

Soil Planner 2002:

State Soils and Protecting Important Farmlands

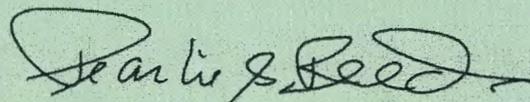


Introduction

Americans will face two increasingly critical challenges in the 21st century. First, how can we maintain the quality of soil on which our economic and environmental well-being depends? Preserving the complex, living system that sustains us is a survival issue for America. Second, how can we protect our most productive and environmentally sensitive soils from conversion to nonagricultural uses? We need a national commitment to conserve our soil and protect our important farmlands. Such commitment is possible only with an informed and concerned citizenry. Our scientific achievements and material wealth are possible only because we have been blessed with an abundance of rich soil.

The importance of soil goes well beyond agriculture. Soil plays a critical role in the planetary ecosystem. Because it is porous, soil acts like a sponge, absorbing most of the water falling on the land surface. In the process, it filters and cleans the water and adds nutrients, which then can be taken up by plants and ultimately by humans. Soil also helps to maintain the proper balance of gases in the atmosphere we breathe and performs other life-sustaining functions. For example, soil microbes break down many of the harmful substances our industrial society releases into the environment each year.

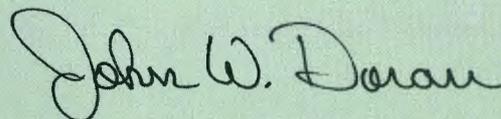
The Natural Resources Conservation Service is proud to have played a part in the publication of this planning guide, with State soils and protecting important farmlands as the theme. As you use this planner, take time to reflect on the many blessings we receive from the soil every day. I hope that you will be inspired to learn more about this life-sustaining natural resource and will join us in helping Americans to understand the importance of safeguarding soil—that rich layer of life that nurtures us all.



Pearlie S. Reed
Chief, Natural Resources Conservation Service

The Soil Science Society of America (SSSA) is pleased to share in the publication of this planning guide. The thin layer of soil covering the Earth's surface represents the difference between survival and extinction for most life on Earth. Thus, the ancient Greeks recognized earth as one of the basic elements of life, along with water, air, and fire. The State soils and important farmlands highlighted in this planner remind us of the importance of soil and farmland to the production of high-quality food and fiber. Soil is also the primary interface with the environment, influencing the quality of our air and water and the stability of the climate on which we depend. Thus, the health of soils and land resources is a primary indicator of the sustainability of land management practices and a major determinant of environmental stability and human health.

As you enjoy using the 2002 planner, reflect on the SSSA motto "Soils Sustain Life." Soils play a vital role in sustaining human welfare and assuring future agricultural productivity and environmental stability. Through our vision of "Sustaining Earth and Its People," we can identify soil and land management practices that balance the needs for food and fiber production with the conservation of essential natural and environmental resources, including soil. In pursuing this goal, soil scientists must communicate to both urban and rural sectors of society two important ideas. First, conservation management of soil and land is critical in providing adequate food and fiber for all people. Second, environmental remediation can be a new and important product of agriculture. Research and education programs should translate science into practices that land managers can embrace to sustain both themselves and the soils and environments on which we all depend.



John W. Doran
President, Soil Science Society of America

What Is a State Soil?

A soil that has special significance to a particular State is recognized as a State soil. Each State in the U.S. has a designated State soil. Also, representative soils have been selected for Guam, Puerto Rico, and the Virgin Islands. Nineteen of the State soils have been legislatively established. The "Official State Soils" share the same level of distinction as official State flowers and birds.

A soil is a naturally occurring entity on the landscape. Therefore, a given soil does not necessarily occur within the confines of only one State. For instance, 7 of the 12 State soils featured in this year's planner range beyond the respective States in which they are honored. A soil name generally is derived from a town or landmark in or near the area where the soil was first recognized.

Most soils have three major layers, called the surface layer, the subsoil, and the substratum. The State soils described in this planner have various combinations of these layers.

The **surface layer** has the maximum accumulation of organic matter and is the horizon of maximum leaching of clay minerals and of iron and aluminum oxides. In some soils it is underlain by a subsurface layer.

The **subsoil**, which underlies the surface layer or the subsurface layer, is the horizon of maximum accumulation of clay minerals, iron and aluminum oxides, and other compounds. These compounds may have been leached from the surface layer and redeposited in the subsoil, or they may have formed in place. Most likely, they occur as a result of a combination of both of these processes. The subsoil commonly has blocky or prismatic structure and generally is firmer and lighter in color than the surface layer.

The **substratum** is below the surface layer and subsoil. It consists of material that has been somewhat modified by weathering but is relatively unchanged by soil-forming processes.

Important Web sites:

- Natural Resources Conservation Service:
<http://www.nrcs.usda.gov>
- Soil Survey Division:
<http://www.statlab.iastate.edu/soils/soildiv>
- National Soil Survey Center:
<http://www.nssc.nrcs.usda.gov>

State Soils of the United States

STATE	STATE SOIL	LEGISLATION
Alabama	Bama	April 1997
Alaska	Tanana	
Arizona	Casa Grande	
Arkansas	Stuttgart	March 1997
California	San Joaquin	August 1997
Colorado	Seitz	
Connecticut	Windsor	
Delaware	Greenwich	April 2000
Florida	Myakka	May 1989
Georgia	Tifton	
Guam	Akina	
Hawaii	Hilo	
Idaho	Threebear	
Illinois	Drummer	June 2001
Indiana	Miami	
Iowa	Tama	
Kansas	Harney	April 1990
Kentucky	Crider	April 1990
Louisiana	Ruston	
Maine	Chesuncook	April 1999
Maryland	Sassafras	
Massachusetts	Paxton	May 1991
Michigan	Kalkaska	December 1990
Minnesota	Lester	
Mississippi	Natchez	
Missouri	Menfro	
Montana	Scobey	

STATE	STATE SOIL	LEGISLATION
Nebraska	Holdrege	April 1979
Nevada	Orovada	May 2001
New Hampshire	Marlow	
New Jersey	Downer	
New Mexico	Penistaja	
New York	Honeoye	
North Carolina	Cecil	
North Dakota	Williams	
Ohio	Miamian	
Oklahoma	Port	April 1987
Oregon	Jory	
Pennsylvania	Hazleton	
Puerto Rico	Bayamon	May 1999
Rhode Island	Narragansett	
South Carolina	Bohicket	
South Dakota	Houdek	February 1990
Tennessee	Dickson	
Texas	Houston Black	
U.S. Virgin Islands	Victory	
Utah	Taylorflat	
Vermont	Tunbridge	March 1985
Virginia	Pamunkey	
Washington	Tokul	
West Virginia	Monongahela	April 1997
Wisconsin	Antigo	September 1983
Wyoming	Forkwood	

Protecting Important Farmlands

Why do we need to protect farmland?

Farmland, one of America's greatest treasures, is being converted to nonagricultural uses in many areas. Between 1982 and 1997, every State lost some high-quality farmland to urban development. According to the National Resources Inventory (NRI), an average of 666,000 acres of prime farmland is converted to nonagricultural uses each year. This amounts to more than 70 acres per hour. One-fifth of the Nation's 250 million acres of prime farmland can be considered at risk because it is within 50 miles of the Nation's 100 largest cities.

When productive farmland is converted to nonagricultural uses, the environmental consequences are widespread. These include the following:

- Conversion of farmland can increase pressure on marginal lands, leading to soil erosion, drainage of wetlands, and increased water pollution from runoff.
- When farmland is paved over, permeable surfaces, which provide for water infiltration and ground-water recharge, disappear. Controlling runoff in open fields helps to prevent the pollution of streams and waterways by sediment, bacteria, nutrients, and metals. Paved areas, such as parking lots, have been shown to generate 16 times more runoff than open lands.
- The loss of large tracts of farmland to urban development is detrimental to wildlife, which need large, unfragmented blocks of land for healthy migration and habitat.

Conversion of farmland, often irreversible, also has the following detrimental social consequences:

- "Farming on the Edge," a 1997 report from the American Farmland Trust, suggests that in 50 years, the population of the United States may increase by 50 percent to 390 million residents, and farmers and ranchers could find themselves farming on 13 percent fewer acres. These changes could threaten agricultural trade balances.

- Farms, with their culture and traditions, are the social and economic foundations of rural communities. When farms disappear, so does the community.

- The disappearance of farms results in the loss of social opportunities for metropolitan communities. Families use farms as places for children to learn about production of food and fiber and get connected to the environment, and communities use them to connect producers and consumers through farmers markets and community-supported agriculture.

What are important farmlands?

In an effort to identify the extent and location of important farmlands, NRCS, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance.

Prime farmland has the soil quality, growing season, and moisture supply needed for the soil to economically produce sustained high yields of food, feed, fiber, forage, and oilseed crops when properly managed. The relative distribution of prime farmland is shown on the map included in this planner. Of the four types of important farmlands, only prime farmland is based on national criteria (available on the Web at http://www.access.gpo.gov/nara/cfr/waisidx_01/7cfr657_01.html).

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits, and vegetables. It has the special combination of soil quality, location, growing season, and moisture supply needed for the soil to economically produce sustainable high yields of these special crops when properly managed. Because it is not based on national criteria, unique farmland can differ from one

area to another. Unique farmland commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be farmland of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of Statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Of the 12 State soils highlighted in this planner, 5 are considered farmland of statewide importance.

