow permeability in the subsoil and substratum. The available water capacity is high. Surface runoff is rapid, and the erosion hazard is very severe. A seasonal high water table at a depth of 1 to 2 feet in the spring restricts rooting. The depth to bedrock is generally more than 5 feet.

Most of the acreage of this soil is in woodland. Some areas are in pasture.

This soil has very poor suitability for most types of farming. Slope, the erosion hazard, and the thin surface layer are the major limitations. The soil dries slowly in the spring and after heavy rains and is sticky when wet. Operating machinery on this soil is difficult and hazardous because of slope.

This soil has fair or good suitability for woodland. Productivity is fair for most native softwoods and hardwoods, but slope limits management. Erosion on skid trails and access roads is a hazard. Building trails and roads on the contour helps to control erosion.

Slope, the slow permeability in the lower part of the soil, a frost-action potential, and the seasonal high water table are the major limitations of the soil for nonfarm use.

The capability subclass is VIIe.

BpB—Boothbay very stony silt loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained to somewhat poorly drained. It is on plains and terraces of lacustrine and marine sediments in coastal sections and inland valleys. Slopes are generally smooth and convex and are less than 200 feet long. The areas are irregular in shape and range from 4 to 70 acres. Stones cover up to 15 percent of the surface.

Typically, this soil has a surface layer of dark brown silt loam 5 inches thick. The subsoil is 17 inches thick. The upper part of the subsoil is olive brown silt loam,

and the lower part is mottled, light olive brown and olive silt loam. The substratum is mottled, olive gray silty clay loam to a depth of 60 inches.

Included with this soil in mapping are small areas of poorly drained Swanville soils and very poorly drained Biddeford soils, that are commonly in low positions and depressions. Also included are small areas of shallow Lyman soils and moderately deep Tunbridge soils, areas that are not stony, and areas of glacial till soils. Some areas are similar to this Boothbay soil but have slopes of more than 8 percent or have a surface layer of very fine sandy loam. Included areas make up about 20 percent of the unit.

This Boothbay soil has moderate permeability in the surface layer and moderately slow or slow permeability in the subsoil and substratum. The available water capacity is high. Surface runoff is moderate, and the erosion hazard is moderate. A seasonal high water table at a depth of 1 to 2 feet in the spring restricts rooting. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland. Some areas are used for pasture.

This soil has very poor suitability for most types of farming. The stones on the surface and the seasonal high water table are the main limitations.

This soil has fair and good suitability for woodland. Productivity is fair for most native softwoods and hardwoods, but the stones on the surface limit management. The use of equipment is restricted for short periods when the soil is wet.

Slow permeability in the lower part of the soil, the stones on the surface, a frost-action potential, and the seasonal high water table are the major limitations of this soil for nonfarm use.

The capability subclass is VIs.

Bs—Borosaprists, ponded. This unit consists of level, very poorly drained organic soils. Slopes range from 0 to 1 percent. The soils are in depressions in upland areas, in basins, and in marshes adjacent to lakes or streams (fig. 2). Most areas are round or oblong and range from about 4 to 100 acres.

Figure 2.—An area of Borosaprists, ponded.

The organic material in this soil is dark reddish brown and black and generally extends to a depth of at least 51 inches. In some areas bedrock or mineral material is at a depth of 16 to 51 inches.

Included with this unit in mapping are areas of soils that are dominantly fibric or hemic material and areas of soils that have mineral and organic layers. Also included in higher positions are small areas of very poorly drained Saco, Searsport, and Biddeford soils and small areas of soils with a surface layer of mucky peat less than 16 inches thick. Small areas of Borosaprists are intermittently flooded by beaver dams. Included areas make up about 35 percent of the unit.

These Borosaprists have moderate permeability in the organic layers. Surface runoff is very slow, and water is ponded on the surface of most areas. The available water capacity is high. The water table is at or near the surface most of the year and restricts rooting. The soils are extremely acid to strongly acid in basin areas and strongly acid to neutral in marshes near lakes and streams.

Most areas of this unit are used for wetland wildlife habitat. The low strength, high water table, and hazard of flooding make the soil unsuitable for most other uses. The vegetation in these areas consists of sphagnum moss and low-growing shrubs such as high bush cranberry, leatherleaf, bog cranberry, and sheep laurel. The common trees are black spruce, balsam fir, tamarack, eastern white pine, and red maple.

The capability subclass is VIIIw.

BtB—Brayton fine sandy loam, 0 to 8 percent slopes. This soil is nearly level to gently sloping, deep, and somewhat poorly drained or poorly drained. It is along drainageways and in low-lying areas of glaciated uplands. Slopes are generally smooth and concave. Most areas are elongated or irregular in shape and range from 4 to 50 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark grayish brown fine sandy loam 8 inches thick. The subsoil is mottled and 11 inches thick. It is olive gray fine sandy loam in the upper part and olive gravelly fine sandy loam in the lower part. The substratum is very firm, olive gravelly fine sandy loam and gravelly sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained Marlow soils, moderately well drained Peru soils, and very poorly drained Borosaprists. The Marlow and Peru soils are at high positions and on knolls, and the Borosaprists are in depressions. Also included are small areas of shallow Lyman soils and moderately deep Tunbridge soils at high positions and a few areas of very stony soils. Some areas are similar to this Brayton soil but have a surface layer of sandy loam, gravelly fine sandy loam, or gravelly sandy loam or have a substratum that is not firm. Included areas make up about 20 percent of the unit.

This Brayton soil has moderate or moderately rapid permeability above the substratum and slow or very slow permeability in the substratum. The available water capacity of the soil is low or moderate. Surface runoff is slow or medium, and the erosion hazard is slight or moderate. The depth to bedrock is generally 5 feet or more, but rooting and water movement are restricted by the substratum. The water table is perched near the surface for most of the year.

Most areas of this soil are in hay and pasture. Some areas are in woodland or silage corn.

The high water table and restricted rooting make this soil poorly suited to farming. Where adequate outlets are available, open-ditch and subsurface drainage can be used. The soil will become compacted if grazing is not restricted during wet periods, and the use of equipment is restricted when the soil is wet.

This soil has fair to poor suitability for woodland. Excess wetness is the major limitation. The rate of seedling mortality is high, and uprooting is a hazard. The soil is better suited to shallow-rooted trees, such as balsam fir, white cedar, white spruce, and red spruce, than to hardwoods. The use of heavy equipment is restricted to periods when the ground is frozen.

The high water table and a frost-action potential limit this soil for most types of nonfarm use.

The capability subclass is IIIw.

BvB—Brayton very stony fine sandy loam, 0 to 8 percent slopes. This soil is nearly level to gently sloping, deep, and somewhat poorly drained or poorly drained. It is along drainageways and in low-lying areas of glaciated uplands. Slopes are generally smooth and concave. Most areas are elongated or irregular in shape and range from about 4 to 50 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 3 inches thick. The subsoil is mottled and 16 inches thick. It is dark grayish brown and olive gray fine sandy loam in the upper part and olive gravelly fine sandy loam in the lower part. The substratum is very firm, olive gravelly fine sandy loam and gravelly sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained Marlow soils, moderately well drained Peru soils, and very poorly drained Borosaprists. The Marlow and Peru soils are at high positions and on knolls, and the Borosaprists are in depressions. Also included are small areas of shallow Lyman soils and moderately deep Tunbridge soils at high positions. Some areas are similar to this Brayton soil but have fewer or more stones on the surface; or have a substratum that is not firm; or have a surface layer of sandy loam, gravelly fine sandy loam, or gravelly sandy loam. Included areas make up about 20 percent of the unit.

This Brayton soil has moderate or moderately rapid permeability above the substratum and slow or very slow permeability in the substratum. The available water capacity of the soil is low or moderate. Surface runoff is slow or medium, and the erosion hazard is slight. The depth to bedrock is generally 5 feet or more, but rooting and water movement are restricted by the substratum. The water table is perched near the surface for most of the year.

Most areas of this soil are in woodland. Some areas are in pasture.

The high water table and the stony surface make this soil very poorly suited to cultivated crops, orchards, hay, or pasture. Using drainage or removing the stones is generally impractical.

This soil has fair to poor suitability for woodland. The high water table and stones on the surface are the major limitations. The soil is better suited to shallow-rooted trees, such as balsam fir, white cedar, white spruce, and red spruce, than to hardwoods. The rate of seedling mortality is high, and uprooting is a hazard. The use of heavy equipment is restricted to periods when the ground is frozen.

The high water table, the surface stones, and a frost-action potential are the major limitations of the soil for nonfarm use.

The capability subclass is VIIs.

BxB—Brayton extremely stony fine sandy loam, 0 to 8 percent slopes. This soil is nearly level to gently sloping, deep, and somewhat poorly drained or poorly drained. It is along drainageways and in low-lying areas of glaciated uplands. Slopes are generally smooth and concave. Most areas are elongated or irregular in shape and range from about 4 to 50 acres. Stones cover 15 to 50 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 3 inches thick. The subsoil is mottled and 16 inches thick. It is dark grayish brown and olive gray fine sandy loam in the upper part and olive gravelly fine sandy loam in the lower part. The substratum is very firm, olive gravelly fine sandy loam and gravelly sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained Marlow soils, moderately well drained Peru soils, and very poorly drained Borosaprists. The Marlow and Peru soils are at high positions and on knolls, and the Borosaprists are in depressions. Also included are small areas of shallow Lyman soils, moderately deep Tunbridge soils, and soils where stones cover more than 50 percent of the surface. Some areas are similar to this Brayton soil but have a substratum that is not firm or have a surface layer of sandy loam, gravelly fine sandy loam, or gravelly sandy loam. Included areas make up about 20 percent of the unit.

This Brayton soil has moderate or moderately rapid permeability above the substratum and slow or very slow in the substratum. The available water capacity of the soil is low or moderate. Surface runoff is slow or medium, and the erosion hazard is slight. The depth to bedrock is generally 5 feet or more, but rooting and water movement are restricted by the substratum. The water table is perched near the surface for most of the year.

The high water table and the extremely stony surface make this soil very poorly suited to cultivated crops, orchards, hay, or pasture. Using drainage or removing the stones is generally impractical.

Most areas of this soil are wooded, but the soil has poor suitability for woodland. The water table and the stones on the surface are the major limitations. The soil is better suited to shallow rooted trees, such as balsam fir, white cedar, white spruce, and red spruce, than to hardwoods. The rate of seedling mortality is high, and uprooting is a hazard. The use of heavy equipment is restricted to periods when the ground is frozen.

The stones on the surface, the high water table, and a frost-action potential are the major limitations of the soil for nonfarm use.

The capability subclass is VIIs.

DxB—Dixmont silt loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained to somewhat poorly drained. It is on low-lying glaciated hills and broad ridges in the northern part of the county. Slopes are generally smooth and concave and are up to 300 feet in length. Most areas are rectangular and range from 5 to 50 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown silt loam 8 inches thick. The subsoil is 18 inches thick. It is dark yellowish brown gravelly silt loam in the upper part and mottled, olive brown and light olive brown silt loam in the lower part. The substratum is mottled, olive silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained Bangor soils and poorly drained Monarda soils. The Bangor soils are on the tops of ridges and knolls. The Monarda soils are in valleys and depressions. Also included are small areas of shallow Thorndike soils and moderately deep Winnecook soils, a few areas of very stony soils, and a few small areas of soils with slopes of less than 3 percent. The Thorndike and Winnecook soils are at high positions. Some areas are similar to this Dixmont soil but have a surface layer of loam. Included areas make up about 15 percent of the unit.

This Dixmont soil has moderate permeability in the surface layer and upper part of the subsoil and moderately slow or slow permeability in the lower part of the subsoil and in the substratum. The available water capacity is high. Surface runoff is medium, and the erosion hazard is moderate. A seasonal high water table perched at a depth of 1 to 2 feet in the spring restricts rooting. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are used for farming. Some areas are wooded.

This soil has fair to poor suitability for most cultivated crops. The seasonal high water table is the major limitation. Open-ditch or tile drainage can be used to remove excess water from the soil. Erosion-control measures such as contour farming and stripcropping are needed in some places where row crops are grown.

This soil has fair to good suitability for pasture and hay. Seasonal wetness is the major limitation. Rotational grazing is the chief management need. Land smoothing to remove wet spots is needed in some areas before alfalfa is planted to prevent ice damage to the tap roots. Overgrazing during wet periods causes compaction of the surface layer.

The soil is suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for hardwoods. Machine planting is practical.

The seasonal high water table and a frost-action potential restrict the use of this soil for most types of nonfarm use. The slow or moderately slow permeability in the substratum limits the use of this soil as a site for septic sewage disposal systems.

The capability subclass is IIw.

DxC—Dixmont silt loam, 8 to 15 percent slopes. This soil is sloping, deep, and moderately well drained to somewhat poorly drained. It is on the crests and side slopes of glaciated ridges. Slopes are generally smooth and concave and are up to 300 feet in length. Most areas are oval and range from 5 to 30 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown silt loam 8 inches thick. The subsoil is 18 inches thick. It is dark yellowish brown gravelly silt loam in the upper part and mottled, olive brown and light olive brown silt loam in the lower part. The substratum is mottled, olive silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas on the side slopes of ridges and the tops of ridge and knolls of well drained Bangor soils, shallow Thorndike soils, and moderately deep Winnecook soils. Also included are a few areas of soils with slopes of more than 15 percent, a few small areas of very stony soils, and a few seep spots. Some areas are similar to this Dixmont soil but have a surface layer of loam. Included areas make up about 15 percent of the unit.

This Dixmont soil has moderate permeability in the surface layer and upper part of the subsoil and moderately slow or slow permeability in the lower part of the subsoil and in the substratum. The available water capacity is high. Surface runoff is medium, and the erosion hazard is severe. A seasonal high water table perched at a depth of 1 to 2 feet in the spring restricts rooting. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are used for farming. Some areas are wooded.

Seasonal wetness, slope, and the erosion hazard make this soil poorly suited to most cultivated crops. Erosion-control measures such as stripcropping, contour farming, and diversions are needed, and open-ditch and tile drainage are needed for some seep spots.

This soil has fair to good suitability for pasture and hay. The use of proper stocking rates and rotational grazing are the chief management needs. Land smoothing to remove wet spots is needed in some areas before alfalfa is planted to prevent ice damage to the tap roots. Overgrazing during wet periods causes compaction of the surface layer.

This soil is suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for hardwoods. Machine planting is practical.

The seasonal high water table, slope, a frost-action potential, and the erosion hazard are the major limitations for nonfarm use. The slow or moderately slow permeability in the substratum limits the use of this soil as a site for septic sewage disposal systems.

The capability subclass is IIIe.

DyB—Dixmont very stony silt loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained to somewhat poorly drained. It is on low-lying glaciated hills and broad ridges in the northern part of the county. Slopes are generally smooth and concave and are up to 300 feet long. Most areas are oval or elongated and range from 5 to 100 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a layer of leaves over a surface layer of very dark grayish brown silt loam 2 inches thick. The subsoil is 24 inches thick. It is dark brown silt loam and dark yellowish brown gravelly silt loam in the upper part and mottled, olive brown and light olive brown silt loam in the lower part. The substratum is mottled, olive silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained Bangor soils, poorly drained Monarda soils, shallow Thorndike soils, and moderately deep Winnecook soils. The Bangor, Thorndike, and Winnecook soils are on ridgetops and knolls. The Monarda soils are in valleys and depressions. Also included are small areas of soils with slopes of less than 3 percent, small areas that are not stony, and small areas of extremely stony soils. Some areas are similar to this Dixmont soil but have a surface layer of loam. Included areas make up about 20 percent of the unit.

This Dixmont soil has moderate permeability in the surface layer and upper part of the subsoil and moderately slow or slow permeability in the lower part of the subsoil and in the substratum. The available water capacity is high. A seasonal high water table perched at a depth of 1 to 2 feet in the spring restricts rooting. Surface runoff is medium, and the erosion hazard is slight. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland. Some areas are in pasture.

The stones on the surface make this soil very poorly suited to farming. Overgrazing during wet periods causes compaction of the surface layer.

This soil is suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for hardwoods. Machine planting is limited by the stones on the surface.

The stones on the surface, the seasonal high water table, and a frost-action potential limit this soil for nonfarm use. The slow or moderately slow permeability in the substratum limits the use of the soil as a site for septic sewage disposal systems.

The capability subclsss is Vls.

DyC—Dixmont very stony silt loam, 8 to 15 percent slopes. This soil is sloping, deep, and moderately well drained to somewhat poorly drained. It is on the crests and side slopes of glaciated ridges in the northern part of the county. Slopes are generally smooth and concave and are up to 300 feet in length. Most areas are oval and range from 5 to 100 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a layer of leaves over a surface layer of very dark grayish brown silt loam 2 inches thick. The subsoil is 24 inches thick. It is dark brown silt loam and dark yellowish brown gravelly silt loam in the upper part and mottled, olive brown and light olive brown silt loam in the lower part. The substratum is mottled, olive silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained Bangor soils, poorly drained Monarda soils, shallow Thorndike soils, and moderately deep Winnecook soils. The Bangor, Thorndike, and Winnecook soils are on the tops of ridges and knolls. The Monarda soils are in valleys and depressions. Also included are small areas with slopes of more than 15 percent and areas of extremely stony soils. Some areas are similar to this Dixmont soil but have a surface layer of loam. Included areas make up about 20 percent of the unit.

This Dixmont soil has moderate permeability in the surface layer and upper part of the subsoil and moderately slow or slow permeability in the lower part of the subsoil and in the substratum. The available water capacity is high. A seasonal high water table perched at a depth of 1 to 2 feet in the spring restricts rooting. Surface runoff is medium, and the erosion hazard is moderate. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland. Some areas are in unimproved pasture.

This soil is very poorly suited to farming. The stones on the surface are the major limitation, but slope and seasonal wetness also limit farming. Overgrazing during wet periods causes compaction of the surface layer.

This soil is suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for hardwoods. The stones on the surface make machine planting impractical.

The stones on the surface, slope, the seasonal high water table, and a frost-action potential limit the soil for nonfarm use. The slow or moderately slow permeability in the substratum limits the use of this soil as a site for septic sewage disposal systems.

The capability subclass is Vls.

ElB—Eldridge fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained. It is on outwash plains and deltas. Slopes are generally smooth and concave and 200 to 300 feet long. Most areas are irregular in shape and range from about 4 to 40 acres.

Typically, this soil has a surface layer of dark yellowish brown fine sandy loam 9 inches thick. The subsoil is 15 inches thick. The upper part of the subsoil is yellowish brown loamy fine sand and mottled, light yellowish brown loamy fine sand. The lower part is mottled, olive gravelly loamy sand. The substratum is mottled, olive silty clay loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained and poorly drained soils. Also included are small areas of moderately well drained Madawaska soils, moderately well drained or somewhat poorly drained Boothbay soils, somewhat excessively drained Adams soils, and poorly drained Swanville soils. The Madawaska and Adams soils have a sandy substratum. The Boothbay and Swanville soils are in low positions and have a surface layer and subsoil of silt loam. Some areas are similar to this Eldridge soil but have a surface layer of very fine sandy loam or sandy loam. Included areas make up about 25 percent of the unit.

This Eldridge soil has rapid permeability in the surface layer and subsoil and moderately slow permeability in the substratum. A seasonal high water table is at a depth of 1.5 to 2 feet in winter and spring. The available water capacity of the soil is high. Surface runoff is slow or medium, and the erosion hazard is slight. The depth to bedrock is generally more than 5 feet, but the firm substratum restricts water movement and rooting.

Most areas of this soil are in woodland. Some areas are in hay or pasture, and a few small areas are cultivated or used for residential development.

This soil has fair suitability for most cultivated crops. Wetness in the spring causes this soil to warm slowly and makes surface drainage necessary in some areas. Droughtiness in some areas during the growing season can be controlled by irrigation.

The soil has good suitability for hay and pasture, but grazing must be restricted during wet periods.

This soil is suited to woodland. Suitability is good for shallow-rooted trees, such as eastern white pine and white spruce, and fair for balsam fir and hardwoods. Rooting depth is restricted by a high water table and the firm substratum. The use of heavy equipment is restricted by seasonal wetness, but machine planting generally is practical in larger areas.

Wetness, the slowly permeable substratum, a shrink-swell potential, and a frost-action potential limit the soil for many nonfarm uses. The substratum is erodible, and erosion control during construction is a management concern.

The capability subclass is IIw.

ElC—Eldridge fine sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and moderately well drained. It is on outwash plains and deltas. Slopes are generally smooth and concave and are 200 to 300 feet long. Most areas are irregular in shape and range from about 4 to 20 acres.

Typically, this soil has a surface layer of dark yellowish brown fine sandy loam 9 inches thick. The subsoil is 15 inches thick. The upper part of the subsoil is yellowish brown loamy fine sand and mottled, light yellowish brown loamy fine sand. The lower part is mottled, olive gravelly loamy sand. The substratum is mottled, olive silty clay loam to a depth of 60 inches.

Included with this soil in mapping are small areas of well drained and poorly drained soils. Also included are small areas of moderately well drained Madawaska soils, moderately well drained or somewhat poorly drained Boothbay soils, somewhat excessively drained Adams soils, and poorly drained Swanville soils. The Madawaska and Adams soils have a sandy substratum. The Boothbay and Swanville soils are in low positions and have a surface layer and subsoil of silt loam. Some areas are similar to this Eldridge soil but have a surface layer of very fine sandy loam or sandy loam. Included areas make up about 25 percent of the unit.

This Eldridge soil has rapid permeability in the surface layer and subsoil and moderately slow permeability in the substratum. A seasonal high water table is at a depth of 1.5 to 2 feet in winter and spring. The available water capacity of the soil is high. Surface runoff is medium, and the erosion hazard is moderate. The depth to bedrock is generally more than 5 feet, but the substratum restricts water movement and rooting.

Most areas of this soil are in woodland. Some areas are in hay or pasture, and a few small areas are cultivated or used for residential development.

This soil has poor suitability for cultivated crops. Slope and the erosion hazard are the major limiting factors. Excess wetness in the spring causes this soil to warm slowly and makes surface drainage necessary in some areas. Droughtiness in some areas can be controlled by irrigation. Contour farming and stripcropping help to reduce erosion in cultivated areas.

This soil has good suitability for hay and pasture. Excess wetness makes restricted grazing necessary.

The soil is suited to woodland. Suitability is good for shallow-rooted trees, such as eastern white pine and white spruce, and fair for balsam fir and hardwoods. Rooting is restricted by the high water table and the substratum. The use of heavy equipment is restricted by seasonal wetness, but machine planting generally is practical in larger areas.

Slope, wetness, the slowly permeable substratum, a shrink-swell potential, and a frost-action potential are the major limitations of the soil for nonfarm use. The substratum is erodible, and erosion control during construction is a management concern.

The capability subclass is IIIe.

HeB—Hermon sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and well drained to somewhat excessively drained. It is on ridgetops and side slopes of glaciated uplands. Slopes are generally smooth and convex. Most areas are irregular in shape and range from 3 to 20 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown sandy loam 8 inches thick. The subsoil is yellowish brown and light olive brown gravelly sandy loam 19 inches thick. The substratum is olive gravelly loamy sand to a depth of 60 inches.

Included with this soil in mapping are a few small areas of moderately well drained Peru soils, shallow Lyman soils, moderately deep Tunbridge soils, and somewhat excessively drained Masardis soils. The Peru soils are in low positions, and the Lyman and Tunbridge soils are on side slopes and ridgetops. The Masardis soils are on deltas and along streams and have a coarse textured substratum. Also included are a few areas with slopes of less than 3 percent and a few small areas of very stony soils. Some areas are similar to this Hermon soil but have a surface layer of fine sandy loam or coarse sandy loam. Included areas make up about 20 percent of the unit.

This Hermon soil has rapid permeability. The available water capacity is low or moderate. Surface runoff is slow or medium, and the erosion hazard is slight or moderate. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are wooded. Some small areas are used for lowbush blueberries or permanent pasture.

This soil has fair to poor suitability for most cultivated crops and fair suitability for potatoes. The soil is droughty during most growing seasons, and natural fertility is low. Large amounts of lime and fertilizer and irrigation are often needed for cultivated crops.

This soil has fair suitability for pasture and hay. Droughtiness during the growing season is the major limitation. Overgrazing during dry periods of the year is the major concern of pasture management. Rotational grazing, deferred grazing, and restricted grazing during droughty periods are the chief pasture management practices.

The soil is suited to woodland. It is well suited to red pine and has fair suitability for eastern white pine, white spruce, balsam fir, and northern hardwoods. Productivity is reduced by droughtiness during peak growing periods. The rate of seedling mortality is high, and revegetation is slow.

This soil is a good source of roadfill, but the rapid permeability limits the use of the soil for sanitary landfills

and septic systems because of the hazard of ground-water pollution.

The capability subclass is IIs.

HeC—Hermon sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and well drained to somewhat excessively drained. It is on side slopes of glaciated uplands. Slopes are generally smooth and convex. Most areas are irregular in shape and range from 3 to 25 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown sandy loam 8 inches thick. The subsoil is yellowish brown and light olive brown gravelly sandy loam 19 inches thick. The substratum is olive gravelly loamy sand to a depth of 60 inches.

Included with this soil in mapping are a few small areas of moderately well drained Peru soils, shallow Lyman soils, moderately deep Tunbridge soils, and somewhat excessively drained Masardis soils. The Peru soils are in low positions, and the Lyman and Tunbridge soils are on side slopes and ridgetops. The Masardis soils are on deltas and along streams and have a coarse textured substratum. Also included are a few areas with slopes of more than 15 percent and a few small areas of very stony soils. Some areas are similar to this Hermon soil but have a surface layer of fine sandy loam or coarse sandy loam. Included areas make up about 20 percent of the unit.

This Hermon soil has rapid permeability. The available water capacity is low or moderate. Surface runoff is slow or medium, and the erosion hazard is moderate or severe. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are wooded. Some areas are used for lowbush blueberries or permanent pasture.

This soil is poorly suited to most cultivated crops but has fair suitability for potatoes. Slope and the erosion hazard are the major limitations for crops. The soil is droughty during most growing seasons, and natural fertility is low. Large amounts of lime and fertilizer and irrigation are often needed for cultivated crops. Contour farming, stripcropping, and terracing help to control erosion in cultivated areas.

The soil has fair suitability for pasture and hay. Droughtiness during the growing season is the major limitation. Overgrazing during dry periods is the major concern of pasture management. Rotational grazing, deferred grazing, and restricted grazing during droughty periods are the chief management practices.

This soil is suited to woodland. It is well suited to red pine and has fair suitability for eastern white pine, white spruce, balsam fir, and northern hardwoods. Productivity is reduced by droughtiness during peak growing periods. The rate of seedling mortality is high, and revegetation is slow.

This soil is a good source of roadfill, but the rapid permeability and slope limit the soil for some types of nonfarm use. The permeability causes a hazard of ground-water pollution in areas used for landfills or septic systems.

The capability subclass is IIIe.

HfC—Hermon very stony sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and well drained to somewhat excessively drained. It is on crests and side slopes of glaciated uplands. Slopes are generally smooth and convex, but some are undulating. Most areas are irregular in shape and range from 3 to 65 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a 2-inch layer of decomposed leaves and needles over a subsurface layer of reddish gray sandy loam 3 inches thick. The subsoil is dark reddish brown, yellowish brown, and light olive brown gravelly sandy loam 24 inches thick. The substratum is olive gravelly loamy sand to a depth of 60 inches.

Included with this soil in mapping are a few small areas of moderately well drained Peru soils, shallow Lyman soils, moderately deep Tunbridge soils, and somewhat excessively drained Masardis soils. The Peru soils are in low positions, and the Lyman and Tunbridge soils are on side slopes and ridgetops. The Masardis soils are on deltas or along streams and have a coarse textured substratum. Also included are a few areas with slopes of less than 8 percent and a few small areas of extremely stony soils. Some areas are similar to this Hermon soil but have a surface layer of fine sandy loam or coarse sandy loam. Included areas make up about 15 percent of the unit.

This Hermon soil has rapid permeability. The available water capacity is low or moderate. Surface runoff is slow or medium, and the erosion hazard is slight or moderate. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are used for woodland. Some small areas have been cleared and are used for lowbush blueberries or unimproved pasture.

The very stony surface makes this soil very poorly suited to farming. Removal of the stones generally is not practical.

This soil is suited to woodland. It has fair suitability for eastern white pine, red pine, white spruce, balsam fir, and northern hardwoods, but productivity is reduced by droughtiness during peak growing periods. The rate of seedling mortality is high, and revegetation is slow. The stones on the surface and slope limit the use of timber harvesting equipment.

The stones on the surface and slope are major limitations of the soil for nonfarm use. The rapid permeability limits use for sewage disposal systems and sanitary landfills because of the hazard of ground-water pollution. The soil is a good source of roadfill.

The capability subclass is VIs.

HfD—Hermon very stony sandy loam, 15 to 25 percent slopes. This soil is moderately steep, deep, and well drained to somewhat excessively drained. It is on

the side slopes of glaciated uplands. Slopes are generally short and slightly undulating. Most areas are irregular in shape and range from 3 to 40 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a 2-inch layer of decomposed leaves and needles over a subsurface layer of reddish gray sandy loam 3 inches thick. The subsoil is dark reddish brown, yellowish brown, and light olive brown gravelly sandy loam. The substratum is olive gravelly loamy sand to a depth of 60 inches.

Included with this soil in mapping are a few small areas of moderately well drained Peru soils in low positions. Also included are shallow Lyman soils, moderately deep Tunbridge soils, and somewhat excessively drained Masardis soils. The Lyman and Tunbridge soils are generally on side slopes and ridgetops. The Masardis soils are on deltas or along streams and have a coarse textured substratum. A few small areas have slopes of more than 25 percent, and a few are extremely stony. Some areas are similar to this Hermon soil but have a surface layer of fine sandy loam or coarse sandy loam. Included areas make up about 15 percent of the unit.

This Hermon soil has rapid permeability. The available water capacity is low or moderate. Surface runoff is medium, and the erosion hazard is moderate or severe. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are used for woodland. Some small areas have been cleared and are used for lowbush blueberries or unimproved pasture.

Slope and the very stony surface make this soil very poorly suited to farming. Stone removal generally is not practical.

This soil is suited to woodland. It has fair suitability for eastern white pine, red pine, balsam fir, white spruce, and northern hardwoods. Productivity is reduced by droughtiness during peak growing periods. The rate of seedling mortality is high, and revegetation is slow. Slope and surface stones limit timber harvesting operations.

This soil is a fair source of roadfill, but slope and the stones on the surface limit most other types of nonfarm use. The rapid permeability limits use for septic sewage disposal, sanitary landfills, and sewage lagoons because of the hazard of ground-water pollution.

The capability subclass is VIs.

HgC—Hermon extremely stony sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and well drained to somewhat excessively drained. It is on the side slopes of glaciated uplands. Slopes are generally smooth and convex, and some are undulating. Most areas are irregular in shape and range from 3 to 65 acres. Stones cover from 15 to 50 percent of the surface (fig. 3).

Typically, this soil has a 2-inch layer of decomposed leaves and needles over a subsurface layer of reddish gray sandy loam 3 inches thick. The subsoil is dark reddish brown, yellowish brown, and light olive brown gravelly sandy loam 24 inches thick. The substratum is olive gravelly loamy sand to a depth of 60 inches.

Included with this soil in mapping are a few areas of moderately well drained Peru soils, shallow Lyman soils, and moderately deep Tunbridge soils. The Peru soils are in low positions, and the Lyman and Tunbridge soils are on side slopes and ridgetops. Also included are a few areas with slopes of less than 8 percent, small areas where stones cover less than 15 percent of the surface, and areas that are covered by boulders. Some areas are similar to this Hermon soil but have a surface layer of fine sandy loam or coarse sandy loam. Included areas make up about 15 percent of the unit.

This Hermon soil has rapid permeability. The available water capacity is low or moderate. Surface runoff is slow or medium, and the erosion hazard is slight. Bedrock is generally at a depth of more than 5 feet.

The stones on the surface make this soil very poorly suited to farming or orchards. Removal of the stones generally is impractical.

This soil has fair suitability for woodland, and most areas are wooded. The soil is suited to red pine, eastern white pine, white spruce, balsam fir, and northern hardwoods. Productivity is reduced by droughtiness during peak growing periods. The rate of seedling mortality is high and revegetation is slow. The stones on the surface especially limit timber harvesting operations.

This soil is a fair source of roadfill, but the stones on the surface and slope are major limitations for most types of nonfarm use. The rapid permeability limits the soil for septic sewage disposal, sewage lagoons, and sanitary landfills because of the hazard of ground-water pollution.

The capability subclass is VIIs.

HgD—Hermon extremely stony sandy loam, 15 to 25 percent slopes. This soil is moderately steep, deep, and well drained to somewhat excessively drained. It is on the side slopes of glaciated uplands. Slopes are generally smooth and convex, and some are undulating. Most areas are irregular in shape and range from 3 to 45 acres. Stones cover 15 to 50 percent of the surface area.

Typically, this soil has a 2-inch layer of decomposed leaves and needles over a subsurface layer of reddish gray sandy loam 3 inches thick. The subsoil is dark reddish brown, yellowish brown, and light olive brown gravelly sandy loam 24 inches thick. The substratum is olive gravelly loamy sand to a depth of 60 inches.

Included with this soil in mapping are a few areas of moderately well drained Peru soils, shallow Lyman soils, and moderately deep Tunbridge soils. The Peru soils are in low positions, and the Lyman and Tunbridge soils are on side slopes and ridgetops. Also included are a few areas with slopes of more than 25 percent, a few small areas where stones cover less than 15 percent of the area, and areas that are covered by boulders. Some

areas are similar to this Hermon soil but have a surface layer of fine sandy loam or coarse sandy loam. Included areas make up about 15 percent of the unit.

This Hermon soil has rapid permeability. The available water capacity is low or moderate. Surface runoff is medium, and the erosion hazard is moderate. Bedrock is generally at a depth of more than 5 feet.

Slope and the stones on the surface make this soil very poorly suited to farming or orchards. Removal of the stones is generally impractical.

This soil has fair suitability for woodland, and most areas are wooded. The soil is suited to red pine, eastern white pine, balsam fir, and northern hardwoods. Productivity is reduced by droughtiness during peak growing periods. The rate of seedling mortality is high, and revegetation is slow. Slope and the stones on the surface especially limit timber harvesting operations.

This soil is a fair source of roadfill, but the stones on the surface and the slope limit most other types of nonfarm use. The rapid permeability limits the soil for septic sewage disposal and sanitary landfills because of the hazard of ground-water pollution.

The capability subclass is VIIs.

Lk—Limerick and Rumney soils. This unit consists of nearly level, deep, poorly drained soils on the flood plains of rivers and streams. Some areas consist mostly of Limerick soils, some mostly of Rumney soils, and some of both. The soils were mapped together because they have no major differences in use and management. Slopes are generally smooth and slightly concave and range from 0 to 2 percent. Most areas are irregular in shape and range from 4 to 40 acres.

Limerick soils make up about 50 percent of the acreage of this unit. Typically, they have a surface layer of very dark grayish brown silt loam 8 inches thick. The substratum is mottled and extends to a depth of 60 inches. It mainly is olive gray silt loam in the upper part and mainly olive gray and olive very fine sandy loam in the lower part. Thin layers of fine sand, sand, and gravel are in the lower part of the substratum.

Figure 3.—An area of Hermon extremely stony sandy loam, 8 to 15 percent slopes, used for blueberries.

Rumney soils make up about 35 percent of the acreage of this unit. Typically, they have a surface layer of very dark grayish brown fine sandy loam 2 inches thick. The subsoil is mottled, dark grayish brown and olive gray fine sandy loam 28 inches thick. The substratum extends to a depth of 60 inches. It is gray gravelly sand and olive gray stratified loamy sand and sand that has a high content of organic matter.

Included with these soils in mapping are small areas of moderately well drained Podunk soils and very poorly drained Saco soils. The Podunk soils are on slightly higher convex spots adjacent to the stream or river. The Saco soils are in depressions and narrow drainageways. Also included are areas of very poorly drained Borosaprists. Some areas are similar to the Limerick soils in this unit but have a surface layer of very fine sandy loam; some are similar to the Rumney soil but have a surface layer of sandy loam or loam. Included areas make up 15 percent of the acreage of the unit.

This Limerick soil has moderate permeability and high available water capacity. This Rumney soil has moderately rapid permeability in the surface layer and subsoil and rapid or very rapid permeability in the substratum. The available water capacity of the Rumney soil is high. Both soils have a seasonal high water table near the surface during the winter and spring that restricts rooting. The soils are frequently flooded during spring runoff. The surface runoff is slow, and the erosion hazard is slight. The depth to bedrock is generally more than 5 feet.

Most areas of these soils are in woodland. Some areas are in pasture or hay.

The seasonal high water table and periodic flooding make these soils poorly suited to farming. Providing drainage is difficult because of the lack of suitable outlets, and flood control is generally impractical. Rotational grazing, deferred grazing, and restricted grazing help to prevent soil compaction.

These soils are poorly suited to most species of trees but have fair suitability for white spruce and eastern white pine. The water table and periodic flooding limit management and hinder seedling survival.

The flooding and high water table are the major limitations of these soils for nonfarm use.

The capability subclass is IIIw.

LrB—Lyman-Rock outcrop complex, 3 to 8 percent slopes. This gently sloping unit consists of 50 percent shallow, somewhat excessively drained Lyman soils and 25 percent exposed bedrock. The unit is on glaciated upland areas and low coastal ridges. Slopes are complex or smooth and are 50 to 300 feet long. Most areas are oblong or round and range from about 4 to 50 acres. The Lyman soils and exposed bedrock are in such an intricate pattern that it was not practical to map them separately. Stones cover up to 15 percent of some areas.

Typically, the Lyman soils have a surface layer of very dark grayish brown fine sandy loam 2 inches thick underlain by a subsurface layer of gray fine sandy loam 1 inch thick. The subsoil is dark brown and light olive brown fine sandy loam 16 inches thick. Bedrock is at a depth of 19 inches.

Included with this complex in mapping are small areas of moderately deep Tunbridge soils. Also included are small, low areas of well drained to somewhat excessively drained Hermon soils, well drained Marlow soils, moderately well drained Peru soils, somewhat poorly drained to poorly drained Brayton soils, and very poorly drained Borosaprists. Boothbay and Swanville soils are in some coastal areas of the unit on lower slopes of knolls. Some areas are similar to the Lyman soils in this unit but have a surface and subsurface layer of loam, very fine sandy loam, or sandy loam. Some units have small areas of extremely stony Lyman soils and soils that are less than 10 inches deep to bedrock. Included areas make up about 25 percent of the unit.

These Lyman soils have moderately rapid permeability. The available water capacity is low. Surface runoff is slow, and the erosion hazard is slight. Rooting depth and water movement are restricted by bedrock at a depth of 10 to 20 inches.

Most areas of this complex are used for woodland or lowbush blueberries. Some areas are used for pasture, hay, or residential development.

The depth to bedrock and droughtiness make this complex very poorly suited to farming or orchards.

This complex is poorly suited to woodland. It is better suited to such shallow-rooted trees as eastern white pine, white spruce, and balsam fir than to hardwoods. Droughtiness causes a high rate of seedling mortality, and the depth to bedrock causes a hazard of uprooting during windy periods. Machine planting is difficult because of depth to rock and numerous bedrock exposures.

The depth to bedrock is the main limitation of this complex for most nonfarm uses.

The capability subclass is VIs.

LrC—Lyman-Rock outcrop complex, 8 to 15 percent slopes. This sloping unit consists of 45 percent shallow, somewhat excessively drained Lyman soils and 30 percent exposed bedrock. The unit is on glaciated uplands and low coastal ridges. Slopes are complex or smooth and are 50 to 400 feet long. Most areas are oblong or round and range from about 4 to 100 acres. The Lyman soils and exposed bedrock are in such an intricate pattern that it is not practical to map them separately. Stones cover up to 15 percent of some areas.

Typically, the Lyman soils have a surface layer of very dark grayish brown fine sandy loam 2 inches thick underlain by a subsurface layer of gray fine sandy loam 1 inch thick. The subsoil is dark brown and light olive brown fine sandy loam 16 inches thick. Bedrock is at a depth of 19 inches.

Included with this complex in mapping are small areas of moderately deep Tunbridge soils and areas that

consist of more than 50 percent exposed bedrock. Also included are small, low areas of well drained to somewhat excessively drained Hermon soils, well drained Marlow soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils. Boothbay and Swanville soils are in some coastal areas of this unit on the lower slopes of knolls. Some units have small areas of extremely stony Lyman soils and soils that are less than 10 inches deep to bedrock. Some areas are similar to the Lyman soils in this unit but have a surface and subsurface layer of loam, very fine sandy loam, or sandy loam. Included areas make up about 25 percent of the unit.

These Lyman soils have moderately rapid permeability. The available water capacity is low. Surface runoff is medium, and the erosion hazard is moderate. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches.

Most areas of this complex are used for woodland or lowbush blueberries. Some areas are used for unimproved pasture, hay, or residential development.

The depth to bedrock and slope make this complex very poorly suited to farming or orchards.

This complex is poorly suited to woodland. It is better suited to such shallow-rooted trees as eastern white pine, white spruce, and balsam fir than to hardwoods. Droughtiness causes a high rate of seedling mortality, and the depth to bedrock causes a hazard of uprooting during windy periods. Machine planting is difficult because of the depth to rock and numerous bedrock exposures.

The depth to bedrock and slope limit this complex for nonfarm use, especially for septic sewage disposal systems.

The capability subclass is VIs.

LrE—Lyman-Rock outcrop complex, 15 to 60 percent slopes. This moderately steep to very steep unit consists of 40 percent shallow, somewhat excessively drained Lyman soils and 35 percent areas of exposed bedrock. The unit is on glaciated uplands and low coastal ridges. Slopes are complex or smooth and are 50 to 200 feet long. Most areas are elongated or irregular in shape and range from about 4 to 60 acres. The Lyman soils and exposed bedrock are in such an intricate pattern that it was not practical to map them separately. Stones cover up to 15 percent of some areas.

Typically, the Lyman soils have a surface layer of very dark grayish brown fine sandy loam 2 inches thick underlain by a subsurface layer of gray fine sandy loam 1 inch thick. The subsoil is dark brown and light olive brown fine sandy loam 16 inches thick. Bedrock is at a depth of 19 inches.

Included with this complex in mapping are small areas of moderately deep Tunbridge soils and areas that consist of more than 50 percent exposed rock. Also included are small, low areas of well drained to somewhat excessively drained Hermon soils, well drained Marlow soils, moderately well drained Peru soils, and somewhat poorly drained or poorly drained Brayton soils. Boothbay and Swanville soils are inclusions in some coastal areas on the lower slopes of shallow knolls. Some units have small areas of extremely stony Lyman soils and soils that are less than 10 inches deep to bedrock. Some areas are similar to the Lyman soils in this unit but have a surface and subsurface layer of loam, very fine sandy loam, or sandy loam. Included areas make up about 25 percent of the unit.

These Lyman soils have moderately rapid permeability. The available water capacity is low. Surface runoff is rapid, and the erosion hazard is severe. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches.

Most areas of this complex are used for woodland. Some areas are used for unimproved pasture or lowbush blueberries.

Slope and the depth to bedrock make this complex very poorly suited to farming or orchards.

This complex is poorly suited to woodland. It is better suited to such shallow-rooted trees as eastern white pine, white spruce, and balsam fir than to hardwoods. Droughtiness causes a high rate of seedling mortality, and the depth to bedrock causes a hazard of uprooting during windy periods. Slope limits the use of most types of equipment.

The depth to bedrock and slope limit the complex for most nonfarm uses.

The capability subclass is VIIs.

MaB—Madawaska fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained. It is in depressions in outwash plains and terraces. Slopes are generally smooth. Most areas are irregular in shape and range from 5 to 50 acres.

Typically, this soil has a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is yellowish brown and olive brown sandy loam 20 inches thick and is mottled in the lower part. The substratum is mottled, olive sand to a depth of 60 inches.

Included with this soil in mapping are small areas of somewhat excessively drained Adams and Masardis soils, moderately well drained Eldridge soils, moderately well drained or somewhat poorly drained Boothbay soils, and very poorly drained Searsport soils. Also included are small areas of soils that have slopes of less than 3 percent and soils that are coarse textured in the surface layer and subsoil. Included soils make up about 15 percent of the unit.

This Madawaska soil has moderately rapid permeability in the surface layer and subsoil and rapid permeability in the substratum. A seasonal high water table at a depth of 1.5 to 3 feet in the spring restricts rooting. The available water capacity of the soil is high. Surface runoff is slow, and the erosion hazard is slight or moderate. Bedrock is generally at a depth of more than 5 feet.

Most areas of this soil are in pasture, hay, corn silage, or woodland. Some small areas are in potatoes.

This soil has fair suitability for farming. The major limitations for crops are seasonal wetness and slope. The use of drainage where suitable outlets are available increases the suitability for cultivated crops or hay and pasture. Green-manure crops increase the organic matter in the soil and improve workability. Droughtiness during the peak growing season and seasonal wetness early in the growing season are the main limitations for hay and pasture.

This soil is suited to eastern white pine, white spruce, balsam fir, and northern hardwoods but is poorly suited to red pine. Most woodland operations are easy to accomplish on this soil, but seasonal wetness limits equipment use during parts of the year.

Seasonal wetness, rapid permeability, instability in excavations, and a frost-action potential limit this soil for nonfarm use. Ground-water contamination is a hazard from septic sewage disposal systems in this soil.

The capability subclass is IIw.

MbB—Marlow fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and well drained. It is on crests of drumlin-shaped ridges generally oriented in a northwest-southeast direction, and on northwest-facing slopes of northeast-southwest-oriented ridges. Slopes are generally smooth and convex and are 200 to 400 feet long. Most areas are oval, circular, or elongated and range from 5 to 20 acres, and most are at an elevation of more than 300 feet above sea level. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is multicolored fine sandy loam 16 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils. The Lyman and Tunbridge soils are on the tops of ridges or on adjacent steeper side slopes. The Peru and Brayton soils are in low positions. Also included are small areas with slopes of less than 3 percent and small areas of very stony soils. Some areas are similar to this Marlow soil but have a surface layer of loam, silt loam, or very fine sandy loam. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is moderate. A seasonal high water table is perched above the compact substratum for short periods, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting is restricted by the substratum.

This soil is used mostly for crops, hay, pasture, woodland, or residential development.

This soil has fair suitability for cultivated crops and apple orchards. Slope and the restricted rooting zone are the major limitations for crops. Winter cover crops and no-till farming help to reduce erosion. The perched water table for a short time in the spring causes the soil to warm slowly and delays early planting. Stone removal after plowing is necessary in some areas.

The soil is well suited to pasture and hay. Some compaction occurs if the soil is grazed when wet, and overgrazing causes erosion.

This soil is suited to woodland, especially to eastern white pine, eastern hemlock, white spruce, balsam fir, and most northern hardwoods. However, tap-rooted trees, such as red pine, are poorly suited to the soil because of the restricted rooting depth. Mechanical planting is practical on this soil.

The seasonal perched water table, the slow permeability, and a frost-action potential limit this soil for nonfarm use. The water table and slow permeability of the substratum limit the soil for septic tank absorption fields, landfills, and shallow excavations. The frost-action potential is a hazard to foundations and roads.

The capability subclass is IIe.

MbC—Marlow fine sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and well drained. It is on the upper side slopes of drumlin-shaped ridges generally oriented in a northeast-southeast direction, and on northwest-facing slopes of northeast-southwest-oriented ridges. Slopes are generally smooth and convex and are 100 to 400 feet long. Most areas are elongated and range from 5 to 60 acres, and most are at an elevation of more than 300 feet above sea level. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 16 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils. The Lyman and Tunbridge soils are on the tops of ridges or on adjacent steeper side slopes. The Peru and Brayton soils are in low positions. Also included are small areas of very stony soils. Some areas are similar to this Marlow soil but have a surface layer of loam, silt loam, or very fine sandy loam. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is severe. A seasonal high water table is perched above the substratum for short periods, especially in the

spring. The depth to bedrock is generally more than 5 feet, but rooting is restricted by the substratum.

This soil is used mostly for crops, hay, pasture, woodland, or residential development.

Slope makes this soil poorly suited to cultivated crops, but the soil has fair suitability for apple orchards. Winter cover crops and no-till farming help to reduce erosion in cultivated areas. The perched water table in the spring causes the soil to warm slowly and delays early planting.

This soil is well suited to pasture and hay. Some compaction of the surface layer occurs if this soil is grazed when wet, and overgrazing causes erosion.

This soil is well suited to woodland, especially to eastern white pine, eastern hemlock, white spruce, balsam fir, and most northern hardwoods. However, tap rooted trees, such as red pine, are poorly suited to the soil because of the restricted rooting depth. Mechanical planting is practical.

Slope, the seasonal perched water table, the slow permeability in the substratum, and a frost-action potential limit the soil for some types of nonfarm use. The slow permeability in the substratum limits this soil for septic tank absorption fields, landfills, and shallow excavations. The frost-action potential is a hazard to foundations and roads.

The capability subclass is IIIe.

MbD—Marlow fine sandy loam, 15 to 25 percent slopes. This soil is moderately steep, deep, and well drained. It is on side slopes of drumlin-shaped ridges generally oriented in a northwest-southeast direction, and on northwest-facing slopes of northeast-southwest-oriented ridges. Slopes are generally smooth and convex and are 100 to 300 feet long. Most areas are elongated and range from 5 to 50 acres, and most are at an elevation of more than 300 feet above sea level. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 16 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils. The Lyman and Tunbridge soils are on the tops of ridges or on adjacent steep side slopes. The Peru and Brayton soils are in low, less sloping areas. Also included are small areas with slopes of more than 25 percent and small areas of very stony soils. Some areas are similar to this Marlow soil but have a surface layer of loam, silt loam, or very fine sandy loam. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is rapid, and the erosion hazard is very severe. A seasonal high water table is perched above the substratum for short periods, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting is restricted by the substratum.

This soil is used mostly for hay, pasture, or woodland.

Slope makes this soil very poorly suited to farming. Some compaction occurs if the soil is grazed when wet, and overgrazing causes erosion. Stone removal after plowing is often necessary prior to seeding.

This soil is suited to woodland, especially to eastern white pine, eastern hemlock, white spruce, balsam fir, and most northern hardwoods. However, tap-rooted trees, such as red pine, are poorly suited to this soil because of the restricted rooting depth. Slope limits equipment operation in some areas. Placing roads on the contour and using water bars help to reduce erosion.

Slope, the seasonal perched water table, the slow permeability in the substratum, and a frost-action potential limit the soil for nonfarm use. The slow permeability in the substratum limits the soil for septic tank absorption fields, landfills, and shallow excavations. The frost-action potential is a hazard for foundations and roads.

The capability subclass is IVe.

MeB—Marlow very stony fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and well drained. It is on crests of drumlin-shaped ridges generally oriented in a northwest-southeast direction, and on northwest-facing slopes of northeast-southwest-oriented ridges. Slopes are generally smooth and convex and are 100 to 400 feet long. Most areas are oval, circular, or elongated and range from 5 to 25 acres, and most are at an elevation of more than 300 feet above sea level. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 18 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils. The Lyman and Tunbridge soils are on the tops of ridges or on adjacent side slopes. The Peru and Brayton soils are in low areas and depressions. Also included are small areas with slopes of less than 3 percent and small areas of extremely stony soils. Some areas are similar to this Marlow soil but have a surface and subsurface layer of loam, silt loam, or very fine sandy loam. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil

is moderate. Surface runoff is medium, and the erosion hazard is slight. A seasonal high water table is perched above the substratum for short periods, especially in the spring. Bedrock is generally at a depth of more than 5 feet, but rooting depth is restricted by the substratum.

This soil is used primarily for woodland. Some areas are used for unimproved pasture.

The stones on the surface make this soil very poorly suited to farming. Overgrazing causes erosion, and compaction of the surface layer often results if the areas are grazed when wet.

This soil is suited to woodland, especially to eastern white pine, white spruce, balsam fir, and northern hardwoods. However, tap-rooted trees, such as red pine, are poorly suited to this soil because of the restricted rooting depth. The stones on the surface limit mechanical planting.

The stones on the surface, the seasonal perched water table, the slow permeabiltiy in the substratum, and a frost-action potential limit the soil for nonfarm use. The water table and slow permeability especially limit the soil for septic tank absorption fields and shallow excavations. The frost-action potential is a hazard for foundations and roads.

The capability subclass is VIs.

MeC—Marlow very stony fine sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and well drained. It is on crests and side slopes of drumlin-shaped ridges generally oriented in a northwest-southeast direction, and on northwest-facing slopes of northeast-southwest-oriented ridges. Slopes are generally smooth and convex and are 100 to 500 feet long. Most areas are oval, circular, or elongated and range from 5 to 40 acres, and most are at an elevation of more than 300 feet above sea level. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 18 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils. The Lyman and Tunbridge soils are on the tops of ridges or on adjacent side slopes. The Peru and Brayton soils are in low areas and in depressions. Also included are small areas of extremely stony soils. Some areas are similar to this Marlow soil but have a surface and subsurface layer of loam, very fine sandy loam, or silt loam. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capactiy of the soil is moderate. Surface runoff is medium or rapid, and the erosion hazard is moderate. A seasonal high water table is perched above the substratum for short periods, especially in the spring. Bedrock is generally at a depth of more than 5 feet, but rooting is restricted by the substratum.

This soil is used primarily for woodland. Some areas are used for unimproved pasture.

Slope and the stones on the surface make this soil very poorly suited to farming. Overgrazing causes erosion, and compaction of the surface layer often results if the areas are grazed when wet.

This soil is suited to woodland, especially to eastern white pine, white spruce, balsam fir, and northern hardwoods. However, tap-rooted trees, such as red pine, are poorly suited to this soil because of the restricted rooting depth. The stones on the surface limit mechanical planting.

The stones on the surface, slope, the seasonal perched water table, the slow permeability in the substratum, and a frost-action potential limit this soil for nonfarm use. The water table and slow permeability in the substratum limit this soil for septic tank absorption fields and shallow excavations. The frost-action potential is a hazard for foundations and roads.

The capability subclass is VIs.

MeD—Marlow very stony fine sandy loam, 15 to 25 percent slopes. This soil is moderately steep, deep, and well drained. It is on side slopes of drumlin-shaped ridges generally oriented in a northwest-southeast direction, and on northwest-facing slopes of northeast-southwest-oriented ridges. Slopes are generally smooth and convex and are 100 to 400 feet long. Most areas are oval or elongated and range from 5 to 45 acres, and most are at an elevation of more than 300 feet above sea level. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 18 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, and moderately well drained Peru soils. The Lyman and Tunbridge soils are near the tops of ridges or on adjacent side slopes. The Peru soils are generally in low areas. Some areas are similar to this Marlow soil but have a surface and subsurface layer of loam, silt loam, or very fine sandy loam. Also included are small areas with slopes of more than 25 percent and areas of extremely stony Marlow soils. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is rapid, and the erosion

hazard is moderate. A seasonal high water table is perched above the substratum for short periods, especially in the spring. Bedrock is generally at a depth of more than 5 feet, but rooting is restricted by the substratum.

This soil is used primarily for woodland. Some areas are used for unimproved pasture.

Slope and the stones on the surface make this soil very poorly suited to farming. Removal of the stones generally is not practical.

This soil is suited to woodland, especially to eastern white pine, white spruce, balsam fir, and northern hardwoods. However, tap-rooted trees, such as red pine, are poorly suited to this soil because of the restricted rooting depth. Equipment use is hindered by slope, and the stones on the surface restrict mechanical planting. Placing skid trails and roads on the contour helps to control erosion.

The surface stones, the seasonal perched water table, the slow permeability of the substratum, and a frost-action potential limit this soil for nonfarm use.

The capability subclass is VIs.

MeE—Marlow very stony fine sandy loam, 25 to 45 percent slopes. This soil is steep, deep, and well drained. It is on side slopes of drumlin-shaped ridges generally oriented in a northwest-southeast direction, and on northwest-facing slopes of northeast-southwest-oriented ridges. Slopes are generally smooth and convex and are 100 to 400 feet long. Most areas are oval or elongated and range from 5 to 45 acres, and most are at an elevation of more than 300 feet above sea level. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 18 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, and moderately well drained Peru soils. The Lyman and Tunbridge soils are generally near the tops of ridges or on adjacent side slopes. The Peru soils are in low areas. Also included are small areas with slopes of more than 45 percent and a few areas of extremely stony soils. Included areas make up about 20 percent of the unit.

This Marlow soil has moderately rapid permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is rapid, and the erosion hazard is severe. A seasonal high water table is perched above the substratum for short periods, especially in the spring. Bedrock is generally at a depth of more than 5 feet, but rooting is restricted by the substratum.

Slope and the stones on the surface make this soil very poorly suited to farming or orchards.

This soil is suited to woodland, especially to eastern white pine, white spruce, balsam fir, and northern hardwoods. Most areas are wooded, but tap-rooted trees, such as red pine, are poorly suited to this soil because of the restricted rooting depth. Equipment use, including mechanical planting, is limited by slope and the stones on the surface. Placing roads on the contour and using water bars help to reduce erosion on skid trails.

Slope is the main limitation of this soil for nonfarm use, but the stones on the surface, the seasonal perched water table, the slow permeability of the substratum, and a frost-action potential are additional limitations.

The capability subclass is VIIs.

MfC—Marlow extremely stony fine sandy loam, 3 to 15 percent slopes. This soil is gently sloping to sloping, deep, and well drained. It mainly is on south-facing slopes of drumlin-shaped ridges. The slopes are generally smooth and convex and are 100 to 400 feet long. Most areas are elongated or round and range from 5 to 30 acres. Stones and boulders cover 15 to 50 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 18 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils. The Lyman and Tunbridge soils are on the tops of ridges or on adjacent side slopes. The Peru and Brayton soils are in low areas or depressions. Also included are small areas with slopes of less than 3 percent and small areas of very stony soils. Some areas are similar to this Marlow soil but have a surface and subsurface layer of loam, silt loam, or very fine sandy loam. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is slight. A seasonal high water table is perched above the compact substratum for short periods, especially in the spring. Bedrock is generally at a depth of more than 5 feet, but rooting is restricted by the substratum.

Slope and the stones on the surface make this soil very poorly suited to farming or orchards. Removal of the stones is generally impractical.

This soil is suited to woodland, and most areas are wooded. It is especially suited to eastern white pine, white spruce, balsam fir, and northern hardwoods. However, tap-rooted trees, such as red pine, are poorly suited because of the restricted rooting depth. The

stones and slope hinder the use of equipment for harvesting and planting. Placing roads on the contour and using water bars help to reduce erosion.

The stones on the surface, slope, and the slow permeability of the substratum are the major limitations of this soil for nonfarm use.

The capability subclass is VIIs.

MfE—Marlow extremely stony fine sandy loam, 15 to 45 percent slopes. This soil is moderately steep to steep, deep, and well drained. It mainly is on south-facing slopes of drumlin-shaped ridges. The slopes are generally smooth and convex and are 100 to 300 feet long. Most areas are elongated and range from 5 to 30 acres. Stones and boulders cover 15 to 50 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and olive fine sandy loam 18 inches thick. The substratum is very firm and brittle, olive fine sandy loam to a depth of 60 inches.

Included with this soil in mapping are small areas of shallow Lyman soils, moderately deep Tunbridge soils, and moderately well drained Peru soils. The Lyman and Tunbridge soils are on the tops of ridges or on adjacent side slopes. The Peru soils are in low areas. Also included are small areas with slopes of more than 45 percent and areas of very stony soils. Some areas are similar to this Marlow soil but have a surface and subsurface layer of loam, very fine sandy loam, or silt loam. Included areas make up about 20 percent of the unit.

This Marlow soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is rapid, and the erosion hazard is moderate or severe. A seasonal high water table is perched above the substratum for short periods, especially in the spring. Bedrock is generally at a depth of more than 5 feet, but rooting is restricted by the substratum.

The extremely stony surface and the slope make this soil very poorly suited to farming or orchards.

This soil is suited to woodland, and most areas are wooded. It is especially suited to eastern white pine, white spruce, balsam fir, and northern hardwoods. However, tap-rooted trees, such as red pine, are poorly suited because of the restricted rooting depth. The stones and slope hinder the use of equipment for harvesting and planting. Placing roads on the contour and using water bars help to reduce erosion.

Slope, the stones on the surface, and the slow permeability of the substratum are the major limitations of this soil for nonfarm use.

The capability subclass is VIIs.

MkB—Masardis fine sandy loam, 0 to 8 percent slopes. This soil is nearly level to gently sloping, deep, and somewhat excessively drained. It is on glaciofluvial terraces, deltas, kames, and eskers near streams and rivers. Slopes are generally smooth and concave and are 100 feet to several hundred feet long. Most areas are elongated or oblong and range from 4 to 200 acres.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown gravelly sandy loam and olive brown very gravelly loamy coarse sand 25 inches thick. The substratum is olive brown very gravelly loamy coarse sand to a depth of 60 inches.

Included with this soil in mapping are small areas of somewhat excessively drained Adams soils, well drained and somewhat excessively drained Hermon soils, moderately well drained Madawaska soils, and very poorly drained Searsport soils. The Adams soils are on adjacent slopes, and the Hermon soils are on upland knolls. The Madawaska and Searsport soils are in low areas and depressions. Also included are small areas of moderately deep Masardis Variant soils. Some areas are similar to this Masardis soil but have a surface layer of very fine sandy loam, gravelly fine sandy loam, or gravelly very fine sandy loam. Included areas make up about 15 percent of the unit.

This Masardis soil has moderately rapid permeability in the surface layer and upper part of the subsoil and rapid or very rapid permeability in the lower layers. The available water capacity is moderate. Surface runoff is slow, and the erosion hazard is slight. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland. Some areas are in hay and pasture, and some have been excavated for gravel and sand.

The low natural fertility and periods of droughtiness during the growing season make this soil poorly suited to cultivated crops. Using irrigation and adding organic material to the soil are the primary management concerns. The soil can be worked very early in the spring.

Droughtiness during the growing season makes this soil poorly suited to hay and pasture. Deferred and restricted grazing, irrigation, and adding organic material to the soil are the main pasture management concerns.

This soil is suitable for woodland. It has fair suitability for eastern white pine, white spruce, balsam fir, and northern hardwoods and good suitability for red pine. Periods of droughtiness cause a high rate of seedling mortality.

This soil is a good source of gravel and roadfill. The rapid permeability causes a hazard of ground-water contamination in areas used for septic tank absorption fields and sanitary landfills. Excavations in this soil are unstable.

The capability subclass is IIIs.

MkC—Masardis fine sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and somewhat

excessively drained. It is on glaciofluvial terraces, kames, deltas, and eskers near streams and rivers. Slopes are generally smooth and convex and are 100 feet to several hundred feet long. Most areas are elongated or oblong and range from 4 to 150 acres.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown gravelly sandy loam and olive brown very gravelly loamy coarse sand 25 inches thick. The substratum is olive brown very gravelly loamy coarse sand to a depth of 60 inches.

Included with this soil in mapping are small areas of somewhat excessively drained Adams soils, well drained and somewhat excessively drained Hermon soils, moderately well drained Madawaska soils, and very poorly drained Searsport soils. The Adams soils are on adjacent slopes, and the Hermon soils are on upland knolls. The Madawaska and Searsport soils are in low areas and depressions. Also included are small areas of moderately deep Masardis Variant soils. Some areas are similar to this Masardis soil but have a surface layer of very fine sandy loam, gravelly fine sandy loam, or gravelly very fine sandy loam. Included areas make up about 15 percent of the unit.

This Masardis soil has moderately rapid permeability in the surface layer and upper part of the subsoil and rapid or very rapid permeability in the lower layers. The available water capacity is moderate. Surface runoff is medium, and the erosion hazard is slight or moderate. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland. Some areas are in hay and pasture, and some have been excavated for gravel and sand.

Slope, the low natural fertility, and periods of droughtiness during the growing season make this soil poorly suited to cultivated crops. Using irrigation, adding organic material, and controlling erosion are the primary management concerns. Contour farming and stripcropping help to control erosion. This soil can be worked very early in the spring.

Droughtiness during the growing season makes this soil poorly suited to hay and pasture. Deferred and restricted grazing, irrigation, and adding organic material to the soil are the main pasture management concerns.

This soil is suitable for woodland. It has fair suitability for eastern white pine, white spruce, balsam fir, and northern hardwoods and good suitability for red pine. Droughtiness causes a high rate of seedling mortality and is a management concern. Placing skid trails and roads on the contour helps to control erosion.

Slope limits this soil for homesites, but the soil is a source of gravel and roadfill. The rapid permeability causes a hazard of ground-water contamination in areas used for septic tank absorption fields and sanitary landfills. Excavations in this soil are unstable.

The capability subclass is IVs.

MkE—Masardis fine sandy loam, 15 to 45 percent slopes. This soil is moderately steep to steep, deep, and somewhat excessively drained. It is on glaciofluvial terraces, deltas, kames, and eskers near streams and rivers. Slopes are generally smooth and convex and are 50 to 200 feet long. Most areas are elongated or oblong and range from 4 to 100 acres.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 4 inches thick over a subsurface layer of gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown gravelly sandy loam and olive brown very gravelly loamy coarse sand 25 inches thick. The substratum is olive brown very gravelly loamy coarse sand to a depth of 60 inches.

Included with this soil in mapping are small areas of somewhat excessively drained Adams soils, well drained and somewhat excessively drained Hermon soils, moderately well drained Madawaska soils, and very poorly drained Searsport soils. The Adams soils are on adjacent slopes, and the Hermon soils are on upland knolls. The Madawaska and Searsport soils are in low areas and depressions. Also included are small areas of moderately deep Masardis Variant soils, soils with a surface layer less than 4 inches thick, and soils with slopes of more than 45 percent. Some areas are similar to this Masardis soil but have a surface layer of very fine sandy loam, gravelly fine sandy loam, or gravelly very fine sandy loam. Included areas make up about 15 percent of the unit.

This Masardis soil has moderately rapid permeability in the surface layer and upper part of the subsoil and rapid or very rapid permeability in the lower layers. The available water capacity is moderate. Surface runoff is rapid, and the erosion hazard is moderate or severe. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland. Some areas are in hay and pasture, and some have been excavated for gravel and sand.

Slope and droughtiness make this soil very poorly suited to farming. Controlling erosion is the primary management concern. Using irrigation and adding organic material to the soil are secondary management concerns. Contour farming and stripcropping in cultivated areas and deferred and restricted grazing help to control erosion. This soil can be worked early in the spring.

This soil has fair suitability for eastern white pine, white spruce, balsam fir, and northern hardwoods and good suitability for red pine. Slope limits the use of equipment, and droughtiness causes a high rate of seedling mortality. Placing roads and skid trails on the contour helps to control erosion.

This soil is a good source of gravel and roadfill, but slope limits the soil for most other types of nonfarm use. The rapid permeability causes a hazard of ground-water contamination in areas used for septic systems and landfills.

The capability subclass is VIIs.

MrB—Masardis Variant fine sandy loam, very rocky, 3 to 8 percent slopes. This soil is gently sloping, moderately deep, and somewhat excessively drained. It is on terraces mainly on offshore islands. Slopes are generally smooth and convex and are 100 to 200 feet long. Most areas are oval and range from 5 to 50 acres. Exposed bedrock covers up to 10 percent of the surface of some areas.

Typically, this soil has a surface layer of dark brown fine sandy loam 6 inches thick. The subsoil is dark brown gravelly fine sandy loam and yellowish brown very gravelly loamy sand 15 inches thick. The substratum is olive brown very gravelly coarse sand to a depth of 38 inches. Schist bedrock is at a depth of 38 inches.

Included with this soil in mapping are small, high areas of Masardis soils that are more than 40 inches deep to bedrock and small, high areas of Masardis soils that are more than 10 percent exposed bedrock. Also included are small areas of moderately well drained Madawaska soils, very poorly drained Searsport soils, and soils that are less than 10 inches deep to bedrock. Some areas are similar to this Masardis Variant soil but have a surface layer of very fine sandy loam, gravelly very fine sandy loam, or gravelly fine sandy loam. Included areas make up about 15 percent of the unit.

This Masardis Variant soil has moderately rapid permeability in the surface layer and upper part of the subsoil and rapid or very rapid permeability in the lower layers. The available water capacity is low. Surface runoff is slow, and the erosion hazard is slight. Bedrock between depths of 20 and 40 inches restricts rooting.

Most areas of this soil are in woodland. Some areas are in hay or pasture, and some have been excavated for gravel and sand.

The depth to bedrock and droughtiness during the growing season make this soil very poorly suited to cultivated crops. Using irrigation and adding organic material to the soil are the main farming management concerns.

This soil is poorly suited to hay and pasture. The bedrock exposures and droughtiness during the growing season are the major limitations. Deferred and restricted grazing are the main pasture management practices.

Droughtiness and the shallow rooting depth make this soil poorly suited to woodland. The soil is better suited to eastern white pine, red pine, balsam fir, and white spruce than to northern hardwoods. The rate of seedling mortality is high.

The depth to bedrock limits this soil for most types of nonfarm use. The rapid permeability causes a hazard of ground-water contamination in areas used for septic tank absorption fields or sanitary landfills.

The capability subclass is IIIs.

MrC—Masardis Variant fine sandy loam, very rocky, 8 to 15 percent slopes. This soil is sloping, moderately deep, and somewhat excessively drained. It is on terraces mainly on offshore islands. Slopes are generally smooth and convex and are 100 to 300 feet long. Most areas are oval and range from 5 to 40 acres. Exposed bedrock covers up to 10 percent of the surface of some areas.

Typically, this soil has a surface layer of dark brown fine sandy loam 6 inches thick. The subsoil is dark brown gravelly fine sandy loam and yellowish brown very gravelly loamy sand 15 inches thick. The substratum is olive brown very gravelly coarse sand to a depth of 38 inches. Schist bedrock is at a depth of 38 inches.

Included with this soil in mapping are small areas of Masardis soils that are more than 40 inches deep to bedrock or that have slopes of more than 15 percent. Also included are small areas of moderately well drained Madawaska soils in low positions and areas of soils that are less than 10 inches deep to bedrock. Some areas are similar to this Masardis Variant soil but have a surface layer of very fine sandy loam, gravelly very fine sandy loam, or gravelly fine sandy loam. Included areas make up about 15 percent of the unit.

This Masardis Variant soil has moderately rapid permeability in the surface layer and upper part of the subsoil and rapid or very rapid permeability in the lower layers. The available water capacity is low. Surface runoff is medium, and the erosion hazard is slight or moderate. Bedrock between depths of 20 and 40 inches restricts rooting.

Most areas of this soil are in woodland. Some areas are in hay or pasture, and some have been excavated for gravel and sand.

Slope, the depth to bedrock, and droughtiness during the growing season make this soil very poorly suited to farming. Using irrigation, adding organic material, and controlling erosion are the main management concerns. Contour farming and stripcropping and deferred grazing and restricted grazing help to control erosion.

Droughtiness and restricted rooting make this soil poorly suited to woodland. The soil is better suited to eastern white pine, red pine, balsam fir, and white spruce than to northern hardwoods. The rate of seedling mortality is high.

Slope and the depth to bedrock limit this soil for most types of nonfarm use. The rapid permeability causes a hazard of ground-water contamination in areas used for septic tank absorption fields or sanitary landfills.

The capability subclass is IVs.

MsB—Masardis Variant-Rock outcrop complex, 3 to 8 percent slopes. This unit is mainly on gently sloping terraces on offshore islands. It consists of 50 percent moderately deep, somewhat excessively drained Masardis Variant soils; 30 percent exposed bedrock; and 20 percent other soils. The soils and exposed rock are so intermingled that it was not practical to map them separately. Slopes are generally smooth and convex and 100 to 300 feet long. Most areas of the unit are oval and range from 5 to 50 acres.

Typically, the surface layer of the Masardis Variant soils is dark brown fine sandy loam 6 inches thick. The

subsoil is dark brown gravelly fine sandy loam, and yellowish brown very gravelly loamy sand 15 inches thick. The substratum is olive brown very gravelly coarse sand to a depth of 38 inches. Schist bedrock is at a depth of 38 inches.

Included with this complex in mapping are small areas of Masardis soils which are more than 40 inches deep to bedrock. Also included are small areas of moderately well drained Madawaska soils and areas of soils that are less than 10 inches deep to bedrock. Some areas are similar to the Masardis Variant soils in this unit but have a surface layer of very fine sandy loam, gravelly very fine sandy loam, or gravelly fine sand.

These Masardis Variant soils have moderately rapid permeability in the surface layer and upper part of the subsoil and rapid or very rapid permeability in the lower layers. The available water capacity is low. Surface runoff is slow, and the erosion hazard is slight. Bedrock between depths of 20 and 40 inches in the Masardis Variant soils restricts rooting.

This unit is very poorly suited to farming or orchards. Droughtiness and the exposed rock are the major limitations.

Most areas of the unit are wooded, but the suitability for trees is poor. Droughtiness and restricted rooting are the major limitations. The rate of seedling mortality is high, and there is a hazard of uprooting during windy periods.

The depth to bedrock and the areas of exposed rock limit this unit for most types of nonfarm use. The rapid permeability causes a hazard of ground-water contamination in areas used for septic tank absorption fields or sanitary landfills.

The capability subclass is VIs.

MsC—Masardis Variant-Rock outcrop complex, 8 to 15 percent slopes. This unit is mainly on sloping terraces on offshore islands. It consists of 45 percent moderately deep, somewhat excessively drained Masardis Variant soils; 35 percent exposed bedrock; and 20 percent other soils. The soils and exposed rock are so intermingled that it was not practical to map them separately. Slopes are generally smooth and convex and 50 to 200 feet long. Most areas of the unit are oval and range from 5 to 40 acres.

Typically, the surface layer of the Masardis Variant soils is dark brown fine sandy loam 6 inches thick. The subsoil is dark brown gravelly fine sandy loam and yellowish brown very gravelly loamy sand 15 inches thick. The substratum is olive brown very gravelly coarse sand to a depth of 38 inches. Schist bedrock is at a depth of 38 inches.

Included with this complex in mapping are areas of Masardis soils that are more than 40 inches deep to bedrock or that have slopes of more than 15 percent. Also included are small areas of moderately well drained Madawaska soils and areas of soils that are less than 10 inches deep to bedrock. Some areas are similar to the Masardis Variant soils in this unit but have a surface layer of very fine sandy loam, gravelly very fine sandy loam, or gravelly fine sandy loam.

These Masardis Variant soils have moderately rapid permeability in the surface layer and upper part of the subsoil and rapid or very rapid permeability in the lower layers. The available water capacity is low. Surface runoff is medium, and the erosion hazard is slight or moderate. Bedrock between depths of 20 and 40 inches in the Masardis Variant soils restricts rooting.

This complex is very poorly suited to farming or orchards. Droughtiness, the exposed rock, and slope are the major limitations.

Most areas of this unit are wooded, but the suitability for woodland is poor. Droughtiness and restricted rooting are the major limitations. The rate of seedling mortality is high, and there is a hazard of uprooting during windy periods.

Slope, the depth to bedrock, and the exposed rock limit this unit for nonfarm use. The rapid permeability causes a hazard of ground-water contamination in areas used for septic tank absorption fields or sanitary landfills.

The capability subclass is VIs.

MwB—Monarda silt loam, 0 to 8 percent slopes. This soil is nearly level to gently sloping, deep, and poorly drained. It is along drainageways and in valleys in the northern part of the county. Slopes are generally smooth and concave and are about 100 to 400 feet long. Most areas are oval or elongated and range from about 4 to 30 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown silt loam 6 inches thick. The subsoil is mottled, dark grayish brown and olive gray gravelly silt loam 14 inches thick. The substratum is very firm, olive silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of very stony soils. Also included are high areas of moderately well drained to somewhat poorly drained Dixmont soils, very poorly drained Borosaprists in low areas and depressions, and somewhat poorly drained to poorly drained Brayton soils on adjacent slopes. Some areas are similar to this Monarda soil but are very poorly drained or have a surface layer of loam or gravelly silt loam. Included areas make up about 20 percent of the unit.

This Monarda soil has moderate permeability above the substratum and slow or very slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is slow, and the erosion hazard is slight. The water table is perched at or near the surface most of the year. The depth to bedrock is generally more than 5 feet, but rooting is restricted by the perched high water table and the substratum, and the substratum restricts water movement.

Most areas of this soil are in pasture. Some areas are in hay or woodland, and a few small areas are in crops.

The high water table makes this soil poorly suited to farming. Open-ditch and subsurface drainage help to remove excess water where suitable outlets are available. Grazing and equipment use are limited to the dry season, and the high water table and slow runoff restrict plowing and seeding in the spring.

This soil has fair suitability for woodland, mainly red and white spruce and eastern white pine. The water table and slow runoff limit machine planting and restrict the use of equipment and management operations to periods when the soil is frozen. The rate of seedling mortality is high, and there is a hazard of uprooting during windy periods.

Seasonal wetness, slow or very slow permeability in the substratum, a frost-action potential, and slow runoff limit this soil for nonfarm use.

The capability subclass is IIIw.

MyB—Monarda very stony silt loam, 0 to 8 percent slopes. This soil is nearly level to gently sloping, deep, and poorly drained. It is along drainageways and in valleys in the northern part of the county. Slopes are generally smooth and concave and are about 100 to 400 feet long. Most areas are oval or elongated and range from about 4 to 50 acres or more. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown silt loam 6 inches thick. The subsoil is mottled, dark grayish brown and olive gray gravelly silt loam 14 inches thick. The substratum is very firm, olive silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of extremely stony soils. Also included are high areas of moderately well drained to somewhat poorly drained Dixmont soils, very poorly drained Borosaprists in low areas and depressions, and somewhat poorly drained to poorly drained Brayton soils on adjacent slopes. Some areas are similar to this Monarda soil but are very poorly drained or have a surface layer of loam or gravelly silt loam. Included areas make up about 20 percent of the unit.

This Monarda soil has moderate permeability above the substratum and slow or very slow permeability in the substratum. The available water capacity is moderate. Surface runoff is slow, and the erosion hazard is slight. The water table is perched at or near the surface most of the year. The depth to bedrock is generally more than 5 feet, but rooting is restricted by the perched water table and the substratum, and the substratum restricts water movement.

Most areas of this soil are in woodland. Some areas are in unimproved pasture.

The high water table and stony surface make this soil very poorly suited to farming.

This soil has fair suitability for woodland, mainly red and white spruce and eastern white pine. The water table, slow runoff, and stony surface limit machine planting, and the water table restricts the use of equipment and management operations to periods when the soil is frozen. The rate of seedling mortality is high, and there is a hazard of uprooting during windy periods.

Seasonal wetness, the stony surface, slow or very slow permeability in the substratum, a frost-action potential, and slow runoff are the major limitations of the soil for nonfarm use.

The capability subclass is VIIs.

PaB—Peru fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained. It is on the lower slopes of broad, drumlin-shaped ridges that are in a northwest-to-southeast direction. Slopes are generally concave and smooth and are about 100 to 500 feet long. Most areas are irregular in shape and range from 5 to 25 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is 9 inches thick. It is dark brown fine sandy loam in the upper part and mottled, olive brown gravelly fine sandy loam in the lower part. The substratum is very firm and extends to a depth of 60 inches. The upper part of the substratum is light olive brown gravelly fine sandy loam. The lower part is olive gravelly sandy loam.

Included with this soil in mapping are small areas of well drained Marlow soils and somewhat poorly drained to poorly drained Brayton soils. The Marlow soils are generally in high areas and the Brayton soils are in low areas and depressions. Also included are a few areas with slopes of less than 3 percent and a few areas of very stony soils. Some areas are similar to this Peru soil but do not have a very firm substratum or have a surface layer of silt loam, loam, very fine sandy loam, gravelly loam, or gravelly fine sandy loam. Included areas make up about 15 percent of the unit.

This Peru soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is moderate. A seasonal high water table is commonly perched above the substratum, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting and water movement are restricted by the substratum.

Most areas of this soil are used for hay and pasture (fig. 4). Some areas are used for row crops and some for woodland.

This soil has fair suitability for cultivated crops. The seasonal high water table causes the soil to warm slowly in the spring and delays planting. Surface drains and tile drains can be used to remove water from the soil where suitable outlets are available. The removal of stones is necessary in some areas after plowing.

The soil has fair suitability for hay and pasture. The restricted rooting depth is the major limiting factor. The main pasture management practices are rotation grazing, weed control, and deferred grazing in the spring when the soil is wet.

This soil is well suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. The soil is not suited to tap-rooted trees, such as red pine, because of the restricted rooting depth. Machine planting is practical on this soil if the areas are large.

The seasonal high water table and the slow or very slow permeability of the substratum limit this soil for nonfarm use. A frost-action potential is a hazard for foundations and roads.

The capability subclass is IIw.

Figure 4.—Permanent pasture on an area of Peru fine sandy loam, 3 to 8 percent slopes.

PaC—Peru fine sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and moderately well drained. It is on the sides of long and broad, drumlin-shaped ridges that are in a northwest-to-southeast direction. Slopes are generally concave and smooth and are about 100 to 500 feet long. Most areas are irregular in shape and range from about 5 to 20 acres. Stones cover less than 1 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is 9 inches thick. It is dark brown fine sandy loam in the upper part, and mottled, olive brown gravelly fine sandy loam in the lower part. The substratum is very firm and extends to a depth of 60 inches. The upper part of the substratum is light olive brown gravelly fine sandy loam. The lower part is olive gravelly sandy loam.

Included with this soil in mapping are small areas of well drained Marlow soils and somewhat poorly drained to poorly drained Brayton soils. The Marlow soils are generally at high areas, and the Brayton soils are in low areas and depressions. Also included are a few areas with slopes of more than 15 percent, a few areas of very stony soils, and a few areas of exposed bedrock. Some areas are similar to this Peru soil but do not have a very firm substratum or have a surface layer of silt loam, loam, very fine sandy loam, gravelly loam, or gravelly fine sandy loam. Included areas make up about 15 percent of the unit.

This Peru soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is moderate. A seasonal high water table is commonly perched above the substratum, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting and water movement are restricted by the substratum.

Most areas of this soil are used for hay and pasture. Some areas are used for row crops and some for woodland.

This soil has poor suitability for most cultivated crops and fair suitability for potatoes. An erosion hazard, slope, and the high water table are the major limitations for crops. Diversions, contour farming, and stripcropping help to reduce erosion in cultivated areas. The seasonal high water table causes the soil to warm slowly in the spring and delays planting, but surface drains and tile drains can be used to remove water from the soil where adequate outlets are available. The removal of stones is necessary in some areas after plowing.

The soil has fair suitability for pasture and hay. The restricted rooting depth limits the soil for deep-rooted plants, such as alfalfa. The main pasture management practices are rotation grazing, weed control, and deferred grazing in the spring when the soil is wet.

This soil is well suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. The soil is not suited to tap-rooted trees, such as red pine, because of the restricted rooting depth. Machine planting is practical on this soil if the areas are large. Erosion is a hazard on skid trails.

Slope, seasonal wetness, and the slow or very slow permeability of the substratum limit this soil for nonfarm use. A frost-action potential is a hazard to foundations and roads.

The capability subclass is IIIe.

PbB—Peru very stony fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained. It is on the lower slopes of hills and on the crests and lower slopes of broad, drumlin-shaped ridges. Slopes are generally concave and smooth and are about 100 to 500 feet long. Most areas are irregular in shape and range from about 5 to 100 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 4 inches thick over a subsurface layer of grayish brown fine sandy loam 2 inches thick. The

subsoil is 11 inches thick. It is dark brown fine sandy loam in the upper part, and mottled, olive brown gravelly fine sandy loam in the lower part. The substratum is very firm and extends to a depth of 60 inches. The upper part of the substratum is light olive brown fine sandy loam. The lower part is olive gravelly sandy loam.

Included with this soil in mapping are small areas of somewhat poorly drained to poorly drained Brayton soils in depressions and along drainageways and well drained Marlow soils at high positions. Also included are small areas of extremely stony soils and soils with slopes of less than 3 percent. Some areas are similar to this Peru soil but do not have a very firm substratum or have a surface and subsurface layer of silt loam, loam, very fine sandy loam, gravelly loam, or gravelly fine sandy loam. Included areas make up about 20 percent of the unit.

This Peru soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is slight. A seasonal high water table is commonly perched above the substratum, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting and water movement are restricted by the substratum.

Most areas of this soil are used for woodland. Some areas are used for unimproved pasture and some for blueberries.

The stones on the surface and, to a lesser extent, the water table make this soil very poorly suited to farming. Surface drains and tile drains can be used to remove water from the soil where adequate outlets are available.

The soil is well suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. The soil is not suited to tap-rooted trees, such as red pine, because of the restricted rooting depth. Machine planting is limited by surface stones.

The slow or moderately slow permeability in the substratum, seasonal wetness, and the stones on the surface limit this soil for nonfarm use. A frost-action potential is a hazard for foundations and roads.

The capability subclass is VIs.

PbC—Peru very stony fine sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and moderately well drained. It is on the side slopes of hills and drumlin-shaped ridges. Slopes are generally concave and smooth and are about 100 to 500 feet long. Most areas are irregular in shape and range from 5 to 100 acres. Stones cover about 1 to 15 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 4 inches thick over a subsurface layer of grayish brown fine sandy loam 2 inches thick. The subsoil is 11 inches thick. It is dark brown fine sandy loam in the upper part, and mottled, olive brown gravelly fine sandy loam in the lower part. The substratum is very firm and extends to a depth of 60 inches. The upper part of the substratum is light olive brown fine sandy loam. The lower part is olive gravelly sandy loam.

Included with this soil in mapping are small, high areas of well drained Marlow soils and areas of somewhat poorly drained to poorly drained Brayton soils in depressions and along drainageways. Also included are small areas of extremely stony soils, small areas with slopes of more than 15 percent, and a few areas of exposed bedrock. Some areas are similar to this Peru soil but do not have a very firm substratum or have a surface and subsurface layer of silt loam, loam, very fine sandy loam, gravelly loam, or gravelly fine sandy loam. Included areas make up about 20 percent of the unit.

This Peru soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is slight or moderate. A seasonal high water table is commonly perched above the substratum, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting and water movement are restricted by the substratum.

Most areas of this soil are used for woodland. Some cleared areas are used for unimproved pasture and some for blueberries.

The stones on the surface and, to a lesser extent, the slope and water table make this soil very poorly suited to farming. Stone removal and drainage are generally impractical.

This soil is well suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. The soil is not suited to tap-rooted trees, such as red pine, because of the restricted rooting depth. Machine planting is limited by the surface stones, and erosion is a hazard on skid trails that are not on the contour of the landscape.

Slope, seasonal wetness, the slow or moderately slow permeability in the substratum, and stones on the surface limit this soil for nonfarm use. A frost-action potential is a hazard for foundations and roads.

The capability subclass is VIs.