In some areas that are not identified as having national or statewide importance, land is considered to be farmland of local importance for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies.

The role of the NRCS in farmland protection

Working in conjunction with local conservation districts, NRCS plays several roles in protecting important farmlands. In 1981, the U.S. Congress passed the Farmland Protection Policy Act (FPPA), which directs USDA through the NRCS to provide technical assistance to Federal agencies and State and local governments or organizations desiring to develop programs or policies that limit the conversion of productive farmlands to nonagricultural uses.

The FPPA was created, in part, in response to a national study showing that millions of acres of farmland were being converted annually to nonagricultural uses. The goal of the FPPA is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of important farmland to nonagricultural uses. The FPPA also states that Federal programs must be administered in a manner compatible with State, local government, and private programs and policies which protect farmland and that Federal

agencies must consider alternatives to projects which have an adverse impact on farmland.

The 1996 Farm Bill established the Farmland Protection Program (FPP). The goal of the FPP is to protect prime or unique farmland or other productive farmland from conversion to nonagricultural uses. This goal can be attained by conservation easements or other financial arrangements. The FPP is carried out in partnership with State, local, or Tribal governments and nongovernmental organizations with farmland protection programs.

NRCS can assist local governments with land use decisions by helping to develop Land Evaluation and Site Assessment (LESA) systems. These are locally adapted rating systems that are helpful to local officials who make land use decisions about farmlands. LESA also is used at the Federal level, as part of FPPA, in evaluations of the impacts of federally assisted projects on important farmlands.

LESA analyses are done in two parts. First, a land evaluation, using the National Cooperative Soil Survey, NRCS field office technical guides, soil potential or soil productivity ratings, land capability classifications, and important farmland determinations, is conducted to evaluate the inherent qualities of the soil. Second, a site assessment evaluates the land for the nonsoil factors related to agricultural use of a site, factors related to development pressure, and other factors associated with locally identified values of a site.

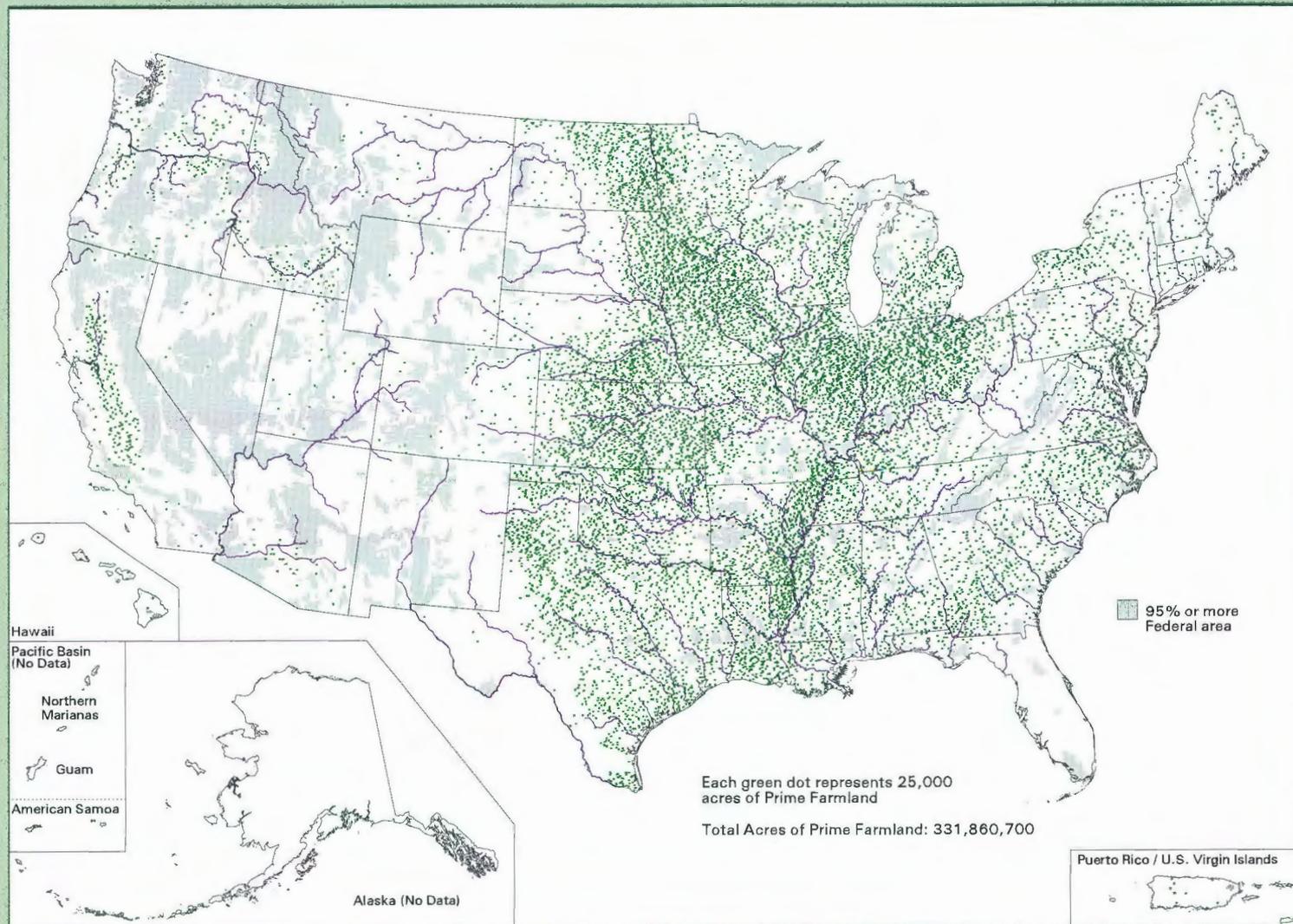
A LESA system helps to protect farmland by facilitating the identification of important farmlands and by assisting State and local government in implementing farmland protection policies.

Resources

In cooperation with the NRCS and the National Agricultural Library, the American Farmland Trust has developed a farmland protection information center. For more information about farmland protection, visit <http://farmlandinfo.org>.

For more information about FPP, FPPA, and LESA and links to the many partners involved in farmland protection and natural resource conservation, visit <http://www.info.usda.gov/nrcs/fpcp>.

Acres of Prime Farmland, 1997



Data Source:
1997 National Resources Inventory
Revised December 2000

State Soils and Important Farmlands

The following table identifies the State soils highlighted in this planner that may be prime farmland, unique farmland, or farmland of statewide importance. A ✓ in the table indicates that the soils of a given series may meet the requirements for prime farmland, unique farmland, or farmland of statewide importance. Not all of the soils of the specified series meet the requirements for these kinds of important farmland. For example, Cecil sandy loam, 2 to 8 percent slopes, is considered prime farmland; Cecil sandy loam, 8 to 15 percent slopes, is considered farmland of statewide importance; and Cecil soils that have slopes of more than 15 percent are too steep to be considered important farmlands.

STATE	STATE SOIL	PRIME FARMLAND	UNIQUE FARMLAND	FARMLAND OF STATEWIDE IMPORTANCE
Alabama	Bama	✓		
Arizona	Casa Grande		✓	
Delaware	Greenwich	✓		
Iowa	Tama	✓		✓
Montana	Sobey			✓
Nebraska	Holdrege	✓		
North Carolina	Cecil	✓		✓
Oklahoma	Port	✓		
Oregon	Jory	✓		
Texas	Houston Black	✓		✓
Vermont	Tunbridge			✓
Wisconsin	Antigo	✓		