PcB—Peru extremely stony fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping, deep, and moderately well drained. It is on the lower slopes of hills and on the crests of broad, drumlin-shaped ridges. Slopes are generally concave and smooth and are 100 to 200 feet long. Most areas are irregular in shape and range from 5 to 50 acres. Stones cover from 15 to 50 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 4 inches thick over a subsurface layer of grayish brown fine sandy loam 2 inches thick. The subsoil is 11 inches thick. It is a dark brown fine sandy loam in the upper part, and mottled, olive brown gravelly fine sandy loam in the lower part. The substratum is very

firm and extends to a depth of 60 inches. The upper part of the substratum is light olive brown fine sandy loam. The lower part is olive gravelly sandy loam.

Included with this soil in mapping are small areas of somewhat poorly drained to poorly drained Brayton soils in depressions and along drainageways. Also included are areas where stones cover more than 50 percent of the surface and areas with slopes of less than 3 percent. Some areas are similar to this Peru soil but do not have a very firm substratum or have a surface and subsurface layer of silt loam, loam, very fine sandy loam, gravelly loam, or gravelly fine sandy loam. Included areas make up about 20 percent of the unit.

This Peru soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. Available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is slight. A seasonal high water table is commonly perched above the substratum, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting and water movement are restricted by the substratum.

Most areas of this soil are used for woodland. Some small areas are used for unimproved pasture.

The stones on the surface make this soil very poorly suited to farming. The soil is well suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. The soil is not suited to tap-rooted trees, such as red pine, because of the restricted rooting depth. The stones on the surface limit the use of equipment and make machine planting generally impractical.

The stones on the surface, seasonal wetness, and moderately slow or slow permeability in the substratum limit this soil for nonfarm use. A frost-action potential is a hazard to roads and foundations.

The capability subclass is VIIs.

PcC—Peru extremely stony fine sandy loam, 8 to 15 percent slopes. This soil is sloping, deep, and moderately well drained. It is on the sides of hills and drumlin-shaped ridges. Slopes are generally concave and smooth and are about 100 to 400 feet long. Most areas are irregular in shape and range from 5 to 50 acres. Stones cover from 15 to 50 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 4 inches thick over a subsurface layer of grayish brown fine sandy loam 2 inches thick. The subsoil is 11 inches thick. It is dark brown fine sandy loam in the upper part, and mottled, olive brown gravelly fine sandy loam in the lower part. The substratum is very firm and extends to a depth of 60 inches. The upper part of the substratum is light olive brown fine sandy loam. The lower part is olive gravelly sandy loam.

Included with this soil in mapping are small areas of somewhat poorly drained to poorly drained Brayton soils in depressions and along drainageways. Some areas are similar to this Peru soil, but stones cover more than 50 percent of the surface of these areas or the surface and subsurface layers are silt loam, very fine sandy loam, gravelly loam, or gravelly fine sandy loam. Included areas make up about 20 percent of the unit.

This Peru soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil is moderate. Surface runoff is medium, and the erosion hazard is slight. A seasonal high water table is commonly perched above the substratum, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting and water movement are restricted by the substratum.

Most areas of this soil are used for woodland. Some small areas are used for unimproved pasture.

The stones on the surface make this soil very poorly suited to farming. The soil is well suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. The soil is not suited to tap-rooted trees, such as red pine, because of the restricted rooting depth. The stones on the surface limit the use of equipment and make machine planting generally impractical.

The stones on the surface, the moderately slow or slow permeability in the substratum, slope, and seasonal wetness limit the soil for nonfarm use. A frost-action potential is a hazard for foundations and roads.

The capability subclass is VIIs.

PcD—Peru extremely stony fine sandy loam, 15 to 30 percent slopes. This soil is moderately steep, deep, and moderately well drained. It is on the sides of larger hills and drumlin-shaped ridges. Slopes are concave. Most areas are irregular in shape and range from 5 to 50 acres. Stones cover from 15 to 50 percent of the surface.

Typically, this soil has a surface layer of dark brown fine sandy loam 4 inches thick over a subsurface layer of grayish brown fine sandy loam 2 inches thick. The subsoil is 11 inches thick. It is dark brown fine sandy loam in the upper part, and mottled, olive brown gravelly fine sandy loam in the lower part. The substratum is very firm and extends to a depth of 60 inches. The upper part of the substratum is light olive brown fine sandy loam. The lower part is olive gravelly sandy loam.

Included with this soil in mapping are small, high areas of shallow Lyman soils, moderately deep Tunbridge soils, and well drained Marlow soils. Some areas are similar to this Peru soil, but stones cover more than 50 percent of some of these areas, slopes are more than 30 percent in some others, and some others have a surface and subsurface layer of silt loam, loam, very fine sandy loam, gravelly loam, or gravelly fine sandy loam. Included areas make up about 20 percent of the unit.

This Peru soil has moderate permeability above the substratum and moderately slow or slow permeability in the substratum. The available water capacity of the soil

is moderate. Surface runoff is medium, and the erosion hazard is moderate. A seasonal high water table is commonly perched above the substratum, especially in the spring. The depth to bedrock is generally more than 5 feet, but rooting and water movement are restricted by the substratum.

Slope and the stones on the surface make this soil very poorly suited to farming. Most areas are wooded, and the soil is well suited to woodland. The soil has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. It is not suited to tap-rooted trees, such as red pine, because of the restricted rooting depth. Slope and the stones on the surface limit equipment use and make machine planting generally impractical. Placing logging roads on the contour and using water bars help to reduce erosion.

Slope, the stones on the surface, and the seasonal wetness limit the soil for nonfarm use. A frost-action potential is a hazard for foundations and roads.

The capability subclass is VIIs.

Pg—Pits, gravel and sand. This unit consists of open excavations from which soil and underlying material have been removed. The areas are generally round or oval and range from 4 to 25 acres. They are generally near Masardis, Adams, and Hermon soils, but some are near Marlow soils. Some areas of this unit are too small to be shown on the soil map and are indicated by a special symbol.

This unit is not assigned to a capability subclass.

Py—Podunk fine sandy loam. This soil is nearly level, deep, and moderately well drained. It is on the flood plains of major streams and rivers. Slopes are generally smooth and concave, are 50 to 200 feet long, and range from 0 to 2 percent. Most areas are elongated and range from about 4 to 40 acres.

Typically, this soil has a surface layer of dark brown fine sandy loam 10 inches thick. The subsoil is 14 inches thick. It is olive brown fine sandy loam that is mottled in the lower part. The substratum is mottled, olive sand, loamy sand, and coarse sand to a depth of 60 inches.

Included with this soil in mapping are small areas of poorly drained Rumney and Limerick soils and very poorly drained Saco soils in low positions and depressions. Also included are areas of very poorly drained Borosaprists. Some areas are similar to this Podunk soil but have a surface layer of loam. Included areas make up about 20 percent of the unit.

This Podunk soil has moderately rapid permeability in the surface layer and subsoil and moderately rapid or rapid permeability in the substratum. Surface runoff is medium or slow, and the soil is commonly flooded for short periods in the spring. The erosion hazard is slight. Available water capacity is high. The depth to bedrock is generally more than 5 feet, but rooting is restricted by a seasonal high water table at a depth of 1.5 to 3 feet.

Most of the larger areas of this soil are used for hay, pasture, or cultivated crops. The smaller areas are generally in woodland.

This soil is suitable for most cultivated crops, especially silage corn and potatoes. However, flooding is a hazard during the growing season and the seasonal high water table causes the soil to warm slowly in the spring, which delays planting. Surface drainage helps to remove water where adequate outlets are available.

This soil is well suited to hay and pasture, but spring flooding sometimes damages plants and reduces yields and seasonal wetness restricts equipment use and grazing. Deferred and rotational grazing are the main pasture management practices on this soil.

This soil is well suited to woodland. It has good suitability for eastern white pine, white spruce, and balsam fir and fair suitability for northern hardwoods. Some trees are girdled or uprooted by ice where flooding occurs during the winter.

Flooding and seasonal wetness are the main limitations of the soil for nonfarm use.

The capability subclass is IIw.

Qu—Quarries. This unit consists of nearly level to very steep open excavations that have been mined for mainly granite bedrock. The areas are irregular in shape and range from 2 to 10 acres. The thickness of the soil material over undisturbed bedrock is as much as 60 inches but is generally less than 10 inches. In some areas the bedrock is schist or limestone.

Included with this unit in mapping are areas of Rock outcrop and shallow Lyman soils that make up about 15 percent of the unit.

This unit has rapid permeability, but internal drainage is variable. The available water capacity is very low, and surface runoff is very rapid to very slow. Some areas are permanently flooded. The rooting depth is restricted by the depth to bedrock, the fluctuating water table, mineral accumulation, and extreme acidity.

Most areas of this unit have been abandoned and are unsuitable for most uses other than as wildlife habitat. Determination of the suitability of the unit for reclamation generally requires onsite investigation.

This unit is not assigned to a capability subclass.

Rc—Rock outcrop. This unit consists of nearly level to steep areas that are at least 90 percent exposed bedrock. The bedrock is generally schist, but in some areas it is granite, gneiss, phyllite, or slate or some combination of the four. Most areas are on the tops of the hills and mountains. The areas are generally round or oblong and range from 5 to 100 acres, but most are about 5 to 15 acres.

Included with this unit in mapping are small areas of shallow Lyman and Thorndike soils and moderately deep Tunbridge and Winnecook soils. Also included are a few areas with boulders on the surface and areas of soils that are less than 10 inches deep to bedrock. Included areas make up about 10 percent of the unit.

Determination of the suitability of this unit for any use requires onsite investigation.

The capability subclass is VIIIs.

RmC—Rock outcrop-Lyman complex, 3 to 15 percent slopes. This unit is gently sloping to sloping. It consists of 60 percent exposed bedrock and 20 percent shallow, somewhat excessively drained Lyman soils. The exposed rock and Lyman soils are so intermingled that it was not practical to map them separately. The areas are on the tops of hills and mountains. Most are oblong or irregular in shape and range from 5 to 50 acres.

Typically, the Lyman soils have a surface layer of very dark grayish brown fine sandy loam 2 inches thick over a subsurface layer of gray fine sandy loam 1 inch thick. The subsoil is dark yellowish brown and light olive brown fine sandy loam 16 inches thick. Dark gray bedrock is at a depth of 19 inches.

Included with this unit in mapping are small areas with slopes of less than 3 percent. Also included are small, low areas of well drained Marlow soils, moderately well drained Peru soils, and moderately deep Tunbridge soils. Some areas are very stony or extremely stony, and some are less than 10 inches deep to bedrock. Included areas make up about 20 percent of the unit.

These Lyman soils have moderately rapid permeability and low available water capacity. Surface runoff is medium. The erosion hazard is moderate. Rooting and water movement are restricted in the Lyman soils by bedrock at a depth of 10 to 20 inches.

Most areas of this unit are wooded. The areas of exposed rock and the depth to bedrock make the unit generally unsuitable for most uses other than as wildlife habitat or for esthetic value.

The capability subclass is VIIs.

RmE—Rock outcrop-Lyman complex, 15 to 60 percent slopes. This unit is moderately steep to very steep. It consists of 60 percent areas of exposed bedrock and 20 percent shallow, somewhat excessively drained Lyman soils. The exposed rock and Lyman soils are so intermingled that it was not practical to map them separately. The areas are on the tops and sides of hills and mountains. Most are oblong or irregular in shape and range from 5 to 40 acres.

Typically, the Lyman soils have a surface layer of very dark grayish brown fine sandy loam 2 inches thick over a subsurface layer of gray fine sandy loam 1 inch thick. The subsoil is dark yellowish brown and light olive brown fine sandy loam 16 inches thick. Dark gray bedrock is at a depth of 19 inches.

Included with this complex in mapping are small, low areas of well drained Marlow soils and moderately deep Tunbridge soils. Also included are areas of very stony or extremely stony soils and soils that are less than 10 inches deep to bedrock. Included areas make up about 20 percent of the unit.

These Lyman soils have moderately rapid permeability and low available water capacity. Surface runoff is rapid. The erosion hazard is severe. Rooting and water movement are restricted in the Lyman soils by bedrock at a depth of 10 to 20 inches.

This unit is mostly wooded. The slope, areas of exposed rock, and depth to bedrock make the unit generally unsuitable for most uses other than as wildlife habitat or for esthetic value.

The capability subclass is VIIIs.

Sa—Saco very fine sandy loam. This soil is nearly level, deep, and very poorly drained. It is on flood plains of large streams and rivers and adjacent to lakes. Slopes are concave and range from 0 to 2 percent. Most areas are elongated or oval and range from about 5 to 30 acres.

Typically, this soil has a surface layer of very dark grayish brown very fine sandy loam 12 inches thick. The substratum extends to a depth of 60 inches. It is mottled, gray very fine sandy loam and dark gray silt loam to a depth of 46 inches. From 46 to 60 inches, it is dark gray sand with thin strata of gravel.

Included with this soil in mapping are small areas of poorly drained Limerick and Rumney soils on flood plains and very poorly drained Biddeford soils and Borosaprists. Also included are areas similar to this Saco soil but that have a surface layer of mucky silt loam, silt loam, mucky very fine sandy loam, mucky peat, silty clay loam, loamy fine sand, or very fine sand. Included areas make up about 20 percent of the unit.

This Saco soil has moderate permeability in the surface layer and upper part of the substratum and rapid permeability in the lower part of the substratum. Drainage and rooting depth are restricted by a high water table which is at the surface most of the year. The available water capacity of the soil is high. Surface runoff is slow or very slow, and the erosion hazard is slight. Flooding from stream overflow is common in early spring and after periods of heavy rainfall. The depth to bedrock is generally more than 5 feet.

Most areas of this soil are in woodland or in marshland used as wetland wildlife habitat.

Flooding and the high water table make this soil very poorly suited to farming or woodland. Most woodland management practices are restricted to periods when the soil is frozen. The flooding and water table also limit the soil for nonfarm use.

The capability subclass is VIw.

Se—Searsport mucky peat. This soil is nearly level, deep, and very poorly drained. It is in depressional areas in outwash plains, deltas, and terraces. Most areas are irregular in shape and range from about 5 to 50 acres. Slopes range from 0 to 3 percent.

Typically, this soil has a surface layer of very dark gray mucky peat 8 inches thick over very dark gray loamy fine sand 5 inches thick. The substratum extends to a depth of 60 inches. It is dark gray loamy sand in the upper part and gray sand in the lower part.

Included with this soil in mapping are small areas of very poorly drained Borosaprists. Also included are small areas of soils similar to this Searsport soil but that are shallow to bedrock or that do not have a surface layer of mucky peat. Included areas make up about 15 percent of the unit.

This Searsport soil has rapid or very rapid permeability. The available water capacity is moderate. Drainage and rooting are restricted by a high water table which is at the surface for most of the year. Surface runoff is very slow. The depth to bedrock is generally more than 5 feet.

The high water table and instability of the surface layer make this soil very poorly suited to farming or woodland and, along with the rapid permeability, are major limitations for nonfarm use. Most of the acreage is wooded, but woodland management practices are limited to periods when the soil is frozen.

The capability subclass is VIIw.

Su—Sulfaquents and Sulfihemists, frequently flooded. This unit consists of level to depressional, deep, very poorly drained soils in tidal areas along streams and coastal beaches. The areas are subject to tidal flooding. They range from 4 to 40 acres and have small, narrow drainage channels. Some areas consist entirely of Sulfaquents, some of Sulfihemists, and some of both. The use and management of these soils are so similar that it was not necessary to map them separately. Slopes dominantly are less than 1 percent.

Sulfaquents make up about 65 percent of the acreage of this unit. Typically, the Sulfaquents have a black or very dark grayish brown, well decomposed surface layer consisting primarily of saltwater marshgrass. The underlying material extends to a depth of 60 inches. It is dark grayish brown or dark gray silt loam with a high content of organic material and sulfides in the upper part.

Sulfihemists make up about 25 percent of the unit. Typically, the Sulfihemists have a very dark grayish brown or black surface layer that consists of decomposed saltwater marshgrass mixed with varying amounts of fine textured mineral material. Below the surface layer is very dark grayish brown or black, decomposed saltwater marshgrass that has a high content of mineral and sulfidic materials. The thickness of the organic material ranges from 18 to 60 inches. The underlying material is generally very dark gray silt loam but ranges to fine sandy loam and silty clay. It has a high content of organic material in the upper part.

Included with these soils in mapping are small areas of very poorly drained Biddeford and Saco soils and poorly drained Swanville soils that make up about 10 percent of the acreage of the unit.

The Sulfaquents and Sulfihemists have moderate permeability. The available water capacity is high, and surface runoff is very slow or slow. Internal drainage and rooting are restricted by the water table, which is at or near the surface most of the year. These soils are slightly acid to strongly acid at the surface and neutral below the surface, but when drained they become extremely acid.

Most areas of these soils support salt-tolerant grasses and weeds such as salt meadowgrass, saltwater cordgrass, and blackgrass, and are used by waterfowl for nesting and feeding. The strong salt concentration and the flooding make these soils very poorly suited to most uses other than as habitat for waterfowl.

The capability subclass is VIIIw.

Sw—Swanville silt loam. This soil is nearly level, deep, and poorly drained. It is in low-lying areas near the coast and in the northern part of the county. Slopes are generally smooth, slightly convex, and about 100 to 500 feet long. They range from 0 to 3 percent. Most areas are irregular in shape and range from about 5 to 100 acres.

Typically, this soil has a surface layer of dark brown silt loam 6 inches thick. The subsoil is mottled, olive and olive gray silt loam 16 inches thick. The substratum is mottled, olive silt loam to a depth of 60 inches.

Included with this soil in mapping are small areas of very poorly drained Biddeford soils and moderately well drained or somewhat poorly drained Boothbay soils. Also included are small areas of shallow Lyman soils and moderately deep Tunbridge soils. The Biddeford soils are in low depressions, and the Lyman and Tunbridge soils are on small upland knolls. Some areas are similar to this Swanville soil but have a surface layer of very fine sandy loam. Included areas make up about 15 percent of the unit.

This Swanville soil has moderate permeability in the surface layer and moderately slow or slow permeability in the lower layers. The available water capacity is high. Surface runoff is slow or medium, and the erosion hazard is slight. The depth to bedrock is generally more than 5 feet, but rooting is restricted by a high water table that is near the surface for most of the year.

Most of this soil is used for woodland. Some large areas are used for hay and pasture.

The high water table makes this soil poorly suited to farming. The soil is difficult to drain because of the slow permeability and a lack of available drainage outlets, and the soil dries slowly in the spring. The surface layer easily becomes compacted if the soil is grazed when wet. Restricted and rotational grazing are the main pasture management practices.

The high water table also makes the soil poorly suited to trees. The water table causes a high rate of seedling mortality and restricts the use of equipment. It also restricts rooting so that trees are susceptible to uprooting during windy periods.

The water table, the moderately slow or slow permeability in the lower layers, and a frost-action potential limit the soil for most types of nonfarm use other than as wetland wildlife habitat and as a site for sewage lagoons.

The capability subclass is IVw.

ThB—Thorndike-Winnecook complex, 3 to 8 percent slopes. This gently sloping unit consists of 40 percent shallow, somewhat excessively drained Thorndike soils and 35 percent moderately deep, well drained Winnecook soils. The Thorndike and Winnecook soils are so intermingled that it was not practical to map them separately. The areas are generally on ridgetops and southeast-facing slopes. Slopes are generally smooth or slightly undulating and are 100 to 300 feet long. Most areas are oblong or round and range from about 4 to 30 acres. Bedrock covers as much as 1 percent of some areas.

Typically, the Thorndike soils have a surface layer of dark brown slaty silt loam 6 inches thick. The subsoil is 13 inches thick. It is reddish brown slaty silt loam in the upper part and dark brown slaty loam in the lower part. Dark gray bedrock is at a depth of 19 inches.

Typically, the Winnecook soils have a surface layer of dark yellowish brown silt loam 9 inches thick. The subsoil is brown and dark yellowish brown slaty silt loam 19 inches thick. The substratum is light olive brown very slaty silt loam to a depth of 34 inches. Phyllite bedrock is at a depth of 34 inches.

Included with these soils in mapping are small areas of well drained Bangor soils, moderately well drained to somewhat poorly drained Dixmont soils, poorly drained Monarda soils, and very poorly drained Borosaprists. The Bangor, Dixmont, and Monarda soils are generally in low areas. The Borosaprists are in depressions between shallow areas and moderately deep areas. Some areas are similar to these Thorndike soils but have a surface layer of silt loam, loam, or slaty loam; some are similar to these Winnecook soils but have a surface layer of loam, slaty silt loam, or slaty loam. Included areas make up about 25 percent of the unit.

These Thorndike soils have moderate permeability. The available water capacity is low or moderate, depending on the depth to bedrock. These Winnecook soils have moderate permeability, and the available water capacity is moderate. Surface runoff is slow on both soils, and the erosion hazard is moderate. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches in the Thorndike soils and 20 to 40 inches in the Winnecook soils.

Most areas of this complex are used for woodland. Some areas are used for hay and pasture and cultivated crops, mainly potatoes, corn silage, or small garden vegetables.

This complex has good suitability for corn silage and potatoes and fair suitability for some other cultivated crops. A few areas are very wet or very dry, and deep cultivation and rooting are restricted in some areas by the depth to bedrock. Contour farming, stripcropping, terracing, and using winter cover crops help to control erosion.

This complex has fair suitability for hay and pasture. Overgrazing causes erosion, and compaction occurs if these areas are grazed when wet. Plowing and reseeding to establish pastures are difficult where bedrock is near the surface.

This complex is suited to woodland, especially to shallow-rooted trees such as red spruce, eastern white pine, white spruce, and balsam fir. The soils have fair or poor suitability for northern hardwoods. Machine planting is especially difficult in areas where bedrock is near the surface. The rate of seedling mortality is high on these soils.

The depth to bedrock is the major limitation of this complex for nonfarm use. The bedrock, however, is rippable with light equipment.

The capability subclass is IIe.

ThC—Thorndike-Winnecook complex, 8 to 15 percent slopes. This sloping unit consists of 45 percent shallow, somewhat excessively drained Thorndike soils and 30 percent moderately deep, well drained Winnecook soils. The Thorndike and Winnecook soils are so intermingled that it was not practical to map them separately. The areas are generally along southeast-facing slopes of upland ridges. Slopes are generally smooth or rolling and are 100 to 300 feet long. Most areas are oblong or round and range from about 4 to 60 acres. Exposed bedrock make up as much as 1 percent of the surface of some areas.

Typically, the Thorndike soils have a surface layer of dark brown slaty silt loam 6 inches thick. The subsoil is 13 inches thick. It is reddish brown slaty silt loam in the upper part and dark brown slaty loam in the lower part. Dark gray bedrock is at a depth of 19 inches.

Typically, the Winnecook soils have a surface layer of dark yellowish brown silt loam 9 inches thick. The subsoil is brown and dark yellowish brown slaty silt loam 19 inches thick. The substratum is light olive brown very slaty silt loam to a depth of 34 inches. Phyllite bedrock is at a depth of 34 inches.

Included with these soils in mapping are areas of well drained Bangor soils, moderately well drained to somewhat poorly drained Dixmont soils, poorly drained Monarda soils, and very poorly drained Borosaprists. The Bangor, Dixmont, and Monarda soils are in low areas. The Borosaprists are in deep depressional areas between shallow areas and moderately deep areas. Some areas are similar to these Thorndike soils but have a surface layer of silt loam, loam or slaty loam; some are similar to these Winnecook soils but have a surface layer of loam, slaty silt loam, or slaty loam. Included areas make up about 25 percent of the unit.

These Thorndike soils have moderate permeability. The available water capacity is low or moderate, depending on the depth to bedrock. These Winnecook soils have moderate permeability, and the available water capacity is moderate. Surface runoff is medium on both soils, and the erosion hazard is severe. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches in the Thorndike soils and 20 to 40 inches in the Winnecook soils.

Most areas of this complex are used for woodland. Some areas are used for hay and pasture and cultivated crops, mainly potatoes, corn silage, or small garden vegetables.

This complex has fair suitability for potatoes and corn silage and poor suitability for other cultivated crops. A few areas are very wet or very dry, and deep cultivation is restricted in some areas by the depth to bedrock. Contour farming, stripcropping, terracing, and using winter cover crops help to control erosion.

This complex has fair suitability for hay and pasture. Overgrazing causes erosion, and compaction occurs if these areas are grazed when wet. Plowing and reseeding to establish pastures are difficult where bedrock is near the surface.

This complex is suited to woodland, especially to shallow-rooted trees such as eastern white pine, balsam fir, red spruce, and white spruce. The soils have fair or poor suitability for northern hardwoods. Machine planting is especially difficult in areas where bedrock is near the surface. The rate of seedling mortality is high on these soils.

Slope and the depth to bedrock limit these soils for nonfarm use. The bedrock, however, is rippable with light equipment.

The capability subclass is IIIe.

ThD—Thorndike-Winnecook complex, 15 to 25 percent slopes. This moderately steep unit consists of 55 percent shallow, somewhat excessively drained Thorndike soils and 25 percent moderately deep, well drained Winnecook soils. The Thorndike and Winnecook soils are so intermingled that it was not practical to map them separately. The areas are on southeast-facing slopes of upland ridges. Slopes are generally smooth and hilly and are 100 to 300 feet long. Most areas are elongated and range from 4 to 20 acres. Exposed bedrock makes up as much as 1 percent of the surface of some areas.

Typically, the Thorndike soils have a surface layer of dark brown slaty silt loam 6 inches thick. The subsoil is 13 inches thick. It is reddish brown slaty silt loam in the upper part and dark brown slaty loam in the lower part. Dark gray phyllite bedrock is at a depth of 19 inches.

Typically, the Winnecook soils have a surface layer of dark yellowish brown silt loam 9 inches thick. The subsoil is brown and dark yellowish brown slaty silt loam 19 inches thick. The substratum is light olive brown very slaty silt loam to a depth of 34 inches. Phyllite bedrock is at a depth of 34 inches.

Included with these soils in mapping are areas with slopes of more than 25 percent. Also included are small areas of well drained Bangor soils, moderately well drained to somewhat poorly drained Dixmont soils, and very poorly drained Borosaprists. The Bangor and Dixmont soils are in low areas. The Borosaprists are in depressions between shallow areas and moderately deep areas. Some areas are similar to these Thorndike soils but have a surface layer of silt loam, loam, or slaty loam; some are similar to these Winnecook soils but have surface layer of loam, slaty silt loam, or slaty loam. Included areas make up about 20 percent of the unit.

These Thorndike soils have moderate permeability. The available water capacity is low or moderate, depending on the depth to bedrock. These Winnecook soils have moderate permeability, and the available water capacity is moderate. Surface runoff is rapid on both soils, and the erosion hazard is very severe. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches in the Thorndike soils and 20 to 40 inches in the Winnecook soils.

Most areas of this complex are used for woodland. Some areas are used for hay and pasture. A few small areas are in cultivated crops.

Slope and the depth to bedrock make this complex very poorly suited to cultivated crops. Deep cultivation is restricted in the shallow areas. Stripcropping, terracing, contour farming, and using winter cover crops are practices that help to control erosion but are difficult to establish and manage.

This complex is poorly suited to hay and pasture. Slope is the major limitation. Overgrazing causes erosion, and compaction occurs in the areas that are grazed when wet. Plowing and reseeding to establish pastures is difficult because of slope and the depth to bedrock.

This complex is suited to woodland, especially to shallow-rooted trees such as eastern white pine, balsam fir, red spruce, and white spruce. The suitability is fair or poor for northern hardwoods. Controlling erosion on skid trails and roads is a major management concern. Slope limits the use of heavy equipment, and slope and the depth to bedrock limit machine planting. The rate of seedling mortality is high on these soils.

Slope and the depth to rock limit these soils for nonfarm use. The bedrock, however, is rippable with light equipment.

The capability subclass is IVe.

TkB—Thorndike-Rock outcrop complex, 3 to 8 percent slopes. This gently sloping unit consists of 55 percent shallow, somewhat excessively drained Thorndike soils and 25 percent areas of exposed bedrock. The Thorndike soils and exposed rock are in such an intermingled pattern that it was not practical to map them separately. The areas of the unit are generally on the tops and southeast-facing slopes of ridges. Slopes are generally smooth or undulating and are 100 to 200 feet long. Most areas are oblong or round and range from about 4 to 50 acres or more. Stones cover up to 15 percent of the surface of some areas.

Typically, the Thorndike soils have a surface layer of dark brown slaty silt loam 6 inches thick. The subsoil is 13 inches thick. It is reddish brown slaty silt loam in the upper part and dark brown slaty loam in the lower part. Dark gray bedrock is at a depth of 19 inches.

Included with this complex in mapping are small, low areas of moderately deep Winnecook soils, well drained Bangor soils, moderately well drained to somewhat poorly drained Dixmont soils, poorly drained Monarda soils, and very poorly drained Borosaprists. The Borosaprists are in depressions between shallow areas. Also included are areas of soils that are less than 10 inches deep to bedrock. Some areas are similar to the Thorndike soils in this unit but have a surface layer of loam, slaty loam, or slaty silt loam. Included areas make up 20 percent of the unit.

These Thorndike soils have moderate permeability. The available water capacity is low or moderate, depending on the depth to bedrock. Surface runoff is slow, and the erosion hazard is moderate. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches in the Thorndike soils.

Most of the acreage of this complex is used for woodland. A small amount is used for hay and pasture.

The depth to bedrock and droughtiness make this complex very poorly suited to farming. The depth to bedrock and the areas of exposed rock make the complex poorly suited to woodland. The rate of seedling mortality is high, and uprooting is a hazard during windy periods because of the restricted rooting depth. Machine planting is not practical on this unit.

The depth to bedrock is the major limitation of this unit for nonfarm use. The bedrock, however, is rippable with light equipment.

The capability subclass is VIs.

TkC—Thorndike-Rock outcrop complex, 8 to 15 percent slopes. This sloping unit consists of 50 percent shallow, somewhat excessively drained Thorndike soils and 30 percent areas of exposed bedrock. The areas of the unit are generally along southeast-facing slopes of large ridges, on ridgetops, and on low-lying ridges. Slopes are generally smooth or rolling and are about 100 to 500 feet long. Most areas are oblong, elongated, or round and range from about 4 to 60 acres. Stones cover as much as 15 percent of the surface of some areas.

Typically, the Thorndike soils have a surface layer of dark brown slaty silt loam 6 inches thick. The subsoil is 13 inches thick. It is reddish brown slaty silt loam in the upper part and dark brown slaty loam in the lower part. Dark gray bedrock is at a depth of 19 inches.

Included in mapping are small, low areas of moderately deep Winnecook soils, well drained Bangor soils, moderately well drained to somewhat poorly drained Dixmont soils, poorly drained Monarda Soils, and very poorly drained Borosaprists. The Borosaprists are in depressions. Also included are areas of soils that are less than 10 inches deep to bedrock. Some areas are similar to the Thorndike soils in this unit but have a surface layer of loam or slaty loam. Included areas make up about 20 percent of the unit.

These Thorndike soils have moderate permeability. The available water capacity is low or moderate, depending on the depth to bedrock. Surface runoff is medium, and the erosion hazard is moderate. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches in the Thorndike soils.

Most of the acreage of this complex is used for woodland. A small amount is used for hay and unimproved pasture.

The depth to bedrock and slope make this complex very poorly suited to farming. The depth to bedrock and the areas of exposed rock make the complex poorly suited to woodland. The rate of seedling mortality is high, and uprooting is a hazard during windy periods because of the restricted rooting depth. Machine planting is not practical on this unit.

The depth to bedrock and slope are the major limitations of the unit for nonfarm use. The bedrock, however, is rippable with light equipment.

The capability subclass if VIs.

TkE—Thorndike-Rock outcrop complex, 15 to 45 percent slopes. This moderately steep to steep unit consists of 45 percent shallow, somewhat excessively drained Thorndike soils and 30 percent areas of exposed bedrock. The Thorndike soils and the exposed bedrock are in such an intermingled pattern that it was not practical to map them separately. The areas of the unit are generally along southeast-facing slopes of ridges, on ridgetops, and on low-lying ridges. Slopes are generally smooth or rolling and are 100 to 200 feet long. Most areas are oblong or round and range from about 4 to 50 acres. Stones cover up to 15 percent of some areas.

Typically, the Thorndike soils have a surface layer of dark brown slaty silt loam 6 inches thick. The subsoil is 13 inches thick. It is reddish brown slaty silt loam in the upper part and dark brown slaty loam in the lower part. Dark gray bedrock is at a depth of 19 inches.

Included with this complex in mapping are small, low areas of moderately deep Winnecook soils, well drained Bangor soils, moderately well drained to somewhat poorly drained Dixmont soils, and poorly drained Monarda soils. Also included are areas of Thorndike-Rock outcrop complex with slopes of more than 45 percent and areas of soils that are less than 10 inches deep to bedrock. Some areas are similar to the Thorndike soils in this unit but have a surface layer of loam, slaty loam, or slaty silt loam. Included areas make up about 25 percent of the unit.

These Thorndike soils have moderate permeability. The available water capacity is low or moderate, depending on the depth to bedrock. Surface runoff is rapid, and the erosion hazard is severe. Rooting and water movement are restricted by bedrock at a depth of 10 to 20 inches in the Thorndike soils.

Most of the acreage of this complex is used for woodland. A small amount is used for unimproved pasture.

The depth to bedrock and slope make this complex very poorly suited to farming. The complex is poorly

suited to woodland. The depth to bedrock, the areas of exposed rock, and, to a lesser extent, slope are the main limitations. Slope limits the use of equipment. The rate of seedling mortality is high, and uprooting is a hazard during windy periods.

Slope and the depth to bedrock are the major limitations of the unit for nonfarm use. The bedrock, however, is rippable with light equipment.

The capability subclass is VIIs.

TrB—Tunbridge-Lyman complex, 3 to 8 percent slopes. This gently sloping unit consists of 55 percent moderately deep, well drained Tunbridge soils and 25 percent shallow, somewhat excessively drained Lyman soils. The Tunbridge soils and Lyman soils are so intermingled that it was not practical to map them separately. The areas are on glaciated upland ridges and on low coastal ridges. Slopes are generally smooth and convex and are about 100 to 500 feet long. Most areas are oblong or round and range from about 4 to 60 acres. Exposed bedrock covers up to 1 percent of some areas.

Typically, the Tunbridge soils have a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is dark brown fine sandy loam 14 inches thick. The substratum is olive brown fine sandy loam to a depth of 29 inches. Bedrock is at a depth of 29 inches.

Typically, the Lyman soils have a surface layer of very dark brown fine sandy loam 8 inches thick. The subsoil is dark brown and light olive brown fine sandy loam 11 inches thick. Bedrock is at a depth of 19 inches.

Included with this complex in mapping are small, low areas of well drained Marlow soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils and high areas of soils that are less than 10 inches deep to bedrock. Also included are small areas of moderately deep Masardis Variant soils along streams, very poorly drained Borosaprists between shallow areas, and medium textured Boothbay and Swanville soils in coastal areas and some low-lying inland valleys. Some areas are similar to the Tunbridge and Lyman soils in this unit but have a surface layer of silt loam, very fine sandy loam, loam, or sandy loam. Included areas make up about 20 percent of the unit.

These Tunbridge and Lyman soils have moderately rapid permeability and low to moderate available water capacity, depending on the depth to bedrock. Surface runoff is slow or medium, and the erosion hazard is slight or moderate. Rooting and water movement are restricted by bedrock at a depth of 20 to 40 inches in the Tunbridge soils and 10 to 20 inches in the Lyman soils.

Many areas of this complex are used for woodland. Some areas are used for hay, pasture, cultivated crops, lowbush blueberries, and nonfarm development. Most of the cultivated areas are used for silage corn and a few for potatoes or small gardens.

This complex has fair suitability for most cultivated crops. The depth to bedrock and droughtiness during the growing season are the major limiting factors. Areas that are moderately deep to bedrock have better suitability for silage corn than do the shallow areas. Irrigation is often needed during dry periods. Using winter cover crops, contour farming, and stripcropping will help to control erosion.

This complex has fair to good suitability for hay and pasture; the areas of Tunbridge soils are better suited than are the areas of Lyman soils. Overgrazing causes erosion and causes compaction if the soil is wet.

This complex has good to fair suitability for woodland, including most northern hardwoods and eastern white pine. Uprooting is a hazard during windy periods in areas where bedrock is at a depth of less than 20 inches.

The depth to bedrock is the main limitation of this unit for nonfarm use.

The capability subclass is IIe.

TrC—Tunbridge-Lyman complex, 8 to 15 percent slopes. This sloping unit consists of 50 percent moderately deep, well drained Tunbridge soils and 35 percent shallow, somewhat excessively drained Lyman soils. The Tunbridge and Lyman soils are so intermingled that it was not practical to map them separately. The unit is on upland ridges and low coastal ridges. Slopes are generally smooth and convex and are about 100 to 500 feet long. Most areas are oblong or round and range from about 4 to 100 acres. Exposed bedrock covers up to 1 percent of some areas.

Typically, the Tunbridge soils have a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is dark brown fine sandy loam 14 inches thick. The substratum is olive brown fine sandy loam to a depth of 29 inches. Bedrock is at a depth of 29 inches.

Typically, the Lyman soils have a surface layer of very dark brown fine sandy loam 8 inches thick. The subsoil is dark brown and light olive brown fine sandy loam 11 inches thick. Bedrock is at a depth of 19 inches.

Included with this complex in mapping are small, low areas of well drained Marlow soils, moderately well drained Peru soils, and somewhat poorly drained to poorly drained Brayton soils and high areas of soils that are less than 10 inches deep to bedrock. Also included are small areas of moderately deep Masardis Variant soils along streams, very poorly drained Borosaprists in pockets between shallow areas, and medium textured Boothbay and Swanville soils in coastal areas and some low-lying inland valleys. Some areas are similar to the Tunbridge and Lyman soils in this unit but have a surface layer of silt loam, very fine sandy loam, sandy loam, or loam. Included areas make up about 15 percent of the unit.

These Tunbridge and Lyman soils have moderately rapid permeability and low to moderate available water capacity, depending on the depth to bedrock. Surface runoff is medium, and the erosion hazard is moderate or severe. Rooting and water movement are restricted by bedrock at a depth of 20 to 40 inches in the Tunbridge soils and 10 to 20 inches in the Lyman soils.

Many areas of this complex are used for woodland. Some areas are used for hay, pasture, cultivated crops, lowbush blueberries, and nonfarm development. Most of the cultivated areas are used for silage corn or small gardens.

This complex is poorly suited to most cultivated crops but has fair suitability for silage corn and potatoes. Slope and, to a lesser extent, the depth to bedrock and droughtiness during the growing season are the limiting factors for cultivation. Irrigation is often needed during dry periods. Using winter cover crops, contour farming, terracing, and stripcropping will help to control erosion.

This complex has fair to good suitability for hay and pasture; the Tunbridge soils are better suited than are the Lyman soils. The depth to bedrock and droughtiness during the growing season are the major limitations for hay and pasture. Overgrazing causes erosion and causes compaction if the soil is wet.

This complex has good to fair suitability for woodland, including most northern hardwoods and eastern white pine. Uprooting is a hazard during windy periods in areas where bedrock is at a depth of less than 20 inches. Placing logging roads on the contour helps to control the erosion hazard.

The depth to bedrock and slope are the major limitations of this unit for nonfarm use.

The capability subclass is IIIe.

TrD—Tunbridge-Lyman complex, 15 to 25 percent slopes. This moderately steep unit consists of 45 percent moderately deep, well drained Tunbridge soils and 40 percent shallow, somewhat excessively drained Lyman soils. The Tunbridge soils and Lyman soils are so intermingled that it was not practical to map them separately. The unit is on upland ridges and low coastal ridges. Slopes are generally smooth and convex and are about 100 to 300 feet long. Most areas are oblong or round and range from about 4 to 80 acres. Exposed bedrock covers up to 1 percent of some areas.

Typically, the Tunbridge soils have a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is dark brown fine sandy loam 14 inches thick. The substratum is olive brown fine sandy loam to a depth of 29 inches. Bedrock is at a depth of 29 inches.

Typically, the Lyman soils have a surface layer of very dark brown fine sandy loam 8 inches thick. The subsoil is dark brown and light olive brown fine sandy loam 11 inches thick. Bedrock is at a depth of 19 inches.

Included with this complex in mapping are small, low areas of well drained Marlow soils and moderately well drained Peru soils and high areas of soils that are less than 10 inches deep to bedrock. Also included are small areas of moderately deep Masardis Variant soils along streams, medium textured Boothbay and Swanville soils in coastal areas and some low-lying inland valleys, and small areas of soils with slopes of more than 25 percent. Some areas are similar to the Tunbridge and Lyman soils in this unit but have a surface layer of silt loam, very fine sandy loam, sandy loam, or loam. Included areas make up about 15 percent of the unit.

These Tunbridge and Lyman soils have moderately rapid permeability and low to moderate available water capacity, depending on the depth to bedrock. Surface runoff is medium, and the erosion hazard is severe or very severe. Rooting and water movement are restricted by bedrock at a depth of 20 to 40 inches in the Tunbridge soils and 10 to 20 inches in the Lyman soils.

Many areas of this complex are used for woodland. Some areas are used for hay and pasture, lowbush blueberries, and nonfarm development.

Slope makes this complex very poorly suited to cultivated crops. Using winter cover crops, contour farming, terracing, and stripcropping are practices that help to control erosion but that are difficult to establish and maintain.

This complex has poor suitability for hay and pasture. Slope and erosion hazard and, to a lesser extent, the depth to bedrock and droughtiness during the growing season are the main limitations. The suitability for hay and pasture is better in areas where bedrock is at a depth of more than 20 inches. Overgrazing causes erosion and is a major management concern.

This complex has fair suitability for woodland, especially for northern hardwoods and eastern white pine. Uprooting is a hazard during windy periods in areas where bedrock is at a depth of less than 20 inches. Erosion control on skid trails during harvesting is a major management concern, and slope limits the use of equipment for management and harvesting.

Slope and the depth to bedrock are the major limitations of the unit for nonfarm use.

The capability subclass is IVe.

Ud—Udorthents-Urban land complex. This complex consists of 50 percent fill material that has been placed on poorly drained to somewhat excessively drained soils and 30 percent areas largely covered by asphalt, buildings, concrete, or other impervious surfaces. The areas of the unit are sites for buildings, parking lots, roads, railroads, airports, and other nonfarm uses. The areas range from about 3 to 70 acres. Most range from nearly level on top to very steep on the sides.

The source and thickness of the fill is variable, but the material is at least 20 inches. Some areas are sandy, gravelly, loamy, or clayey materials or bedrock fragments. Some areas are waste materials that have been mixed or covered with soil material.

Included with this unit in mapping are areas of material from razed buildings, some of which is mixed with soil material. Also included are small areas of soils that have not been significantly altered by filling or excavation. Included areas make up about 20 percent of the unit.

The characteristics of this unit are so variable that onsite investigation is needed to determine the suitability of the unit for any proposed use.

This unit is not assigned to a capability subclass.

prime farmland

Prime farmland is one of several kinds of important farmlands defined by the U.S. Department of Agriculture. It is of importance in providing for the short- and long-range needs of the Nation for food and fiber. The supply of quality farmland is limited, and the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, must encourage and facilitate the use of our Nation's prime farmland with wisdom and foresight.

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to producing food, feed, forage, and fiber crops. It has the soil quality, growing season, and moisture supply needed to economically produce a sustained high yield of crops when the soil is treated and managed using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment.

Prime farmland may now be in crops, pasture, woodland, or other land, but not urban and built-up land or water areas. It must either be used for producing food or fiber or be available for these uses.

Prime farmland usually has an adequate and dependable supply of moisture from precipitation or irrigation. It also has favorable temperature and growing season and an acceptable level of acidity. It has few or no rocks and is permeable to water and air. Prime farmland is not excessively erodible or saturated with water for long periods and is not flooded during the growing season. The slope of prime farmland ranges mainly from 0 to 6 percent. For more detailed information on the criteria for prime farmland contact the local office of the Soil Conservation Service.

About 58,700 acres, or approximately 12.5 percent of Waldo County, meets the soil requirements for prime farmland. The areas are scattered throughout the county, but most are in the central part and extend toward the northeastern part, mainly in map units 1, 2, 3, and 5 of the general soil map. Much of this prime farmland is used for crops. Crops grown on this land are primarily hay, corn silage, and small grains and a small acreage of potatoes, dry beans, or other cultivated crops. Other areas of prime farmland are used for pasture, but the majority is in woodland.

A continuing trend in land use in some parts of the county has been the conversion of some prime farmland to residential or industrial uses. The loss of prime farmland to uses other than food and fiber production puts pressure on marginal lands for food and fiber production. These lands are less economical to use, are more erodible, more droughty, and wetter, and are more difficult to cultivate and less productive.

Soil map units that make up prime farmland in Waldo County are listed in this section. This list does not constitute a recommendation for a particular land use. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps in the back of this publication. The soil qualities that affect use and management are described in the section "Detailed soil map units."

The map units that meet the soil requirements for prime farmland are:

BaB—Bangor silt loam, 3 to 8 percent slopes
BoB—Boothbay silt loam, 3 to 8 percent slopes
DxB—Dixmont silt loam, 3 to 8 percent slopes
ElB—Eldridge fine sandy loam, 3 to 8 percent slopes
MaB—Madawaska fine sandy loam, 3 to 8 percent slopes
MbB—Marlow fine sandy loam, 3 to 8 percent slopes
PaB—Peru fine sandy loam, 3 to 8 percent slopes
Py—Podunk fine sandy loam

use and management of the soils

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 avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, soil conservationists, engineers, and others collect extensive field data about the nature and behavior 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 woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. 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 sand and gravel, 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.

crops and pasture

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils in the survey area are identified, the system of land capability classification used by the Soil Conservation Service is explained, and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems 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 from the local office of the Soil Conservation Service or the Cooperative Extension Service.

The 1974 Census of Agriculture shows 31,396 acres of crops and pasture in Waldo County. Of that total, 7,354 acres was used for pasture; 20,843 acres for harvested crops, mainly hay; and 3,199 acres for all other cropland (*7*).

Providing drainage is the major management concern on about two-thirds of the acreage used for cropland in Waldo County. Inadequate natural drainage is commonly caused by a seasonal high water table.

The seasonal high water table in most soils is a result of their position in the landscape: The soils are primarily at the lower elevations, and the amount of water in the soils is increased by the surface runoff from higher areas. Some gently sloping soils have a seasonal high water table because the rate of runoff is slow and more water infiltrates the soil. Slow or moderate permeability in the subsoil and substratum or the presence of a compact substratum can also cause a seasonal high water table. The Marlow soils, for example, are well drained, but restricted permeability in the substratum causes them to have a seasonal high water table.

Soils that have a seasonal high water table tend to dry and warm slowly in the spring, thus delaying planting. Soils that have a high water table during the growing season are very poorly suited to crop production. Examples of such soils are very poorly drained Biddeford, Saco, and Searsport soils and Borosaprists, Sulfaquents, and Sulfihemists.

The design of surface and subsurface drainage systems varies with the kind of soil. A combined surface and subsurface system is needed in most areas of the moderately well drained, somewhat poorly drained, or poorly drained soils which are intensively farmed. Small areas of wet soils along drainageways and in swales are commonly within areas of well drained or moderately well drained soils. These wet areas commonly require supplemental drainage.

Erosion is a major concern on about one-third of the cropland in Waldo County, mainly on soils with slopes of more than 3 percent. For example, Bangor, Marlow, Tunbridge, Peru, and Winnecook soils have slopes of more than 3 percent.

Erosion of the soils is damaging for two reasons: First, the productivity of the soil is reduced as the surface

layer—where most of the available nutrients and the organic material are stored—is lost and part of the subsoil becomes incorporated into the plow layer; second, erosion causes pollution of streams by sediment, some of which carries animal wastes or agricultural chemicals, reducing water quality for municipal use, recreation, and fish and wildlife.

Loss of the surface soil is especially damaging to soils with a clayey subsoil or substratum, such as Boothbay and Eldridge soils, and to soils that have bedrock near the surface or have a layer in or below the subsoil which restricts the depth of the root zone. The Marlow and Peru soils, for example, have a compact substratum. The Tunbridge, Winnecook, Lyman, and Thorndike soils have bedrock near the surface.

Contour tillage, terracing, minimum tillage, stripcropping, and stripcropping with diversions will help to control erosion. Further, a cropping system that keeps plant cover on the soil for extended periods can reduce erosion. Using pasture and hay, including legumes, in a cropping system helps to control erosion on sloping land and provides nitrogen and improved tilth for the following crop.

Fall plowing is generally not a good practice on the soils in Waldo County because of the possibility of erosion during the winter and spring. Also, about one-half of the tilled cropland consists of sloping soils that are subject to excessive erosion if they are not protected by a winter cover crop, such as winter rye.

Fertility is naturally low in the unlimed upland soils of Waldo County, which are mainly extremely acid to strongly acid. The soils on flood plains, such as Podunk, Limerick, and Rumney soils, range from very strongly to slightly acid. They generally have more plant nutrients than do most upland soils.

Most of the soils in Waldo County used for cropland have had many applications of lime and fertilizer, altering the natural fertility and acidity of the soils. Most soils that have never been limed require substantial applications of lime to decrease acidity sufficiently for alfalfa and other crops that require less acid soils. Available phosphorus and potash levels are naturally low in most of these soils.

The organic matter in a soil is a major source of nitrogen and helps to maintain tilth. Organic matter increases the water intake rate, reduces erosion, and helps to prevent surface crusting. Most of the soils used for cropland in Waldo County have a surface layer of loam, silt loam, or fine sandy loam and originally had an adequate organic matter content. After many years of continuous cropping, many of these soils are low in organic matter content in the surface layer and generally have weak structure. Intense rainfall causes the formation of a crust on the surface of the soils, and the crust reduces infiltration and increases runoff. Regular additions of crop residue and manure, for instance, help to increase the organic matter content of the soils.

Field crops suited to many of the soils in the survey area are the commonly grown row crops: silage corn, high-moisture corn, grain corn, sweet potatoes, and dry beans. Timothy and bromegrass are the commonly grown crops used for hay silage and green feed. Alfalfa, orchardgrass, birdsfoot trefoil, clover, and millet also are used for hay, hay silage, and pasture.

Specialty crops grown in Waldo County include vegetables, small fruits, and tree fruits. A small acreage is used for strawberries, raspberries, highbush blueberries, and vegetable gardens. Some areas are used for native lowbush blueberries. Apples are the major tree fruit grown in the county.

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 yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered. The acreage of some crops is increasing, but yield data for such crops are not available. High-moisture corn is an example. It is estimated that 5 bushels of high-moisture corn can be expected for every ton of corn silage.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, 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 insures the smallest possible loss.

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 Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils.

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 grouping does

not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider 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 woodland and engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have slight limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

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, IIe. The letter *e* shows that the main limitation is 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 I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe-4 or IIIe-6.

The acreage of soils in each capability class and subclass is shown in table 6. The capability classification of each map unit is given in the section "Detailed soil map units."

woodland management and productivity

William B. Calderwood, district forester, Maine Forest Service, assisted with this section.

Forestland covers about 76 percent of the land area of Waldo County, or about 359,200 acres. Of that total, 31 percent is the spruce-fir forest type, 25 percent is white pine-red pine-hemlock, 20 percent is elm-ash-red maple, 11 percent is maple-beech-birch, 7 percent is aspen-birch, and 6 percent is oak and ash-pine. Commercial-size wood makes up about 39 percent of the total commercial woodland.

A 1971 survey shows that 32 million board-feet of softwood sawtimber and 242 million board-feet of hardwood sawtimber stood on the commercial forestland in Waldo County. In 1978, slightly over 10 million board-feet of softwood and slightly less than 3 million board-feet of hardwood sawtimber was cut in the county. The major wood-related products are building material, lobster traps, furniture, pallets, pulp and paper, and fuelwood.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination (woodland suitability) symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 3 indicates good productivity; 4, fair; and 5, poor. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *x* indicates stoniness or rockiness; *w*, excessive water in or on the soil; *d*, restricted root depth; *s*, sandy texture; and *r*, steep slopes. The letter *o* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: x, w, d, s, and r.

In table 7, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree to which the soil affects the mortality of tree seedlings. Plant competition is not considered in the ratings. The ratings apply to seedlings from good stock that are properly planted during a period of sufficient rainfall. A rating of *slight* indicates that the expected mortality is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Ratings of *windthrow hazard* are based on soil characteristics that affect the development of tree roots and the ability of the soil to hold trees firmly. A rating of *slight* indicates that a few trees may be blown down by normal winds; *moderate*, that some trees will be blown down during periods of excessive soil wetness and strong winds; and *severe*, that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This 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 woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suited to the soils and to commercial wood production.

recreation

The major public recreation areas in Waldo County are owned and operated by the State of Maine. The major State parks are Camden Hills State Park, Lake St. George State Park, Moose Point State Park in Searsport, and Warren Island State Park on Penobscot Bay. Some other State-owned or other publicly owned areas are Fort Pownal in Stockton Springs, Fort Knox in Prospect, and several town-owned areas on lake shores or on the coast. All these areas have picnic areas, and some have swimming and boating, camping, horseback riding, or hiking trails.

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings 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 sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreation use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

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 best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a firm, dense layer should be considered.

Paths and trails for hiking, horseback riding, and bicycling should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

wildlife habitat

By Robert J. Wengrzynek, biologist, Soil Conservation Service.

Soils affect the type, amount, and quality of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. Wildlife habitat can be created or improved by managing the existing plant cover, or by promoting the natural establishment of desirable plants, or by planting vegetation which is suitable for habitat and adapted to the climate.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be useful in selecting soils that are suitable for creating, improving, or maintaining specific elements of wildlife habitat; and in determining the degree of management needed. Knowledge of habitat and soil relationships can be used in planning farms, rural residences, parks, wildlife refuges, nature study areas, and other land management for wildlife.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, rye, sorghum, and sunflower.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are ryegrass, redtop, flatpea, fescue, lovegrass, vetch, bromegrass, clover, alfalfa, bluegrass, switchgrass, timothy, and trefoil.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are meadow rye, thistle, mustard, fescue, goldenrod, asters, hawkweed, and milkweed.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, the available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, maple, beech, birch, alder, willow, apple, hawthorn, blackberry, sumac, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are dogwood, mountain-ash, blueberry, raspberry, elderberry, Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse, seeds, and cones. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and hemlock.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, burreed, wildrice, cattails, cordgrass, rushes, and sedges.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild

herbaceous plants. The wildlife attracted to these areas include bobolink, hawks, deer, meadowlark, field sparrow, snowshoe hare, red fox, and woodchuck.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include ruffed grouse, woodcock, songbirds, woodpeckers, squirrels, coyote, red fox, raccoon, deer, moose, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, rails, herons, shorebirds, muskrat, mink, otter, and beaver.

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. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil properties" section.

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 within a depth of 5 or 6 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 need to 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 grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, 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 kind 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 (1) evaluate the potential of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of gravel, sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and (8) 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

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or to a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. Thc ratings are based on soil properties, site

features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, depth to bedrock, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

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 stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock, the available water capacity in the upper 40 inches, and the content of sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

sanitary facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

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 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to effectively filter the effluent. Many local ordinances require that this material be of a certain thickness.

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. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive 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 and bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the 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.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground

water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, and soil reaction affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

construction materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

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 soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high 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 engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability 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 engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

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.

Plant growth is affected by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, water table, rock fragments, and bedrock.

Soils rated *good* have friable loamy material to a depth of at least 40 inches. They are free of stones and

cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel or stones, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

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 13 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 ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, terraces and diversions, and grassed waterways.

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. 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.

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 or organic matter. 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 and permeability of the aquifer. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity in the root zone. Availability of drainage outlets is not considered in the ratings.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. Low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

soil properties

The estimates of soil and water features, listed in tables, are explained on the following pages.

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 excavations 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 grain-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 characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

engineering index properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil series and their morphology."

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 a soil contains particles coarser than sand, 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 grain-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, SP-SM.

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 grain-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.

Rock fragments larger than 3 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.

The estimates of grain-size distribution, liquid limit, and plasticity index are usually rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

physical and chemical properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are

given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, and plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major 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 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. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water 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, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

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 major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. 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.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major 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.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

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) 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 (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

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.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

In table 15, the estimated content of organic matter of the plow layer is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. A dash is given for those soils that are not likely to be cultivated.

The content of organic matter of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

soil and water features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils 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 permanent high water table, soils that have a 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.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt and water in swamps and marshes are not considered flooding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, common, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *common* that it is likely under normal conditions; *occasional* that it occurs on an average of once or less in 2 years; and *frequent* that it occurs on an average of more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; November-May, for example, means that flooding can usually occur during the period November through May.

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 absence of distinctive horizons that form in soils that are not subject to flooding.

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.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table—that is, perched or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An apparent water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A perched water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Potential 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 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 mainly to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves 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 creates a severe corrosion environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel 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 is also 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

The system of soil classification used by the National Cooperative Soil Survey has six categories (*6*). 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. In table 17, the soils of the survey area are classified according to the system. The categories are defined in the following paragraphs.

ORDER. Ten 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 Spodosol.

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 Orthod (*Orth*, meaning the central concept or most representative, plus *od*, from Spodosol).

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; 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 Haplorthods (*Hapl*, meaning minimal horizonation, plus *orthods*, the suborder of the Spodosols that have a horizon with an accumulation of iron, aluminum, and humus).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic 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 known kind of soil. 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 Haplorthods.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly 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, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is coarse-loamy, mixed, frigid Typic Haplorthods.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

laboratory data

Samples of Boothbay and Swanville soils were taken at selected sites in this survey area and were analyzed in the laboratory. Two sites of Boothbay and three sites of Swanville soil were sampled. Data obtained from these samples are published in Technical Bulletin 94, *Chemical and Physical Properties of the Boothbay, Brayton, Croghan, Monarda, Plaisted, Scantic, and Swanville Soil Mapping Units*, by R. V. Rourke and K. A. Schmidt, Life Sciences and Agriculture Experiment Station, University of Maine, Orono, Maine 04473. Boothbay and Swanville soils represent 8.2 and 5.0 percent of the county respectively.

soil series and their morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other 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 (*5*). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (*6*). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series. The relationship of each series to

its position, parent material, and drainage is shown in table 18.

The map units of each soil series are described in the section "Detailed soil map units."

Adams series

The Adams series consists of deep, somewhat excessively drained soils. The soils formed in glaciofluvial-deposited sand derived from crystalline rock. Adams soils are on terraces, kames, deltas, outwash plains, and old beaches. Slopes range from 3 to 25 percent but are dominantly 3 to 15 percent.

Adams soils are associated on the landscape with Boothbay, Eldridge, Madawaska, Masardis, and Searsport soils. Adams soils are better drained than Boothbay, Eldridge, Madawaska, or Searsport soils, and have fewer coarse fragments than Masardis soils.

Typical pedon of Adams loamy fine sand, 3 to 8 percent slopes, in an idle field, in the town of Unity, 200 feet southeast of Pond Cemetery, at Unity Center:

Ap—0 to 8 inches, dark brown (10YR 4/3) loamy fine sand, light yellowish brown (2.5Y 6/4) dry; weak fine granular structure; friable; many fine roots; strongly acid; clear wavy boundary.

B21ir—8 to 10 inches, dark yellowish brown (10YR 4/4) loamy fine sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

B22—10 to 15 inches, yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

B3—15 to 21 inches, olive brown (2.5Y 4/4) loamy sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

C—21 to 60 inches, grayish brown (2.5Y 5/2) sand; single grain; loose; strongly acid.

The solum thickness ranges from 20 to 30 inches. These soils are typically free of gravel, but some pedons are up to 5 percent gravel to a depth of 20 inches and up to 10 percent below that depth. Unless limed, the soils are very strongly acid or strongly acid in the solum and very strongly acid to medium acid in the substratum.

The Ap horizon has hue of 10YR, value of 3 through 5, and chroma of 2 or 3. In undisturbed areas a very dark grayish brown or black O2 horizon overlies an A2 horizon. The A2 horizon has hue of 5YR through 10YR, value of 5 through 7, and chroma of 1 or 2.

The B2ir and B2 horizons have hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6. The B3 horizon has hue of 2.5Y, value of 4 through 6, and chroma of 2 or 4. It is loamy fine sand, or loamy sand in the upper part and loamy sand, fine sand or sand in the lower part.

The C horizon has hue of 2.5Y, value of 5, and chroma of 2 through 4. It is sand or coarse sand.

Bangor series

The Bangor series consists of deep, well drained soils on glacial till plains and ridges in the northern part of the county. The soils formed in glacial till derived mainly from phyllite or slate. Slopes range from 3 to 25 percent but are dominantly 8 to 15 percent.

Bangor soils are associated on the landscape with Dixmont, Monarda, Thorndike, and Winnecook soils. Bangor soils are better drained than Dixmont or Monarda soils and are deeper to bedrock than Thorndike or Winnecook soils.

Typical pedon of Bangor silt loam, in an area of Bangor very stony silt loam, 8 to 15 percent slopes, in a wooded area in the town of Winterport, 1,000 feet east of the north end of the north-south runway at Winterport Airport:

O1—3 to 2 inches, litter of hardwood leaves and twigs.

O2—2 inches to 0, black (5YR 2/1) partially decomposed and well decomposed forest litter; abrupt wavy boundary.

A1—0 to 1 inch, dark grayish brown (10YR 4/2) silt loam, gray (10YR 6/1) dry; weak fine and medium granular structure; friable; many fine to coarse roots; 5 percent coarse fragments; strongly acid; abrupt broken boundary.

A2—1 to 3 inches, gray (10YR 6/1) silt loam; weak fine and medium granular structure; friable; many fine to coarse roots; 5 percent coarse fragments; strongly acid; abrupt wavy boundary.

B21ir—3 to 9 inches, dark brown (7.5YR 4/4) silt loam; weak fine and medium granular structure; friable; many fine and few medium roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.

B22—9 to 14 inches, dark yellowish brown (10YR 4/4) gravelly silt loam; weak fine and medium granular structure; friable; few fine roots; 20 percent coarse fragments; strongly acid; clear wavy boundary.

B23—14 to 21 inches, light olive brown (2.5Y 5/4) gravelly silt loam; weak fine and medium subangular blocky structure; friable; few fine roots; 20 percent coarse fragments; strongly acid; clear wavy boundary.

B24—21 to 26 inches, light yellowish brown (2.5Y 6/4) gravelly silt loam; weak fine and medium subangular blocky structure; firm; 20 percent coarse fragments; medium acid; clear wavy boundary.

B3—26 to 35 inches, light olive brown (2.5Y 5/4) gravelly silt loam; moderate medium and coarse subangular blocky structure; firm; 15 percent coarse fragments; medium acid; clear wavy boundary.

C—35 to 60 inches, light olive brown (2.5Y 5/4) silt loam; massive; firm; 10 percent coarse fragments; medium acid.

The solum thickness ranges from 18 to 35 inches. The content of rock fragments, dominantly pebbles and

cobblestones, in the profile ranges from 5 to 30 percent, by volume. Unless limed, the soil ranges from extremely acid to medium acid in the solum and is strongly acid or medium acid in the substratum.

The A1 or Ap horizon has hue of 10YR through 5Y, value of 3 or 4, and chroma of 1 through 3. The A2 horizon has hue of 10YR through 5Y, value of 5 or 6, and chroma of 1.

The B2ir horizon has hue of 5YR through 10YR and value and chroma of 3 through 5. The B2 horizon has hue of 7.5YR through 2.5Y, value of 4 through 6, and chroma of 3 through 8. The B3 horizon has hue of 2.5Y, value of 4 through 6, and chroma of 4 or 6. The B horizon is silt loam or loam in the fine-earth fraction.

The C horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 2 through 4. It is silt loam in the fine-earth fraction.

Biddeford series

The Biddeford series consists of deep, very poorly drained soils. The soils formed in marine or lacustrine sediments in depressional areas on lowlands. Slopes range from 0 to 3 percent.

Biddeford soils are on the landscape with Borosaprists and Boothbay, Saco, and Swanville soils. Biddeford soils have a thinner organic surface layer than Borosaprists, are more poorly drained than Boothbay or Swanville soils, and are finer textured than Saco soils.

Typical pedon of Biddeford mucky peat, in hayfield in the city of Belfast, 0.3 mile east of the Belfast-Morrill town line, 800 feet south of Banks Road:

O1—10 to 9 inches, undecomposed grass and moss litter.

O2—9 inches to 0, black (10YR 2/1) mucky peat; moderate fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

A2g—0 to 4 inches, dark greenish gray (5GY 4/1) silty clay loam, gray (5Y 5/1) dry; few fine prominent yellowish brown (10YR 5/8) mottles and root stains; moderate very coarse prismatic structure parting to moderate fine granular; firm; common fine roots; thin continuous greenish gray (5G 5/1) coatings on faces of prisms; slightly acid; clear wavy boundary.

B2g—4 to 24 inches, dark greenish gray (5GY 4/1) silty clay; many fine and medium distinct yellowish brown (10YR 5/6) and grayish brown (2.5Y 5/2) mottles; many fine and medium prominent brown (10YR 5/3) root stains; moderate coarse and very coarse prismatic structure; firm, sticky and plastic; common fine roots along faces of prisms; few fine and very fine pores; thin continuous greenish gray (5BG 5/1) coatings on faces of prisms and in pores; slightly acid; clear wavy boundary.

B3g—24 to 40 inches, gray (5Y 5/1) silty clay; many fine and medium distinct strong brown (7.5YR 5/6) mottles and many coarse distinct dark grayish brown (2.5Y 4/2) mottles; common fine and medium distinct yellowish brown (10YR 5/6) stains around root channels; moderate very coarse prismatic structure; firm, sticky and plastic; few fine pores; thin continuous greenish gray (5BG 5/1) coatings on faces of prisms and in some pores; slightly acid; clear wavy boundary.

Cg—40 to 60 inches, dark greenish gray (5GY 4/1) silty clay; common fine and medium distinct and prominent strong brown (7.5YR 5/6) and olive gray (5Y 5/2) mottles; massive; firm, sticky and plastic; few fine pores; slightly acid.

The solum thickness ranges from 20 to 40 inches. The content of coarse fragments throughout the soil is less than 1 percent, by volume. The soil ranges from strongly acid to slightly acid in the surface horizons, is medium acid or slightly acid in the subsoil, and ranges from slightly acid to mildly alkaline in the substratum.

The O horizon has hue of 5YR through 10YR, value of 2 or 3, and chroma of 0 through 2. The A2g horizon has hue of 5Y or 5GY, value of 3 through 5, and chroma of 1 or 2.

The Bg horizon has hue of 5Y or 5GY, value of 4 through 6, and chroma of 1 or 2. It is dominantly silty clay, but in some pedons it has layers of silty clay loam.

The Cg horizon has hue of 5Y, 5BG, 5GY, 5B, or 5G; value of 4 or 5; and chroma of 0 or 1. It is dominantly silty clay, but in some pedons it has layers of silty clay loam.

Boothbay series

The Boothbay series consists of deep, moderately well drained or somewhat poorly drained soils. The soils formed in water-deposited sediments and are on convex lacustrine plains and marine plains and terraces. Slopes range from 3 to 45 percent but are dominantly 3 to 8 percent.

Boothbay soils are on the landscape with Biddeford, Lyman, Swanville, and Tunbridge soils. Boothbay soils are better drained than Biddeford or Swanville soils and are deeper to bedrock than Lyman or Tunbridge soils.

Typical pedon of Boothbay silt loam, 3 to 8 percent slopes, in a hayfield in the town of Winterport, 100 feet north of Maine Route 139, 0.75 mile southwest of the intersection of Maine Route 139 and Goshen Road:

Ap—0 to 5 inches, dark brown (10YR 3/3) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; many fine and common medium roots; slightly acid; abrupt smooth boundary.

B21—5 to 10 inches, olive brown (2.5Y 4/4) silt loam; weak fine and medium subangular blocky structure parting to weak fine granular; friable; common fine and few medium roots; medium acid; clear wavy boundary.

B22—10 to 16 inches, light olive brown (2.5Y 5/4) silt loam; common fine distinct olive gray (5Y 5/2)

mottles and few medium distinct yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure parting to weak very fine and fine granular; friable; few fine roots; few fine and medium pores; medium acid; gradual wavy boundary.

B3—16 to 22 inches, olive (5Y 4/3) silt loam, pale olive (5Y 6/3) faces of peds; many fine distinct olive gray (5Y 5/2) mottles, and few fine distinct light olive brown (2.5Y 5/6) and yellowish brown (10YR 5/8) mottles; weak thin to thick platy structure parting to weak very fine and fine subangular blocky; friable; few fine roots; few fine pores; medium acid; gradual wavy boundary.

C1—22 to 44 inches, olive (5Y 5/3) silty clay loam, light olive gray (5Y 6/2) faces of prisms; many fine and medium faint light olive gray (5Y 6/2) mottles and few fine distinct light olive brown (2.5Y 5/6) and yellowish brown (10YR 5/8) mottles; strong very coarse prismatic structure parting to weak fine and medium angular blocky; firm; few fine roots along faces of prisms; few fine pores; dark reddish brown (5YR 3/2) oxide coatings on 15 percent of faces of peds within prisms; slightly acid; gradual wavy boundary.

C2—44 to 60 inches, olive (5Y 5/3) silty clay loam, light olive gray (5Y 6/2) faces of prisms; few fine faint light olive gray (5Y 6/2) mottles and few fine distinct light olive brown (2.5Y 5/6) mottles; strong very coarse prismatic structure parting to moderate fine and medium angular blocky; firm; oxide coatings on 60 percent of faces of peds within prisms that have dark reddish brown (5YR 3/2) centers grading to reddish brown (5YR 4/4); slightly acid.

The solum thickness ranges from 18 to 36 inches. Unless limed, the soil is very strongly acid to slightly acid in the solum and medium acid to neutral in the substratum.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 through 4.

The B horizon has hue of 10YR through 5Y, value of 3 through 5, and chroma of 3 through 6. It is mainly silt loam or silty clay loam. In some pedons thin layers of very fine sandy loam or silty clay are in the lower part of the B horizon.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 through 4. It is mainly silt loam or silty clay loam, but thin layers of silty clay, very fine sandy loam, or loamy very fine sand are present in some pedons.

Borosaprists

Borosaprists consist of very poorly drained, ponded, organic soils. The soils formed in highly decomposed plant material derived primarily from mosses, grasses, and herbaceous and woody plants. These soils are in depressions of the upland areas, in basins of old glacial lakes, or in marshes adjacent to existing lakes and streams. Slopes are dominantly less than 1 percent.

Borosaprists are associated in the landscape with very poorly drained Biddeford, Saco, and Searsport soils all of which are mineral soils.

Because of the variability of these soils, a typical pedon is not given. In general, the surface tier is dark reddish brown to black sapric material. The subsurface and bottom tiers are black sapric material.

The thickness of the organic material ranges from 16 inches to over 51 inches, depending on depth to bedrock or mineral material. The soils range from extremely acid to neutral. The content of coarse woody fragments ranges from 0 to 10 percent, by volume.

The surface tier has hue of 5YR through 5Y, value of 0 through 3, and chroma of 0 through 2. It is dominantly sapric material, but some pedons have thin fibric or hemic layers.

The subsurface tier has hue of 5YR through 5Y, value of 2 or 3, and chroma of 1 or 2. It mainly is sapric material but commonly contains thin layers of fibric and hemic material.

Some pedons have a bottom tier with hue of 5YR through 10YR, value of 2 or 3, and chroma of 1 through 3. It is mainly sapric material but commonly contains thin layers of hemic material. In some places it has lenses of fine sandy loam, sand, or silt.

The underlying material is very fine sandy loam, fine sandy loam, sandy loam, loamy sand, sand, silt loam, silty clay loam, or silty clay or is bedrock.

Brayton series

The Brayton series consists of deep, somewhat poorly drained or poorly drained soils. The soils are along drainageways and in nearly level to gently sloping valleys between upland ridges. They formed in compact glacial till derived mainly from schist and gneiss. Slopes range from 0 to 8 percent.

Brayton soils are on the landscape with Lyman, Marlow, Peru, and Tunbridge soils and Borosaprists. Brayton soils are deeper than Lyman or Tunbridge soils, are wetter than Marlow or Peru soils, and are better drained than Borosaprists.

Typical pedon of Brayton fine sandy loam, in an area of Brayton very stony fine sandy loam, 0 to 8 percent slopes, in a wooded area in the town of Brooks, 0.9 mile north of the Waldo-Brooks town line on Maine Route 7 and 1,600 feet west of Maine Route 7:

O2—2 inches to 0, black (10YR 2/1) decomposed organic material; many fine and coarse roots; very strongly acid; abrupt smooth boundary.

A1—0 to 3 inches, very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (2.5Y 6/2) dry; weak fine and medium granular structure; very friable; many fine and coarse roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.

B21g—3 to 8 inches, dark grayish brown (2.5Y 4/2) fine sandy loam; common medium faint light brownish gray (2.5Y 6/2) mottles and few coarse distinct yellowish brown (10YR 5/6) mottles; weak very fine and fine subangular blocky structure; friable; many fine and few medium roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.
B22g—8 to 12 inches, olive gray (5Y 4/2) fine sandy loam; common fine prominent strong brown (7.5YR 5/6) mottles and common fine distinct light brownish gray (2.5Y 6/2) mottles; weak fine subangular blocky structure; friable; many fine and few medium roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.
B3—12 to 19 inches, olive (5Y 4/3) gravelly fine sandy loam; common medium distinct dark yellowish brown (10YR 4/4) and strong brown (7.5YR 5/6) mottles and many fine distinct light brownish gray (2.5Y 6/2) mottles; weak thin and medium platy structure; friable; few fine roots; 15 percent coarse fragments; strongly acid; abrupt wavy boundary.
C1x—19 to 24 inches, olive (5Y 5/3) gravelly fine sandy loam; common medium distinct yellowish brown (10YR 5/6) and olive brown (2.5Y 4/4) mottles and many fine distinct light brownish gray (10YR 6/2) mottles; moderate medium and thick platy structure; very firm, brittle; few fine pores; 20 percent coarse fragments; medium acid; clear wavy boundary.
C2x—24 to 60 inches, olive (5Y 4/3) gravelly sandy loam; common fine distinct light brownish gray (10YR 6/2) mottles; weak medium and thick platy structure; very firm, brittle; common fine pores; 20 percent coarse fragments; medium acid.

The depth to the compact substratum and the thickness of the solum range from 15 to 24 inches. The content of rock fragments ranges from 5 to 25 percent, by volume, in the solum and from 10 to 35 percent in the compact substratum. The fragments are dominantly pebbles and some cobblestones and stones. In unlimed areas, the soil ranges from very strongly acid to medium acid in the solum and is medium acid or slightly acid in the compact substratum.

The A1 horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 or 2. Some pedons have an Ap horizon with hue of 10YR, value of 3 or 4, and chroma of 2. Some pedons have an A2 horizon.

The B horizon has hue of 10YR through 5Y, value of 4 through 6, and chroma of 2 or 3. It is sandy loam, fine sandy loam, or loam in the fine-earth fraction. Structure is weak or moderate, very fine or fine subangular blocky, or it is weak thin or medium platy. Consistence is very friable to firm.

The Cx horizon has hue of 10YR through 5Y, value of 3 through 5, and chroma of 2 or 3. It is sandy loam or fine sandy loam in the fine-earth fraction. Structure is weak or moderate, medium or thick platy, or moderate or strong very coarse prismatic, or the horizon is massive. The horizon is firm or very firm and brittle.

Dixmont series

The Dixmont series consists of deep, moderately well drained to somewhat poorly drained soils that are in the northern part of the county. The soils formed in glacial till derived mainly from slate or phyllite on rolling upland ridges and hills. Slopes range from 3 to 15 percent but are dominantly 3 to 8 percent.

Dixmont soils are associated on the landscape with Bangor, Monarda, Thorndike, and Winnecook soils. Dixmont soils are wetter than Bangor, Thorndike, or Winnecook soils; are better drained than Monarda soils; and are deeper than Thorndike or Winnecook soils.

Typical pedon of Dixmont silt loam, in an area of Dixmont very stony silt loam, 3 to 8 percent slopes, in a wooded area in the town of Winterport, 0.75 mile from Whites Corner Road on Perkins Road, 150 feet south of Perkins Road:

O1—4 inches to 0, litter of loose leaves and twigs.
A1—0 to 2 inches, very dark grayish brown (10YR 3/2) silt loam, light brownish gray (2.5Y 6/2) dry; weak fine granular structure; friable; many fine and few coarse roots; 10 percent coarse fragments; very strongly acid; abrupt wavy boundary.
B21ir—2 to 8 inches, dark brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure parting to weak medium granular; friable; many fine roots; 10 percent coarse fragments; very strongly acid; clear wavy boundary.
B22ir—8 to 13 inches, dark yellowish brown (10YR 4/4) gravelly silt loam; weak medium subangular blocky structure parting to weak medium granular; friable; few fine roots; 15 percent coarse fragments; very strongly acid; clear wavy boundary.
B23—13 to 20 inches, olive brown (2.5Y 4/4) silt loam; many coarse prominent yellowish red (5YR 5/6) and distinct grayish brown (2.5Y 5/2) mottles; moderate medium subangular blocky structure parting to weak fine and medium granular; friable; few fine roots; 10 percent coarse fragments; very strongly acid; clear wavy boundary.
B3—20 to 26 inches, light olive brown (2.5Y 5/4) silt loam; many coarse distinct light brownish gray (10YR 6/2) mottles, many fine prominent strong brown (7.5YR 5/6) mottles, and many coarse faint light olive brown (2.5Y 5/6) mottles; weak medium and thick platy structure; firm in place, friable when removed; 10 percent coarse fragments; medium acid; clear wavy boundary.
C—26 to 60 inches, olive (5Y 5/3) silt loam; many coarse prominent strong brown (7.5YR 5/6) mottles; strong very coarse prismatic structure parting to moderate medium and thick platy; firm; 10 percent coarse fragments; medium acid.

The solum thickness ranges from 18 to 28 inches. Distinct or prominent mottles are at a depth of 10 to 18

inches. The content of rock fragments, dominantly pebbles and some cobblestones, in the profile ranges from 5 to 30 percent, by volume. Unless limed, this soil ranges from very strongly acid to medium acid in the solum and is strongly acid or neutral in the substratum.

Some pedons have an O2 horizon with has hue of 5YR through 10YR, value of 2 or 3, and chroma of 1 or 2.

The A1 or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 through 4. Some pedons have an A2 horizon with hue of 10YR, value of 5 through 7, and chroma of 0 or 1.

The B2h and B2ir horizons have hue of 2.5YR through 10YR, value of 2 through 5, and chroma of 3 or 4. The B2 horizon has hue of 7.5YR through 2.5Y and value and chroma of 3 through 6. The B3 horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 3 through 6. The B horizon is loam or silt loam in the fine-earth fraction.

The C horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 2 through 4. It has prismatic or platy structure. It is loam or silt loam in the fine-earth fraction.

Eldridge series

The Eldridge series consists of deep, moderately well drained soils. The soils formed in a thin mantle of sandy outwash material over loamy lacustrine or marine sediments. Slopes range from 3 to 15 percent but are dominantly 3 to 8 percent. The Eldridge soils in this survey area are a taxadjunct because the mean annual soil temperature is lower than that defined in the range for the series, but this difference does not greatly alter use and management.

Eldridge soils are on the landscape with Adams, Boothbay, Lyman, Madawaska, Marlow, Masardis, Peru, Swanville, and Tunbridge soils. Eldridge soils are wetter than Adams, Lyman, Marlow, Masardis, or Tunbridge soils and are coarser textured in the solum than Boothbay, Madawaska, Peru, or Swanville soils.

Typical pedon of Eldridge fine sandy loam, 3 to 8 percent slopes, in a hayfield, in the town of Winterport, 0.25 mile east of U.S. Route 1A, 300 feet west of the Penobscot River, and 0.75 mile south of the junction of U.S. Route 1A and Oak Point Road:

Ap—0 to 9 inches, dark yellowish brown (10YR 4/4) fine sandy loam, light yellowish brown (10YR 6/4) dry; moderate fine granular structure; very friable; many fine roots; slightly acid; abrupt smooth boundary.

B21—9 to 15 inches, yellowish brown (10YR 5/4) loamy fine sand; weak fine granular structure; very friable; many fine roots; slightly acid; clear wavy boundary.

B22—15 to 20 inches, light yellowish brown (2.5Y 6/4) loamy fine sand; common medium distinct yellowish brown (10YR 5/4) and grayish brown (10YR 5/2) mottles; weak fine granular structure; very friable; common fine roots; slightly acid; clear wavy boundary.

A'2—20 to 24 inches, olive (5Y 5/3) gravelly loamy sand; common medium prominent yellowish brown (10YR 5/4) and dark grayish brown (2.5Y 4/2) mottles; single grain; loose; few fine roots; 20 percent gravel; medium acid; abrupt smooth boundary.

IIC—24 to 60 inches, olive (5Y 5/3) silty clay loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; weak medium and thick platy structure; firm; dark reddish brown (5YR 3/2) oxide stains on faces of peds; thin discontinuous gray (5Y 5/1) silt films on faces of peds; slightly acid.

The solum thickness ranges from 18 to 30 inches. The coarser textured cap is 0 to 25 percent coarse fragments, which are primarily pebbles. The loamy material generally does not have coarse fragments. Unless limed, the soil ranges from strongly acid to slightly acid in the coarser textured cap and is slightly acid or neutral below.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4.

The B2 horizon has hue of 7.5YR through 2.5Y and value and chroma of 3 through 6. It is loamy fine sand, loamy sand, or sand in the fine-earth fraction.

The A'2 horizon has hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 2 through 4. It is loamy sand or sand in the fine-earth fraction.

The IIC horizon has hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 2 through 4. It mainly is silty clay loam or silt loam but has thin strata of loam or sand at a depth of more than 40 inches in some pedons.

Hermon series

The Hermon series consists of deep, well drained to somewhat excessively drained soils that formed in glacial till derived from granite and schist. The Hermon soils are on hillsides and ridgetops. Slopes range from 3 to 25 percent but are dominantly 8 to 15 percent.

Hermon soils are on the landscape with Lyman, Marlow, Peru, and Tunbridge soils. Hermon soils are deeper and coarser textured than Lyman or Tunbridge soils and are coarser textured and more droughty than Marlow or Peru soils.

Typical pedon of Hermon sandy loam, in an area of Hermon extremely stony sandy loam, 8 to 15 percent slopes, in a wooded area in the town of Prospect, near the southeast corner of Half Moon Pond, 300 feet east of Half Moon Stream on an abandoned town road, 100 feet north of road:

O1—3 to 2 inches, litter of leaves, needles, and twigs.

O2—2 inches to 0, black (5YR 2/1), partly decomposed leaf litter; very strongly acid; abrupt wavy boundary.

A2—0 to 3 inches, reddish gray (5YR 5/2) sandy loam, pinkish gray (7.5YR 6/2) dry; weak fine granular

structure; very friable; many roots; 10 percent rock fragments; strongly acid; abrupt wavy boundary.
B21h—3 to 7 inches, dark reddish brown (2.5YR 3/4) gravelly sandy loam; weak fine granular structure; friable; many roots; 15 percent rock fragments; strongly acid; abrupt wavy boundary.
B22ir—7 to 15 inches, yellowish brown (10YR 5/6) gravelly sandy loam; weak fine granular structure; very friable; many roots; 25 percent rock fragments; strongly acid; clear wavy boundary.
B23—15 to 27 inches, light olive brown (2.5Y 5/6) gravelly sandy loam; weak very fine granular structure; very friable; many roots; 40 percent rock fragments; strongly acid; clear wavy boundary.
C—27 to 60 inches, olive (5Y 5/4) gravelly loamy sand; single grain; slightly firm in place and loose when disturbed; few roots; 45 percent rock fragments; medium acid.

The solum thickness ranges from 17 to 28 inches. The content of rock fragments in the particle-size control section ranges from 15 to 60 percent, but the weighted average ranges from 35 to 50 percent. The content of rock fragments in the upper 10 inches of the soil ranges from 5 to 25 percent. The rock fragments are pebbles, cobblestones, and stones and a few boulders. Unless limed, the solum ranges from extremely acid to strongly acid and the substratum is strongly acid or medium acid.

The A2 horizon has hue of 5YR through 10YR, value of 5 or 6, and chroma of 1 or 2. Some pedons have an Ap horizon with hue of 10YR, value of 3 or 4, and chroma of 2 or 3.

The B2h horizon has hue of 2.5YR through 7.5YR, value of 3 or 4, and chroma of 2 through 6. The B2ir horizon has hue of 5YR through l0YR, value of 3 through 6, and chroma of 3 through 8. The B2h and B2ir horizons are fine sandy loam or sandy loam in the fine-earth fraction. The B2 horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 through 8. It is gravelly sandy loam or gravelly coarse sandy loam.

The C horizon has hue of 10YR through 5Y, value of 5 or 6, and chroma of 2 through 4. It is gravelly loamy coarse sand or gravelly loamy sand.

Limerick series

The Limerick series consists of deep, poorly drained soils that formed in recent alluvium on flood plains of streams and rivers. Slopes range from 0 to 2 percent. Limerick soils in this survey area are a taxadjunct because the mean annual soil temperature is lower than that defined for the series, but this difference does not greatly alter use and management.

Limerick soils are associated on the landscape with Podunk, Rumney, and Saco soils and Borosaprists. Limerick soils are wetter than Podunk soils, better drained than Saco soils or Borosaprists, and finer textured than Rumney soils.

Typical pedon of Limerick silt loam, in an area of Limerick and Rumney soils, in a wooded area in the town of Monroe, 100 feet east of Marsh Stream and 800 feet north of junction of Maine Routes 139 and 141:

Ap—0 to 8 inches, very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; few fine distinct strong brown (7.5YR 5/6) mottles and common medium faint grayish brown (10YR 5/2) mottles in the lower 2 inches; weak medium granular structure; friable; common fine and few medium roots; strongly acid; abrupt smooth boundary.
C1—8 to 12 inches, olive gray (5Y 4/2) silt loam; few fine distinct yellowish brown (10YR 5/6) mottles and many medium faint olive (5Y 4/4) mottles; massive; friable; few fine roots; strongly acid; clear smooth boundary.
C2—12 to 36 inches, olive gray (5Y 5/2) very fine sandy loam; common medium faint olive (5Y 5/6) mottles and common medium distinct light brownish gray (2.5Y 6/2) mottles; massive; friable; strong brown (7.5YR 5/6) root stains; medium acid; clear smooth boundary.
C3—36 to 42 inches, olive (5Y 5/3) very fine sandy loam; many medium distinct yellowish brown (10YR 5/6) mottles and common fine distinct light brownish gray (2.5Y 6/2) mottles; massive; friable; strong brown (7.5YR 5/6) root stains; medium acid; clear wavy boundary.
C4—42 to 60 inches, olive (5Y 5/3) very fine sandy loam; thin strata of fine sand, sand, and fine gravel; many medium distinct yellowish brown (10YR 5/6) mottles; massive; friable; medium acid.

Unless limed, the soil is strongly acid or medium acid in the upper 40 inches and ranges from medium acid to neutral below 40 inches.