Bama: Alabama State Soil

Bama Soil Profile

Surface layer: dark brown fine sandy loam

Subsurface layer: pale brown fine sandy loam

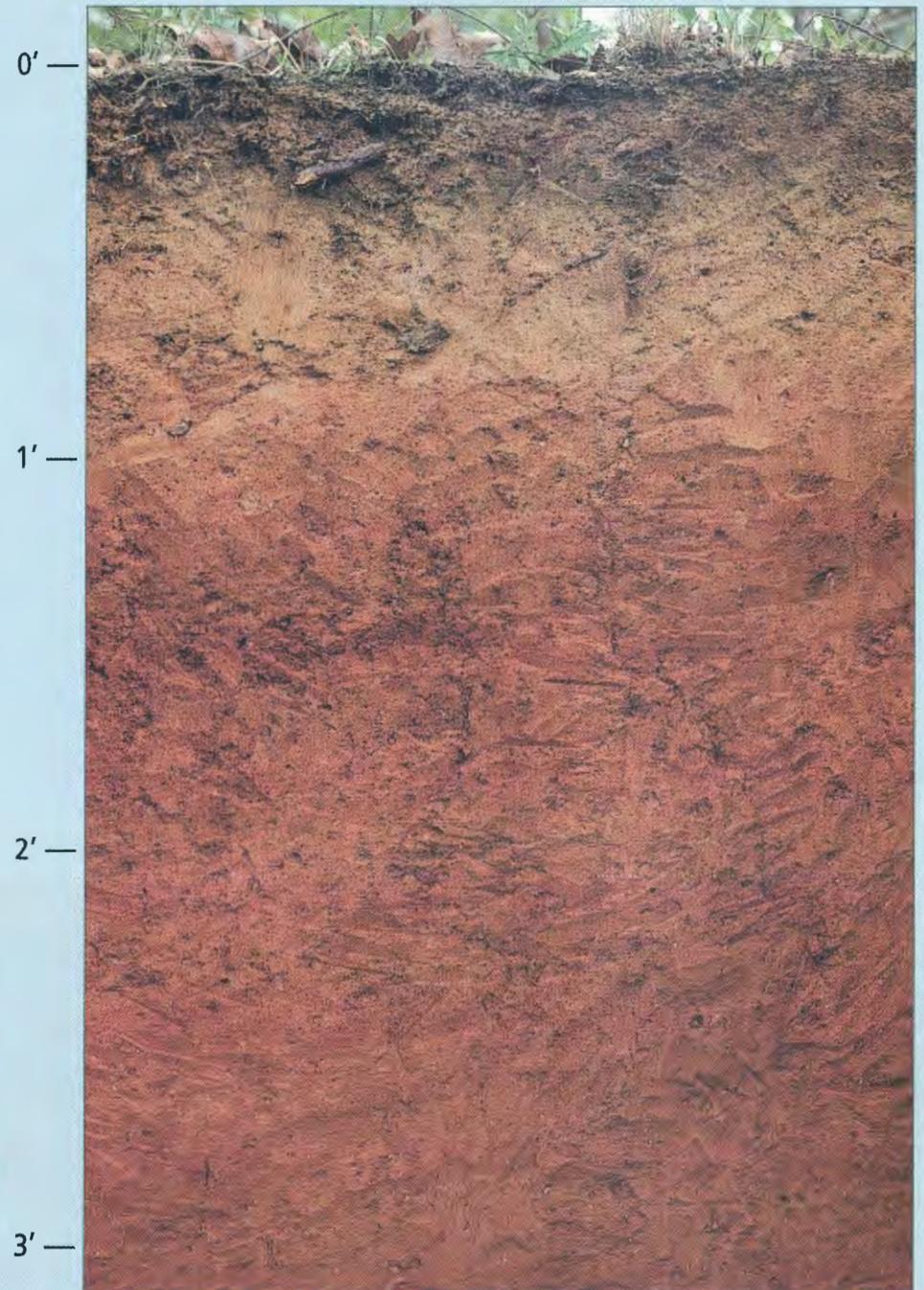
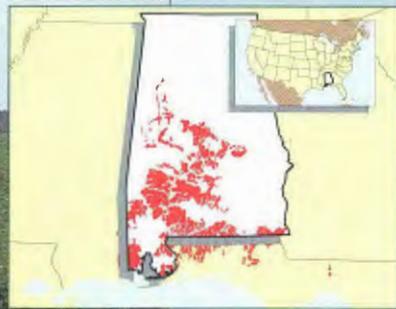
Subsoil: red clay loam and sandy clay loam

Bama soils are mainly in level to gently sloping areas on high terraces paralleling major river systems and on broad marine terraces. These very deep, well-drained, moderately permeable soils formed in thick deposits of loamy fluvial or marine sediments. The average annual precipitation is 56 to 64 inches. The average annual air temperature is 60 to 65 degrees F.

These soils make up more than 360,000 acres, mainly in the western and central parts of Alabama. They occur in 26 counties in the State. They also occur in Florida, Mississippi, and Virginia.

These soils are well suited to cultivated crops, pasture, hay, woodland, and most urban uses. Cotton and corn are the main cultivated crops. Some areas are used as woodland. These areas support longleaf, loblolly, and slash pine and scattered oak, sweetgum, hickory, and dogwood.

The Bama series was designated the official state soil of Alabama by the State Legislature on April 22, 1997. The resolution was proposed by the Professional Soil Classifiers Association of Alabama with support from the Alabama Soil and Water Conservation Committee and the Alabama Association of Conservation Districts.



January 2002

December 2001							February 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1						1	2
2	3	4	5	6	7	8	3	4	5	6	7	8	9
9	10	11	12	13	14	15	10	11	12	13	14	15	16
16	17	18	19	20	21	22	17	18	19	20	21	22	23
23/30	24/31	25	26	27	28	29	24	25	26	27	28		

EVENTS

27-30
Aquaculture America
 San Diego, CA
www.naa@intrepid.net

PRIME FARMLAND FACTS

- Of the total non-Federal acreage of cropland, about 56 percent is prime farmland.
- Of the total non-Federal acreage of pastureland, about 30 percent is prime farmland.
- Of the total non-Federal acreage of rangeland, about 5 percent is prime farmland.
- Of the total non-Federal acreage of forest land, about 12 percent is prime farmland.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 New Year's Day	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21 Martin Luther King, Jr.'s Birthday	22	23	24	25	26
27	28	29	30	31		

Casa Grande: *Arizona* State Soil

Casa Grande Soil Profile

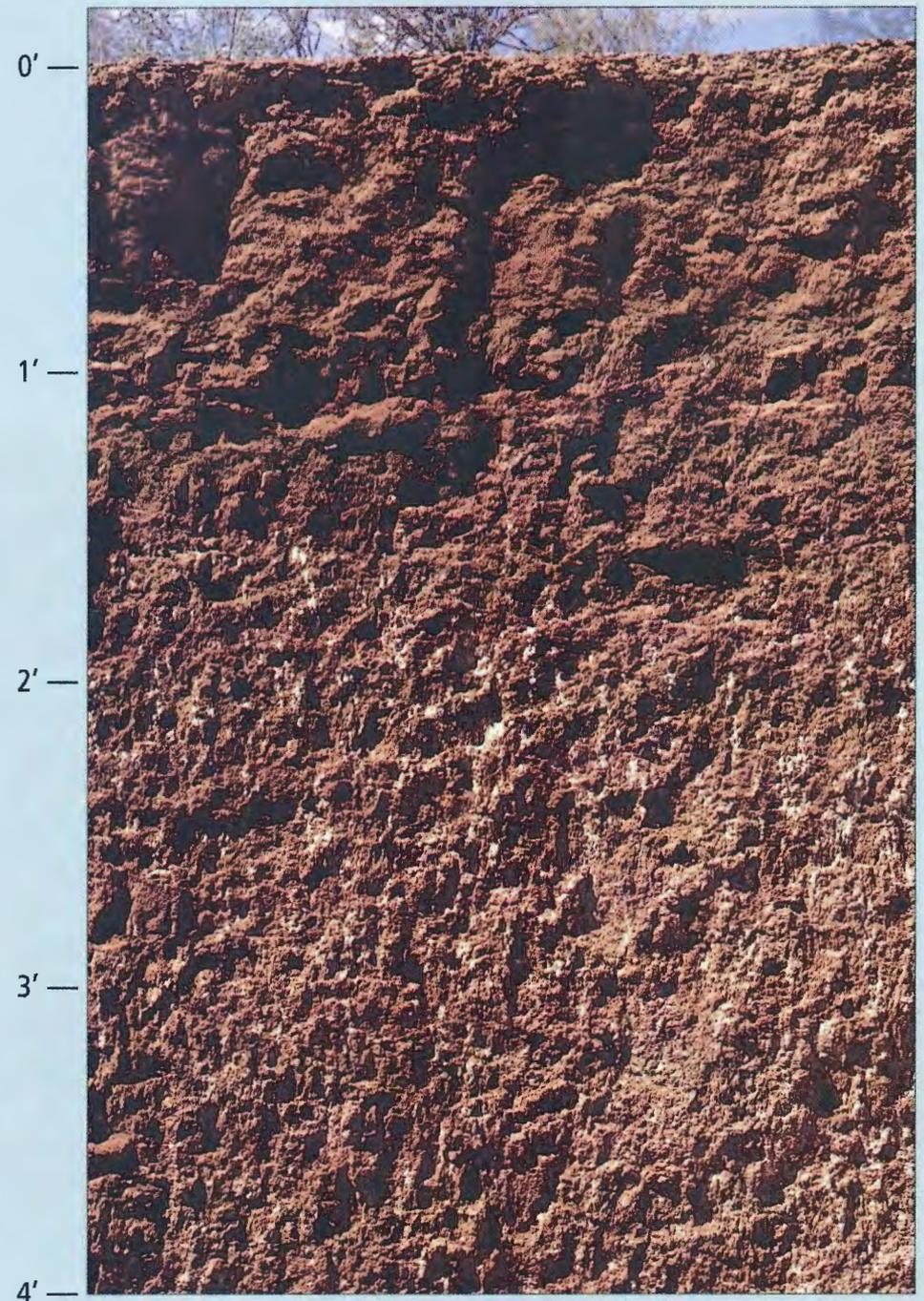
Surface layer: light brown, saline-sodic fine sandy loam

Subsoil: reddish brown, saline-sodic sandy clay loam in the upper part and light reddish brown, saline-sodic clay loam in the lower part

The Casa Grande series was first identified in 1936. It is named after the city of Casa Grande and the nearby Casa Grande National Monument, home of a large earthen building constructed by the Hohokam Indians nearly 1,000 years ago. The Spanish words "Casa Grande" mean "Big House." The Indians used irrigation to remove excess salts from Casa Grande soils and raised cotton, grain, and vegetables on these productive soils, much as farmers do today.

The Casa Grande series consists of very deep, well-drained, saline-sodic soils on fan terraces and relict basin floors. These soils formed in alluvium derived from granite, rhyolite, andesite, quartzite, and some limestone and basalt. Slopes generally are 0 to 5 percent. The climate is hot and arid.

Casa Grande soils have a known distribution of about 275,000 acres and a probable distribution of several million acres throughout central and southwestern Arizona.