The A1 or Ap horizon has hue of 10YR through 5Y, value of 3 or 4, and chroma of 2 or 3.

The C horizon has hue of 10YR through 5Y, value of 4 or 5, and chroma of 1 or 2 above a depth of 30 inches and chroma of 1 through 4 below 30 inches. Varves or thin strata that vary in color, texture, or reaction are in the C horizon of some pedons. The C horizon to a depth of 40 inches is dominantly silt loam or very fine sandy loam. Lenses of very fine sand are in some pedons, but the weighted average of fine sand and coarser textured material is less than 15 percent.

Lyman series

The Lyman series consists of shallow, somewhat excessively drained soils on the tops and southeast-facing side slopes of upland ridges and mountains and on low coastal ridges. The soils formed in a thin mantle of glacial till mainly derived from mica schist and some phyllite, granite, or gneiss. Slopes range from 3 to 60 percent, but are dominantly 8 to 15 percent.

In upland areas Lyman soils are on the landscape with Brayton, Marlow, Peru, and Tunbridge soils and Rock outcrop and Borosaprists. Lyman soils are shallower than Brayton, Marlow, Peru, or Tunbridge soils or Borosaprists. In coastal areas Lyman soils are on the landscape with and are shallower and better drained than Boothbay and Swanville soils.

Typical pedon of Lyman fine sandy loam in an area of Lyman-Rock outcrop complex, 8 to 15 percent slopes, in a wooded area in the town of Searsmont, 200 feet northwest of the intersection of Maine Route 3 and a gravel road to a public landing on north end of Quantabacook Lake, 50 feet north of Maine Route 3:

O2—2 inches to 0, very dark gray (10YR 3/1) decomposed spruce and balsam fir needles.
A1—0 to 2 inches, very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; very friable; many fine and medium roots; 10 percent coarse fragments; strongly acid; abrupt discontinuous boundary.
A2—2 to 3 inches, gray (10YR 5/1) fine sandy loam; weak medium subangular blocky structure parting to weak fine and medium granular; very friable; many fine roots; 10 percent coarse fragments; strongly acid; abrupt discontinuous boundary.
B21ir—3 to 7 inches, dark brown (7.5YR 4/4) fine sandy loam; weak medium subangular blocky structure parting to weak fine granular; very friable; many fine roots; 10 percent coarse fragments; strongly acid; abrupt wavy boundary.
B22—7 to 13 inches, dark brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure parting to weak fine and medium granular; very friable; many fine roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.
B23—13 to 19 inches, light olive brown (2.5Y 5/4) fine sandy loam; weak medium subangular blocky structure parting to weak fine and medium granular; very friable; few fine roots; 10 percent coarse fragments; strongly acid; abrupt smooth boundary.
R—19 inches, dark gray banded gneiss bedrock.

The solum thickness and depth to bedrock range from 10 to 20 inches. The content of rock fragments, primarily pebbles and cobblestones, ranges from 5 to 30 percent throughout. Unless limed, the soil ranges from extremely acid to medium acid throughout.

The A1 horizon has hue of 5YR through 10YR, value of 2 or 3, and chroma of 0 through 2. The A2 horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 1 or 2. Some pedons have an Ap horizon with hue of 7.5YR or 10YR, value of 2 through 4, and chroma of 2 or 3.

Some pedons have a B2h horizon with hue of 5YR or 7.5YR, value of 2 through 4, and chroma of 2 or 3. The B21ir horizon has hue of 5YR through 10YR, value of 3 or 4, and chroma of 3 through 8. The B22 and B23 horizons have hue of 10YR or 2.5Y, value of 2 through 5, and chroma of 3 through 6. The B horizon is fine sandy loam, very fine sandy loam, loam, or silt loam in the fine-earth fraction.

The bedrock is gneiss, schist, phyllite, or granite.

Madawaska series

The Madawaska series consists of deep, moderately well drained soils on terraces and outwash plains. The soils formed in material derived mainly from slate, granite, and quartzite. Slopes range from 3 to 8 percent. The Madawaska soils in this survey area are a taxadjunct because they have a coarse-loamy particle-size control section, but this difference does not greatly alter use and management.

Madawaska soils are on the landscape with Adams, Eldridge, Masardis, Searsport, and Swanville soils. Madawaska soils are wetter than Adams or Masardis soils, are coarser textured and better drained than Swanville soils, are better drained than Searsport soils, and have a coarser textured substratum than Eldridge soils.

Typical pedon of Madawaska fine sandy loam, 3 to 8 percent slopes, in a hayfield in the town of Unity, 0.25 mile east of Sandy Stream and 400 feet north of Maine Route 139:

Ap—0 to 8 inches, dark brown (10YR 3/3) fine sandy loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; common fine roots; 5 percent gravel; strongly acid; abrupt smooth boundary.
B21ir—8 to 12 inches, yellowish brown (10YR 5/6) sandy loam; weak fine granular structure; friable; few fine roots; 10 percent gravel; strongly acid; abrupt wavy boundary.
B22—12 to 16 inches, yellowish brown (10YR 5/4) sandy loam; many fine distinct dark brown (7.5YR 4/4) mottles and few fine distinct olive gray (5Y 5/2) mottles; weak fine granular structure; friable; few fine roots; 10 percent gravel; strongly acid; abrupt wavy boundary.
B3—16 to 28 inches, olive brown (2.5Y 4/4) sandy loam; common fine distinct strong brown (7.5YR 5/6) mottles and few fine distinct olive gray (5Y 5/2) mottles; weak fine granular structure; friable; few fine roots; 10 percent gravel; strongly acid; abrupt smooth boundary.
IIC—28 to 60 inches, olive (5Y 5/3) sand; many fine and medium prominent yellowish red (5YR 4/6) and yellowish brown (10YR 5/6) mottles and many fine distinct grayish brown (2.5Y 5/2) mottles; single grain; loose; 10 percent gravel in upper 8 inches; medium acid.

The solum thickness ranges from 18 to 32 inches. The content of coarse fragments, primarily gravel, ranges

from 0 to 10 percent throughout the soil. The soil is strongly acid or medium acid throughout unless limed.

The Ap horizon has a hue of 10YR, value of 3 or 4, and chroma of 2 or 3. Some pedons have an A2 with hue of 7.5YR through 2.5Y, value of 5 through 7, and chroma of 1 or 2.

Some pedons have a B2h horizon with hue of 5YR or 7.5YR and value and chroma of 2 through 4. The B21ir horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 3 through 6. The B22 and B3 horizons have hue of 10YR or 2.5Y and value and chroma of 4 through 6. The B horizon is fine sandy loam or sandy loam.

The C horizon has hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 1 through 3. It is dominantly sand or fine sand but in some pedons is sandy loam to a depth of 30 inches.

Marlow series

The Marlow series consists of deep, well drained soils that formed in compact glacial till derived mainly from mica schist and some granite (fig. 5). The soils are on upland-drumlin shaped ridges and on the side slopes of bedrock-influenced ridges. Slopes range from 3 to 45 percent but are dominantly 8 to 15 percent.

Figure 5.—Typical profile of Marlow fine sandy loam.

Marlow soils are on the landscape with Brayton, Lyman, Peru, and Tunbridge soils. Marlow soils are better drained than Brayton or Peru soils and deeper than Lyman or Tunbridge soils.

Typical pedon of Marlow fine sandy loam, in an area of Marlow very stony fine sandy loam, 8 to 15 percent slopes, in a blueberry field in the city of Belfast, on Patterson Hill, 1 mile south of Lower Belmont Road on Armstrong Road, l,000 feet southeast of Armstrong Road:

Ap—0 to 4 inches, very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; moderate fine and medium granular structure; friable; many fine and medium roots; 10 percent coarse fragments; strongly acid; abrupt wavy boundary.

A2—4 to 6 inches, gray (10YR 6/1) fine sandy loam; weak fine granular structure; friable; common fine and medium roots; 5 percent coarse fragments; strongly acid; abrupt broken boundary.

B2lh—6 to 10 inches, dark reddish brown (5YR 3/4) fine sandy loam; weak medium granular structure; friable; common fine and medium roots; 5 percent coarse fragments; strongly acid; clear wavy boundary.

B22ir—10 to 15 inches, dark brown (10YR 4/3) fine sandy loam; moderate fine subangular blocky structure parting to moderate fine granular; friable; common fine and few medium roots; 5 percent coarse fragments; strongly acid; clear wavy boundary.

B23—15 to 20 inches, olive brown (2.5Y 4/4) fine sandy loam; moderate medium subangular blocky structure parting to moderate fine granular; friable; few fine roots; 5 percent coarse fragments; strongly acid; clear wavy boundary.

B3—20 to 24 inches, olive (5Y 5/3) fine sandy loam; moderate fine subangular blocky structure; firm; 5 percent coarse fragments; strongly acid; clear smooth boundary.

Cx—24 to 60 inches, olive (5Y 5/4) fine sandy loam; moderate medium platy structure; very firm, brittle; 5 percent coarse fragments; strongly acid.

The solum thickness and depth to the compact substratum range from 14 to 36 inches. The rock-fragment content in the solum and compact substratum is generally 5 to 15 percent, by volume, but ranges to 30 percent. The rock fragments consist dominantly of pebbles and cobblestones and a few stones. Unless limed, the soil ranges from very strongly acid to medium acid throughout.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. An A1 horizon in undisturbed areas has hue of 10YR, value of 2 or 3, and chroma of 1 or 2.

The B2h horizon has hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 4 or 6. The B22ir horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 through 6. The B23 and B3 horizons have hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 3 through 6. The B2 horizon is dominantly fine sandy loam, loam, or sandy loam in the fine-earth fraction. Structure is weak or moderate, fine or medium, granular, or subangular blocky. The B3 horizon has hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 3 through 6. It is fine sandy loam, loam, or sandy loam in the fine-earth fraction. Structure is weak or moderate, fine or medium granular or subangular blocky or weak, thin or medium platy. An A'2 is in some pedons.

The Cx horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 through 4. It is fine sandy loam, loam, or sandy loam in the fine-earth fraction. Structure is weak or moderate, medium or thick platy, or the horizon is massive. Consistence is firm or very firm and brittle.

Masardis series

The Masardis series consists of deep, somewhat excessively drained soils (fig. 6). The soils formed in glaciofluvial deposits on terraces, deltas, kames, and eskers. Slopes range from 0 to 45 percent but are dominantly 0 to 15 percent.

Masardis soils are on the landscape with Adams, Madawaska, and Searsport soils and Borosaprists. Masardis soils are coarser textured than Adams soils and better drained than Madawaska or Searsport soils or Borosaprists. Hermon, Lyman, Marlow, Peru, and Tunbridge soils formed in glacial till on adjacent uplands.

Figure 6.—An excavated area of Masardis fine sandy loam.

Typical pedon of Masardis fine sandy loam, 0 to 8 percent slopes, at the south end of a gravel pit in the town of Montville, 100 feet west of North Searsmont Road, 0.25 mile north of Greenwood Cemetery:

A1—0 to 4 inches, very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (2.5Y 6/2) dry; moderate very fine and fine granular structure; friable; many fine and common medium roots; 10 percent coarse fragments; strongly acid; abrupt wavy boundary.

A2—4 to 6 inches, gray (10YR 6/1) fine sandy loam; moderate very fine and fine granular structure; friable; many fine and common medium roots; 10 percent coarse fragments; strongly acid; abrupt broken boundary.

B21h—6 to 10 inches, dark reddish brown (5YR 3/4) gravelly sandy loam; moderate very fine and fine granular structure; friable; common fine and few medium roots; 40 percent coarse fragments; strongly acid; abrupt wavy boundary.

B22ir—10 to 14 inches, dark brown (7.5YR 4/4) gravelly coarse sandy loam; weak very fine and fine granular structure; friable; few fine roots; 40 percent coarse fragments; strongly acid; clear wavy boundary.

IIB23—14 to 16 inches, dark yellowish brown (10YR 4/4) very gravelly loamy coarse sand; single grain; loose; 60 percent coarse fragments; medium acid; clear wavy boundary.

IIB3—16 to 31 inches, olive brown (2.5Y 4/4) very gravelly loamy coarse sand; single grain; loose; 60 percent coarse fragments; medium acid; gradual wavy boundary.

IIC—31 to 60 inches, olive brown (2.5Y 4/4) very gravelly loamy coarse sand; single grain; loose; 65 percent coarse fragments; medium acid.

The solum thickness ranges from 18 to 36 inches. The content of rock fragments, mainly pebbles and cobblestones, in 35 to 60 percent in the control section but ranges from 10 to 60 percent in the upper part of the solum and from 40 to 75 percent in the lower part of the solum and in the substratum. Unless limed, the soil ranges from very strongly acid to medium acid in the solum and is strongly acid or medium acid in the substratum.

In undisturbed areas, the soil has an A1 horizon with hue of 10YR, value of 3 or 4, and chroma of 1 or 2. The A2 horizon has hue of 10YR, value of 6, and chroma of 1 or 2. Some pedons have an Ap horizon with hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4.

The B2h horizon has hue of 5YR and value and chroma of 2 through 4. The B2ir horizon has hue of 5YR through 10YR, value of 3 through 5, and chroma of 4 or 6. The lower B2 horizon has hue of 7.5YR or 10YR and value and chroma of 4 through 6. The B3 horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 3 through 6. The B horizon in the fine-earth fraction is loam, very fine sandy loam, fine sandy loam, or sandy loam within 10 inches of the surface and sandy loam through loamy coarse sand below 10 inches.

The C horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 2 through 4. It is loamy coarse sand and coarse sand in the fine-earth fraction, but some pedons have strata of sand, gravel, and cobbles.

Masardis Variant

The Masardis Variant consists of moderately deep, somewhat excessively drained soils. The soils formed in glaciofluvial material on bedrock-controlled landscapes. Slopes range from 3 to 15 percent but are dominantly 8 to 15 percent.

Masardis Variant soils are on the landscape with Adams, Lyman, Madawaska, Masardis, Tunbridge, and Searsport soils and Borosaprists. Masardis Variant soils are coarser textured than Adams or Tunbridge soils, shallower than Borosaprists or Madawaska, Masardis, or Searsport soils, and deeper than Lyman soils. Masardis Variant soils are better drained than Madawaska and Searsport soils and Borosaprists.

Typical pedon of Masardis Variant fine sandy loam, in an area of Masardis Variant fine sandy loam, very rocky, 8 to 15 percent slopes, in a wooded area in the town of Islesboro, 500 feet west of Turtle Head Road on a gravel road, 1 mile north of the junction of Turtle Head Road and Pripet Road, and 100 feet north of the gravel road:

Ap—0 to 6 inches, dark brown (10YR 4/3) fine sandy loam, light yellowish brown (2.5Y 6/4) dry; weak fine granular structure; friable; many fine and few medium roots; 10 percent coarse fragments; strongly acid; abrupt wavy boundary.

B21ir—6 to 10 inches, dark brown (7.5YR 4/4) gravelly fine sandy loam; weak fine and medium granular structure; friable; common fine roots; 30 percent coarse fragments; strongly acid; clear wavy boundary.

B22—10 to 16 inches, dark yellowish brown (10YR 4/4) gravelly sandy loam; weak fine granular structure; friable; common fine roots; 45 percent coarse fragments; medium acid; clear wavy boundary.

IIB3—16 to 21 inches, yellowish brown (10YR 5/4) very gravelly loamy sand; single grain; loose; few fine roots; 55 percent coarse fragments; medium acid; clear wavy boundary.

IIC—21 to 38 inches, olive brown (2.5Y 4/4) very gravelly coarse sand; single grain; loose; 60 percent coarse fragments; strata of very gravelly sand and coarse sand; medium acid; abrupt smooth boundary.

IIIR—38 inches, schist bedrock.

The solum thickness ranges from 18 to 36 inches and the depth to bedrock from 20 to 40 inches. The content of rock fragments, mainly pebbles and cobblestones, is mainly 35 to 60 percent in the control section but ranges

from 10 to 60 percent in the solum and 40 to 70 percent in the C horizon. The soil ranges from very strongly acid to medium acid in the solum and is strongly acid or medium acid in the substratum.

The Ap horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. In undisturbed areas the soil has an A1 horizon with hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Some pedons have an A2 horizon with hue of 10YR, value of 6, and chroma of 1 or 2.

Some pedons have a B2h horizon with hue of 5YR and value and chroma of 2 through 4. The B2ir horizon has hue of 5YR through 10YR, value of 3 through 5, and chroma of 4 or 6. The lower part of the B2 horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 4 or 6. The B3 horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 3 through 6. The B horizon in the fine-earth fraction is very fine sandy loam, fine sandy loam, or sandy loam within 10 inches of the surface and sandy loam through loamy coarse sand at a depth of more than 10 inches.

The C horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 2 through 4. It mainly is loamy coarse sand and coarse sand in the fine-earth fraction, but some pedons have strata of sand, gravel, and cobbles.

The bedrock is dominantly gneiss, schist, or phyllite.

Monarda series

The Monarda series consists of deep, poorly drained soils that formed in glacial till derived mainly from slate or phyllite. The soils are along drainageways and in valleys in slate- and phyllite-dominated glaciated uplands. Slopes range from 0 to 8 percent.

Monarda soils are on the landscape with Bangor, Dixmont, Thorndike, and Winnecook soils and Borosaprists. Monarda soils are wetter than Bangor or Dixmont soils, better drained than Borosaprists, and deeper than Thorndike or Winnecook soils.

Typical pedon of Monarda silt loam, in an area of Monarda very stony silt loam, 0 to 8 percent slopes, in a wooded area in the town of Troy, 1,200 feet north of Fleming Road and 0.4 mile west of the Penobscot County line:

Ap—0 to 6 inches, very dark grayish brown (2.5Y 3/2) silt loam, light brownish gray (2.5Y 6/2) dry; weak fine and medium granular structure; friable; many fine and few medium roots; 10 percent coarse fragments; medium acid; clear wavy boundary.

B21g—6 to 9 inches, dark grayish brown (2.5Y 4/2) gravelly silt loam; common medium distinct yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4) mottles and common fine distinct light olive gray (5Y 6/2) mottles; weak fine and medium granular structure; friable; common fine roots; 15 percent coarse fragments; medium acid; clear wavy boundary.

B22—9 to 15 inches, olive (5Y 5/3) gravelly silt loam; common medium distinct yellowish brown (10YR 5/6) and light olive brown (2.5Y 5/4) mottles and common fine faint light olive gray (5Y 6/2) mottles; weak fine subangular blocky structure; friable; few fine roots; 20 percent coarse fragments; slightly acid; clear wavy boundary.

B3g—15 to 20 inches, olive gray (5Y 5/2) gravelly silt loam; many fine distinct yellowish brown (10YR 5/6) and light olive brown (2.5Y 5/4) mottles and many fine faint light olive gray (5Y 6/2) mottles; weak medium platy structure parting to weak very fine subangular blocky; friable; 20 percent coarse fragments; slightly acid; clear wavy boundary.

C1x—20 to 36 inches, olive (5Y 5/4) silt loam; many fine distinct yellowish brown (10YR 5/6) and olive brown (2.5Y 4/4) mottles and many fine faint olive gray (5Y 5/2) mottles; moderate medium platy structure; very firm, brittle; 10 percent coarse fragments; slightly acid; clear wavy boundary.

C2x—36 to 60 inches, olive (5Y 4/3) silt loam; common fine distinct light olive brown (2.5Y 5/4) mottles and few fine distinct olive gray (5Y 5/2) mottles; moderate medium platy structure; firm, brittle; 10 percent coarse fragments; slightly acid.

The thickness of the solum and depth to the compact substratum range from 12 to 30 inches. The content of rock fragments, dominantly pebbles and cobblestones, ranges from 5 to 35 percent, by volume, throughout the profile. Unless limed, the soil ranges from very strongly acid to slightly acid above the compact substratum and is slightly acid or neutral in the substratum.

The Ap or A1 horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 through 3. Some undisturbed areas have an A2g horizon below the A1 horizon.

The B horizon has hue of 10YR through 5Y, value of 4 through 6, and chroma of 2 through 4. It is silt loam or loam in the fine-earth fraction.

The Cx horizon has hue of 2.5Y, 5Y, or 5GY; value of 4 through 6; and chroma of 1 through 4. It is silt loam or loam in the fine-earth fraction. Structure is weak to strong, coarse or very coarse prismatic, weak or moderate, medium or thick platy, or the horizon is massive.

Peru series

The Peru series consists of deep, moderately well drained soils. The soils formed in compact glacial till derived mainly from mica schist and some granite. They are on upland drumlin-shaped ridges and on side slopes of bedrock-influenced ridges. Slopes range from 3 to 30 percent but are dominantly 3 to 8 percent.

Peru soils are on the landscape with Brayton, Lyman, Marlow, and Tunbridge soils. Peru soils are better drained than Brayton soils, wetter than Marlow soils, and deeper than Lyman or Tunbridge soils.

Typical pedon of Peru fine sandy loam, in an area of Peru very stony fine sandy loam, 3 to 8 percent slopes, in a wooded area in the town of Palermo, 1.5 miles south of Maine Route 3 on Turner Ridge Road, 0.4 mile west of Turner Ridge Road along a gravel road, 100 feet north of road:

O1—1 inch to 0, litter of leaves and pine needles.
A1—0 to 4 inches, dark brown (7.5YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; moderate fine and medium granular structure; very friable; many fine and medium roots; 5 percent coarse fragments; medium acid; abrupt wavy boundary.
A2—4 to 6 inches, grayish brown (10YR 5/2) fine sandy loam; weak fine and medium granular structure; very friable; many fine and medium roots; 5 percent coarse fragments; strongly acid; abrupt smooth boundary.
B21ir—6 to 10 inches, dark brown (7.5YR 4/4) fine sandy loam; weak fine and medium granular structure; very friable; few fine and medium roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.
B22—10 to 17 inches, olive brown (2.5Y 4/4) gravelly fine sandy loam; few fine distinct yellowish brown (10YR 5/6) and grayish brown (10YR 5/2) mottles in lower part; weak fine and medium granular structure; friable; few fine roots; 20 percent coarse fragments; strongly acid; abrupt wavy boundary.
C1x—17 to 28 inches, light olive brown (2.5Y 5/4) gravelly fine sandy loam; common fine distinct light brownish gray (10YR 6/2) mottles and many medium distinct strong brown (7.5YR 5/6) mottles; moderate medium and thick platy structure; very firm, brittle; 15 percent coarse fragments; medium acid; gradual wavy boundary.
C2x—28 to 60 inches, olive (5Y 4/3) gravelly sandy loam; few medium prominent reddish brown (5YR 4/4) mottles, few fine distinct light brownish gray (2.5Y 6/2) mottles, and many coarse distinct yellowish brown (10YR 5/6) mottles; moderate medium and thick platy structure; very firm, brittle; 15 percent coarse fragments; medium acid.

The solum thickness and depth to the compact substratum range from 12 to 36 inches. The content of rock fragments, mainly of pebbles and cobblestones, in the solum and substratum ranges from 5 to 30 percent, by volume. Unless limed, the soil ranges from very strongly acid to medium acid throughout.

The A1 horizon has hue of 7.5YR or 10YR, value of 2 through 4, and chroma of 2 or 3. Some pedons have an Ap horizon with hue of 10YR, value of 2 through 4, and chroma of 2 or 3. A discontinuous A2 horizon is in undisturbed pedons.

The B2ir horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 3 through 6. The B2 horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 or 4. Some pedons have a B3 horizon with hue of 2.5Y or 5Y, value of 4, and chroma of 3 or 4. The B horizon is fine sandy loam or loam in the fine-earth fraction.

The Cx horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 through 4. It is fine sandy loam, sandy loam, and loam in the fine-earth fraction. Structure is dominantly weak or moderate, thin or medium platy but ranges to strong thick platy, or the horizon is massive. Consistence is firm or very firm and is brittle.

Podunk series

The Podunk series consists of deep, moderately well drained soils that formed in recent alluvium on floodplains of rivers and streams. Slopes range from 0 to 2 percent. The Podunk soils in this survey area are a taxadjunct because they have a particle-size control section that is coarse-loamy over sandy or sandy-skeletal. This difference does not greatly alter use or management.

Podunk soils are associated on the landscape with Limerick, Madawaska, Rumney, and Saco soils. Podunk soils are better drained than Limerick, Rumney, or Saco soils and do not have the spodic horizon typical of Madawaska soils.

Typical pedon of Podunk fine sandy loam, in a hayfield in the town of Unity, 300 feet east and 300 feet north of junction of Prairie Road and Maine Route 139, adjacent to Sandy Stream:

Ap—0 to 10 inches, dark brown (10YR 3/3) fine sandy loam, light brownish gray (2.5Y 6/2) dry; weak fine granular structure; very friable; many fine roots; medium acid; abrupt wavy boundary.
B21—10 to 15 inches, olive brown (2.5Y 4/4) fine sandy loam; weak fine granular structure; friable; common fine roots; medium acid; clear wavy boundary.
B22—15 to 24 inches, olive brown (2.5Y 4/4) fine sandy loam; common fine distinct strong brown (7.5YR 5/6) mottles and few coarse distinct olive gray (5Y 5/2) mottles; weak fine granular structure; friable; few fine roots; medium acid; clear wavy boundary.
IIC—24 to 60 inches, olive (5Y 5/4) sand; strata of loamy sand, coarse sand, and sand; many fine and medium distinct yellowish brown (10YR 5/4) mottles; single grain; loose; strongly acid.

The solum thickness ranges from 18 to 30 inches. Unless limed, the soil is strongly acid to slightly acid throughout.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 2 through 4.

The B horizon has hue of 10YR through 5Y, value of 3 through 5, and chroma of 3 through 6. The B horizon is mottled below a depth of 12 inches. It is fine sandy loam or loam.

The IIC horizon has hue of 10YR through 5Y, value of 4 through 6, and chroma of 1 through 6. It mainly is

loamy fine sand to coarse sand and has strata of loamy sand to gravel.

Rumney series

The Rumney series consists of deep, poorly drained soils that formed in recent alluvium on flood plains of streams and rivers. Slopes range from 0 to 2 percent. The Rumney soils in this survey area are a taxadjunct because they have a particle-size control section that is coarse-loamy over sandy or sandy-skeletal, but this difference does not greatly alter use or management.

Rumney soils are associated on the landscape with Limerick, Podunk, and Saco soils and Borosaprists. Rumney soils are coarser textured than Limerick soils, wetter than Podunk soils, and better drained than Saco soils or Borosaprists.

Typical pedon of Rumney fine sandy loam, in an area of Limerick and Rumney soils, in a wooded area in the town of Lincolnville, adjacent to Ducktrap Stream, 300 feet northwest of Maine Route 52:

A1—0 to 2 inches, very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; common fine and medium roots; strongly acid; clear smooth boundary.

B21g—2 to 8 inches, dark grayish brown (10YR 4/2) fine sandy loam; common fine faint yellowish brown (10YR 5/4) mottles; weak fine and medium granular structure; friable; few fine roots; strongly acid; clear smooth boundary.

B22g—8 to 26 inches, dark grayish brown (2.5Y 4/2) fine sandy loam; common fine and medium distinct gray (10YR 5/1) and yellowish brown (10YR 5/6) mottles and many fine distinct light gray (10YR 6/1) mottles; weak fine granular structure; friable; few fine roots; strongly acid; clear smooth boundary.

B23g—26 to 30 inches, olive gray (5Y 4/2) fine sandy loam; many medium distinct grayish brown (2.5Y 5/2) mottles; weak fine granular structure; friable; few fine roots; red (2.5YR 4/6) root stains; 10 percent gravel; strongly acid; clear smooth boundary.

IIC1—30 to 40 inches, gray (5Y 6/1) gravelly sand; single grain; loose; 25 percent gravel; medium acid; abrupt wavy boundary.

IIC2—40 to 48 inches, olive gray (5Y 4/2) stratified loamy sand and sand; high organic matter content; single grain; loose; 10 percent gravel; medium acid; abrupt wavy boundary.

IIC3—48 to 60 inches, dark olive gray (5Y 3/2) stratified gravelly sand and sand; single grain; loose; 30 percent gravel; medium acid.

The thickness of the solum ranges from 20 to 30 inches and generally corresponds to the depth to contrasting soil material. The gravel content ranges from 0 to 10 percent in the solum and from 5 to 35 percent in the IIC horizon. Unless limed, the soil ranges from very strongly acid to slightly acid throughout.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 2 through 4, and chroma of 1 or 2.

The B horizon has hue of 10YR through 5Y, value of 3 through 5, and chroma of 1 or 2. It is fine sandy loam, sandy loam, or loam.

The IIC horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 1 through 3. It is dominantly loamy sand and gravelly sand but has strata less than 5 inches thick of coarse sand, sand, fine sand, very fine sand, silt, and organic material.

Saco series

The Saco series consists of deep, very poorly drained soils that formed in recent alluvium on flood plains of rivers and streams and adjacent to lakes. Slopes range from 0 to 2 percent. The Saco soils in this survey area are a taxadjunct because the mean annual soil temperature is lower than that defined for the series, but this difference does not greatly alter use or management.

Saco soils are associated on the landscape with Biddeford, Limerick, Podunk, and Rumney soils and Borosaprists. Saco soils are coarser textured than Biddeford soils and are wetter than Limerick, Podunk, or Rumney soils. The Saco soils have a mineral surface layer, and Borosaprists have an organic surface layer.

Typical pedon of Saco very fine sandy loam, in a marsh in the town of Searsmont, 0.25 mile north of Lawry Pond and 0.5 mile south of Bickfords Corner on Maine Route 173, 100 yards west of Maine Route 173:

A11—0 to 3 inches, very dark grayish brown (10YR 3/2) very fine sandy loam, grayish brown (2.5Y 5/2) dry; weak medium and coarse granular structure; very friable; common medium and coarse roots; strongly acid; abrupt smooth boundary.

A12—3 to 12 inches, very dark grayish brown (10YR 3/2) very fine sandy loam, grayish brown (2.5Y 5/2) dry; common fine faint dark gray (10YR 4/1) mottles and common fine distinct dark reddish brown (5YR 3/2) mottles; weak medium granular structure; friable; common coarse roots; strongly acid; abrupt smooth boundary.

C1g—12 to 30 inches, gray (10YR 5/1) very fine sandy loam; common fine distinct dark reddish brown (5YR 3/4) mottles and few fine faint gray (5Y 5/1) mottles; massive; friable; few fine roots; strongly acid; abrupt smooth boundary.

C2g—30 to 46 inches, dark gray (5Y 4/1) silt loam; massive; friable; medium acid; clear smooth boundary.

IIC3g—46 to 60 inches, dark gray (5Y 4/1) sand with thin strata of gravel; single grain; loose; neutral.

The depth to sand or sand and gravel ranges from 40 to 60 inches. The content of coarse fragments, mainly pebbles, is less than 5 percent above a depth of 40 inches and 0 to 40 percent at a depth of more than 40 inches. Unless limed, the soil is strongly acid or medium acid to a depth of 30 inches and ranges from medium acid to neutral at a depth of more than 30 inches.

The A1 or Ap horizon has hue of 7.5YR through 2.5Y, value of 2 or 3, and chroma of 1 through 3.

The C horizon has hue of 10YR through 5Y, value of 3 through 6, and chroma of 0 or 1. The upper part is mottled. The part of the C horizon above the lithologic discontinuity is silt loam or very fine sandy loam. The part below is sand or gravelly sand.

Searsport series

The Searsport series consists of deep, very poorly drained soils. The soils formed in depressional areas in outwash plains, deltas, and terraces. Slopes range from 0 to 3 percent.

Searsport soils are associated on the landscape with Adams, Madawaska, and Masardis soils and Borosaprists. Searsport soils are wetter than Adams, Madawaska, or Masardis soils and have a thinner organic surface layer than do Borosaprists.

Typical pedon of Searsport mucky peat, in a wooded area in the town of Monroe, 0.5 mile south of Robertson Cemetery, 1,000 feet east of a gravel road:

O1—10 to 8 inches, litter of leaves, twigs, and grasses.
O2—8 inches to 0, very dark gray (N 3/0) mucky peat; 60 percent fiber, 40 percent after rubbing; moderate fine granular structure; friable, slightly sticky, slightly plastic; many fine and medium roots; strongly acid; abrupt smooth boundary.
A1—0 to 5 inches, very dark gray (10YR 3/1) loamy fine sand, gray (10YR 6/1) dry; weak and moderate fine granular structure; friable, slightly sticky, slightly plastic; common fine roots; strongly acid; abrupt smooth boundary.
C1g—5 to 15 inches, dark gray (5Y 4/1) loamy sand; common fine and medium faint gray (5Y 6/1) mottles; single grain; loose, nonsticky, nonplastic; few fine roots; very strongly acid; abrupt smooth boundary.
C2g—15 to 60 inches, gray (5Y 5/1) sand; common coarse distinct yellowish brown (10YR 5/6) and dark grayish brown (10YR 4/2) mottles; single grain; loose, nonsticky, nonplastic; very strongly acid.

The thickness of the O horizon ranges from 8 to 16 inches. Coarse fragments of mostly fine gravel make up less than 10 percent of the particle-size control section. Strata of fine gravel are in some pedons at a depth of more than 40 inches. The soil ranges from very strongly acid to medium acid throughout the profile.

The O2 horizon has hue of 5YR through 5Y, value of 2 or 3, and chroma of 0 through 2.

The A1 horizon has hue of 5YR through 10YR, value of 2 through 4, and chroma of 1 or 2. It is sand, loamy sand, loamy fine sand, sandy loam, or fine sandy loam.

Some pedons have an A2g horizon with hue of 10YR through 5Y, value of 4 through 7, and chroma of 0 or 1. It is loamy fine sand to sand.

The C horizon has hue of 10YR through 5Y, value of 4 through 6, and chroma of 0 through 2. Mottling is faint to prominent, few to many, and fine to coarse. The horizon is loamy sand, fine sand, sand, or coarse sand. Gravelly analogs are below a depth of 40 inches in some pedons.

Sulfaquents

Sulfaquents consist of deep, very poorly drained, ponded soils in tidal areas subject to inundation by saltwater. The soils formed in marine silts and clays and large amounts of decomposed plant material derived primarily from marshgrasses. Slopes are dominantly less than 1 percent.

Sulfaquents are on the landscape with Sulfihemists and Borosaprists.

Because of variability of Sulfaquents, a typical pedon is not given. In general, the surface layer is black or very dark grayish brown, well decomposed sapric material consisting primarily of saltwater marshgrass. The underlying material to a depth of 60 inches is mainly dark grayish brown or dark gray silt loam. The upper part is high in organic matter content and sulfides.

The soil is slightly acid or neutral in the solum and substratum. The soil material has a weak or moderate hydrogen-sulfide smell upon removal. The thickness of surface organic layer ranges from 0 to 15 inches.

The upper horizons of mineral soil generally have hue of 10YR through 5Y, value of 2 through 4, and chroma of 1 or 2. They are very fine sandy loam to silty clay loam and are up to 25 percent organic material.

The lower horizons have hue of 2.5Y or 5Y, value of 2 through 4, and chroma of 1 or 2. They are silt loam or silty clay loam and are less than 20 percent organic material.

Sulfihemists

Sulfihemists consist of deep, very poorly drained, ponded organic soils. They formed in decomposed plant material derived primarily from saltwater marshgrasses and marine sediments. They are in tidal areas subject to inundation by saltwater. Slopes dominantly are less than 1 percent.

Sulfihemists are on the landscape with Sulfaquents and Borosaprists. Because of the variability of Sulfihemists a typical pedon is not given. In general, the surface layer is very dark grayish brown or black, decomposed, hemic or sapric material that has varying amounts of fine textured mineral material. Below the surface layer is very dark grayish brown or black, decomposed saltwater marshgrass that has a high

content of mineral and sulfidic materials. The bottom horizon extends to a depth of 60 inches and is generally very dark gray silt loam with a high content of organic material in the upper part.

The soil ranges from strongly acid to neutral throughout. The soil material has a weak or moderate hydrogen sulfide smell upon removal.

The thickness of the organic surface layer ranges from 18 to 60 inches. The underlying mineral horizons have hue of 10YR through 5Y, value of 2 through 4, and chroma of 1 or 2. They are fine sandy loam, very fine sandy loam, silt loam, silt, silty clay loam, or clay loam. Organic content within the mineral soil ranges from 5 to 25 percent.

Swanville series

The Swanville series consists of deep, poorly drained soils that formed in water-deposited sediments on low lying marine plains and lacustrine plains. Slopes range from 0 to 3 percent.

Swanville soils are on the landscape with Biddeford, Boothbay, Lyman, and Tunbridge soils and Borosaprists. Swanville soils are better drained than Biddeford soils or Borosaprists, are wetter than Boothbay soils, and are deeper and wetter than Lyman or Tunbridge soils.

Typical pedon of Swanville silt loam, in a hayfield in the town of Swanville, 1 mile south of Swan Lake, and 300 feet east of Maine Route 141:

Ap—0 to 6 inches, dark brown (10YR 3/3) silt loam, light brownish gray (10YR 6/2) dry; few fine and medium distinct light brownish gray (2.5Y 6/2) mottles and few fine distinct yellowish brown (10YR 5/6) mottles in the lower 2 inches; weak fine and medium granular structure; very friable; many fine roots, slightly acid; abrupt wavy boundary.

B21g—6 to 9 inches, olive (5Y 5/3) silt loam, pale olive (5Y 6/4) crushed and gray (5Y 5/1) faces of peds; common fine and medium faint light olive gray (5Y 6/2) mottles and few fine distinct yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure parting to weak fine and medium granular; friable; common fine roots; slightly acid; clear wavy boundary.

B22g—9 to 15 inches, olive gray (5Y 5/2) silt loam, gray (5Y 6/1) faces of prisms and olive (5Y 5/3) crushed; many fine and medium faint light olive gray (5Y 6/2) mottles, common fine distinct light olive brown (2.5Y 5/4) mottles, and few fine distinct yellowish brown (10YR 5/4) mottles; strong very coarse prismatic structure parting to weak fine and medium subangular blocky; friable; few fine roots; few very fine and fine pores with gray (5Y 5/1) coatings; dark reddish brown (5YR 3/2) oxide coatings on 10 percent of faces of peds within prisms; medium acid; gradual wavy boundary.

B3g—15 to 22 inches, olive (5Y 4/4) silt loam, gray (5Y 5/1) faces of prisms and olive (5Y 4/3) crushed; common fine faint olive gray (5Y 5/2) mottles, few fine distinct dark grayish brown (2.5Y 4/2) mottles, and light olive brown (2.5Y 5/6) mottles; strong very coarse prismatic structure parting to weak thick and very thick platy; friable; few fine roots; few very fine and fine pores with gray (5Y 5/1) coatings; dark reddish brown (5YR 3/2) oxide coatings on 25 percent of faces of peds within prisms; medium acid; gradual wavy boundary.

C1—22 to 46 inches, olive (5Y 4/3) silt loam, gray (5Y 6/1) faces of prisms and olive (5Y 5/3) crushed; many fine and medium faint olive gray (5Y 5/2) mottles and few fine distinct light olive brown (2.5Y 5/6) and dark yellowish brown (10YR 4/4) mottles; strong very coarse prismatic structure parting to weak thick and very thick platy; firm; few very fine and fine pores with light olive gray (5Y 6/2) coatings; dark reddish brown (5YR 3/2) oxide coatings on 25 percent of the plate faces within prisms; medium acid; gradual wavy boundary.

C2—46 to 60 inches, olive (5Y 4/4) silt loam, gray (5Y 6/1) faces of prisms and olive (5Y 5/3) crushed; many fine and medium faint olive gray (5Y 5/2) mottles and few fine distinct dark grayish brown (2.5Y 4/2) and yellowish brown (10YR 5/6) mottles; strong very coarse prismatic structure parting to weak very thick platy; firm; dark reddish brown (5YR 3/2) oxide coatings on 50 percent of plate faces within prisms; slightly acid.

The thickness of the solum ranges from 20 to 40 inches. Unless limed, the soil ranges from strongly acid to slightly acid in the solum and medium acid to neutral in the substratum.

The Ap horizon has hue of 10YR through 5Y, value of 3 through 5, and chroma of 1 through 3. Some pedons have an A2g horizon with hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 1 or 2.

The B horizon has hue of 2.5Y through 5Y, value of 4 or 5, and chroma of 1 through 4. It is very fine sandy loam, silt loam, and silty clay loam.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 1 through 4. It mainly is silt loam or silty clay loam and has thin layers that range from silt to fine sand in some pedons.

Thorndike series

The Thorndike series consists of shallow, somewhat excessively drained soils on glaciated, bedrock-controlled ridges and hills in the northern and northwestern parts of the county. The soils formed in a thin mantle of glacial till derived primarily from phyllite or slate. Slopes range from 3 to 45 percent but are dominantly 8 to 15 percent.

Thorndike soils are associated on the landscape with and are shallower than Bangor, Dixmont, Monarda, and Winnecook soils.

Typical pedon of Thorndike slaty silt loam, in an area of Thorndike-Winnecook complex, 8 to 15 percent slopes, in a wooded area in the town of Unity, 200 feet north of Unity-Freedom townline on Quaker Hill Road, 20 feet northwest of the road:

Ap—0 to 6 inches, dark brown (10YR 4/3) slaty silt loam, light yellowish brown (10YR 6/4) dry; weak fine granular structure; friable; many fine and coarse roots; 15 percent slaty fragments; medium acid; clear wavy boundary.
B21h—6 to 8 inches, reddish brown (5YR 4/4) slaty silt loam; weak fine and medium granular structure; friable; few fine roots; 40 percent slaty fragments; medium acid; clear wavy boundary.
B22ir—8 to 19 inches, dark brown (7.5YR 4/4) slaty loam; weak fine granular structure; friable; few fine roots; 40 percent slaty fragments; medium acid; clear wavy boundary.
R—19 inches, dark gray fractured phyllite bedrock.

The solum thickness and depth to bedrock range from 10 to 20 inches. The weighted average of rock fragments, mainly slate or phyllite, in the solum ranges from 35 to 60 percent, by volume. In some pedons a thin O horizon overlies an A2 horizon. Unless limed, the soil is strongly acid or medium acid throughout.

The Ap horizon has hue of 10YR, value of 3 through 5, and chroma of 2 through 6. Some pedons have an A1 horizon with hue of 10YR, value of 3 or 4, and chroma of 1 through 3.

The B2h horizon has hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 2 through 4. The B2ir horizon has hue of 5YR through 10YR, value of 4 or 5, and chroma of 4 through 8. Some pedons have other B2 horizons with hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 4 through 8. The B2 horizon is loam or silt loam in the fine-earth fraction.

The bedrock is dominantly phyllite or slate that is fractured in the upper part.

Tunbridge series

The Tunbridge series consists of moderately deep, well drained soils. The soils formed in glacial till derived mainly from mica schist, gneiss, or phyllite. Slopes range from 3 to 25 percent but are dominantly 8 to 15 percent.

In upland areas Tunbridge soils are on the landscape with Brayton, Lyman, Marlow, and Peru soils and areas of Borosaprists. Tunbridge soils are shallower than Brayton, Marlow, or Peru soils or Borosaprists and are deeper than Lyman soils. In coastal areas Tunbridge soils are on the landscape with Boothbay and Swanville soils. Tunbridge soils are shallower, better drained, and coarser textured than Boothbay or Swanville soils.