February 2002

January 2002							March 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2
6	7	8	9	10	11	12	3	4	5	6	7	8	9
13	14	15	16	17	18	19	10	11	12	13	14	15	16
20	21	22	23	24	25	26	17	18	19	20	21	22	23
27	28	29	30	31			24/31	25	26	27	28	29	30

EVENTS

Black History Month

3-7
National Association of
Conservation Districts
Sparks, NV

14-19
American Association for the
Advancement of Science
Boston, MA

21-22
Agriculture Outlook Forum
Washington, DC
www.usda.gov

PRIME FARMLAND FACTS

- Why is prime farmland of importance to us? It is best suited to and available for the production of food, feed, forage, fiber, and oilseed crops. It can be cropland, pastureland, rangeland, forestland, or other land.
- About 22 percent (332 million acres) of the non-Federal lands excluding Alaska is prime farmland. Of this 22 percent, about 64 percent is cropland, 14 percent is forest land, 5 percent is rangeland, 11 percent is pastureland, and 6 percent is other.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
					Boy Scout Day	
10	11	12	13	14	15	16
17	18	19	20	21	22	23
	President's Day					
24	25	26	27	28		

Greenwich: Delaware State Soil

Greenwich Soil Profile

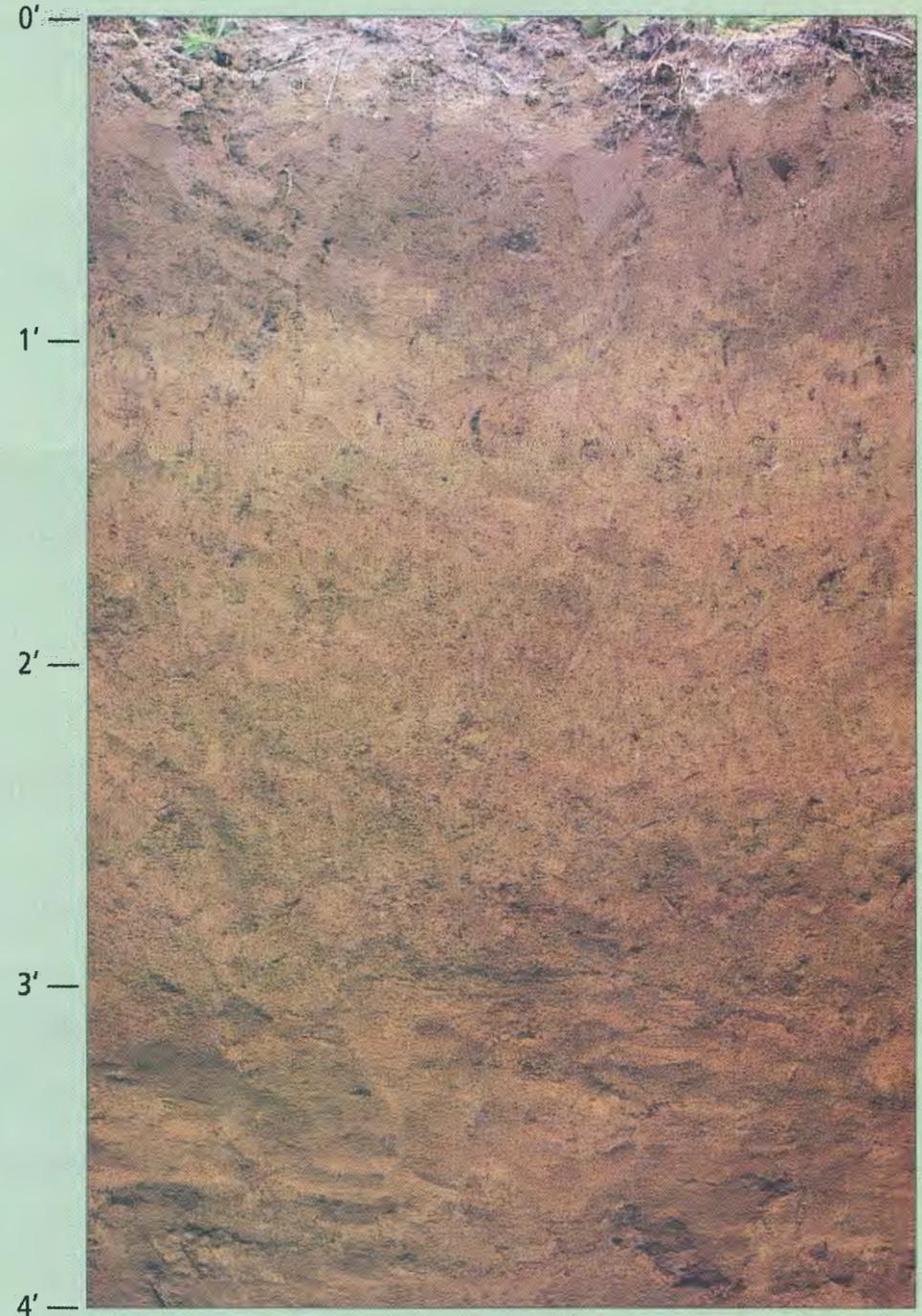
Surface layer: brown loam

Subsoil: strong brown loam in the upper part and yellowish brown sandy loam in the lower part

Substratum: yellowish brown coarse sand stratified with dark yellowish brown loamy sand

The Greenwich series consists of very deep, well-drained, moderately rapidly permeable soils that formed in sandy marine and old alluvial sediments overlain by a thin mantle of sediments that have a high content of silt. These soils are in the uplands on the coastal plain of Delaware and adjacent States. They are among the most productive soils in Delaware for agriculture and forestry and are considered prime farmland. They have few limitations if used as sites for urban or recreational development.

On April 20, 2000, Governor Thomas R. Carper signed House Bill 436, which designated Greenwich loam as Delaware's official State soil. Students from Fifer Middle School assisted primary sponsor Rep. V. George Carey in convincing the General Assembly to adopt Greenwich loam as the State soil. The students made Greenwich soil mini-monoliths, which they distributed to legislators in an attempt to illustrate the need for the public to be educated about the importance of soils and soil conservation.



March 2002

February 2002							April 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2		1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28			28	29	30				

EVENTS

Women's History Month

19-23
Association of American Geographers
 Los Angeles, CA

27-30
National Science Teachers Association
 San Diego, CA

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12 Girl Scout Day	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

For every pound of tissue (dry weight) it produces, a plant must extract 400 to 500 pounds of water from the soil.



Holdrege: Nebraska State Soil

Holdrege Soil Profile

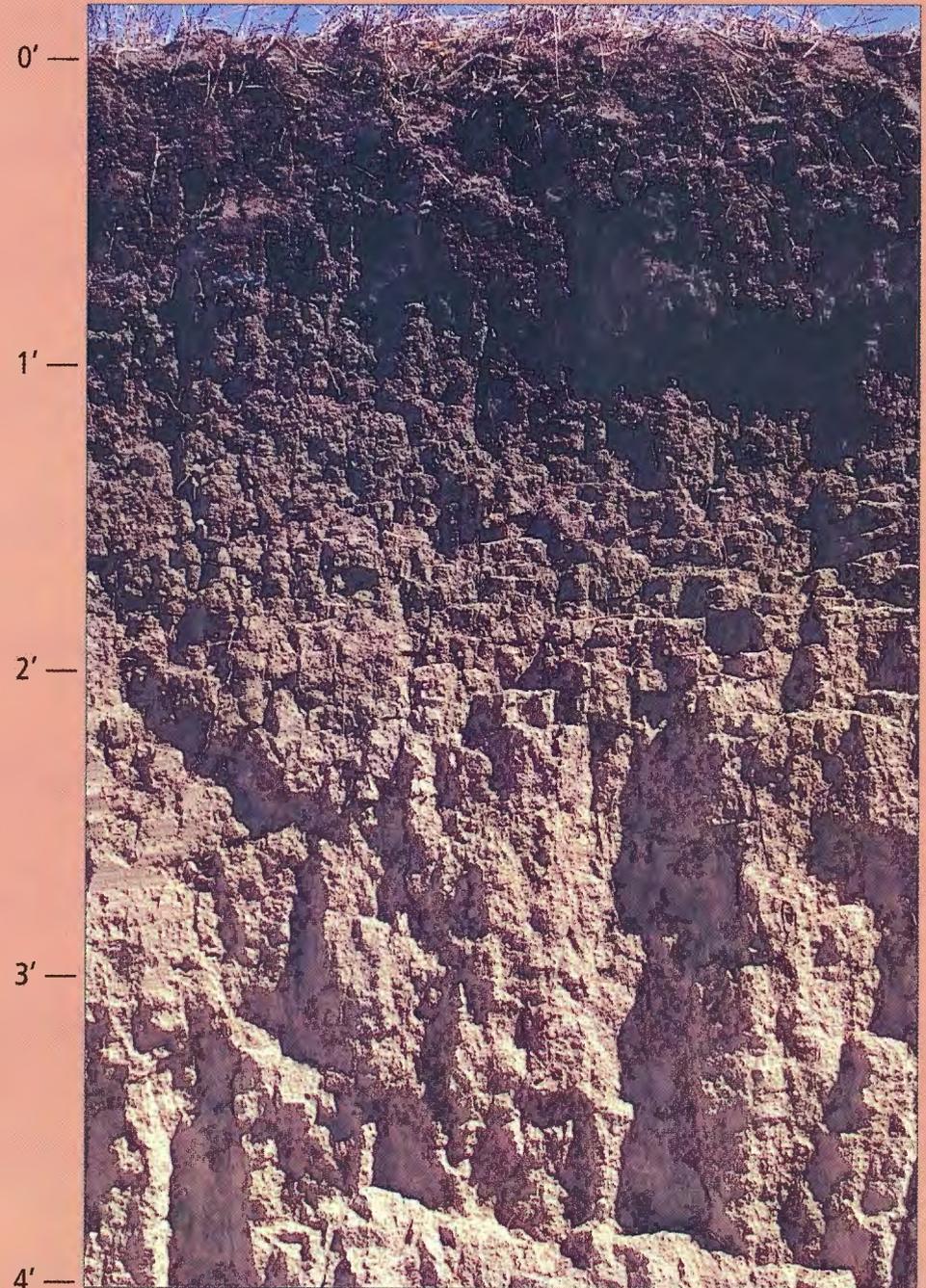
Surface layer: dark grayish brown silt loam

Subsoil: dark grayish brown silty clay loam in the upper part, light brownish gray silty clay loam in the next part, and light gray silt loam in the lower part

Holdrege soils are extensive, making up about 1.8 million acres in south-central Nebraska. Most areas of these soils are used for crops, pasture, or rangeland. Corn, soybeans, and small grain are the main crops grown under dryland conditions. Many areas are irrigated.

The Holdrege series consists of deep, nearly level to gently sloping, well-drained soils on uplands. These soils formed in silty, calcareous loess. Slopes typically range from 0 to 6 percent, but they are as much as 15 percent in some areas. The average annual precipitation is about 22 inches, and the annual average snowfall is about 22 inches. The average annual air temperature is about 50 degrees.

The Holdrege series was established in Phelps County, Nebraska, in 1917. It is named after a community in the county. It was selected as the Nebraska State soil in 1979.



April 2002

March 2002							May 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2				1	2	3	4
3	4	5	6	7	8	9	5	6	7	8	9	10	11
10	11	12	13	14	15	16	12	13	14	15	16	17	18
17	18	19	20	21	22	23	19	20	21	22	23	24	25
24/31	25	26	27	28	29	30	26	27	28	29	30	31	

EVENTS

13-17
American Planning Association
Chicago, IL

22-24
Children's Conference on the
Environment
Victoria, Canada,
United Nations Environment
Programme

29-May 5
Soil Stewardship Week

PRIME FARMLAND FACTS

■ If Prime Farmland soils are the very best of the best for agricultural uses, are there other soils needing consideration for agricultural uses? Soils of statewide, local, and unique importance should be considered when lands are evaluated for agricultural uses. Statewide important soils are excellent for agricultural uses, but they just are not the best of the best. Locally important soils are very productive soils and important to a jurisdiction. Soils of unique importance have specific characteristics (soil and climate) for growing high-value food or fiber crops.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
						Hugh Hammond Bennett's Birthday
14	15	16	17	18	19	20
21	22	23	24	25	26	27
	Earth Day				National Arbor Day	
28	29	30				

Tama: Iowa State Soil

Tama Soil Profile

Surface layer: very dark brown silty clay loam

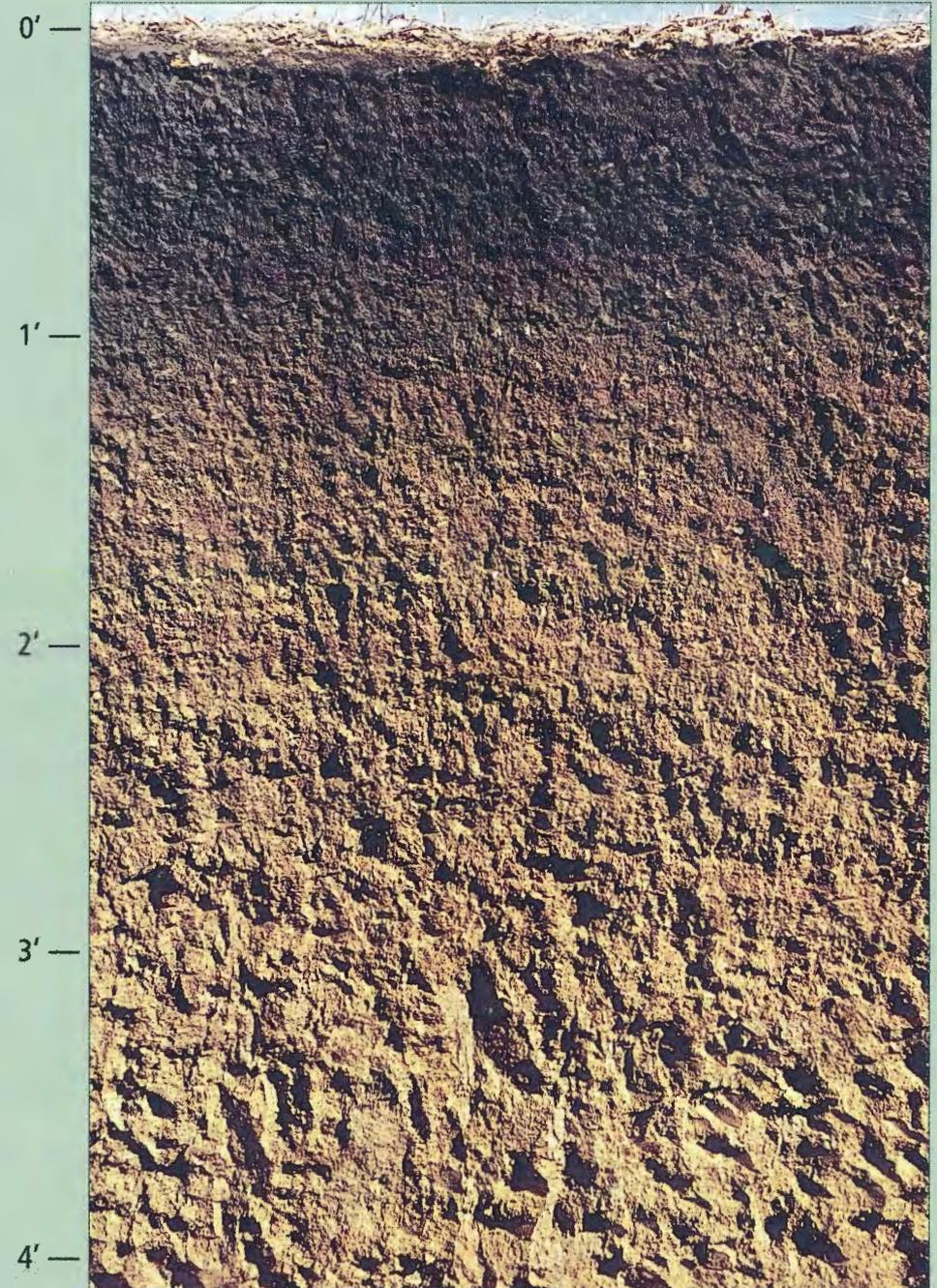
Subsurface layer: very dark grayish brown silty clay loam

Subsoil: brown silty clay loam in the upper part and dark yellowish brown silty clay loam in the lower part

Substratum: yellowish brown silty clay loam

The Tama series is considered one of the most productive of the soils in Iowa that are used for agricultural purposes. It makes up about 825,000 acres in east-central and eastern Iowa. The series was first identified in Black Hawk County, Iowa, in 1917. It has been identified in 26 counties in Iowa. It also has been identified in Illinois, Minnesota, and Wisconsin.

Tama soils formed in 48 or more inches of silty loess; under tall prairie grasses with a deep, fibrous root system; and under relatively humid climatic conditions. Over hundreds of years, the grasses have added organic matter to the soils, producing a relatively thick, dark surface layer. In some areas erosion has significantly affected the properties of the soils. Eroded Tama soils have less total nitrogen and organic matter and more clay in the surface layer than uneroded Tama soils.



May 2002

April 2002

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

June 2002

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24	25	26	27	28	29

EVENTS

National Wetlands Month

Asian-Pacific American Heritage Month

6-8
International Symposium on
Composting & Utilization
Columbus, OH
www.symposium@compost-
ing2002.org

PRIME FARMLAND FACTS

■ In what part of the United States is the largest percent of Prime Farmland used for cropland located? See NRI on the Internet: <http://www.nhq.nrcs.usda.gov/NRI>