Typical pedon of Tunbridge fine sandy loam, in an area of Tunbridge-Lyman complex, 8 to 15 percent slopes, in a pasture in the town of Thorndike, 1.1 miles northwest of the Thorndike-Knox town line on Maine Route 139, 150 feet east of the road:

Ap—0 to 8 inches, dark brown (10YR 3/3) fine sandy loam, light brownish gray (2.5Y 6/2) dry; weak fine and medium granular structure; friable; many fine and medium roots; 5 percent coarse fragments; strongly acid; abrupt smooth boundary.
B21ir—8 to 12 inches, dark brown (7.5YR 4/4) fine sandy loam; weak medium subangular blocky structure parting to weak fine and medium granular; friable; few fine roots; 10 percent coarse fragments; medium acid; clear wavy boundary.
B22—12 to 22 inches, dark brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure parting to weak fine and medium granular; friable; few fine roots; 10 percent coarse fragments; medium acid; clear wavy boundary.
C—22 to 29 inches, olive brown (2.5Y 4/4) fine sandy loam; weak medium platy structure; friable; 10 percent coarse fragments; medium acid; abrupt smooth boundary.
R—29 inches, dark gray mica schist bedrock.

The solum thickness ranges from 20 to 30 inches and the depth to bedrock from 20 to 40 inches. Weighted average, by volume, of rock fragments ranges from 5 to 20 percent in the solum and from 10 to 20 percent in the C horizon. The rock fragments are primarily pebbles, and cobblestones and a few stones. Unless limed, the soil is strongly acid or medium acid throughout.

The Ap horizon and A1 horizon have hue of of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. A discontinuous A2 horizon is in some pedons. It has hue of 5YR through 10YR, value of 4 through 6, and chroma of 1 or 2.

A B2h horizon is in some pedons and has hue of 5YR or 7.5YR and value and chroma of 3 or 4. The B2ir horizon has hue of 5YR through 10YR, value of 3 through 5, and chroma of 3 through 6. The lower part of the B2 horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 3 through 6. The B horizon is fine sandy loam or loam in the fine-earth fraction.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 through 4. It is fine sandy loam or loam in the fine-earth fraction. The bedrock is dominantly mica schist, gneiss, or phyllite.

Udorthents

Udorthents consist of moderately deep and deep, excessively drained to well drained, fill material over bedrock or soil. The fill material is highly variable but is mainly compacted gravel, sand, loamy sand, sandy loam, or some mixture of these materials. The content of coarse fragments in these materials generally ranges from 5 to 35 percent. The underlying soil is mainly moderately well drained to poorly drained but ranges to

include excessively drained. Slopes dominantly range from 0 to 3 percent.

Udorthents are on the landscape with various other soils but are primarily associated with those that are moderately well drained to poorly drained.

Because of the variability of Udorthents, a typical pedon is not given. They are more than 20 inches thick but are generally 30 to 40 inches thick. The depth to bedrock is 20 inches or more. The soils are very strongly acid to neutral.

The surface layer is gravelly fill or topsoil from other locations. The thickness, color, texture, and gravel content are highly variable.

The underlying layers dominantly have hue of 7.5YR through 5Y, value of 5 through 8, and chroma of 0 through 4. These layers are often discontinuous. They are mainly gravelly sand, gravelly loamy sand, loamy sand, or sandy loam. The thickness of the layers ranges from 14 to 60 inches or more.

The original material underlying the fill is bedrock or soil. The soil ranges from sand to silty clay and is primarily moderately well drained to poorly drained.

Winnecook series

The Winnecook series consists of moderately deep, well drained soils that formed in glacial till derived primarily from phyllite or slate. Slopes range from 3 to 25 percent but are dominantly 8 to 15 percent.

Winnecook soils are on the landscape with Bangor, Dixmont, Monarda, and Thorndike soils. Winnecook soils are shallower than Bangor, Dixmont, or Monarda soils and are deeper than Thorndike soils.

Typical pedon of Winnecook silt loam, in an area of Thorndike-Winnecook complex, 8 to 15 percent slopes, in a wooded area in the town of Troy, 1.2 miles north of U.S. Route 202 and Maine Route 9 on Barker Road, 300 yards west of Barker Road:

Ap—0 to 9 inches, dark yellowish brown (10YR 4/4) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; many fine roots; 10 percent phyllite fragments; strongly acid; abrupt smooth boundary.

B21ir—9 to 16 inches, brown (7.5YR 5/4) slaty silt loam; weak fine granular structure; friable; common fine roots; 35 percent phyllite fragments; strongly acid; clear wavy boundary.

B22—16 to 23 inches, yellowish brown (10YR 5/6) slaty silt loam; weak fine granular structure; friable; few fine roots; 40 percent phyllite fragments; strongly acid; clear wavy boundary.

B23—23 to 28 inches, dark yellowish brown (10YR 4/4) slaty silt loam; weak fine granular structure; friable; few fine roots; 40 percent phyllite fragments; strongly acid; clear wavy boundary.

C—28 to 34 inches, light olive brown (2.5Y 5/4) very slaty silt loam; weak medium platy structure; friable; 50 percent phyllite fragments; strongly acid; clear wavy boundary.

R—34 inches, fractured phyllite bedrock.

The solum thickness ranges from 18 to 35 inches, and the depth to bedrock is 20 to 40 inches. The content of rock fragments ranges from 10 to 70 percent, and the weighted average throughout the particle-size control section is more than 35 percent, by volume. The fragments are primarily slate or phyllite. The soil ranges from extremely acid to medium acid unless limed.

The Ap horizon has a hue of 10YR, value of 3 through 5, and chroma of 2 through 4. Most undisturbed areas have a thin O horizon that overlies an A2 horizon, but a few pedons have a 1- to 2-inch-thick A1 horizon over an A2 horizon. The A1 horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. The A2 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 or 2.

Some pedons have a B2h horizon with hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 2 through 4. The B2ir horizon has hue of 5YR or 7.5YR, value of 5, and chroma of 4 through 8. The other B2 horizons have hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 through 8. The B horizon in the fine-earth fraction is loam or silt loam.

The C horizon has hue of 2.5Y through 5Y, value of 5 or 6, and chroma of 2 through 6. The C horizon is friable or firm. It is loam or silt loam in the fine-earth fraction.

The bedrock is fractured phyllite or slate.

morphology of the soils

By Robert V. Rourke, associate soil scientist, University of Maine.

The soils in Waldo County have distinct horizons. The distinct horizons are the result of five major processes that take place, often simultaneously, within the soil: (1) addition of organic matter, (2) transformation and transfer of organic matter and iron and aluminum oxides, (3) weathering of primary minerals or rocks and parent material into silicate clays, (4) formation of soil structure, and (5) chemical change and transfer of iron.

Soils in wooded areas have an O (organic) horizon at the surface. This horizon is an accumulation of organic matter, such as twigs and leaves, or of humified organic material that has little admixture of mineral material. The amount of organic matter added to the surface of soils varies with the amount of vegetation, the aspect, and the temperature, moisture, and drainage conditions. Generally, excessively drained soils have a small amount of organic matter in the A horizon while somewhat poorly drained and wetter soils have a large amount.

Organic matter is accumulated and incorporated into the soil to form the A1 horizon. Plowing and cultivation have changed the A1 horizon to an Ap horizon in many soils. Man-deposited organic materials are also incorporated into the Ap horizon.

The weathering process, important in the formation of horizons in the soils of Waldo County, involves the movement of organic matter and iron and aluminum

oxides from the A horizon to the B horizon. Leaching of soluble cations and the decomposition of organic matter in the A horizon create acidity which dissolves sesquioxides (iron and aluminum oxides), reduces iron, and forms soluble metal-organic complexes. These complexes are leached from the A horizon into the B horizon, where they are precipitated by mechanical, chemical, and biological processes (*3*). In some areas, a light grayish, leached A2 horizon forms over an accumulation of humus and sesquioxides in the B horizon. Adams, Hermon, Madawaska, Masardis, and Peru soils, for example, all show evidence of the accumulation of humus and sesquioxides in the B horizon.

In some soils, such as Boothbay soils, the B horizon is formed mainly by alteration of the original material rather than as a result of illuviation. The alteration can be caused by the weathering of the parent material, or the oxidation of iron to give rusty colors, or the development of soil structure in place of the original rock or sediment structure.

In poorly drained soils or soils subject to wetness, gray in subsoil horizons indicates the reduction of iron to the ferrous form. These grayish layers have been chemically reduced and the iron has changed to a more soluble form during anaerobic activity. The iron was then leached from the soils, or moved to a different horizon, or concentrated and partly reoxidized. Mottles in the soil result from the reduction and reoxidation. Grayish layers are common in such soils as somewhat poorly drained to poorly drained Brayton soils and poorly drained Swanville soils.

Marlow and Peru soils have a compact substratum. Soil particles are tightly packed, bulk density is high, and pore space is low. It is believed that the compact substratum was formed, in part, as a result of high pressure from glacial ice. The eluvial-illuvial sequence is above the dense layer and is frequently separated from the dense zone by a second area of eluviation. The compact substratum continues from about 50 to 60 centimeters to several meters in depth and frequently has a very coarse to coarse prismatic structure. It is brittle when moist. This dense zone is nearly impervious to plant roots and is slowly permeable to water.

formation of the soils

This section describes the major processes of soil formation in Waldo County.

factors of soil formation

Soil is formed through the interaction of the five major soil forming factors: climate, parent material, plant and animal life, topography, and time. The influences of each of these factors on the soil-forming processes varies from place to place, and in some places one factor dominates the formation of a soil and determines most of its properties. Any local variations in the soils of Waldo County are caused by the varying influence of each of the five factors.

climate

Climate influences the weathering process and the vegetation, which in turn further modifies the soil-forming process. Climatic data for the county are recorded in the section "General nature of the area."

The coastal zone of Waldo County comes under the influence of the weather from the Maritime Provinces and therefore has a maritime polar climate. West and north of this coastal zone, the county is considered to be in a continental polar zone. The boundary between these two zones is an imaginary line running southwest-northeast from Searsmont to Frankfort and extending along the Penobscot River.

Rainfall influences soil formation through erosion-solution losses caused by leaching and chemical reaction, in which water is a necessary component. Many constituents are removed from the soils by leaching. For example, the soluble salts and basic ions (calcium, magnesium, potassium, and sodium) released in weathering of certain minerals are removed in varying degrees. In the course of a year, water percolating through soils may remove, via solution, several tons of minerals per square mile. As a result of this leaching the soils of Waldo County are slightly acid to extremely acid.

Physical weathering, in the form of alternate freezing and thawing, takes place from fall to spring. This promotes the granulation of soil material and the breaking of rock fragments into smaller units. This alternate freezing and thawing process improves soil structure in those soils that have been compacted as a result of the use of heavy equipment.

Waldo County is at a latitude just south of the midpoint between the North Pole and the Equator. The soils, therefore, are more deeply weathered and thickly formed than those in polar regions, but they are not so highly weathered or deep as most soils in tropical latitudes, where climate commonly masks the influence of different parent materials.

parent material

The parent material of Waldo County and the inherent landscape features have largely resulted from the Wisconsin stage of glaciation, the last glacial advance and retreat over this area. The five major parent materials of the soils of Waldo County are glacial till, glaciofluvial deposits, marine and lacustrine sediments, organic material, and recent alluvium.

Soils that formed in friable glacial till, such as Hermon soils, reflect the gouging, scraping, and transportation action of the glacier while depositing the material across the landscape. Marlow and Peru soils formed in dense, compact glacial till on smooth, drumlin-shaped landforms

derived mainly from a mixture of micaceous gneiss, schist, and granite. Brayton soils formed in the depressional areas on these landforms and also have a compact substratum. Bangor and Dixmont soils formed in less dense glacial till derived from lime-seamed slate, phyllite, quartzite, and schist.

Glaciofluvial deposits were accumulated when meltwater from the glacier picked up the particles of various sizes and deposited them as strata of sandy, loamy, or gravelly material on deltas, outwash plains, terraces, kames, and eskers. Adams, Madawaska, Masardis, and Searsport soils formed in such material.

Some other soils formed in marine and lacustrine sediments that were deposited as particles in quiet bodies of water. Eldridge soils formed in sandy material underlain by loamy sediments. Boothbay, Swanville, and Biddeford soils formed in silt and clay sediments.

Some soils formed in recent alluvium deposited along streams and rivers. Limerick, Podunk, Rumney, and Saco soils formed in such material.

Still other soils formed in organic material in depressional areas that were ponded at one time and subsequently have accumulated plant remains over many years. Borosaprists formed in material from mosses, grasses, and herbaceous and woody plants. Sulfaquents and Sulfihemists formed in material from saltwater marshgrasses and marine silts and clays from tidal flooding.

plant and animal life

The presence of living plants and animals and their decaying remains in a mineral soil is one of the features that distinguishes the soil from its parent material. Plants generally supply the organic matter that gives color to the surface layer. In areas of poor drainage, this organic matter tends to collect on the surface, creating thick organic layers.

The decaying plants and animals also supply nutrients to the soil. Many of the trees and other plants take up these plant nutrients and store them in leaves, stems, and roots. When the trees and plants die, they are acted on by bacteria or fungi, and the nutrients are returned to the soil. Fungi produce some of the organic acids in areas of such soils as Adams, Hermon, and Marlow soils, especially where the soils are not plowed.

Earthworms, insects, rodents, and other animals that live in the soil help to mix the soil layers. Earthworms aid in soil aeration and in the formation of granular soil structure. They also help in the decomposition of organic matter.

The most obvious result of man's activities is the mixing of layers through plowing. Compact, impermeable layers have been created in some areas within the soil by plowing or use of machinery. Soil erosion is accelerated in cultivated areas to the point that on some soils the surface layer has eroded away. In places that have been limed and fertilized for long periods, the soils have become less acid. In places where man has added drainage systems, the soil has often become more aerated and warmer and has a lower organic matter content in the surface layer.

topography

The influence of topography on the soils can be seen by comparing soils that have the same kind of parent material and climatic conditions but that have different topography and drainage.

The Brayton, Marlow, and Peru soils, for example, formed in compact glacial till. The Marlow soils are well drained, have mainly convex slopes, and are on the upper parts of till ridges. The Peru soils are moderately well drained, have mainly slightly concave slopes, and are on the middle parts of till ridges. The Brayton soils are somewhat poorly to poorly drained, have mainly concave slopes, and are in depressions or at lower slope positions.

time

The degree of development, or maturity, of a soil commonly reflects the length of time that the parent material has been in place. In this survey area, most of the upland soils have been forming in their present state for about 13,500 years, since the retreat of the last glacier. The lowland soils have been forming since they emerged from the sea about 12,000 years ago.

Most soils on flood plains are continually being reworked and are considered immature. Their layers are not well defined, their colors show only slight differences, and their structure is weak. Podunk soils are an example of soils on flood plains.

Some soils show evidence of change and maturity, such as the formation of a reddish, dark layer that is distinct from the other layers in the soil. This distinct layer is a result of the accumulation of organic matter, iron, and aluminum over a long period. Marlow soils, which are more mature soils, have such a layer.

geology

By D. Bruce Champeon, geologist, Soil Conservation Service.

The landscape of Waldo County is a result mainly of the events of the Pleistocene epoch, which began about 2 million years ago. Huge ice sheets advanced and retreated over the area probably as many as four times during that period, but evidence remains of only the last major glaciation, known as the Wisconsin stage.

The Laurentide ice sheet of Late Wisconsin age had spread southeast to its maximum extent on the continental shelf by about 18,000 years ago. As it moved, the glacier ground up the rocks beneath it and deposited this newly eroded material under the ice as a compact blanket of glacial till, a mixture of rock fragments ranging from clay-sized material to boulders. Marlow and Peru soils are examples of soils developed in this dense till.

The sheer weight of a massive sheet of ice thousands of feet thick depressed the land surface significantly, but the extent of the lowering is not known. The great quantities of moisture locked up in the glacier resulted in a general worldwide lowering of sea level by about 300 to 350 feet. Eventually the climate warmed, and the rate of melting exceeded the rate of advance, resulting in a net retreat of the glacial margin. By about 13,500 years ago, the ice margin had receded to approximately the position of the present coast. As recession continued inland, a series of small ridges were built up. These ridges, known as recessional moraines, were formed from material deposited when the ice margin stabilized temporarily during the overall retreat. Many of the ridges were formed under water and were later wave-washed as emergence continued. Hermon soils are examples of soils formed on these ridges. Flooding of the lowlands and valleys by the rising seas followed. Large quantities of clay and silt were deposited in these areas, forming the familiar "blue clays" of the coastal zone and major river valleys. Boothbay soils are an example of soils developed in this marine material.

During glacial retreat, the large amounts of meltwater carried and eventually deposited sand and gravel as terraces, kames, deltas, and eskers in contact with the remaining ice. Also, sand was sometimes deposited in front of the ice margin in the form of outwash plains. These types of deposits often supply high yields of ground water to wells and are the best aquifers in Waldo County. Masardis soils are an example of soils formed in ice-contact deposits; Adams soils formed in sandy material on outwash plains.

As meltwater quantities decreased, some material in the ice was not able to be carried away, but remained to form a cover of firm, but not dense, till on some of the upland ridges and slopes. Bangor soils developed in this till.

As the ice melted and its weight was removed, the land began to rebound and emerge from the sea. This emergence began about 3,000 years ago and continued until about 10,000 years ago when sea level was about 180 feet below the present level. Since that time, a slow submergence has brought the sea up to its present level. During the period of emergence, many lakes, ponds, and marshes were formed. Some still exist, but many have been filled with lacustrine sediments or organic material. Boothbay soils formed in the lake sediments, and Borosaprists formed in the organic materials.

The process of erosion, sedimentation, and landscape alteration is an ongoing one. Soils continue to form in "modern" (postglacial) materials: Alluvial soils, such as Podunk soils, formed in river and stream bottom deposits; Sulfaquents and Sulfihehmists developed from saltwater marshgrasses on tidal marshes; and Beaches formed in loose water-worked sand, gravel, or cobbly material.

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glossary

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

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.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

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 40-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 2.4
Low	2.4 to 3.2
Moderate	3.2 to 5.2
High	>5.2

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

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 but 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.

Channery soil. A soil that is, by volume, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches along the longest axis. A single piece is called a fragment.

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 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.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15.2 to 38.1 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Cobblestone (or cobble). A rounded or partly rounded fragment of rock 3 to 10 inches (7.5 to 25 centimeters) in diameter.

Compact substratum. A layer with high bulk density, that is hard when dry, and is moderately to weakly brittle when moist.

Complex slope. Irregular or variable slope. Planning or constructing terraces, diversions, and other water-control measures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil 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 are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

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.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

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.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or arresting grazing for a prescribed period.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the

surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

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.

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 the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes the surface.

Esker (geology). A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Fast intake (in tables). The rapid movement of water into the soil.

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 ovendry 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.*

Fine textured soil. Sandy clay, silty clay, and clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

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.

Glacial drift (geology). Pulverized and other rock material transported by glacial ice and then deposited. Also the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial melt water.

Glacial till (geology). Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits (geology). Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial melt water. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

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 up to 3 inches (2 millimeters to 7.5 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.5 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 (geology). Water filling all the unblocked pores of underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. 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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric and the more decomposed sapric material.

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 upper case letter represents the major horizons. Numbers or lower case 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 at the surface of a mineral soil.

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.

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. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

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 A or B horizon. 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, the Roman numeral II precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but 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-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

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 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.

Kame (geology). An irregular, short ridge or hill of stratified glacial drift.

Lacustrine deposit (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Large stones (in tables). Rock fragments 3 inches (7.5 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.

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.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

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. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Sandy loam and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

Moraine (geology). An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

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. Mottling generally indicates poor aeration and impeded drainage. 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).

Muck. Dark colored, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

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.

Outwash, glacial. Stratified sand and gravel produced by glaciers and carried, sorted, and deposited by glacial melt water.

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it is generally low in relief.

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.

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 downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.20 inch
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

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressions. 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.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

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.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in 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 degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly 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

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Rill. A steep sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rippable. Bedrock or hardpan can be excavated using a single-tooth ripping attachment mounted on a tractor with a 200-300 draw bar horsepower rating.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

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 ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments 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.

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.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

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 or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and runoff water.

Shrink-swell. 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.

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.

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 feet.

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.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

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 over periods of time.

Soil separates. Mineral particles less than 2 mm in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

	Millimeters
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 and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to wind 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 grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

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."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. 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 is generally 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 (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

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 too thin for the specified use.

Till plain. An extensive flat to undulating area underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

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.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

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 melt water streams, in a glacial lake or other body of still water in front of a glacier.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the 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 ovendry basis, at which a plant (specifically sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

tables

TABLE 1.--TEMPERATURE AND PRECIPITATION
[Recorded in the period 1951-75 at Belfast, Maine]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[1]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	32.5	11.9	22.2	53	-18	7	3.84	2.14	5.22	8	12.8
February	34.5	12.0	23.3	52	-19	0	4.03	2.51	5.38	7	18.9
March	42.1	22.3	32.2	60	-4	10	4.00	2.00	5.62	7	9.3
April	53.4	32.2	42.8	74	17	102	3.81	2.43	5.05	7	1.2
May	64.8	41.8	53.3	88	28	412	3.81	2.18	5.13	8	.0
June	74.4	51.3	62.8	93	37	684	3.25	1.92	4.44	8	.0
July	79.6	57.0	68.3	94	46	877	3.33	1.30	4.97	6	.0
August	78.5	55.5	67.0	92	41	837	3.08	2.03	4.03	6	.0
September	70.4	48.6	59.5	88	31	585	3.83	2.40	5.12	7	.0
October	60.1	39.3	49.7	79	23	301	4.30	2.76	5.68	7	.1
November	47.4	31.0	39.3	67	12	64	5.92	4.03	7.65	9	2.5
December	35.5	17.7	26.6	58	-11	21	5.51	3.40	7.40	8	14.1
Year	56.1	35.1	45.6	96	-23	3,900	48.71	40.83	56.24	88	58.9

[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 (40° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL
[Recorded in the period 1951-75 at Belfast, Maine]

Probability	Temperature		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	April 24	May 2	May 19
2 years in 10 later than--	April 19	April 29	May 16
5 years in 10 later than--	April 11	April 24	May 10
First freezing temperature in fall:			
1 year in 10 earlier than--	October 12	October 4	September 20
2 years in 10 earlier than--	October 19	October 9	September 25
5 years in 10 earlier than--	November 1	October 18	October 4

TABLE 3.--GROWING SEASON
[Recorded in the period 1951-75 at Belfast, Maine]

Probability	Daily minimum temperature during growing season		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	176	161	130
8 years in 10	186	166	136
5 years in 10	203	176	147
2 years in 10	221	187	158
1 year in 10	230	192	164

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
AdB	Adams loamy fine sand, 3 to 8 percent slopes	1,259	0.3
AdC	Adams loamy fine sand, 8 to 15 percent slopes	1,202	0.3
AdD	Adams loamy fine sand, 15 to 25 percent slopes	376	0.1
BaB	Bangor silt loam, 3 to 8 percent slopes	840	0.2
BaC	Bangor silt loam, 8 to 15 percent slopes	1,180	0.2
BaD	Bangor silt loam, 15 to 25 percent slopes	273	0.1
BbB	Bangor very stony silt loam, 3 to 8 percent slopes	1,315	0.3
BbC	Bangor very stony silt loam, 8 to 15 percent slopes	2,183	0.5
BbD	Bangor very stony silt loam, 15 to 25 percent slopes	726	0.2
Be	Beaches	195	*
Bf	Biddeford mucky peat	2,785	0.6
BoB	Boothbay silt loam, 3 to 8 percent slopes	21,407	4.5
BoC	Boothbay silt loam, 8 to 15 percent slopes	10,954	2.3
BoD	Boothbay silt loam, 15 to 25 percent slopes	3,701	0.8
BoE3	Boothbay silt loam, 25 to 45 percent slopes, severely eroded	1,767	0.4
BpB	Boothbay very stony silt loam, 3 to 8 percent slopes	850	0.2
Bs	Borosaprists, ponded	25,635	5.5
BtB	Brayton fine sandy loam, 0 to 8 percent slopes	2,615	0.6
BvB	Brayton very stony fine sandy loam, 0 to 8 percent slopes	29,928	6.3
BxB	Brayton extremely stony fine sandy loam, 0 to 8 percent slopes	1,642	0.3
DxB	Dixmont silt loam, 3 to 8 percent slopes	3,319	0.7
DxC	Dixmont silt loam, 8 to 15 percent slopes	1,372	0.3
DyB	Dixmont very stony silt loam, 3 to 8 percent slopes	7,923	1.7
DyC	Dixmont very stony silt loam, 8 to 15 percent slopes	3,131	0.7
ElB	Eldridge fine sandy loam, 3 to 8 percent slopes	872	0.2
ElC	Eldridge fine sandy loam, 8 to 15 percent slopes	452	0.1
HeB	Hermon sandy loam, 3 to 8 percent slopes	217	*
HeC	Hermon sandy loam, 8 to 15 percent slopes	623	0.1
HfC	Hermon very stony sandy loam, 8 to 15 percent slopes	822	0.2
HfD	Hermon very stony sandy loam, 15 to 25 percent slopes	420	0.1
HgC	Hermon extremely stony sandy loam, 8 to 15 percent slopes	1,029	0.2
HgD	Hermon extremely stony sandy loam, 15 to 25 percent slopes	376	0.1
Lk	Limerick and Rumney soils	3,491	0.7
LrB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	5,093	1.1
LrC	Lyman-Rock outcrop complex, 8 to 15 percent slopes	26,634	5.7
LrE	Lyman-Rock outcrop complex, 15 to 60 percent slopes	13,894	3.0
MaB	Madawaska fine sandy loam, 3 to 8 percent slopes	3,249	0.7
MbB	Marlow fine stony loam, 3 to 8 percent slopes	5,619	1.1
MbC	Marlow fine sandy loam, 8 to 15 percent slopes	11,563	2.5
MbD	Marlow fine sandy loam, 15 to 25 percent slopes	3,089	0.7
MeB	Marlow very stony fine sandy loam, 3 to 8 percent slopes	4,383	0.9
MeC	Marlow very stony fine sandy loam, 8 to 15 percent slopes	12,722	2.7
MeD	Marlow very stony fine sandy loam, 15 to 25 percent slopes	9,269	2.0
MeE	Marlow very stony fine sandy loam, 25 to 45 percent slopes	2,048	0.4
MfC	Marlow extremely stony fine sandy loam, 3 to 15 percent slopes	1,643	0.3
MfE	Marlow extremely stony fine sandy loam, 15 to 45 percent slopes	1,302	0.3
MkB	Masardis fine sandy loam, 0 to 8 percent slopes	2,862	0.6
MkC	Masardis fine sandy loam, 8 to 15 percent slopes	3,259	0.7
MkE	Masardis fine sandy loam, 15 to 45 percent slopes	1,821	0.4
MrB	Masardis Variant fine sandy loam, very rocky, 3 to 8 percent slopes	260	0.1
MrC	Masardis Variant fine sandy loam, very rocky, 8 to 15 percent slopes	412	0.1
MsB	Masardis Variant-Rock outcrop complex, 3 to 8 percent slopes	101	*
MsC	Masardis Variant-Rock outcrop complex, 8 to 15 percent slopes	531	0.1
MwB	Monarda silt loam, 0 to 8 percent slopes	772	0.2
MyB	Monarda very stony silt loam, 0 to 8 percent slopes	8,866	1.9
PaB	Peru fine sandy loam, 3 to 8 percent slopes	21,426	4.5
PaC	Peru fine sandy loam, 8 to 15 percent slopes	10,572	2.3
PbB	Peru very stony fine sandy loam, 3 to 8 percent slopes	36,331	7.7
PbC	Peru very stony fine sandy loam, 8 to 15 percent slopes	31,077	6.6
PcB	Peru extremely stony fine sandy loam, 3 to 8 percent slopes	981	0.2
PcC	Peru extremely stony fine sandy loam, 8 to 15 percent slopes	1,910	0.4
PcD	Peru extremely stony fine sandy loam, 15 to 30 percent slopes	423	0.1
Pg	Pits, gravel and sand	635	0.1
Py	Podunk fine sandy loam	1,970	0.4
Qu	Quarries	42	*
Rc	Rock outcrop	262	0.1
RmC	Rock outcrop-Lyman complex, 3 to 15 percent slopes	615	0.1
RmE	Rock outcrop-Lyman complex, 15 to 60 percent slopes	992	0.2
Sa	Saco very fine sandy loam	1,957	0.4
Se	Searsport mucky peat	1,257	0.3

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
Su	Sulfaquents and Sulfihemists, frequently flooded	521	0.1
Sw	Swanville silt loam	23,401	5.0
ThB	Thorndike-Winnecook complex, 3 to 8 percent slopes	7,300	1.6
ThC	Thorndike-Winnecook complex, 8 to 15 percent slopes	11,033	2.3
ThD	Thorndike-Winnecook complex, 15 to 25 percent slopes	3,252	0.7
TkB	Thorndike-Rock outcrop complex, 3 to 8 percent slopes	903	0.2
TkC	Thorndike-Rock outcrop complex, 8 to 15 percent slopes	3,356	0.7
TkE	Thorndike-Rock outcrop complex, 15 to 45 percent slopes	2,142	0.5
TrB	Tunbridge-Lyman complex, 3 to 8 percent slopes	15,379	3.3
TrC	Tunbridge-Lyman complex, 8 to 15 percent slopes	27,901	5.9
TrD	Tunbridge-Lyman complex, 15 to 25 percent slopes	6,630	1.4
Ud	Udorthents-Urban land complex	1,055	0.2
W	Water	2,165	0.4
	Total	469,760	100.0

* Less than 0.1 percent.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass-legume hay	Grass hay	Pasture	Apples
	Ton	Cwt	Ton	Ton	Ton	AUM*	Bu
AdB---- Adams	14	---	3.0	3.0	2.0	4.5	---
AdC---- Adams	12	---	3.0	2.5	2.0	4.5	---
AdD---- Adams	---	---	---	---	---	---	---
BaB---- Bangor	29	345	4.5	4.0	4.0	8.5	800
BaC---- Bangor	22	300	4.0	3.5	3.5	8.5	800
BaD---- Bangor	20	---	3.5	3.0	3.0	7.5	700
BbB, BbC, BbD---- Bangor	---	---	---	---	---	---	---
Be**. Beaches							
Bf---- Biddeford	---	---	---	---	---	---	---
BoB---- Boothbay	22	270	4.0	4.0	4.5	7.7	600
BoC---- Boothbay	20	270	3.5	3.5	4.0	6.5	600
BoD---- Boothbay	16	---	3.0	3.0	3.5	6.0	---
BoE3---- Boothbay	---	---	---	---	---	6.0	---
BpB---- Boothbay	---	---	---	---	---	---	---
Bs**. Borosaprists							
BtB---- Brayton	16	---	3.0	3.0	3.0	5.5	---
BvB, BxB---- Brayton	---	---	---	---	---	---	---
DxB---- Dixmont	25	300	4.0	3.0	3.6	7.7	600
DxC---- Dixmont	18	240	4.0	2.5	2.7	7.7	600
DyB, DyC---- Dixmont	---	---	---	---	---	---	---
ElB---- Eldridge	16	---	4.0	3.5	3.0	6.6	650

See footnote at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass-legume hay	Grass hay	Pasture	Apples
	Ton	Cwt	Ton	Ton	Ton	AUM*	Bu
ElC---------- Eldridge	14	---	3.5	3.0	2.5	5.7	650
HeB---------- Hermon	16	270	4.0	3.0	3.0	7.7	600
HeC---------- Hermon	14	240	4.0	3.0	3.0	7.7	600
HfC, HfD---------- Hermon	---	---	---	---	---	---	---
HgC, HgD---------- Hermon	---	---	---	---	---	---	---
Lk---------- Limerick and Rumney	20	---	---	3.5	4.0	6.5	---
LrB---------- Lyman-Rock outcrop	---	---	---	---	---	---	---
LrC---------- Lyman-Rock outcrop	---	---	---	---	---	---	---
LrE---------- Lyman-Rock outcrop	---	---	---	---	---	---	---
MaB---------- Madawaska	22	270	4.5	3.5	4.0	8.5	650
MbB---------- Marlow	22	330	4.5	4.0	4.0	8.5	700
MbC---------- Marlow	20	300	4.5	4.0	4.0	8.5	700
MbD---------- Marlow	18	---	4.0	3.5	3.5	7.5	650
MeB, MeC, MeD---------- Marlow	---	---	---	---	---	---	---
MeE---------- Marlow	---	---	---	---	---	---	---
MfC, MfE---------- Marlow	---	---	---	---	---	---	---
MkB---------- Masardis	14	250	3.5	3.0	2.5	7.0	---
MkC---------- Masardis	12	230	3.0	2.5	2.5	6.5	---
MkE---------- Masardis	---	---	---	---	---	---	---
MrB---------- Masardis Variant	---	---	---	2.5	2.0	6.5	---
MrC---------- Masardis Variant	---	---	---	2.0	2.0	6.0	---
MsB---------- Masardis Variant-Rock outcrop	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass-legume hay	Grass hay	Pasture	Apples
	Ton	Cwt	Ton	Ton	Ton	AUM*	Bu
MsC--- Masardis Variant-Rock outcrop	---	---	---	---	---	---	---
MwB--- Monarda	14	---	---	3.0	3.0	5.5	---
MyB--- Monarda	---	---	---	---	---	---	---
PaB--- Peru	20	270	4.0	4.0	4.0	8.0	650
PaC--- Peru	18	240	4.0	4.0	4.0	8.0	650
PbB, PbC--- Peru	---	---	---	---	---	---	---
PcB, PcC, PcD--- Peru	---	---	---	---	---	---	---
Pg**. Pits							
Py--- Podunk	24	300	4.0	4.5	4.5	8.5	---
Qu**. Quarries							
Rc**. Rock outcrop							
RmC--- Rock outcrop-Lyman	---	---	---	---	---	---	---
RmE--- Rock outcrop-Lyman	---	---	---	---	---	---	---
Sa--- Saco	---	---	---	---	---	---	---
Se--- Searsport	---	---	---	---	---	---	---
Su--- Sulfaquents and Sulfihemists	---	---	---	---	---	---	---
Sw--- Swanville	17	---	---	3.2	3.7	6.2	---
ThB--- Thorndike-Winnecook	18	284	4.0	3.2	---	6.3	650
ThC--- Thorndike-Winnecook	16	253	3.5	2.7	---	6.3	650
ThD--- Thorndike-Winnecook	---	---	2.6	2.5	---	5.1	---
TkB--- Thorndike-Rock outcrop	---	---	---	---	---	---	---
TkC--- Thorndike-Rock outcrop	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass-legume hay	Grass hay	Pasture	Apples
	Ton	Cwt	Ton	Ton	Ton	AUM*	Bu
TkE---------- Thorndike-Rock outcrop	---	---	---	---	---	---	---
TrB---------- Tunbridge-Lyman	16	---	---	---	3.0	6.3	550
TrC---------- Tunbridge-Lyman	14	---	---	---	2.9	6.1	550
TrD---------- Tunbridge-Lyman	---	---	---	---	---	5.2	450
Ud---------- Udorthents-Urban land	---	---	---	---	---	---	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.
** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 6.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I	---	---	---	---
II	81,598	29,138	52,243	217
III	86,909	75,650	6,878	4,381
IV	45,219	16,945	23,401	4,873
V	---	---	---	---
VI	152,888	---	4,742	148,146
VII	71,644	1,767	1,257	68,620
VIII	27,605	---	26,156	1,449

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
AdB, AdC---------- Adams	5s	Slight	Slight	Severe	Slight	Eastern white pine-- Red pine---------- Sugar maple--------- Northern red oak----	55 55 47 50	Eastern white pine, red pine, European larch.
AdD---------- Adams	5s	Slight	Moderate	Severe	Slight	Eastern white pine-- Red pine---------- Sugar maple--------- Northern red oak----	55 55 47 50	Eastern white pine, red pine, European larch.
BaB, BaC---------- Bangor	3o	Slight	Slight	Slight	Slight	Eastern white pine-- White spruce-------- Balsam fir---------- Red spruce----------	74 63 56 50	Eastern white pine, red pine, European larch, tamarack, white spruce.
BaD---------- Bangor	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- White spruce-------- Balsam fir---------- Red spruce----------	74 63 56 50	Eastern white pine, red pine, European larch, tamarack, white spruce.
BbB, BbC---------- Bangor	3o	Slight	Slight	Slight	Slight	Eastern white pine-- White spruce-------- Balsam fir---------- Red spruce----------	74 63 56 50	Eastern white pine, red pine, European larch, tamarack, white spruce.
BbD---------- Bangor	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- White spruce-------- Balsam fir---------- Red spruce----------	74 63 56 50	Eastern white pine, red pine, European larch, tamarack, white spruce.
Bf---------- Biddeford	5w	Slight	Severe	Severe	Severe	Red maple---------- Balsam fir---------- White spruce-------- Tamarack---------- Black spruce--------	55 48 49 --- ---	
BoB, BoC---------- Boothbay	4o	Slight	Slight	Slight	Slight	Eastern white pine-- Eastern hemlock----- Balsam fir---------- White spruce-------- Paper birch--------- Red maple----------	65 --- 55 55 56 56	Eastern white pine, white spruce.
BoD---------- Boothbay	4r	Slight	Moderate	Slight	Slight	Eastern white pine-- Eastern hemlock----- Balsam fir---------- White spruce-------- Paper birch--------- Red maple----------	65 --- 55 55 56 56	Eastern white pine, white spruce.
BoE3---------- Boothbay	4r	Moderate	Severe	Slight	Slight	Eastern white pine-- Eastern hemlock----- Balsam fir---------- White spruce-------- Paper birch--------- Red maple----------	65 --- 55 55 56 56	Eastern white pine, white spruce.
BpB---------- Boothbay	4o	Slight	Slight	Slight	Slight	Eastern white pine-- Eastern hemlock----- Balsam fir---------- White spruce-------- Paper birch--------- Red maple----------	65 --- 55 55 56 56	Eastern white pine, white spruce.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
BtB, BvB---------- Brayton	4w	Slight	Severe	Severe	Severe	Northern red oak----	60	Eastern white pine, white spruce, northern white-cedar.
						Eastern white pine--	67	
						White spruce--------	56	
						Balsam fir----------	56	
						Red maple-----------	65	
						Eastern hemlock-----	60	
						Northern white-cedar	45	
BxB---------- Brayton	4x	Slight	Severe	Severe	Severe	Northern red oak----	60	Eastern white pine, white spruce, northern white-cedar.
						Eastern white pine--	67	
						White spruce--------	56	
						Balsam fir----------	56	
						Red maple-----------	65	
						Eastern hemlock-----	60	
						Northern white-cedar	45	
DxB, DxC, DyB, DyC- Dixmont	3o	Slight	Slight	Slight	Slight	Eastern white pine--	75	Eastern white pine, northern white-cedar, white spruce, European larch.
						White spruce--------	58	
						Balsam fir----------	54	
						Red spruce----------	49	
						Northern white-cedar	55	
ElB, ElC---------- Eldridge	4o	Slight	Slight	Slight	Slight	Eastern white pine--	65	Eastern white pine, red pine.
						Northern red oak----	60	
HeB, HeC, HfC------ Hermon	4s	Slight	Slight	Moderate	Slight	Eastern white pine--	62	Eastern white pine, red pine, European larch.
						White spruce--------	50	
						Red pine------------	65	
						Sugar maple---------	55	
						Northern red oak----	60	
HfD---------- Hermon	4s	Slight	Moderate	Moderate	Slight	Eastern white pine--	62	Eastern white pine, red pine, European larch.
						White spruce--------	50	
						Red pine------------	65	
						Sugar maple---------	55	
						Northern red oak----	60	
HgC, HgD---------- Hermon	4x	Slight	Moderate	Moderate	Slight	Eastern white pine--	62	Eastern white pine, red pine, European larch.
						White spruce--------	50	
						Red pine------------	65	
						Sugar maple---------	55	
						Northern red oak----	60	
Lk*:								
Limerick----------	4w	Slight	Severe	Severe	Severe	Eastern white pine--	65	Eastern white pine, white spruce, northern white-cedar.
						Red maple-----------	---	
Rumney------------	4w	Slight	Severe	Severe	Severe	Eastern white pine--	57	Eastern white pine, white spruce, northern white-cedar.
						Red maple-----------	65	
						Balsam fir----------	55	
LrB*, LrC*:								
Lyman-------------	4d	Slight	Slight	Severe	Moderate	Sugar maple---------	50	Eastern white pine, red pine, white spruce, balsam fir.
						Balsam fir----------	60	
						Northern red oak----	60	
						Eastern white pine--	60	
Rock outcrop.								
LrE*:								
Lyman-------------	4d	Slight	Moderate	Severe	Moderate	Sugar maple---------	50	Eastern white pine, red pine, white spruce, balsam fir.
						Balsam fir----------	60	
						Northern red oak----	60	
						Eastern white pine--	60	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
LrE*: Rock outcrop.								
MaB---------- Madawaska	4o	Slight	Slight	Slight	Slight	Eastern white pine-- White spruce--------- Sugar maple--------- Balsam fir---------- Red spruce---------- Red pine----------	68 51 63 51 49 70	Eastern white pine, white spruce, European larch, balsam fir.
MbB, MbC---------- Marlow	4o	Slight	Slight	Slight	Slight	Eastern white pine-- Balsam fir---------- Sugar maple--------- Red pine---------- Yellow birch--------- Paper birch--------- White spruce--------- White ash---------- Northern red ash----	66 57 59 64 63 65 58 61 70	Eastern white pine, white spruce, balsam fir.
MbD---------- Marlow	4r	Slight	Moderate	Slight	Slight	Eastern white pine-- Balsam fir---------- Sugar maple--------- Red pine---------- Yellow birch--------- Paper birch--------- White spruce--------- White ash---------- Northern rad oak----	66 57 59 64 63 65 58 61 70	Eastern white pine, white spruce, balsam fir.
MeB, MeC---------- Marlow	4o	Slight	Slight	Slight	Slight	Eastern white pine-- Balsam fir---------- Sugar maple--------- Red pine---------- Northern red oak----	66 57 59 64 70	Eastern white pine, white spruce, balsam fir.
MeD---------- Marlow	4r	Slight	Moderate	Slight	Slight	Eastern white pine-- Balsam fir---------- Sugar maple--------- Red pine---------- Northern red oak----	66 57 59 64 70	Eastern white pine, white spruce, balsam fir.
MeE---------- Marlow	4r	Moderate	Severe	Slight	Slight	Eastern white pine-- Balsam fir---------- Sugar maple--------- Red pine---------- Northern red oak----	66 57 59 64 70	Eastern white pine, white spruce, balsam fir.
MfC, MfE---------- Marlow	3x	Slight	Moderate	Slight	Slight	Yellow birch--------- Paper birch--------- White spruce--------- White ash---------- Northern red oak----	63 65 58 61 70	
MkB, MkC---------- Masardis	4s	Slight	Slight	Moderate	Slight	White spruce--------- Red spruce---------- Paper birch--------- Sugar maple--------- Yellow birch--------- Eastern white pine-- Red pine---------- Northern red oak----	55 45 55 55 55 65 65 60	Eastern white pine, red pine, white spruce.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
MkE---------- Masardis	4s	Slight	Moderate	Moderate	Slight	White spruce-------- Red spruce---------- Paper birch--------- Sugar maple--------- Yellow birch-------- Eastern white pine-- Red pine---------- Northern red oak----	55 45 55 55 55 65 65 60	Eastern white pine, red pine, white spruce.
MrB, MrC---------- Masardis Variant	5x	Slight	Slight	Moderate	Slight	Eastern white pine-- Red pine---------- White spruce--------	55 55 ---	Eastern white pine, red pine.
MsB*, MsC*: Masardis Variant--	5x	Slight	Slight	Moderate	Slight	Eastern white pine-- Red pine---------- White spruce--------	55 55 ---	Eastern white pine, red pine.
Rock outcrop.								
MwB, MyB---------- Monarda	4w	Slight	Severe	Severe	Severe	Eastern white pine-- White spruce-------- Balsam fir---------- Sugar maple--------- Northern white-cedar	64 59 47 55 55	Eastern white pine, white spruce.
PaB, PaC, PbB, PbC- Peru	3o	Slight	Slight	Slight	Slight	Sugar maple--------- Northern red oak---- Eastern white pine-- Balsam fir---------- White spruce-------- White ash----------	57 70 71 55 52 62	Eastern white pine, red pine, white spruce, European larch.
PcB, PcC, PcD------ Peru	3x	Slight	Moderate	Slight	Slight	Sugar maple--------- Northern red oak---- Eastern white pine-- Balsam fir---------- White spruce-------- White ash----------	57 70 71 55 52 62	Eastern white pine, red pine, white spruce, European larch.
Py---------- Podunk	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Red pine---------- Red spruce---------- Red maple----------	75 75 45 62	Eastern white pine, red pine, white spruce.
RmC*: Rock outcrop.								
Lyman---------- RmE*: Rock outcrop.	4d	Slight	Slight	Severe	Moderate	Sugar maple--------- Balsam fir---------- Northern red oak---- Eastern white pine--	50 60 60 60	Eastern white pine, red pine, white spruce, balsam fir.
Lyman---------- Sa---------- Saco	4d 5w	Moderate Slight	Severe Severe	Severe Severe	Moderate Severe	Sugar maple--------- Balsam fir---------- Northern red oak---- Eastern white pine-- Eastern white pine-- Red maple---------- Northern white-cedar	50 60 60 60 50 50 45	Eastern white pine, red pine, white spruce, balsam fir.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
Se---------- Searsport	5w	Slight	Severe	Severe	Severe	Eastern white pine-- Red maple---------- Northern white-cedar Balsam fir---------- European larch------ Tamarack----------	58 64 45 53 --- ---	Northern white-cedar, European larch.
Sw---------- Swanville	5w	Slight	Severe	Severe	Severe	Eastern white pine-- White spruce-------- Red spruce---------- Sugar maple----------	58 50 40 50	Eastern white pine, red spruce, northern white-cedar.
ThB*, ThC*: Thorndike---------	4d	Slight	Slight	Severe	Moderate	Eastern white pine-- White spruce-------- Red spruce---------- Paper birch----------	62 56 46 56	Eastern white pine.
Winnecook---------	4o	Slight	Slight	Slight	Slight	Eastern white pine-- White spruce-------- Balsam fir---------- Paper birch---------- Northern white-cedar Sugar maple---------- Yellow birch-------- Red spruce----------	66 53 55 57 57 57 57 44	Eastern white pine, red pine.
ThD*: Thorndike---------	4d	Slight	Moderate	Severe	Moderate	Eastern white pine-- White spruce-------- Red spruce---------- Paper birch----------	62 56 46 56	Eastern white pine.
Winnecook---------	4r	Slight	Moderate	Slight	Slight	Eastern white pine-- White spruce-------- Balsam fir---------- Paper birch---------- Northern white-cedar Sugar maple---------- Yellow birch-------- Red spruce----------	66 53 55 57 57 57 57 44	Eastern white pine, red pine.
TkB*, TkC*: Thorndike---------	4d	Slight	Slight	Severe	Moderate	Eastern white pine-- White spruce-------- Red spruce---------- Paper birch----------	62 56 46 56	Eastern white pine.
Rock outcrop.								
TkE*: Thorndike---------	4d	Slight	Moderate	Severe	Moderate	Eastern white pine-- White spruce-------- Red spruce---------- Paper birch----------	62 56 46 56	Eastern white pine.
Rock outcrop.								
TrB*, TrC*: Tunbridge---------	3o	Slight	Slight	Slight	Slight	Northern red oak---- Eastern white pine-- Red spruce---------- Sugar maple---------- Yellow birch-------- Paper birch---------- White spruce-------- Balsam fir----------	70 75 55 57 57 57 60 60	Eastern white pine, white spruce, red spruce.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
TrB*, TrC*:								
Lyman	4d	Slight	Slight	Severe	Moderate	Sugar maple	50	Eastern white pine, red pine, white spruce, balsam fir.
						Balsam fir	60	
						Northern red oak	60	
						Eastern white pine	60	
TrD*:								
Tunbridge	3r	Slight	Moderate	Slight	Slight	Northern red oak	70	Eastern white pine, white spruce, red spruce.
						Eastern white pine	75	
						Red spruce	55	
						Sugar maple	57	
						Yellow birch	57	
						Paper birch	57	
						Balsam fir	60	
						Northern red oak	60	
Lyman	4d	Slight	Moderate	Severe	Moderate	Sugar maple	50	Eastern white pine, red pine, white spruce, balsam fir.
						Balsam fir	60	
						Northern red oak	60	
						Eastern white pine	60	