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	
	Memorial Day					

Scobey: *Montana State Soil*

Scobey Soil Profile

Surface layer: very dark grayish brown clay loam

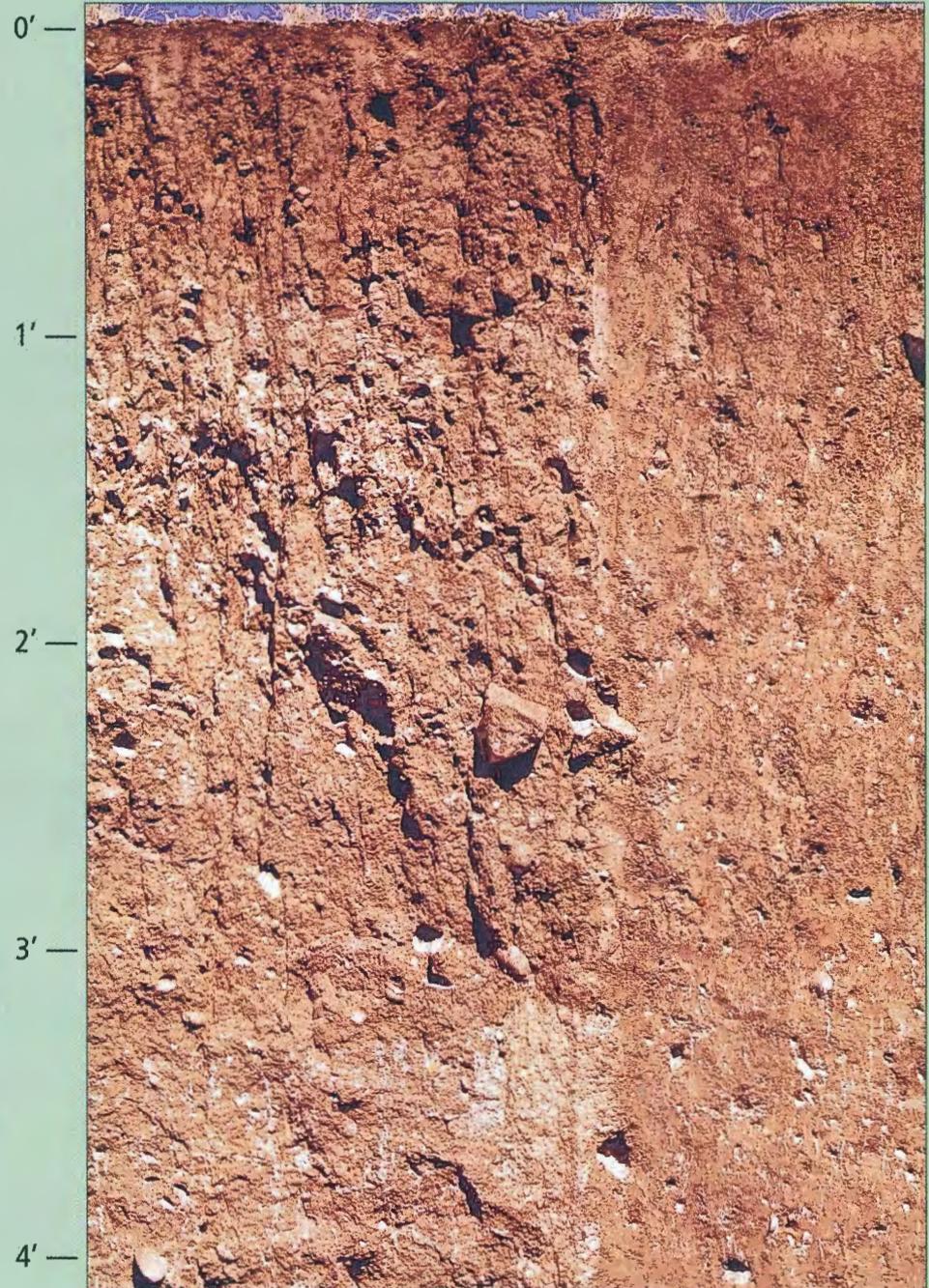
Subsurface layer: dark brown clay

Subsoil: dark grayish brown clay loam

The Scobey series consists of very deep, well-drained soils on till plains, hills, and moraines in the north-central part of Montana. These soils occur on more than 700,000 acres. They are among the most productive soils in Montana's Golden Triangle, an area known for its ideal climatic conditions for growing wheat of exceptionally high quality. The three points of the Golden Triangle are Havre, Conrad, and Great Falls. The main crops grown on Scobey soils are spring and winter varieties of nonirrigated wheat.

These soils formed in glacial till and under prairie vegetation. The average annual precipitation is about 12 inches. The average annual air temperature is about 43 degrees F. The frost-free period is about 115 days.

These soils are named for the town of Scobey, in northeast Montana. The series was established in 1928.



June 2002

May 2002							July 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4		1	2	3	4	5	6
5	6	7	8	9	10	11	7	8	9	10	11	12	13
12	13	14	15	16	17	18	14	15	16	17	18	19	20
19	20	21	22	23	24	25	21	22	23	24	25	26	27
26	27	28	29	30	31		28	29	30	31			

EVENTS

15-18
General Federation of Women's Clubs
Kansas City, MO

19-22
Ag. in the Classroom
Washington, DC

24-25
Developing Master Planned Cities, Urban Land Institute
Newport Beach, CA

30-July 4
International Conference on Ag. Engineering
Budapest, Hungary

PRIME FARMLAND FACTS

■ Did you know that Prime Farmland is the very best for agricultural uses? But about 10 million acres were converted to non-agricultural uses between 1982 and 1997.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
			World Environment Day			
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24	25	26	27	28	29

Cecil: North Carolina State Soil

Cecil Soil Profile

Surface layer: dark gray sandy loam

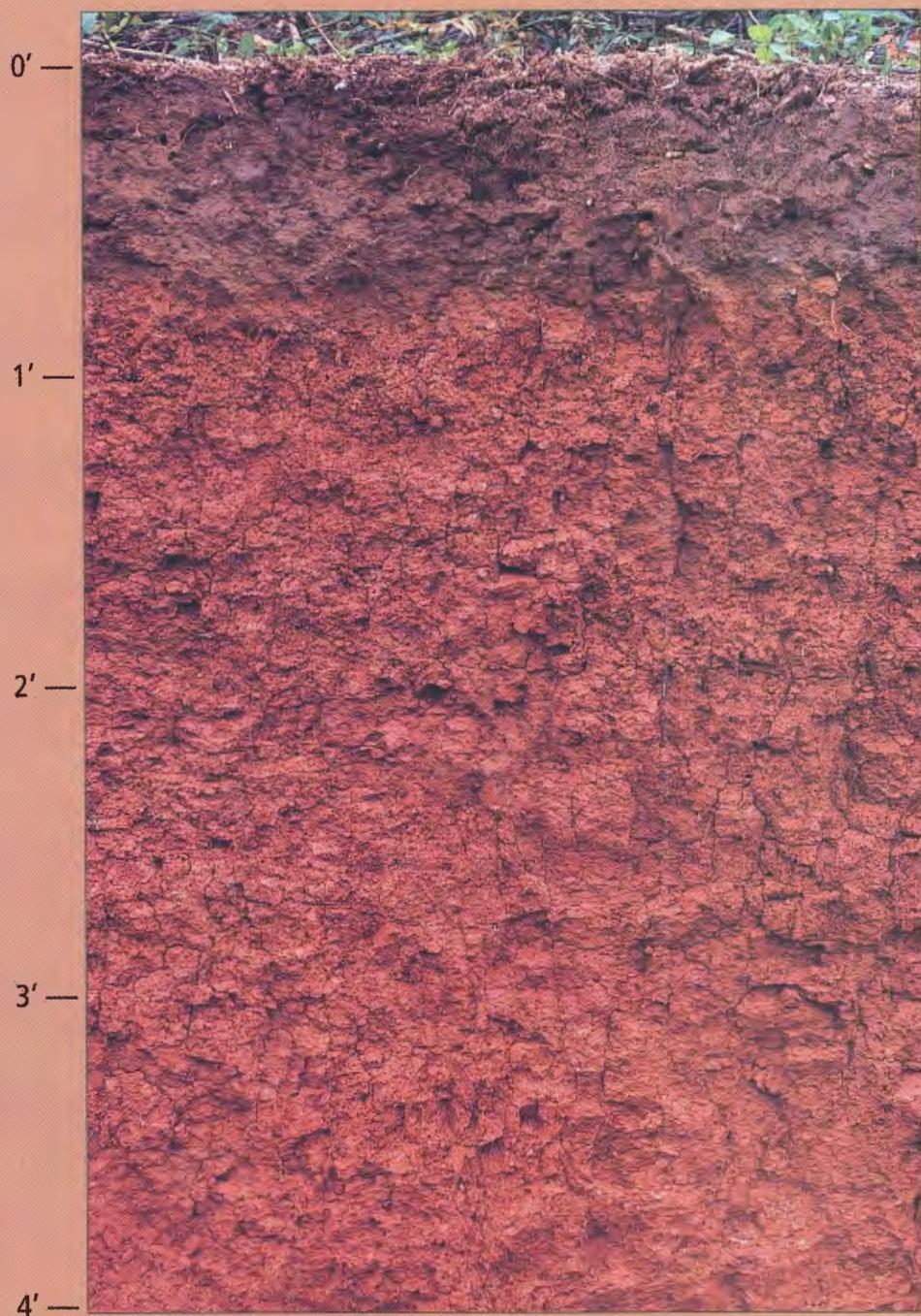
Subsoil: red clay and clay loam

Cecil soils are the most extensive of the soils that have their type location in North Carolina. They occur on 1,601,740 acres in the State. They are estimated to be on nearly one-third of the Piedmont Plateau in the Eastern United States.

About half of the acreage of these soils is cultivated, and the rest is used for pasture or forest. The most common crops are small grain, corn, cotton, and tobacco.

The Cecil series consists of very deep, well-drained, moderately permeable soils on upland ridges and side slopes. These soils formed in material weathered from felsic, igneous, and high-grade metamorphic rocks. Slopes range from 0 to 25 percent.

The Cecil series is on the National List of Benchmark Soils and is a Hall of Fame Soil. A monolith of the series profile is on display at the International Soil Reference and Information Centre in Wageningen, The Netherlands.



July 2002

June 2002							August 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1					1	2	3
2	3	4	5	6	7	8	4	5	6	7	8	9	10
9	10	11	12	13	14	15	11	12	13	14	15	16	17
16	17	18	19	20	21	22	18	19	20	21	22	23	24
23/30	24	25	26	27	28	29	25	26	27	28	29	30	31

EVENTS

15-17
Soil and Water Conservation Society
Indianapolis, IN

29-August 4
Canon Envirothon
Amherst, MA

PRIME FARMLAND FACTS

■ How do Prime Farmlands differ from other lands? They have the soil quality, growing season, and moisture needed to produce high yields of crops each year economically, if managed according to acceptable farm practices.

Each acre of soil is commonly home to a ton of bacteria.



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4 Independence Day	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Port: Oklahoma State Soil

Port Soil Profile

Surface layer: dark reddish brown loam

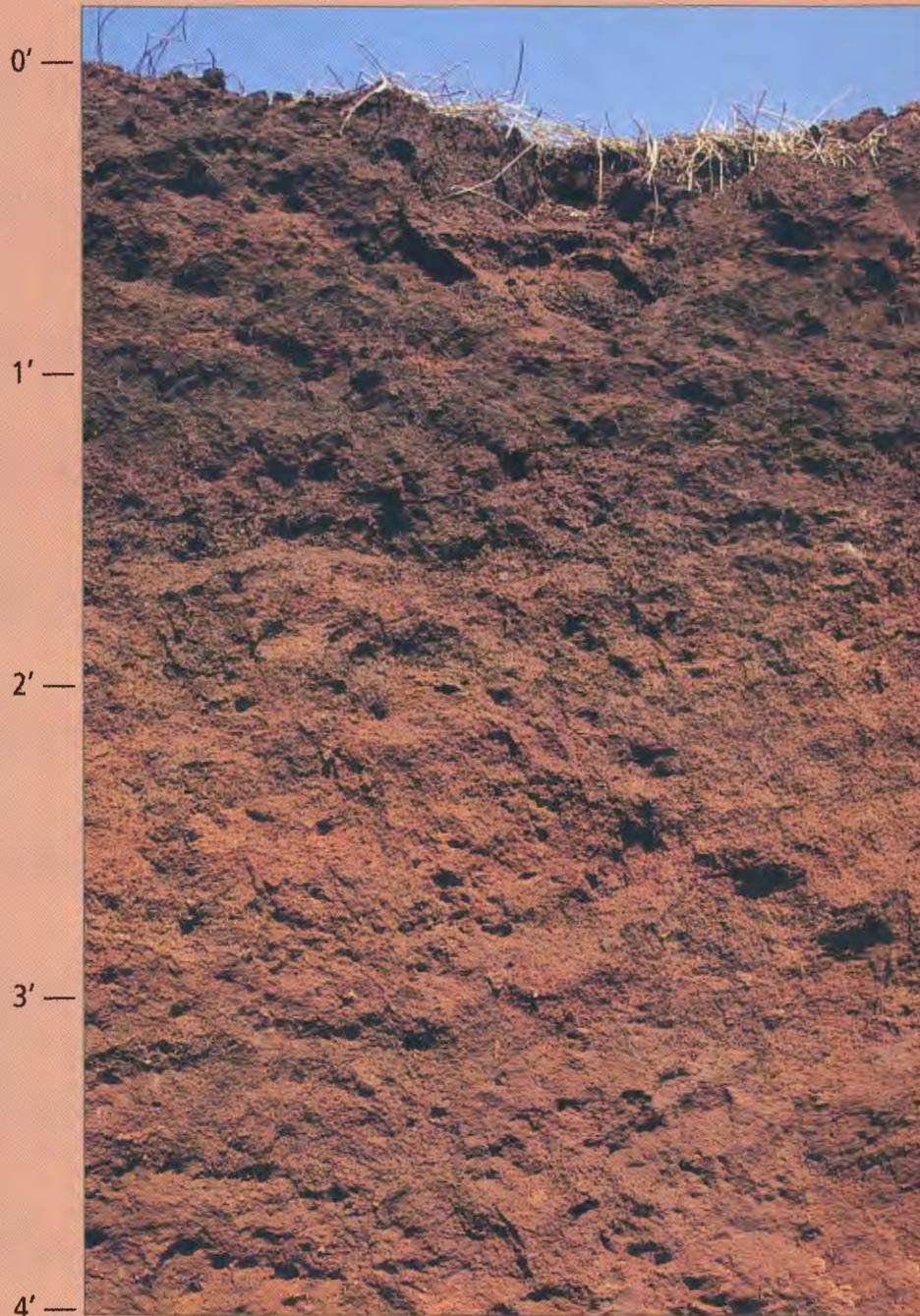
Subsurface layer: reddish brown silt loam

Subsoil: reddish brown loam in the upper part and red very fine sandy loam in the lower part

The Port series consists of very deep, well-drained, moderately permeable, nearly level and very gently sloping soils on flood plains that are subject to frequent, occasional, or rare flooding. These soils are in western and central Oklahoma and in Kansas and Texas. They are in 33 of the 77 counties in Oklahoma, where they make up about 1 million acres.

These soils formed in calcareous, loamy alluvium and under native grasses. A high volume of organic matter recycled in a grass ecosystem has resulted in good soil structure and tilth. Most areas of the soils are used as cropland. The main cultivated crops are alfalfa, wheat, grain sorghum, and cotton. Some areas are used as pasture or rangeland.

The Port series was established in 1942. It is named after the small community of Port, which is in Washita County, Oklahoma. The series was added to the list of official State symbols by the Oklahoma Legislature in 1987.



August 2002

July 2002

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2002

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

EVENTS

14-21
World Congress of Soil Science
Bangkok, Thailand

PRIME FARMLAND FACTS

Why as an individual should I care about maintaining our present acreage of Prime Farmland? It produces the highest yields with minimal expenditure of energy and economic resources and does so with the least damage to the environment.

From less than 1 percent to 60 percent of sunlight is reflected from soil, affecting the temperature of the soil.



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Jory: Oregon State Soil

Jory Soil Profile

Surface layer: organic material

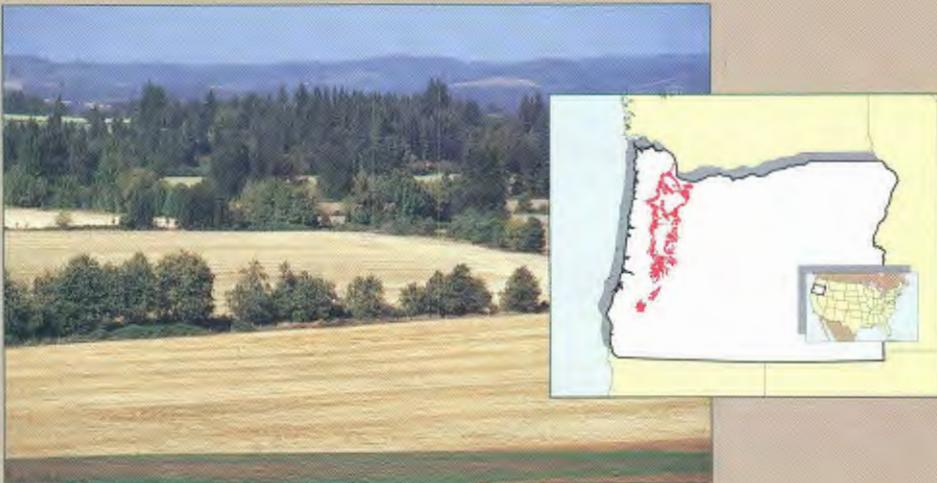
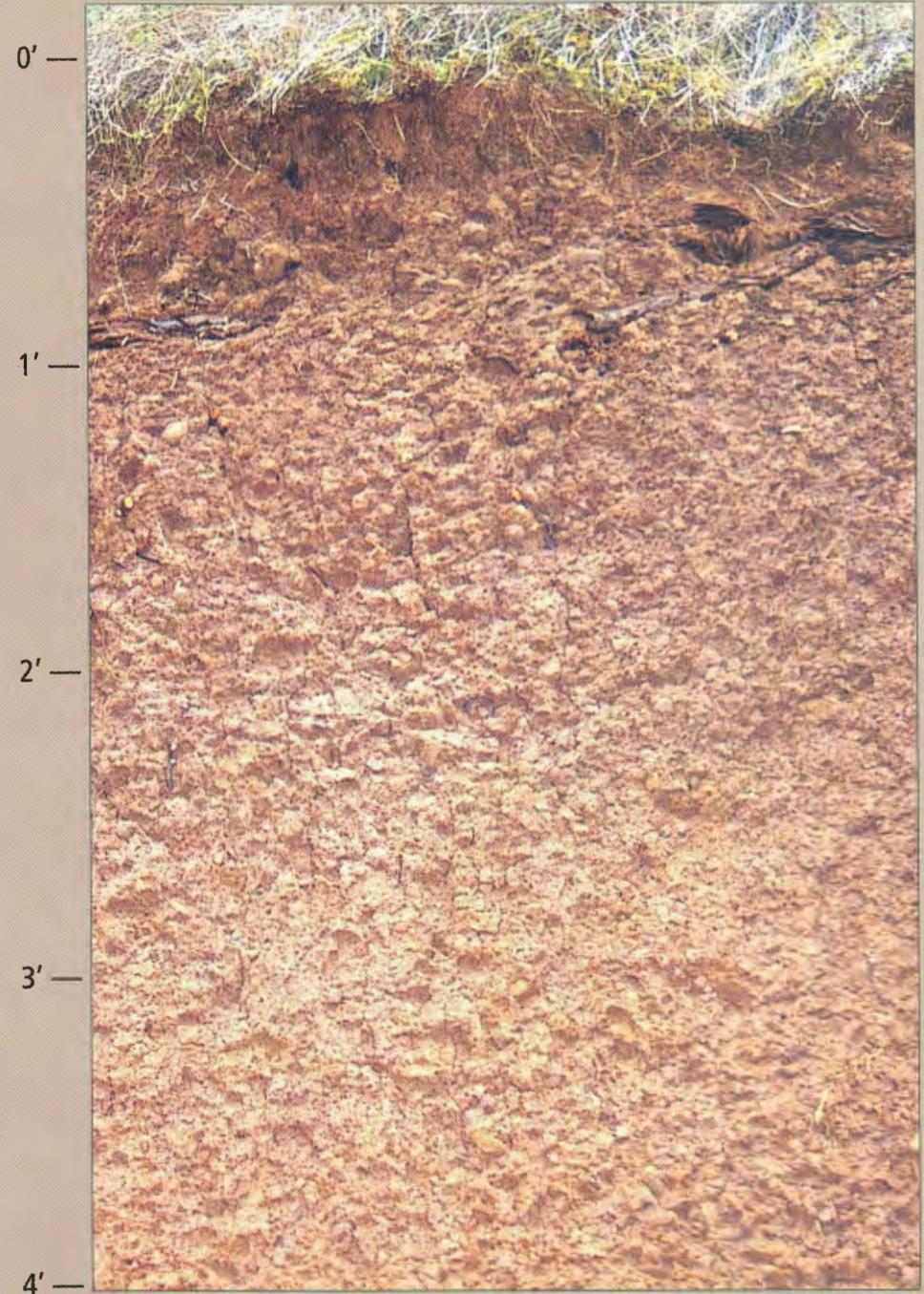
Subsurface layer: dark reddish brown silty clay loam