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AdB---- Adams	Slight	Slight	Moderate: slope.	Slight	Severe: droughty.
AdC---- Adams	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Severe: droughty.
AdD---- Adams	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope, droughty.
BaB---- Bangor	Slight	Slight	Moderate: slope, small stones.	Slight	Slight.
BaC---- Bangor	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
BaD---- Bangor	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
BbB---- Bangor	Moderate: large stones, small stones.	Moderate: large stones, small stones.	Severe: large stones, small stones.	Slight	Moderate: large stones.
BbC---- Bangor	Moderate: slope, large stones, small stones.	Moderate: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Slight	Moderate: slope, large stones.
BbD---- Bangor	Severe: slope.	Severe: slope.	Severe: slope, large stones, small stones.	Moderate: slope.	Severe: slope.
Be*. Beaches					
Bf---- Biddeford	Severe: ponding, percs slowly, excess humus.	Severe: ponding, excess humus, percs slowly.	Severe: excess humus, ponding, percs slowly.	Severe: ponding, excess humus.	Severe: ponding, excess humus.
BoB---- Boothbay	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
BoC---- Boothbay	Severe: wetness.	Moderate: slope, wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, slope.
BoD---- Boothbay	Severe: slope, wetness.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Severe: slope.
BoE3---- Boothbay	Severe: slope, wetness.	Severe: slope.	Severe: wetness.	Severe: slope.	Severe: slope.
BpB---- Boothbay	Severe: wetness.	Moderate: wetness, large stones, percs slowly.	Severe: large stones, wetness.	Moderate: wetness.	Moderate: wetness, large stones.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Bs*. Borosaprists					
BtB---------- Brayton	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.
BvB---------- Brayton	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: large stones, wetness, percs slowly.	Severe: wetness.	Severe: wetness.
BxB---------- Brayton	Severe: large stones, wetness, percs slowly.	Severe: wetness, large stones, percs slowly.	Severe: large stones, wetness, percs slowly.	Severe: wetness.	Severe: wetness.
DxB---------- Dixmont	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
DxC---------- Dixmont	Severe: wetness.	Moderate: slope, wetness, percs slowly.	Severe: slope, wetness.	Moderate: wetness.	Moderate: slope, wetness.
DyB---------- Dixmont	Severe: wetness.	Moderate: wetness, large stones.	Severe: large stones, wetness.	Moderate: large stones, wetness.	Moderate: large stones, wetness.
DyC---------- Dixmont	Severe: wetness.	Moderate: slope, wetness, large stones.	Severe: slope, large stones, wetness.	Moderate: large stones, wetness.	Moderate: slope, large stones, wetness.
ElB---------- Eldridge	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
ElC---------- Eldridge	Severe: wetness.	Moderate: slope, wetness, percs slowly.	Severe: slope, wetness.	Moderate: wetness.	Moderate: wetness, droughty, slope.
HeB---------- Hermon	Slight----------	Slight----------	Moderate: slope, small stones.	Slight----------	Moderate: droughty.
HeC---------- Hermon	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope, droughty.
HfC---------- Hermon	Moderate: slope, large stones.	Moderate: slope.	Severe: slope, large stones, small stones.	Slight----------	Moderate: small stones, large stones, droughty.
HfD---------- Hermon	Severe: slope.	Severe: slope.	Severe: slope, large stones, small stones.	Moderate: slope.	Severe: slope.
HgC---------- Hermon	Severe: large stones.	Severe: large stones.	Severe: slope, large stones, small stones.	Moderate: large stones.	Severe: large stones.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
HgD---------- Hermon	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones, small stones.	Moderate: slope, large stones.	Severe: large stones, slope.
Lk*: Limerick----------	Severe: floods, wetness.	Severe: wetness.	Severe: wetness, floods.	Severe: wetness.	Severe: floods, wetness.
Rumney----------	Severe: floods, wetness.	Severe: wetness.	Severe: wetness, floods.	Severe: wetness.	Severe: floods, wetness.
LrB*: Lyman----------	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock, small stones.	Slight----------	Severe: thin layer, droughty.
Rock outcrop.					
LrC*: Lyman----------	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock, small stones.	Slight----------	Severe: thin layer, droughty.
Rock outcrop.					
LrE*: Lyman----------	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock, small stones.	Severe: slope.	Severe: slope, thin layer, droughty.
Rock outcrop.					
MaB---------- Madawaska	Moderate: wetness.	Moderate: wetness.	Moderate: slope, wetness, small stones.	Moderate: wetness.	Moderate: wetness.
MbB---------- Marlow	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight----------	Slight.
MbC---------- Marlow	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight----------	Moderate: slope.
MbD---------- Marlow	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
MeB---------- Marlow	Moderate: large stones.	Moderate: large stones.	Severe: large stones.	Slight----------	Moderate: large stones.
MeC---------- Marlow	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Slight----------	Moderate: large stones, slope.
MeD---------- Marlow	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
MeE---------- Marlow	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
MfC--- Marlow	Severe: large stones.	Severe: large stones.	Severe: large stones, slope.	Slight---	Moderate: large stones, slope.
MfE--- Marlow	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
MkB--- Masardis	Slight---	Slight---	Moderate: slope, small stones.	Slight---	Moderate: large stones, droughty.
MkC--- Masardis	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight---	Moderate: large stones, droughty, slope.
MkE--- Masardis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
MrB--- Masardis Variant	Slight---	Slight---	Moderate: slope, small stones, depth to rock.	Slight---	Moderate: large stones, droughty.
MrC--- Masardis Variant	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight---	Moderate: large stones, droughty, slope.
MsB*: Masardis Variant-----	Slight---	Slight---	Moderate: slope, small stones, depth to rock.	Slight---	Moderate: large stones, droughty.
Rock outcrop.					
MsC*: Masardis Variant-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight---	Moderate: large stones, droughty, slope.
Rock outcrop.					
MwB--- Monarda	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.
MyB--- Monarda	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: large stones, small stones.	Severe: wetness.	Severe: wetness.
PaB--- Peru	Moderate: wetness.	Moderate: wetness.	Moderate: slope, small stones.	Moderate: wetness.	Moderate: wetness.
PaC--- Peru	Moderate: slope, wetness.	Moderate: slope, wetness.	Severe: slope.	Moderate: wetness.	Moderate: wetness, slope.
PbB--- Peru	Moderate: large stones, wetness.	Moderate: wetness, large stones.	Severe: large stones.	Moderate: wetness.	Moderate: large stones, wetness.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
PbC--- Peru	Moderate: slope, large stones, wetness.	Moderate: slope, wetness, large stones.	Severe: large stones, slope.	Moderate: wetness.	Moderate: large stones, wetness, slope.
PcB--- Peru	Moderate: large stones, wetness.	Moderate: wetness, large stones.	Severe: large stones.	Moderate: wetness.	Moderate: large stones, wetness.
PcC--- Peru	Moderate: slope, large stones, wetness.	Moderate: slope, wetness, large stones.	Severe: large stones, slope.	Moderate: wetness.	Moderate: large stones, wetness, slope.
PcD--- Peru	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: wetness, slope.	Severe: slope.
Pg*. Pits					
Py--- Podunk	Severe: floods.	Moderate: floods, wetness.	Severe: floods.	Moderate: floods, wetness.	Severe: floods.
Qu*. Quarries					
Rc*. Rock outcrop					
RmC*: Rock outcrop.					
Lyman---	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock, small stones.	Slight---	Severe: thin layer, droughty.
RmE*: Rock outcrop.					
Lyman---	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock, small stones.	Severe: slope.	Severe: slope, thin layer, droughty.
Sa--- Saco	Severe: floods, wetness, excess humus.	Severe: wetness, excess humus.	Severe: floods, wetness, excess humus.	Severe: wetness, excess humus.	Severe: floods, wetness.
Se--- Searsport	Severe: wetness, excess humus.	Severe: wetness, excess humus.	Severe: excess humus, wetness.	Severe: wetness, excess humus.	Severe: wetness, excess humus.
Su*: Sulfaquents.					
Sulfihemists.					
Sw--- Swanville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
ThB*: Thorndike---	Severe: small stones, depth to rock.	Severe: small stones, depth to rock.	Severe: depth to rock, small stones.	Slight---	Severe: small stones, thin layer.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
ThB*:					
Winnecook	Slight	Slight	Moderate: small stones, slope.	Slight	Moderate: thin layer, small stones.
ThC*:					
Thorndike	Severe: small stones, depth to rock.	Severe: small stones, depth to rock.	Severe: slope, depth to rock, small stones.	Slight	Severe: small stones, thin layer.
Winnecook	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: thin layer, small stones, slope.
ThD*:					
Thorndike	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, depth to rock, small stones.	Moderate: slope.	Severe: slope, small stones, thin layer.
Winnecook	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
TkB*:					
Thorndike	Severe: small stones, depth to rock.	Severe: small stones, depth to rock.	Severe: depth to rock, small stones.	Slight	Severe: small stones, thin layer.
Rock outcrop.					
TkC*:					
Thorndike	Severe: small stones, depth to rock.	Severe: small stones, depth to rock.	Severe: slope, depth to rock, small stones.	Slight	Severe: small stones, thin layer.
Rock outcrop.					
TkE*:					
Thorndike	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, depth to rock, small stones.	Moderate: slope.	Severe: slope, small stones, thin layer.
Rock outcrop.					
TrB*:					
Tunbridge	Slight	Slight	Moderate: slope, depth to rock, small stones.	Slight	Moderate: depth to rock.
Lyman	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock, small stones.	Slight	Severe: thin layer, droughty.
TrC*:					
Tunbridge	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope, depth to rock.
Lyman	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock, small stones.	Slight	Severe: thin layer, droughty.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
TrD*:					
Tunbridge	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Lyman	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock, small stones.	Moderate: slope.	Severe: slope, thin layer, droughty.
Ud*:					
Udorthents.					
Urban land.					

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AdB, AdC, AdD---- Adams	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
BaB---- Bangor	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BaC---- Bangor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BaD---- Bangor	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BbB---- Bangor	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
BbC, BbD---- Bangor	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Be*. Beaches										
Bf---- Biddeford	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
BoB---- Boothbay	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BoC---- Boothbay	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BoD---- Boothbay	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BoE3---- Boothbay	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
BpB---- Boothbay	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
Bs*. Borosaprists										
BtB---- Brayton	Poor	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
BvB---- Brayton	Very poor.	Poor	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
BxB---- Brayton	Very poor.	Very poor.	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
DxB---- Dixmont	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
DxC---- Dixmont	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
DyB---- Dixmont	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
DyC---- Dixmont	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
ElB---- Eldridge	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
ElC---- Eldridge	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
HeB, HeC---- Hermon	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
HfC, HfD---- Hermon	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
HgC, HgD---- Hermon	Very poor.	Very poor.	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
Lk*: Limerick----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Rumney----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
LrB*, LrC*: Lyman----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Rock outcrop.										
LrE*: Lyman----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Rock outcrop.										
MaB---- Madawaska	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
MbB---- Marlow	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
MbC---- Marlow	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MbD---- Marlow	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
MeB---- Marlow	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
MeC, MeD---- Marlow	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
MeE---- Marlow	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
MfC, MfE---- Marlow	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
MkB, MkC---- Masardis	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MkE---- Masardis	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
MrB, MrC---- Masardis Variant	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
MsB*, MsC*: Masardis Variant--	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Rock outcrop.										
MwB---------- Monarda	Poor	Poor	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair.
MyB---------- Monarda	Very poor.	Poor	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair.
PaB---------- Peru	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
PaC---------- Peru	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
PbB---------- Peru	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
PbC---------- Peru	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
PcB---------- Peru	Very poor.	Very poor.	Good	Good	Good	Poor	Very poor.	Poor	Fair	Very poor.
PcC, PcD---------- Peru	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
Pg*. Pits										
Py---------- Podunk	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
Qu*. Quarries										
Rc*. Rock outcrop										
RmC*: Rock outcrop.										
Lyman----------	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
RmE*: Rock outcrop.										
Lyman----------	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Sa---------- Saco	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Se---------- Searsport	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Su*: Sulfaquents.										
Sulfihemists.										

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Sw---------- Swanville	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair	Fair.
ThB*: Thorndike----------	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Winnecook----------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ThC*: Thorndike----------	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Winnecook----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ThD*: Thorndike----------	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Winnecook----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
TkB*, TkC*, TkE*: Thorndike----------	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Rock outcrop.										
TrB*, TrC*: Tunbridge----------	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Lyman----------	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
TrD*: Tunbridge----------	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Lyman----------	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Ud*: Udorthents.										
Urban land.										

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AdB---------- Adams	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: droughty.
AdC---------- Adams	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
AdD---------- Adams	Severe: slope, cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, droughty.
BaB---------- Bangor	Slight---------	Slight---------	Slight---------	Moderate: slope.	Moderate: frost action.	Slight.
BaC---------- Bangor	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
BaD---------- Bangor	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BbB---------- Bangor	Slight---------	Slight---------	Slight---------	Moderate: slope.	Moderate: frost action.	Moderate: large stones.
BbC---------- Bangor	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, large stones.
BbD---------- Bangor	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Be*. Beaches						
Bf---------- Biddeford	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, low strength, frost action.	Severe: ponding, excess humus.
BoB---------- Boothbay	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Moderate: wetness.
BoC---------- Boothbay	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, slope.	Severe: frost action.	Moderate: wetness, slope.
BoD, BoE3--------- Boothbay	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: slope, frost action.	Severe: slope.
BpB---------- Boothbay	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Moderate: wetness, large stones.
Bs*. Borosaprists						
BtB---------- Brayton	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action.	Severe: wetness.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
BvB---- Brayton	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action.	Severe: wetness.
BxB---- Brayton	Severe: large stones, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action.	Severe: wetness.
DxB---- Dixmont	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Moderate: wetness.
DxC---- Dixmont	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: slope, wetness.	Severe: frost action.	Moderate: slope, wetness.
DyB---- Dixmont	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Moderate: large stones, wetness.
DyC---- Dixmont	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: slope, wetness.	Severe: frost action.	Moderate: slope, large stones, wetness.
ElB---- Eldridge	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness, frost action.	Moderate: wetness, droughty.
ElC---- Eldridge	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: slope, wetness.	Moderate: wetness, slope, frost action.	Moderate: wetness, droughty, slope.
HeB---- Hermon	Severe: cutbanks cave.	Moderate: large stones.	Moderate: large stones.	Moderate: slope, large stones.	Moderate: large stones.	Moderate: droughty.
HeC---- Hermon	Severe: cutbanks cave.	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: slope.	Moderate: slope, large stones.	Moderate: slope, droughty.
HfC---- Hermon	Severe: cutbanks cave.	Moderate: large stones, slope.	Moderate: large stones, slope.	Severe: slope.	Moderate: slope, large stones.	Moderate: small stones, large stones, droughty.
HfD---- Hermon	Severe: slope, cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
HgC---- Hermon	Severe: cutbanks cave.	Moderate: large stones, slope.	Moderate: large stones, slope.	Severe: slope.	Moderate: slope, large stones.	Severe: large stones.
HgD---- Hermon	Severe: slope, cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
Lk*: Limerick----	Severe: wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness, frost action.	Severe: floods, wetness.
Rumney----	Severe: wetness, cutbanks cave.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness, frost action.	Severe: floods, wetness.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
LrB*:						
Lyman	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
Rock outcrop.						
LrC*:						
Lyman	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
Rock outcrop.						
LrE*:						
Lyman	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer, droughty.
Rock outcrop.						
MaB---------- Madawaska	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Moderate: slope, wetness.	Severe: frost action.	Moderate: wetness.
MbB---------- Marlow	Moderate: dense layer, wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, slope.	Moderate: wetness, frost action.	Slight.
MbC---------- Marlow	Moderate: dense layer, wetness, slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: wetness, slope, frost action.	Moderate: slope.
MbD---------- Marlow	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
MeB---------- Marlow	Moderate: dense layer, wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, slope.	Moderate: wetness, frost action.	Moderate: large stones.
MeC---------- Marlow	Moderate: dense layer, wetness, slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: wetness, slope, frost action.	Moderate: large stones, slope.
MeD, MeE---------- Marlow	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
MfC---------- Marlow	Moderate: dense layer, wetness, slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: wetness, slope, frost action.	Moderate: large stones, slope.
MfE---------- Marlow	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
MkB---------- Masardis	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: large stones, droughty.
MkC---------- Masardis	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: large stones, droughty, slope.
MkE---------- Masardis	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
MrB---------- Masardis Variant	Severe: depth to rock, cutbanks cave.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock.	Moderate: large stones, droughty.
MrC---------- Masardis Variant	Severe: depth to rock, cutbanks cave.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Moderate: large stones, droughty, slope.
MsB*: Masardis Variant-	Severe: depth to rock, cutbanks cave.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock.	Moderate: large stones, droughty.
Rock outcrop.						
MsC*: Masardis Variant-	Severe: depth to rock, cutbanks cave.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Moderate: large stones, droughty, slope.
Rock outcrop.						
MwB, MyB---------- Monarda	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action.	Severe: wetness.
PaB---------- Peru	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: frost action.	Moderate: wetness.
PaC---------- Peru	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: frost action.	Moderate: wetness, slope.
PbB---------- Peru	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: frost action.	Moderate: large stones, wetness.
PbC---------- Peru	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: frost action.	Moderate: large stones, wetness, slope.
PcB---------- Peru	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: frost action.	Moderate: large stones, wetness.
PcC---------- Peru	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: frost action.	Moderate: large stones, wetness, slope.
PcD---------- Peru	Severe: wetness, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Pg*. Pits						
Py---------- Podunk	Severe: cutbanks cave, wetness.	Severe: floods.	Severe: floods, wetness.	Severe: floods.	Severe: floods, frost action.	Severe: floods.
Qu*. Quarries						
Rc*. Rock outcrop						

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
RmC*: Rock outcrop.						
Lyman	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
RmE*: Rock outcrop.						
Lyman	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer, droughty.
Sa Saco	Severe: wetness, cutbanks cave.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness, frost action.	Severe: floods, wetness.
Se Searsport	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, excess humus.
Su*: Sulfaquents.						
Sulfihemists.						
Sw Swanville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action, low strength.	Severe: wetness.
ThB*: Thorndike	Severe: depth to rock.	Moderate: depth to rock, large stones.	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Moderate: depth to rock, frost action.	Severe: small stones, thin layer.
Winnecook	Moderate: depth to rock.	Slight	Moderate: depth to rock.	Moderate: slope.	Slight	Moderate: thin layer, small stones.
ThC*: Thorndike	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock, frost action.	Severe: small stones, thin layer.
Winnecook	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: thin layer, small stones, slope.
ThD*: Thorndike	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope, small stones, thin layer.
Winnecook	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
TkB*: Thorndike	Severe: depth to rock.	Moderate: depth to rock, large stones.	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Moderate: depth to rock, frost action.	Severe: small stones, thin layer.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
TkB*: Rock outcrop.						
TkC*: Thorndike	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock, frost action.	Severe: small stones, thin layer.
Rock outcrop.						
TkE*: Thorndike	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope, small stones, thin layer.
Rock outcrop.						
TrB*: Tunbridge	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: frost action, depth to rock.	Moderate: depth to rock.
Lyman	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
TrC*: Tunbridge	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock, frost action.	Moderate: slope, depth to rock.
Lyman	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
TrD*: Tunbridge	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope.
Lyman	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer, droughty.
Ud*: Udorthents.						
Urban land.						

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AdB Adams	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AdC Adams	Severe: poor filter.	Severe: slope, seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AdD Adams	Severe: poor filter, slope.	Severe: slope, seepage.	Severe: slope, seepage, too sandy.	Severe: slope, seepage.	Poor: seepage, too sandy, slope.
BaB Bangor	Moderate: percs slowly.	Moderate: slope, seepage.	Slight	Slight	Fair: small stones.
BaC Bangor	Moderate: slope, percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope, small stones.
BaD Bangor	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
BbB Bangor	Moderate: percs slowly.	Moderate: slope, seepage.	Slight	Slight	Fair: small stones.
BbC Bangor	Moderate: slope, percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope, small stones.
BbD Bangor	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Be*. Beaches					
Bf Biddeford	Severe: ponding, percs slowly.	Severe: excess humus.	Severe: ponding, too clayey.	Severe: ponding.	Poor: ponding, too clayey, hard to pack.
BoB Boothbay	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Severe: wetness.	Poor: wetness.
BoC Boothbay	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Severe: wetness.	Poor: wetness.
BoD, BoE3 Boothbay	Severe: wetness, slope, percs slowly.	Severe: slope.	Severe: wetness, slope.	Severe: wetness, slope.	Poor: slope, wetness.
BpB Boothbay	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Bs*. Borosaprists					

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
BtB, BvB---------- Brayton	Severe: wetness, percs slowly.	Severe: seepage.	Severe: wetness.	Severe: wetness, seepage.	Poor: wetness, small stones.
BxB---------- Brayton	Severe: large stones, wetness, percs slowly.	Severe: seepage.	Severe: wetness.	Severe: wetness, seepage.	Poor: small stones, wetness.
DxB---------- Dixmont	Severe: wetness, percs slowly.	Moderate: slope, seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
DxC---------- Dixmont	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Severe: wetness.	Poor: wetness.
DyB---------- Dixmont	Severe: wetness, percs slowly.	Moderate: slope, seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
DyC---------- Dixmont	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Severe: wetness.	Poor: wetness.
ElB---------- Eldridge	Severe: wetness, percs slowly, poor filter.	Severe: seepage.	Severe: wetness, too clayey.	Severe: seepage, wetness.	Poor: too clayey, wetness.
ElC---------- Eldridge	Severe: wetness, percs slowly, poor filter.	Severe: slope, seepage.	Severe: wetness, too clayey.	Severe: seepage, wetness.	Poor: too clayey, wetness.
HeB---------- Hermon	Severe: poor filter.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Poor: small stones, seepage.
HeC, HfC---------- Hermon	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Poor: small stones, seepage.
HfD---------- Hermon	Severe: slope, poor filter.	Severe: seepage, slope.	Severe: slope, seepage.	Severe: slope, seepage.	Poor: slope, small stones, seepage.
HgC---------- Hermon	Severe: poor filter.	Severe: seepage, slope, large stones.	Severe: seepage.	Severe: seepage.	Poor: small stones, seepage.
HgD---------- Hermon	Severe: slope, poor filter.	Severe: seepage, slope, large stones.	Severe: slope, seepage.	Severe: slope, seepage.	Poor: slope, small stones, seepage.
Lk*: Limerick----------	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
Rumney----------	Severe: floods, wetness, poor filter.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Poor: wetness, seepage, too sandy.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
LrB*:					
Lyman	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
Rock outcrop.					
LrC*:					
Lyman	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
Rock outcrop.					
LrE*:					
Lyman	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, area reclaim, small stones.
Rock outcrop.					
MaB Madawaska	Severe: wetness, poor filter.	Severe: wetness, seepage.	Severe: seepage, too sandy, wetness.	Severe: wetness, seepage.	Poor: seepage, too sandy.
MbB Marlow	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Moderate: wetness.	Fair: small stones, wetness.
MbC Marlow	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: small stones, slope, wetness.
MbD Marlow	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
MeB Marlow	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Moderate: wetness.	Fair: small stones, wetness.
MeC Marlow	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: small stones, slope, wetness.
MeD, MeE Marlow	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
MfC Marlow	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: small stones, slope, wetness.
MfE Marlow	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
MkB---------- Masardis	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
MkC---------- Masardis	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
MkE---------- Masardis	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, small stones.
MrB---------- Masardis Variant	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock.	Severe: depth to rock, seepage, too sandy.	Severe: depth to rock, seepage.	Poor: area reclaim, seepage, too sandy.
MrC---------- Masardis Variant	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, too sandy.	Severe: depth to rock, seepage.	Poor: area reclaim, seepage, too sandy.
MsB*: Masardis Variant---	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock.	Severe: depth to rock, seepage, too sandy.	Severe: depth to rock, seepage.	Poor: area reclaim, seepage, too sandy.
Rock outcrop.					
MsC*: Masardis Variant---	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, too sandy.	Severe: depth to rock, seepage.	Poor: area reclaim, seepage, too sandy.
Rock outcrop.					
MwB, MyB---------- Monarda	Severe: percs slowly, wetness.	Slight----------	Severe: wetness.	Severe: wetness.	Poor: wetness.
PaB---------- Peru	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Fair: small stones, wetness.
PaC---------- Peru	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: small stones, slope, wetness.
PbB---------- Peru	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Fair: small stones, wetness.
PbC---------- Peru	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: small stones, wetness, slope.
PcB---------- Peru	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Fair: small stones, wetness.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
PcC---------- Peru	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: small stones, wetness, slope.
PcD---------- Peru	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Poor: slope.
Pg*. Pits					
Py---------- Podunk	Severe: floods, wetness, poor filter.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Poor: seepage, too sandy.
Qu*. Quarries					
Rc*. Rock outcrop					
RmC*: Rock outcrop.					
Lyman----------	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
RmE*: Rock outcrop.					
Lyman----------	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, area reclaim, small stones.
Sa---------- Saco	Severe: floods, wetness, poor filter.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Severe: floods, wetness.	Poor: wetness.
Se---------- Searsport	Severe: wetness, poor filter.	Severe: seepage, excess humus, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Su*: Sulfaquents. Sulfihemists.					
Sw---------- Swanville	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Severe: wetness.	Poor: wetness.
ThB*: Thorndike----------	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: small stones, seepage, area reclaim.
Winnecook----------	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: seepage, large stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
ThC*:					
Thorndike	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: small stones, area reclaim, seepage.
Winnecook	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: seepage, large stones.
ThD*:					
Thorndike	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Poor: area reclaim, small stones, seepage.
Winnecook	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: seepage, large stones, slope.
TkB*:					
Thorndike	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: small stones, area reclaim, seepage.
Rock outcrop.					
TkC*:					
Thorndike	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: small stones, area reclaim, seepage.
Rock outcrop.					
TkE*:					
Thorndike	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Poor: area reclaim, small stones, seepage.
Rock outcrop.					
TrB*:					
Tunbridge	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock, seepage.	Poor: area reclaim.
Lyman	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
TrC*:					
Tunbridge	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock, seepage.	Poor: area reclaim.
Lyman	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
TrD*:					
Tunbridge	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, slope.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
TrD*: Lyman	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, area reclaim, small stones.
Ud*: Udorthents.					
Urban land.					

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," "poor," "probable," and "improbable." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AdB, AdC---- Adams	Good----	Probable----	Improbable: too sandy.	Poor: too sandy.
AdD---- Adams	Fair: slope.	Probable----	Improbable: too sandy.	Poor: slope, too sandy.
BaB, BaC---- Bangor	Good----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
BaD---- Bangor	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
BbB, BbC---- Bangor	Good----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
BbD---- Bangor	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
Be*. Beaches				
Bf---- Biddeford	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, excess humus.
BoB---- Boothbay	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
BoC---- Boothbay	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
BoD---- Boothbay	Fair: low strength, wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
BoE3---- Boothbay	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
BpB---- Boothbay	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: large stones.
Bs*. Borosaprists				
BtB---- Brayton	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, wetness, area reclaim.
BvB, BxB---- Brayton	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, wetness, area reclaim.
DxB, DxC, DyB, DyC---- Dixmont	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
ElB, ElC---------- Eldridge	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
HeB, HeC, HfC--------- Hermon	Fair: large stones.	Probable----------	Probable----------	Poor: small stones, area reclaim.
HfD---------- Hermon	Fair: slope, large stones.	Probable----------	Probable----------	Poor: small stones, area reclaim.
HgC---------- Hermon	Fair: large stones.	Probable----------	Probable----------	Poor: large stones, area reclaim.
HgD---------- Hermon	Fair: slope, large stones.	Probable----------	Probable----------	Poor: large stones, area reclaim.
Lk*: Limerick----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Rumney----------	Poor: wetness.	Probable----------	Improbable: too sandy.	Poor: wetness, small stones.
LrB*, LrC*: Lyman----------	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
Rock outcrop.				
LrE*: Lyman----------	Poor: slope, thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, small stones.
Rock outcrop.				
MaB---------- Madawaska	Fair: wetness.	Probable----------	Improbable: too sandy.	Fair: small stones, thin layer.
MbB, MbC---------- Marlow	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
MbD---------- Marlow	Fair: wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
MeB, MeC---------- Marlow	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
MeD---------- Marlow	Fair: wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
MeE---------- Marlow	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
MfC---------- Marlow	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
MfE---------- Marlow	Fair: wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
MkB, MkC---------- Masardis	Good----------	Probable----------	Probable----------	Poor: small stones, area reclaim.
MkE---------- Masardis	Poor: slope.	Probable----------	Probable----------	Poor: small stones, area reclaim, slope.
MrB, MrC---------- Masardis Variant	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: too sandy, large stones, small stones.
MsB*, MsC*: Masardis Variant-----	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: too sandy, large stones, small stones.
Rock outcrop.				
MwB---------- Monarda	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, small stones, area reclaim.
MyB---------- Monarda	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, wetness, area reclaim.
PaB, PaC, PbB, PbC, PcB, PcC---------- Peru	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
PcD---------- Peru	Fair: wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Pg* Pits				
Py---------- Podunk	Fair: wetness.	Probable----------	Probable----------	Fair: small stones, thin layer, area reclaim.
Qu*. Quarries				
Rc*. Rock outcrop				
RmC*: Rock outcrop.				
Lyman----------	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
RmE*: Rock outcrop.				
Lyman----------	Poor: slope, thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, small stones.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Sa---------- Saco	Poor: wetness.	Probable----------	Improbable: too sandy.	Poor: wetness.
Se---------- Searsport	Poor: wetness.	Probable----------	Improbable: too sandy.	Poor: wetness, excess humus.
Su*: Sulfaquents.				
Sulfihemists.				
Sw---------- Swanville	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
ThB*, ThC*: Thorndike----------	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones, area reclaim.
Winnecook----------	Fair: thin layer.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones, area reclaim.
ThD*: Thorndike----------	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: slope, small stones, area reclaim.
Winnecook----------	Fair: thin layer, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones, area reclaim, slope.
TkB*, TkC*: Thorndike----------	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones, area reclaim.
Rock outcrop.				
TkE*: Thorndike----------	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: slope, small stones, area reclaim.
Rock outcrop.				
TrB*: Tunbridge----------	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, thin layer.
Lyman----------	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
TrC*: Tunbridge----------	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, thin layer, slope.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
TrC*:				
Lyman	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
TrD*:				
Tunbridge	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Lyman	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, small stones.
Ud*:				
Udorthents.				
Urban land.				

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
AdB---------- Adams	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Too sandy------	Droughty.
AdC, AdD---------- Adams	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, too sandy.	Slope, droughty.
BaB---------- Bangor	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.
BaC, BaD---------- Bangor	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Slope.
BbB---------- Bangor	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Large stones---	Large stones.
BbC, BbD---------- Bangor	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, large stones.	Large stones, slope.
Be*. Beaches						
Bf---------- Biddeford	Slight---------	Severe: ponding, piping.	Severe: slow refill.	Ponding, percs slowly, frost action.	Ponding, percs slowly, erodes easily.	Wetness, erodes easily, rooting depth.
BoB---------- Boothbay	Moderate: slope.	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, frost action, slope.	Erodes easily, wetness.	Wetness, erodes easily.
BoC, BoD, BoE3---- Boothbay	Severe: slope.	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, frost action, slope.	Erodes easily, wetness, slope.	Wetness, erodes easily, slope.
BpB---------- Boothbay	Moderate: slope.	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, frost action, slope.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily.
Bs*. Borosaprists						
BtB---------- Brayton	Moderate: slope.	Severe: wetness.	Severe: no water.	Percs slowly, frost action, slope.	Wetness, rooting depth.	Wetness, rooting depth.
BvB, BxB---------- Brayton	Moderate: slope.	Severe: wetness.	Severe: no water.	Percs slowly, frost action, slope.	Large stones, wetness.	Large stones, wetness.
DxB---------- Dixmont	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Frost action, slope, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
DxC---------- Dixmont	Severe: slope.	Severe: piping.	Severe: no water.	Frost action, slope, percs slowly.	Slope, wetness, percs slowly.	Slope, wetness, percs slowly.
DyB---------- Dixmont	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Frost action, percs slowly, slope.	Large stones, wetness.	Large stones, wetness.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
DyC---------- Dixmont	Severe: slope.	Severe: piping.	Severe: no water.	Frost action, percs slowly, slope.	Slope, large stones, wetness.	Slope, large stones, wetness.
ElB---------- Eldridge	Severe: seepage.	Severe: piping, wetness.	Severe: slow refill, cutbanks cave.	Slope, cutbanks cave.	Erodes easily, wetness.	Wetness, erodes easily.
ElC---------- Eldridge	Severe: seepage, slope.	Severe: piping, wetness.	Severe: slow refill, cutbanks cave.	Slope, cutbanks cave.	Slope, erodes easily, wetness.	Wetness, slope, erodes easily.
HeB---------- Hermon	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Large stones, too sandy.	Large stones, droughty.
HeC---------- Hermon	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, large stones, too sandy.	Large stones, slope, droughty.
HfC, HfD---------- Hermon	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Large stones, slope, too sandy.	Large stones, slope, droughty.
HgC, HgD---------- Hermon	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Deep to water	Large stones, slope, too sandy.	Large stones, slope, droughty.
Lk*: Limerick----------	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Floods, frost action.	Wetness, erodes easily.	Wetness, erodes easily.
Rumney----------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Frost action, floods, cutbanks cave.	Wetness, too sandy, erodes easily.	Wetness, erodes easily.
LrB*: Lyman----------	Severe: depth to rock, seepage.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Depth to rock	Depth to rock, droughty.
Rock outcrop.						
LrC*, LrE*: Lyman----------	Severe: slope, seepage, depth to rock.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock, droughty.
Rock outcrop.						
MaB---------- Madawaska	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Slope, cutbanks cave, frost action.	Wetness, too sandy.	Favorable.
MbB---------- Marlow	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope----------	Erodes easily, rooting depth.	Erodes easily, rooting depth.
MbC, MbD---------- Marlow	Severe: slope.	Severe: piping.	Severe: no water.	Slope----------	Slope, erodes easily, rooting depth.	Slope, erodes easily, rooting depth.
MeB---------- Marlow	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope----------	Erodes easily, rooting depth.	Erodes easily, rooting depth.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
MeC, MeD, MeE, MfC, MfE---------- Marlow	Severe: slope.	Severe: piping.	Severe: no water.	Slope----------	Slope, erodes easily, rooting depth.	Slope, erodes easily, rooting depth.
MkB---------- Masardis	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Too sandy------	Droughty.
MkC, MkE---------- Masardis	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, too sandy.	Slope, droughty.
MrB---------- Masardis Variant	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Depth to rock, too sandy.	Droughty, depth to rock.
MrC---------- Masardis Variant	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, depth to rock, too sandy.	Slope, droughty, depth to rock.
MsB*: Masardis Variant-	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Depth to rock, too sandy.	Droughty, depth to rock.
Rock outcrop.						
MsC*: Masardis Variant-	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, depth to rock, too sandy.	Slope, droughty, depth to rock.
Rock outcrop.						
MwB---------- Monarda	Slight----------	Severe: piping, wetness.	Severe: no water.	Percs slowly, frost action.	Rooting depth, wetness.	Wetness, rooting depth.
MyB---------- Monarda	Slight----------	Severe: piping, wetness.	Severe: no water.	Percs slowly, frost action.	Rooting depth, wetness.	Wetness, rooting depth.
PaB---------- Peru	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Erodes easily, wetness.	Erodes easily, wetness.
PaC---------- Peru	Severe: slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Slope, erodes easily, wetness.	Slope, erodes easily, wetness.
PbB---------- Peru	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Erodes easily, wetness.	Erodes easily, wetness.
PbC---------- Peru	Severe: slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Slope, erodes easily, wetness.	Slope, erodes easily, wetness.
PcB---------- Peru	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Erodes easily, wetness.	Erodes easily, wetness.
PcC, PcD---------- Peru	Severe: slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Slope, erodes easily, wetness.	Slope, erodes easily, wetness.
Pg*. Pits						

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
Py---------- Podunk	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Frost action, floods, cutbanks cave.	Wetness, too sandy, erodes easily.	Erodes easily.
Qu*. Quarries						
Rc*. Rock outcrop						
RmC*, RmE*: Rock outcrop.						
Lyman---------- Lyman	Severe: slope, seepage, depth to rock.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock, droughty.
Sa---------- Saco	Moderate: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Floods, frost action, cutbanks cave.	Wetness--------	Wetness.
Se---------- Searsport	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, too sandy.	Wetness.
Su*: Sulfaquents.						
Sulfihemists.						
Sw---------- Swanville	Slight---------	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, frost action.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, rooting depth.
ThB*: Thorndike--------	Severe: depth to rock.	Severe: seepage.	Severe: no water.	Deep to water	Large stones, depth to rock.	Large stones, depth to rock.
Winnecook--------	Moderate: seepage, depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water	Depth to rock	Depth to rock.
ThC*, ThD*: Thorndike--------	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
Winnecook--------	Severe: slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock.
TkB*: Thorndike--------	Severe: depth to rock.	Severe: seepage.	Severe: no water.	Deep to water	Large stones, depth to rock.	Large stones, depth to rock.
Rock outcrop.						
TkC*, TkE*: Thorndike--------	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
Rock outcrop.						

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
TrB*:						
Tunbridge	Moderate: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock	Depth to rock.
Lyman	Severe: depth to rock, seepage.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Depth to rock	Depth to rock, droughty.
TrC*, TrD*:						
Tunbridge	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock.
Lyman	Severe: slope, seepage, depth to rock.	Severe: thin layer piping.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock, droughty.
Ud*:						
Udorthents.						
Urban land.						

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
AdB, AdC, AdD---- Adams	0-8	Loamy fine sand	SM, SP-SM	A-1, A-2, A-3, A-4	0	95-100	95-100	45-85	5-40	---	NP
	8-21	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-1, A-2, A-3, A-4	0	95-100	95-100	35-95	5-40	---	NP
	21-60	Sand, coarse sand	SP-SM, SW-SM, SP	A-1, A-2, A-3	0-1	90-100	70-100	20-90	0-10	---	NP
BaB, BaC, BaD---- Bangor	0-9	Silt loam--------	ML, SM	A-4, A-5	0-5	90-100	80-95	65-90	45-80	<43	NP-10
	9-35	Silt loam, loam, gravelly silt loam.	ML, SM	A-4	0-15	80-95	70-90	60-90	40-80	<38	NP-10
	35-60	Silt loam, loam, gravelly silt loam.	ML, SM	A-4	0-15	80-95	70-90	60-90	40-85	<40	NP-10
BbB, BbC, BbD---- Bangor	0-3	Very stony silt loam.	ML, SM	A-4, A-5	5-35	85-100	70-90	60-90	40-80	<43	NP-10
	3-35	Silt loam, loam, gravelly silt loam.	ML, SM	A-4	0-15	80-95	70-90	60-90	40-80	<38	NP-10
	35-60	Silt loam, loam, gravelly silt loam.	ML, SM	A-4	0-15	80-95	70-90	60-90	40-85	<40	NP-10
Be*. Beaches											
Bf---------- Biddeford	10-0	Mucky-peat-------	Pt	A-8	---	---	---	---	---	---	---
	0-4	Silt loam, silty clay loam, silty clay.	ML, OL, MH, OH	A-4, A-6, A-7, A-5	0	100	100	90-100	85-100	30-62	5-25
	4-40	Silty clay, silty clay loam, clay.	CL, CL-ML, MH, ML	A-6, A-7 A-4, A-5	0	100	100	95-100	90-100	25-55	5-20
	40-60	Silty clay loam, silty clay, clay.	CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	90-100	25-40	5-15
BoB, BoC, BoD---- Boothbay	0-5	Silt loam--------	ML, CL, CL-ML	A-4, A-6	0	100	95-100	85-100	60-90	20-40	3-15
	5-22	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
	22-60	Silty clay loam, silt loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
BoE3---------- Boothbay	0-2	Silt loam--------	ML, CL, CL-ML	A-4, A-6	0	100	95-100	85-100	60-90	20-40	3-15
	2-12	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
	12-60	Silty clay loam, silt loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
BpB---------- Boothbay	0-5	Very stony silt loam.	ML, CL, CL-ML	A-4, A-6	1-15	95-100	95-100	85-100	60-90	20-40	3-15
	5-22	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
	22-60	Silty clay loam, silt loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
Bs*. Borosaprists											

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
BtB---------- Brayton	0-8	Fine sandy loam--	SM, ML	A-1, A-2, A-4	0-15	80-90	75-90	45-90	20-80	<15	NP-4
	8-19	Gravelly fine sandy loam, gravelly sandy loam, silt loam.	GM, ML, SM	A-2, A-4, A-1	0-15	55-95	50-90	30-90	15-80	<15	NP-4
	19-60	Gravelly fine sandy loam, very gravelly sandy loam, loam.	GM, SM, GM-GC, ML	A-2, A-4, A-1	0-15	45-95	40-90	25-85	10-70	<15	NP-4
BvB---------- Brayton	0-3	Very stony fine sandy loam.	GM, SM, ML	A-4, A-1, A-2	5-20	55-80	50-75	30-75	15-70	<15	NP-4
	3-19	Gravelly fine sandy loam, gravelly sandy loam, silt loam.	GM, ML, SM	A-2, A-4, A-1	0-15	55-95	50-90	30-90	15-80	<15	NP-4
	19-60	Gravelly fine sandy loam, very gravelly sandy loam, loam.	GM, SM, ML, GM-GC	A-2, A-4, A-1	0-15	45-95	40-90	25-85	10-70	<15	NP-4
BxB---------- Brayton	0-3	Extremely stony fine sandy loam.	GM, SM, ML	A-4, A-1, A-2	10-30	50-80	45-75	25-75	15-70	<15	NP-4
	3-19	Gravelly fine sandy loam, gravelly sandy loam, silt loam.	GM, ML, SM	A-2, A-4, A-1	0-15	55-95	50-90	30-90	15-80	<15	NP-4
	19-60	Gravelly fine sandy loam, very gravelly sandy loam, loam.	GM, SM, ML, GM-GC	A-2, A-4, A-1	0-15	45-95	40-90	25-85	10-70	<15	NP-4
DxB, DxC--------- Dixmont	0-8	Silt loam--------	ML, CL, SM	A-4	0-5	90-100	80-95	65-90	45-80	<40	NP-10
	8-26	Silt loam, gravelly silt loam, loam.	ML, CL, SM	A-4	5-15	85-95	70-90	60-90	45-80	<40	NP-10
	26-60	Silt loam, gravelly silt loam, loam.	ML, CL, SM	A-4	5-15	85-95	70-90	60-90	45-80	<40	NP-10
DyB, DyC--------- Dixmont	0-2	Very stony silt loam.	ML, CL, SM	A-4	5-35	85-95	75-90	60-90	45-80	<40	NP-10
	2-26	Silt loam, gravelly silt loam, loam.	ML, CL, SM	A-4	5-15	85-95	70-90	60-90	45-80	<40	NP-10
	26-60	Silt loam, gravelly silt loam, loam.	ML, CL, SM	A-4	5-15	85-95	70-90	60-90	45-80	<40	NP-10
ElB, ElC--------- Eldridge	0-9	Fine sandy loam	SM	A-2, A-4	0-5	75-100	70-100	55-80	20-45	---	NP
	9-24	Loamy fine sand, fine sand, gravelly sand.	SM, SP-SM	A-2, A-1, A-3	0-5	65-100	60-100	40-80	5-30	---	NP
	24-60	Stratified very fine sand to clay.	SM, CL-ML, ML	A-4	0	100	90-100	70-100	35-100	<30	NP-5

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
HeB, HeC--------- Hermon	0-8	Sandy loam-------	SM	A-2, A-4	0-5	85-95	75-90	55-80	25-45	<40	NP-10
	8-27	Gravelly coarse sandy loam, gravelly fine sandy loam, gravelly sandy loam.	SM	A-2, A-4, A-1	20-35	70-90	50-75	30-60	15-40	<40	NP-10
	27-60	Gravelly loamy coarse sand, gravelly loamy sand.	SP-SM, SM, GP-GM, GM	A-1, A-2, A-3	20-40	45-80	40-70	20-55	5-25	---	NP
HfC, HfD--------- Hermon	0-3	Very stony sandy loam.	SM	A-2, A-4, A-1	5-30	70-95	50-90	30-80	15-45	<40	NP-10
	3-27	Gravelly coarse sandy loam, gravelly fine sandy loam, gravelly sandy loam.	SM	A-2, A-4, A-1	20-35	70-90	50-75	30-60	15-40	<40	NP-10
	27-60	Gravelly loamy coarse sand, gravelly loamy sand.	SP-SM, SM, GP-GM, GM	A-1, A-2, A-3	20-40	45-80	40-70	20-55	5-25	---	NP
HgC, HgD--------- Hermon	0-3	Extremely stony sandy loam.	SM	A-2, A-4, A-1	20-70	70-95	50-90	30-80	15-45	<40	NP-10
	3-27	Gravelly coarse sandy loam, gravelly fine sandy loam, gravelly sandy loam.	SM	A-2, A-4, A-1	20-35	70-90	50-75	30-60	15-40	<40	NP-10
	27-60	Gravelly loamy coarse sand, gravelly loamy sand.	SP-SM, SM, GP-GM, GM	A-1, A-2, A-3	20-40	45-80	40-70	20-55	5-25	---	NP
Lk*: Limerick--------	0-8	Silt loam--------	ML	A-4	0	100	100	95-100	80-95	---	NP
	8-36	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	80-95	---	NP
	36-60	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	80-95	---	NP
Rumney----------	0-2	Fine sandy loam	SM, ML	A-2, A-4	0	100	85-100	50-85	25-55	---	NP
	2-30	Fine sandy loam, sandy loam, loam.	SM, ML	A-2, A-4	0	100	85-100	50-95	25-75	---	NP
	30-60	Stratified silt to gravelly sand.	SM, SP-SM	A-1, A-2, A-3	0	80-100	45-95	25-70	5-30	---	NP
LrB*, LrC*, LrE*: Lyman----------	0-3	Fine sandy loam	ML, SM	A-4, A-1, A-2	0-15	80-95	70-90	40-85	20-80	<35	NP-6
	3-19	Loam, gravelly fine sandy loam, silt loam.	SM, ML	A-2, A-4, A-1	0-20	65-95	60-90	35-85	20-80	<30	NP-4
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											
MaB-------------- Madawaska	0-8	Fine sandy loam	SM, ML	A-4, A-2	0	100	85-100	65-95	30-75	---	NP
	8-28	Fine sandy loam, sandy loam.	SM, ML	A-4, A-2	0	100	85-100	65-95	30-75	---	NP
	28-60	Fine sand, sand, very fine sand.	SM, SP-SM	A-2, A-4, A-3	0	100	85-100	50-80	5-45	---	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
MbB, MbC, MbD---- Marlow	0-6	Fine sandy loam	SM, ML, CL-ML	A-2, A-4	0-5	80-95	75-90	55-85	30-60	<30	NP-10
	6-24	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SM-SC, CL-ML	A-2, A-4	0-15	70-95	60-90	50-85	30-60	<30	NP-10
	24-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SM-SC, CL-ML	A-2, A-4	0-15	70-90	60-85	50-80	25-55	<30	NP-10
MeB, MeC, MeD, MeE---------- Marlow	0-6	Very stony fine sandy loam.	SM, ML, CL-ML	A-2, A-4	5-15	80-95	75-90	55-85	30-60	<30	NP-10
	6-24	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SM-SC, CL-ML	A-2, A-4	5-15	70-95	60-90	50-85	30-60	<30	NP-10
	24-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SM-SC, CL-ML	A-2, A-4	5-15	70-90	60-85	50-80	25-55	<30	NP-10
MfC, MfE--------- Marlow	0-6	Extremely stony fine sandy loam.	SM, ML, CL-ML	A-2, A-4	10-25	80-90	70-85	55-80	30-60	<30	NP-10
	6-24	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SM-SC, CL-ML	A-2, A-4	5-15	70-95	60-90	50-85	30-60	<30	NP-10
	24-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SM-SC, CL-ML	A-2, A-4	5-15	70-90	60-85	50-80	25-55	<30	NP-10
MkB, MkC, MkE---- Masardis	0-6	Fine sandy loam	SM, ML	A-2, A-4	0-15	80-100	75-90	50-90	30-80	<40	NP-6
	6-14	Gravelly sandy loam, silt loam, very gravelly coarse sand.	SM, ML, SP-SM, GP-GM	A-1, A-2, A-3, A-4	0-15	45-95	35-85	20-85	5-70	---	NP
	14-31	Very gravelly coarse sand, very gravelly sand, gravelly fine sandy loam.	GW-GM, SP, SM, SP-SM	A-1, A-2, A-3	5-20	40-85	35-70	20-60	3-35	---	NP
	31-60	Stratified very gravelly coarse sand to gravelly loamy coarse sand.	SP, GP, SP-SM	A-1, A-2	5-20	30-65	25-50	10-35	1-10	---	NP
MrB, MrC--------- Masardis Variant	0-6	Fine sandy loam	SM	A-2, A-4	0-5	80-100	75-95	55-80	30-50	<10	NP-6
	6-21	Gravelly fine sandy loam, very gravelly loamy coarse sand, very fine sandy loam.	SM, GM, SP-SM	A-1, A-2, A-4	0-5	45-90	35-85	30-70	10-45	---	NP
	21-38	Very gravelly coarse sand, very gravelly loamy coarse sand, gravelly coarse sand.	SM, GM, GW-GM	A-1, A-2	5-20	45-75	35-45	15-35	5-20	---	NP
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
MsB*, MsC*:											
Masardis Variant	0-6	Fine sandy loam	SM	A-2, A-4	0-5	80-100	75-95	55-80	30-50	<10	NP-6
	6-21	Gravelly fine sandy loam, very gravelly loamy coarse sand, very fine sandy loam.	SM, GM, SP-SM	A-1, A-2, A-4	0-5	45-90	35-85	30-70	10-45	---	NP
	21-38	Very gravelly coarse sand, very gravelly loamy coarse sand, gravelly coarse sand.	SM, GM, GW-GM	A-1, A-2	5-20	45-75	35-45	15-35	5-20	---	NP
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											
MwB----------	0-6	Silt loam--------	ML	A-4, A-5	0-5	85-95	75-95	65-95	50-85	<45	NP-10
Monarda	6-20	Silt loam, very fine sandy loam, gravelly loam.	ML, CL-ML, SM	A-4	0-10	75-95	60-95	45-95	35-85	<40	NP-10
	20-60	Silt loam, very fine sandy loam, gravelly loam.	ML, CL-ML, SM	A-4	0-10	70-95	60-95	45-95	35-85	<35	NP-10
MyB----------	0-6	Very stony silt loam.	ML, SM	A-4, A-5	5-30	70-95	60-95	45-95	35-85	<45	NP-10
Monarda	6-20	Silt loam, very fine sandy loam, gravelly loam.	ML, CL-ML, SM	A-4	0-10	75-95	60-95	45-95	35-85	<40	NP-10
	20-60	Silt loam, very fine sandy loam, gravelly loam.	ML, CL-ML, SM	A-4	0-10	70-95	60-95	45-95	35-85	<35	NP-10
PaB, PaC---------	0-8	Fine sandy loam	SM, ML, CL-ML	A-2, A-4	0-10	80-95	75-90	50-85	25-60	<30	NP-10
Peru	8-17	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	0-15	75-95	65-90	55-85	30-65	<30	NP-10
	17-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	0-15	70-90	60-85	55-80	20-60	<30	NP-10
PbB, PbC---------	0-6	Very stony fine sandy loam.	SM, ML, CL-ML	A-2, A-4	5-15	80-95	75-90	50-85	25-60	<30	NP-10
Peru	6-17	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	5-15	75-95	65-95	55-85	30-65	<30	NP-10
	17-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	5-15	70-90	60-85	55-80	20-60	<30	NP-10
PcB, PcC, PcD----	0-6	Extremely stony fine sandy loam.	SM, ML, CL-ML	A-2, A-4	10-30	80-95	70-90	50-85	25-60	<30	NP-10
Peru	6-17	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	5-15	75-95	65-95	55-85	30-65	<30	NP-10
	17-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	5-15	70-90	60-85	55-80	20-60	<30	NP-10
Pg*											
Pits											

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Py---------- Podunk	0-10	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	60-100	30-90	---	NP
	10-24	Fine sandy loam, sandy loam, loam.	SM, ML	A-2, A-4	0	100	100	60-95	30-75	---	NP
	24-60	Stratified loamy fine sand to gravelly coarse sand.	SP-SM, SM	A-2, A-1, A-3	0	75-100	65-100	35-85	5-25	---	NP
Qu*. Quarries											
Rc*. Rock outcrop											
RmC*, RmE*: Rock outcrop.											
Lyman----------	0-3	Fine sandy loam	ML, SM	A-4, A-1, A-2	0-15	80-95	70-90	40-85	20-80	<35	NP-6
	3-19	Loam, gravelly fine sandy loam, silt loam.	SM, ML	A-2, A-4, A-1	0-20	65-95	60-90	35-85	20-80	<30	NP-4
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Sa---------- Saco	0-12	Very fine sandy loam.	ML, OL	A-4	0	100	100	95-100	70-95	<40	NP-10
	12-46	Silt loam, very fine sandy loam.	ML	A-4	0	100	100	95-100	70-95	<40	NP-10
	46-60	Stratified fine sand to gravelly coarse sand.	SP, SM, SP-SM	A-1, A-2, A-3	0	80-100	35-100	10-70	0-20	---	NP
Se----------	8-0	Mucky peat-------	Pt	A-8	0	---	---	---	---	---	---
Searsport	0-5	Loamy fine sand, fine sandy loam, mucky sand.	SM, SP-SM	A-1, A-2, A-3	0	95-100	85-100	40-100	5-35	---	NP
	5-60	Loamy sand, coarse sand, fine sand.	SM, SP	A-1, A-2, A-3	0	95-100	85-100	40-100	0-35	---	NP
Su*: Sulfaquents.											
Sulfihemists.											
Sw---------- Swanville	0-6	Silt loam--------	ML, CL, CL-ML	A-4, A-6	0	100	95-100	85-100	60-90	20-40	3-15
	6-22	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
	22-60	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
ThB*, ThC*, ThD*: Thorndike-------	0-6	Slaty silt loam	GM, SM, ML	A-2 A-4,	0-20	55-90	45-85	40-80	30-70	<40	NP-8
	6-19	Slaty silt loam, very slaty loam, very slaty silt loam.	GM, GP-GM, SM, SP-SM	A-1, A-2, A-4	15-40	30-80	20-70	15-60	10-50	<40	NP-8
	19	Weathered bedrock	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
ThB*, ThC*, ThD*:											
Winnecook-------	0-9	Silt loam--------	SM, ML, CL-ML	A-4	0-5	85-100	75-100	65-100	45-90	<40	NP-8
	9-28	Slaty silt loam, slaty loam, very slaty loam.	GM, SM, GM-GC	A-2, A-1, A-4	0-15	30-70	20-60	20-55	15-50	<40	NP-8
	28-34	Very slaty silt loam, very slaty loam, slaty silt loam.	SM, GM, GP-GM	A-1, A-4	0-15	20-65	15-55	15-50	10-45	<40	NP-8
	34	Weathered bedrock	---	---	---	---	---	---	---	---	---
TkB*, TkC*, TkE*:											
Thorndike-------	0-6	Slaty silt loam	GM, SM, ML	A-2, A-4,	0-20	55-90	45-85	40-80	30-70	<40	NP-8
	6-19	Slaty silt loam, very slaty loam, very slaty silt loam.	GM, GP-GM, SM, SP-SM	A-1, A-2, A-4	15-40	30-80	20-70	15-60	10-50	<40	NP-8
	19	Weathered bedrock	---	---	---	---	---	---	---	---	---
Rock outcrop.											
TrB*, TrC*, TrD*:											
Tunbridge-------	0-8	Fine sandy loam	SM, ML	A-4	0-5	85-95	75-90	60-75	40-70	<20	NP-2
	8-22	Gravelly fine sandy loam, loam, silt loam.	SM, ML	A-4, A-5	0-5	85-95	75-90	60-75	40-70	<50	NP-6
	22-29	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML	A-2, A-4	0-5	80-95	70-90	50-85	25-60	<20	NP-2
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Lyman-----------	0-8	Fine sandy loam	ML, SM	A-4, A-1, A-2	0-15	80-95	70-90	40-85	20-80	<35	NP-6
	8-19	Loam, gravelly fine sandy loam, silt loam.	SM, ML	A-2, A-4, A-1	0-20	65-95	60-90	35-85	20-80	<30	NP-4
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Ud*:											
Udorthents.											
Urban land.											

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm3	In/hr	In/in	pH				Pct
AdB, AdC, AdD----	0-8	0-5	1.00-1.30	6.0-20	0.05-0.15	4.5-5.5	Low----------	0.17	5	1-4
Adams	8-21	0-5	1.10-1.45	6.0-20	0.04-0.09	4.5-5.5	Low----------	0.17		
	21-60	0-5	1.20-1.50	>20	0.03-0.04	4.5-6.0	Low----------	0.17		
BaB, BaC, BaD----	0-9	4-10	0.85-1.20	0.6-2.0	0.18-0.25	3.6-6.0	Low----------	0.24	3	4-8
Bangor	9-35	4-10	1.20-1.50	0.6-2.0	0.15-0.25	3.6-6.0	Low----------	0.28		
	35-60	6-10	1.35-1.60	0.6-2.0	0.15-0.23	5.1-6.0	Low----------	0.28		
BbB, BbC, BbD----	0-3	4-10	0.85-1.20	0.6-2.0	0.15-0.25	3.6-6.0	Low----------	0.20	3	---
Bangor	3-35	4-10	1.20-1.50	0.6-2.0	0.15-0.28	3.6-6.0	Low----------	0.28		
	35-60	6-10	1.35-1.60	0.6-2.0	0.15-0.23	5.1-6.0	Low----------	0.28		
Be*.										
Beaches										
Bf----------	10-0	---	0.10-0.30	2.0-6.0	0.20-0.45	5.1-6.5	----------	----	5	---
Biddeford	0-4	20-50	0.90-1.20	0.2-0.6	0.24-0.34	5.1-7.3	Low----------	0.32		
	4-40	35-55	1.60-1.80	<0.2	0.13-0.23	5.6-7.8	Moderate-----	0.49		
	40-60	35-55	1.70-1.95	<0.2	0.06-0.16	6.1-7.8	Moderate-----	0.49		
BoB, BoC, BoD----	0-5	10-25	1.00-1.30	0.6-2.0	0.22-0.30	4.5-6.5	Low----------	0.28	3	3-6
Boothbay	5-22	18-35	1.20-1.50	0.06-0.6	0.14-0.22	4.5-7.3	Low----------	0.49		
	22-60	18-35	1.60-1.80	0.06-0.6	0.10-0.20	5.6-7.3	Low----------	0.55		
BoE3----------	0-2	10-25	1.00-1.30	0.6-2.0	0.22-0.30	4.5-6.5	Low----------	0.28	3	3-6
Boothbay	2-12	18-35	1.20-1.50	0.06-0.6	0.14-0.22	4.5-7.3	Low----------	0.49		
	12-60	18-35	1.60-1.80	0.06-0.6	0.10-0.20	5.6-7.3	Low----------	0.55		
BpB----------	0-5	10-25	1.00-1.30	0.6-2.0	0.22-0.30	4.5-6.5	Low----------	0.28	3	---
Boothbay	5-22	18-35	1.20-1.50	0.06-0.6	0.14-0.22	4.5-7.3	Low----------	0.49		
	22-60	18-35	1.60-1.80	0.06-0.6	0.10-0.20	5.6-7.3	Low----------	0.55		
Bs*										
Borosaprists										
BtB----------	0-8	4-10	0.90-1.20	0.6-6.0	0.10-0.20	4.5-6.5	Low----------	0.24	3	2-8
Brayton	8-19	4-10	1.40-1.70	0.6-6.0	0.08-0.17	4.5-6.5	Low----------	0.24		
	19-60	4-10	1.70-2.00	<0.2	0.01-0.05	5.6-7.3	Low----------	0.24		
BvB----------	0-3	4-10	0.90-1.20	0.6-6.0	0.08-0.17	4.5-6.5	Low----------	0.24	3	---
Brayton	3-19	4-10	1.40-1.70	0.6-6.0	0.08-0.17	4.5-6.5	Low----------	0.24		
	19-60	4-10	1.70-2.00	<0.2	0.01-0.05	5.6-7.3	Low----------	0.24		
BxB----------	0-3	4-10	0.90-1.20	0.6-6.0	0.08-0.17	4.5-6.5	Low----------	0.24	3	---
Brayton	3-19	4-10	1.40-1.70	0.6-6.0	0.08-0.17	4.5-6.5	Low----------	0.24		
	19-60	4-10	1.70-2.00	<0.2	0.01-0.05	5.6-7.3	Low----------	0.24		
DxB, DxC----------	0-8	4-10	0.95-1.25	0.6-2.0	0.16-0.24	4.5-6.0	Low----------	0.24	3	4-8
Dixmont	8-26	4-10	1.20-1.50	0.2-2.0	0.16-0.25	4.5-6.0	Low----------	0.28		
	26-60	6-10	1.40-1.70	0.06-0.6	0.13-0.22	5.1-7.3	Low----------	0.28		
DyB, DyC----------	0-2	4-10	0.95-1.25	0.6-2.0	0.16-0.24	4.5-6.0	Low----------	0.20	3	---
Dixmont	2-26	4-10	1.20-1.50	0.2-2.0	0.16-0.22	4.5-6.0	Low----------	0.28		
	26-60	6-10	1.40-1.70	0.06-0.6	0.13-0.20	5.1-7.3	Low----------	0.28		
ElB, ElC----------	0-9	1-5	1.20-1.50	6.0-20	0.08-0.16	5.1-6.5	Low----------	0.20	3	3-6
Eldridge	9-24	1-5	1.30-1.70	6.0-20	0.04-0.11	5.1-6.5	Low----------	0.17		
	24-60	3-16	1.30-1.70	0.2-0.6	0.18-0.22	5.1-7.3	Low----------	0.43		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm³	In/hr	In/in	pH				Pct
HeB, HeC--------- Hermon	0-8 8-27 27-60	2-6 2-7 1-4	0.95-1.20 1.00-1.30 1.50-1.70	6.0-20 6.0-20 6.0-20	0.09-0.20 0.05-0.17 0.03-0.10	3.6-5.5 3.6-6.0 5.1-6.0	Low---------- Low---------- Low----------	0.17 0.10 0.10	3	3-7
HfC, HfD--------- Hermon	0-3 3-27 27-60	2-6 2-7 1-4	0.95-1.20 1.00-1.30 1.50-1.70	6.0-20 6.0-20 6.0-20	0.07-0.20 0.05-0.17 0.03-0.10	3.6-5.5 3.6-6.0 5.1-6.0	Low---------- Low---------- Low----------	0.10 0.10 0.10	3	---
HgC, HgD--------- Hermon	0-3 3-27 27-60	2-6 2-7 1-4	0.95-1.20 1.00-1.30 1.50-1.70	6.0-20 6.0-20 6.0-20	0.06-0.20 0.05-0.17 0.03-0.10	3.6-5.5 3.6-6.0 5.1-6.0	Low---------- Low---------- Low----------	0.10 0.10 0.10	3	---
Lk*: Limerick-------- Rumney---------- 	0-8 8-36 36-60 0-2 2-30 30-60	4-10 2-10 1-8 1-9 1-9 0-3	1.10-1.50 1.10-1.50 1.20-1.50 1.10-1.35 1.15-1.45 1.30-1.50	0.6-2.0 0.6-2.0 0.6-2.0 2.0-6.0 2.0-6.0 >6.0	0.18-0.30 0.18-0.26 0.18-0.25 0.12-0.20 0.12-0.19 0.04-0.13	5.1-6.0 5.1-6.0 5.6-7.3 4.5-6.5 4.5-6.5 4.5-6.5	Low---------- Low---------- Low---------- Low---------- Low---------- Low----------	0.49 0.49 0.49 0.24 0.43 0.20	3 5 	2-5 4-8
LrB*, LrC*, LrE*: Lyman---------- Rock outcrop.	0-3 3-19 19	2-10 2-10 ---	0.75-1.20 0.90-1.40 ---	2.0-6.0 2.0-6.0 ---	0.08-0.25 0.08-0.28 ---	3.6-6.0 3.6-6.0 ---	Low---------- Low---------- ----------	0.28 0.32 ----	2	---
MaB-------------- Madawaska	0-8 8-28 28-60	3-13 2-12 0-5	0.95-1.25 1.20-1.50 1.35-1.65	2.0-6.0 2.0-6.0 6.0-20	0.16-0.25 0.10-0.18 0.06-0.18	4.5-6.0 4.5-6.0 4.5-6.0	Low---------- Low---------- Low----------	0.28 0.28 0.28	3	3-9
MbB, MbC, MbD---- Marlow	0-6 6-24 24-60	3-10 3-10 3-10	1.00-1.30 1.30-1.60 1.60-2.05	0.6-2.0 0.6-2.0 0.06-0.6	0.10-0.23 0.06-0.20 0.05-0.12	3.6-6.0 3.6-6.0 3.6-6.0	Low---------- Low---------- Low----------	0.24 0.43 0.17	3	2-8
MeB, MeC, MeD, MeE-------------- Marlow	0-6 6-24 24-60	3-10 3-10 3-10	1.00-1.30 1.30-1.60 1.60-2.05	0.6-2.0 0.6-2.0 0.06-0.6	0.10-0.23 0.06-0.20 0.05-0.12	3.6-6.0 3.6-6.0 3.6-6.0	Low---------- Low---------- Low----------	0.20 0.43 0.17	3	---
MfC, MfE--------- Marlow	0-6 6-24 24-60	3-10 3-10 3-10	1.00-1.30 1.30-1.60 1.60-2.05	0.6-2.0 0.6-2.0 0.06-0.6	0.08-0.15 0.06-0.20 0.05-0.12	3.6-6.0 3.6-6.0 3.6-6.0	Low---------- Low---------- Low----------	0.20 0.43 0.17	3	---
MkB, MkC, MkE---- Masardis	0-6 6-14 14-31 31-60	5-12 5-12 1-8 0-5	0.85-1.15 0.90-1.20 1.00-1.40 1.40-1.70	2.0-6.0 2.0-6.0 >6.0 >6.0	0.12-0.24 0.06-0.15 0.03-0.15 0.01-0.08	3.6-6.0 3.6-6.0 3.6-6.0 4.5-6.0	Low---------- Low---------- Low---------- Low----------	0.17 0.10 0.10 0.05	3	2-6
MrB, MrC--------- Masardis Variant	0-6 6-21 21-38 38	1-3 0-2 0-1 ---	0.85-1.15 1.00-1.40 1.35-1.55 ---	2.0-6.0 >6.0 >6.0 ---	0.12-0.24 0.06-0.15 0.01-0.08 ---	4.5-6.0 4.5-6.0 4.5-6.0 ---	Low---------- Low---------- Low---------- ----------	0.17 0.10 0.10 ----	3	3-6
MsB*, MsC*: Masardis Variant Rock outcrop.	0-6 6-21 21-38 38	1-3 0-2 0-1 ---	0.85-1.15 1.00-1.40 1.35-1.55 ---	2.0-6.0 >6.0 >6.0 ---	0.12-0.24 0.06-0.15 0.01-0.08 ---	4.5-6.0 4.5-6.0 4.5-6.0 ---	Low---------- Low---------- Low---------- ----------	0.17 0.10 0.10 ----	3	---
MwB-------------- Monarda	0-6 6-20 20-60	10-18 10-18 10-18	1.00-1.30 1.30-1.55 1.70-1.95	0.6-2.0 0.6-2.0 <0.2	0.17-0.32 0.15-0.26 0.05-0.10	4.5-6.5 4.5-6.5 5.1-7.3	Low---------- Low---------- Low----------	0.28 0.28 0.28	3	3-8

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm3	In/hr	In/in	pH				Pct
MyB----------	0-6	10-18	1.00-1.30	0.6-2.0	0.15-0.32	4.5-6.5	Low----------	0.20	3	---
Monarda	6-20	10-18	1.30-1.55	0.6-2.0	0.15-0.26	4.5-6.5	Low----------	0.28		
	20-60	10-18	1.70-1.95	<0.2	0.05-0.10	5.1-7.3	Low----------	0.28		
PaB, PaC----------	0-8	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low----------	0.24	3	2-6
Peru	8-17	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low----------	0.43		
	17-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low----------	0.17		
PbB, PbC----------	0-6	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low----------	0.24	3	---
Peru	6-17	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low----------	0.43		
	17-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low----------	0.17		
PcB, PcC, PcD----	0-6	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low----------	0.24	3	---
Peru	6-17	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low----------	0.43		
	17-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low----------	0.17		
Pg*.										
Pits										
Py----------	0-10	1-9	1.15-1.40	2.0-6.0	0.12-0.24	4.5-6.5	Low----------	0.24	5	3-8
Podunk	10-24	1-9	1.15-1.45	2.0-6.0	0.12-0.18	4.5-6.5	Low----------	0.43		
	24-60	0-3	1.30-1.50	2.0-20	0.04-0.13	4.5-6.5	Low----------	0.20		
Qu*.										
Quarries										
Rc*.										
Rock outcrop										
RmC*, RmE*:										
Rock outcrop.										
Lyman----------	0-3	2-10	0.75-1.20	2.0-6.0	0.08-0.25	3.6-6.0	Low----------	0.28	2	---
	3-19	2-10	0.90-1.40	2.0-6.0	0.08-0.28	3.6-6.0	Low----------	0.32		
	19	---	---	---	---	---	----------	----		
Sa----------	0-12	4-10	1.00-1.40	0.6-2.0	0.17-0.30	5.1-6.5	Low----------	0.49	5	3-20
Saco	12-46	2-10	1.20-1.50	0.6-2.0	0.15-0.26	5.1-6.5	Low----------	0.64		
	46-60	1-8	1.30-1.60	>6.0	0.01-0.13	5.6-7.3	Low----------	0.10		
Se----------	8-0	---	0.55-0.75	6.0-20	0.20-0.45	4.5-6.0	----------	----	5	---
Searsport	0-5	1-5	1.15-1.35	>6.0	0.01-0.13	4.5-6.0	Low----------	0.17		
	5-60	0-2	1.35-1.55	>6.0	0.01-0.13	4.5-6.0	Low----------	0.17		
Su*:										
Sulfaquents.										
Sulfihemists.										
Sw----------	0-6	10-35	1.00-1.30	0.6-2.0	0.22-0.30	4.5-7.3	Low----------	0.28	3	3-6
Swanville	6-22	18-35	1.20-1.50	0.06-0.6	0.14-0.22	4.5-7.3	Low----------	0.49		
	22-60	18-35	1.60-1.80	0.06-0.6	0.10-0.20	5.6-7.3	Low----------	0.55		
ThB*, ThC*, ThD*:										
Thorndike-------	0-6	5-10	1.00-1.30	0.6-2.0	0.12-0.24	3.6-6.0	Low----------	0.20	2	2-8
	6-19	5-10	1.00-1.30	0.6-2.0	0.09-0.22	3.6-6.0	Low----------	0.20		
	19	---	---	---	---	---	----------	----		
Winnecook-------	0-9	5-10	0.90-1.20	0.6-2.0	0.15-0.25	3.6-6.0	Low----------	0.28	3	3-7
	9-28	3-10	1.10-1.40	0.6-2.0	0.09-0.22	3.6-6.0	Low----------	0.28		
	28-34	3-10	1.10-1.40	0.6-2.0	0.05-0.20	3.6-6.0	Low----------	0.28		
	34	---	---	---	---	---	----------	----		
TkB*, TkC*, TkE*:										
Thorndike-------	0-6	5-10	1.00-1.30	0.6-2.0	0.12-0.24	3.6-6.0	Low----------	0.20	2	---
	6-19	5-10	1.00-1.30	0.6-2.0	0.09-0.22	3.6-6.0	Low----------	0.20		
	19	---	---	---	---	---	----------	----		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm3	In/hr	In/in	pH				Pct
TkB*, TkC*, TkE*: Rock outcrop.										
TrB*, TrC*, TrD*: Tunbridge-------	0-8	5-9	0.80-1.20	2.0-6.0	0.12-0.18	4.5-5.5	Low----------	0.20	2	2-6
	8-22	3-9	1.20-1.40	2.0-6.0	0.10-0.16	4.5-6.0	Low----------	0.20		
	22-29	3-7	1.20-1.50	2.0-6.0	0.10-0.14	5.1-6.5	Low----------	0.20		
	29	---	---	---	---	---	----------	----		
Lyman----------	0-8	2-10	0.75-1.20	2.0-6.0	0.08-0.25	3.6-6.0	Low----------	0.28	2	1-4
	8-19	2-10	0.90-1.40	2.0-6.0	0.08-0.28	3.6-6.0	Low----------	0.32		
	19	---	---	---	---	---	----------	----		
Ud*: Udorthents.										
Urban land.										

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the text explain terms such as "rare," "brief," "apparent," and "perched." The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
AdB, AdC, AdD----- Adams	A	None--------	---	---	>6.0	---	---	>60	---	Low-------	Low-------	High.
BaB, BaC, BaD, BbB, BbC, BbD---- Bangor	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Low-------	Moderate.
Be*. Beaches												
Bf---------- Biddeford	D	None--------	---	---	+1-0.5	Apparent	Nov-Aug	>60	---	High------	High------	Moderate.
BoB, BoC, BoD, BoE3, BpB-------- Boothbay	C	None--------	---	---	1.0-2.0	Apparent	Mar-May	>60	---	High------	Moderate	Moderate.
Bs*. Borosaprists												
BtB---------- Brayton	D	None--------	---	---	0.0-1.5	Perched	Nov-May	>60	---	High------	High------	Moderate.
BvB, BxB---------- Brayton	D	None--------	---	---	0.0-1.5	Perched	Nov-May	>60	---	High------	High------	Moderate.
DxB, DxC, DyB, DyC---------- Dixmont	C	None--------	---	---	1.0-2.0	Perched	Nov-Jun	>60	---	High------	Moderate	Moderate.
ElB, ElC---------- Eldridge	C	None--------	---	---	1.5-2.0	Apparent	Jan-May	>60	---	Moderate	Moderate	Moderate.
HeB, HeC, HfC, HfD, HgC, HgD---- Hermon	A	None--------	---	---	>6.0	---	---	>60	---	Low-------	Low-------	High.
Lk*: Limerick---------	C	Frequent----	Brief-----	Jan-Jun	0.5-1.5	Apparent	Nov-Jun	>60	---	High------	High------	Low.
Rumney----------	C	Frequent----	Brief-----	Oct-May	0-1.5	Apparent	Nov-Jun	>60	---	High------	High------	High.
LrB*, LrC*, LrE*: Lyman----------	C/D	None--------	---	---	>6.0	---	---	10-20	Hard	Moderate	Low-------	High.
Rock outcrop.												
MaB---------- Madawaska	B	None--------	---	---	1.5-3.0	Apparent	Nov-May	>60	---	High------	Moderate	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
MbB, MbC, MbD, MeB, MeC, MeD, MeE, MfC, MfE----Marlow	C	None--------	---	---	1.5-2.5	Perched	Nov-Mar	>60	---	Moderate	Low------	Moderate.
MkB, MkC, MkE-----Masardis	A	None--------	---	---	>5.0	---	---	>60	---	Low------	Low------	Moderate.
MrB, MrC----------Masardis Variant	C	None--------	---	---	>6.0	---	---	20-40	Hard	Low------	Low------	Moderate.
MsB*, MsC*: Masardis Variant-	C	None--------	---	---	>6.0	---	---	20-40	Hard	Low------	Low------	Moderate.
Rock outcrop.												
MwB, MyB----------Monarda	D	None--------	---	---	0-1.5	Perched	Oct-Jun	>60	---	High-----	High-----	High.
PaB, PaC, PbB, PbC, PcB, PcC, PcD----------Peru	C	None--------	---	---	1.0-2.0	Perched	Nov-Apr	>60	---	High-----	Moderate	Moderate.
Pg*. Pits												
Py----------Podunk	B	Frequent----	Brief-----	Nov-May	1.5-3.0	Apparent	Nov-May	>60	---	High-----	Moderate	Moderate.
Qu*. Quarries												
Rc*. Rock outcrop												
RmC*, RmE*: Rock outcrop.												
Lyman----------	C/D	None--------	---	---	>6.0	---	---	10-20	Hard	Moderate	Low------	High.
Sa----------Saco	D	Frequent----	Brief-----	Nov-May	0-0.5	Apparent	Sep-Jun	>60	---	High-----	Low------	Moderate.
Se----------Searsport	D	None--------	---	---	+1-1.0	Apparent	Sep-Jul	>60	---	Moderate	High-----	High.
Su*: Sulfaquents.												
Sulfihemists.												
Sw----------Swanville	C	None--------	---	---	0-1.5	Apparent	Oct-Jun	>60	---	High-----	High-----	Low.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
ThB*, ThC*, ThD*:												
Thorndike	C/D	None	---	---	>6.0	---	---	10-20	Soft	Moderate	Moderate	High.
Winnecook	C	None	---	---	>6.0	---	---	20-40	Soft	Moderate	Low	Moderate.
TkB*, TkC*, TkE*:												
Thorndike	C/D	None	---	---	>6.0	---	---	10-20	Soft	Moderate	Moderate	High.
Rock outcrop.												
TrB*, TrC*, TrD*:												
Tunbridge	C	None	---	---	>6.0	---	---	20-40	Hard	Moderate	Low	Moderate.
Lyman	C/D	None	---	---	>6.0	---	---	10-20	Hard	Moderate	Low	High.
Ud*:												
Udorthents.												
Urban land.												

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--CLASSIFICATION OF THE SOILS

[An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series]

Soil name	Family or higher taxonomic class
Adams	Sandy, mixed, frigid Typic Haplorthods
Bangor	Coarse-loamy, mixed, frigid Typic Haplorthods
Biddeford	Fine, illitic, nonacid, frigid Histic Humaquepts
Boothbay	Fine-silty, mixed, frigid Aquic Dystric Eutrochrepts
Borosaprists	Borosaprists
Brayton	Coarse-loamy, mixed, frigid Aeric Fragiaquepts
Dixmont	Coarse-loamy, mixed, frigid Aquic Haplorthods
*Eldridge	Sandy over loamy, mixed, nonacid, mesic Aquic Udorthents
Hermon	Loamy-skeletal, mixed, frigid Typic Haplorthods
*Limerick	Coarse-silty, mixed, nonacid, mesic Typic Fluvaquents
Lyman	Loamy, mixed, frigid Lithic Haplorthods
*Madawaska	Coarse-loamy over sandy or sandy-skeletal, mixed, frigid Aquic Haplorthods
Marlow	Coarse-loamy, mixed, frigid Typic Fragiorthods
Masardis	Sandy-skeletal, mixed, frigid Typic Haplorthods
Masardis Variant	Sandy-skeletal, mixed, frigid Typic Haplorthods
Monarda	Coarse-loamy, mixed, frigid Aeric Fragiaquepts
Peru	Coarse-loamy, mixed, frigid Aquic Fragiorthods
*Podunk	Coarse-loamy, mixed, frigid Fluvaquentic Dystrochrepts
*Rumney	Coarse-loamy, mixed, nonacid, frigid Aeric Fluvaquents
*Saco	Coarse-silty, mixed, nonacid, mesic Fluvaquentic Humaquepts
Searsport	Mixed, frigid Typic Psammaquents
Sulfaquents	Sulfaquents
Sulfihemists	Sulfihemists
Swanville	Fine-silty, mixed, nonacid, frigid Aeric Haplaquepts
Thorndike	Loamy-skeletal, mixed, frigid Lithic Haplorthods
Tunbridge	Coarse-loamy, mixed, frigid Typic Haplorthods
Udorthents	Udorthents
Winnecook	Loamy-skeletal, mixed, frigid Typic Haplorthods

TABLE 18.--RELATIONSHIP AMONG SOIL SERIES AND POSITION, PARENT MATERIAL, AND DRAINAGE

Parent material	Excessively drained	Somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
	SOILS ON UPLANDS						
Shallow, medium textured and moderately coarse textured glacial till derived mainly from mica schist or phyllite and some granite or gneiss		Lyman					
Shallow, medium textured glacial till derived from slate or phyllite and some mica schist		Thorndike					
Moderately deep, medium textured and moderately coarse textured glacial till derived mainly from mica schist or phyllite and some granite and gneiss			Tunbridge				
Moderately deep, medium textured glacial till derived from slate or phyllite and some mica schist			Winnecoo				
Deep, moderately coarse textured and coarse textured glacial till derived mainly from granite and schist		Hermon	Hermon				
Deep, medium textured and moderately coarse textured, compact glacial till derived mainly from mica, phyllite, gneiss, or granite			Marlow	Peru	Brayton	Brayton	
Deep, medium textured glacial till derived mainly from slate or phyllite			Bangor	Dixmont	Dixmont	Monarda	
	SOILS ON OUTWASH PLAINS, TERRACES, OR ESKERS						
Moderately deep, moderately coarse textured and coarse textured material over schist, slate, phyllite, or gneiss bedrock		Masardis Variant					
Deep, moderately coarse textured over gravelly coarse textured material		Masardi					
Deep, moderately coarse textured over coarse textured material				Madawaska			Searsport
Deep, coarse textured material		Adams					

TABLE 18.--RELATIONSHIP AMONG SOIL SERIES AND POSITION, PARENT MATERIAL, AND DRAINAGE--Continued

Parent material	Excessively drained	Somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
	SOILS ON MARINE OR LACUSTRINE PLAINS						
Deep, coarse textured over medium textured and moderately fine textured material				Eldridge			
Deep, medium textured over medium textured and moderately fine textured material				Boothbay	Boothbay	Swanville	Biddeford
	SOILS ON FLOOD PLAINS						
Deep, moderately coarse textured and medium textured material over coarse textured material				Podunk		Rumney	
Deep, medium textured material						Limerick	Saco
	SOILS ON WETLANDS (SWAMPS AND BOGS)						
Deep, well decomposed, herbaceous, mossy or woody fiber							Borosaprists
Deep, decomposed saltwater marshgrasses							Sulfihemists
Deep, well decomposed saltwater marshgrasses over medium textured material							Sulfaquents
	SOILS ON DISTURBED AREAS						
Moderately deep to deep, coarse textured to medium textured material	Udorthents	Udorthents	Udorthents				

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