Subsoil: dark reddish brown clay in the upper part and red clay in the lower part

The Jory series consists of very deep, well-drained soils that formed in colluvium derived from basic igneous rock. These soils are in the foothills surrounding the Willamette Valley. They have been mapped on more than 300,000 acres in western Oregon. They are named after Jory Hill, which is in Marion County, Oregon.

Jory soils generally support forest vegetation, dominantly Douglas fir and Oregon white oak. They are very productive forest soils. Many areas have been cleared and are used for agricultural crops. The Jory soils and the climate of the Willamette Valley provide an ideal setting for the production of a variety of crops, including Christmas trees, blackberries, blueberries, strawberries, loganberries, marionberries, raspberries, filberts (hazelnuts), sweet corn, wheat, and many varieties of grass seed. The soils are suitable for the grapes used in the expanding wine industry in Oregon.

Growing urbanization of the Willamette Valley is resulting in a great deal of pressure for urban development in areas of the Jory soils.



September 2002

August 2002							October 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3			1	2	3	4	5
4	5	6	7	8	9	10	6	7	8	9	10	11	12
11	12	13	14	15	16	17	13	14	15	16	17	18	19
18	19	20	21	22	23	24	20	21	22	23	24	25	26
25	26	27	28	29	30	31	27	28	29	30	31		

EVENTS

2-11
World Summit of Sustainable Development
 Johannesburg, South Africa,
 United Nations Environment Programme

15-21
Hispanic Heritage Week

15-19
Environmentally Sustainable Agriculture for Dry Areas
 China

28 - Oct. 2
Water Environment Federation
 Chicago, IL

PRIME FARMLAND FACTS

■ What State (California, New York, or Texas) had the largest annual loss of prime farmland in the United States to nonagricultural uses during 1992-1997?

Answer is Texas.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9 Labor Day	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Houston Black: *Texas State Soil*

Houston Black Soil Profile

Surface layer: black clay

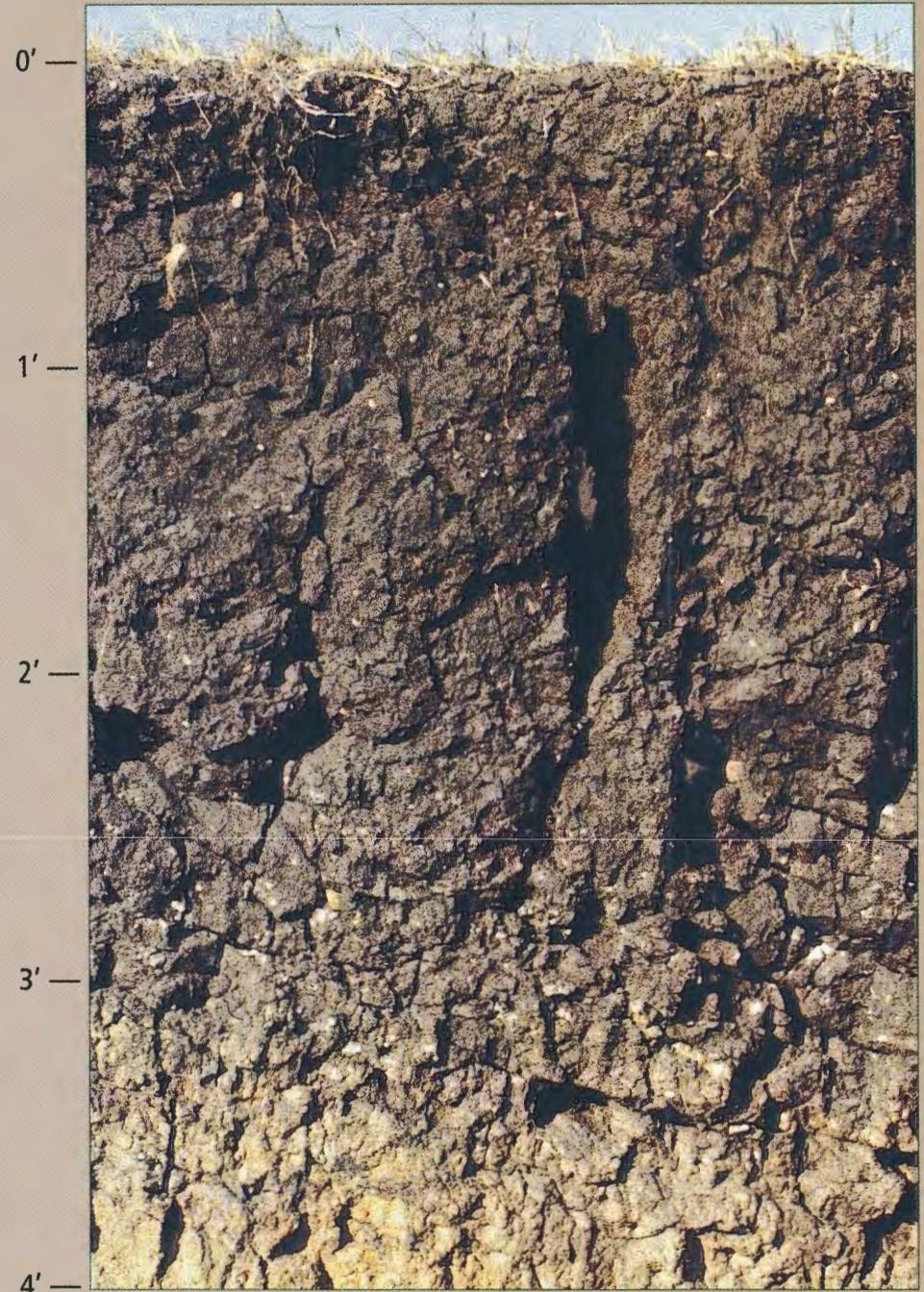
Subsoil: black clay that has slickensides in the upper part and has slickensides and calcium carbonate concretions in the lower part

Substratum: light olive brown clay

The Houston Black series occurs on about 1.5 million acres in the central part of Texas, on the Blackland land Prairie, which extends from north of Dallas south to San Antonio. Because of their highly expansive clays, Houston Black soils are recognized throughout the world as the classic Vertisols, which shrink and swell markedly with changes in moisture content. These soils formed under prairie vegetation and in calcareous clays and marls. Water enters the soils rapidly when they are dry and cracked and very slowly when they are moist.

Houston Black soils are used extensively for grain sorghum, cotton, corn, small grain, and forage grasses. They also occur in several metropolitan areas, where their very high shrink-swell potential commonly is a limitation affecting building site development.

The Professional Soil Scientists Association of Texas has recommended to the State Legislature that the Houston Black series be designated the State soil. The series was established in 1902.



October 2002

September 2002

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

November 2002

S	M	T	W	T	F	S
						1 2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

EVENTS

13-19

Earth Science Week
www.earthscienceworld.org

16-19

National Council for Geographic Education
Philadelphia, PA

17-20

Girl Scouts of the USA
Long Beach, CA

27-30

Geological Society of America
Denver, CO

30-Nov. 1

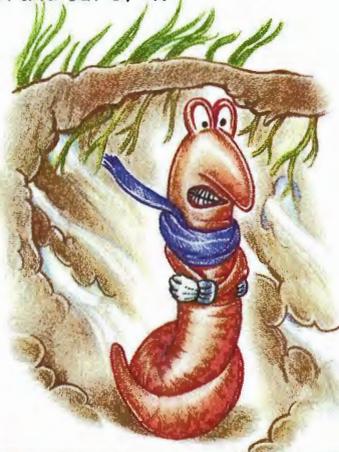
Future Farmers of America
Louisville, KY

30-Nov. 2

National Association for Biology Teachers
Cincinnati, OH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14 Columbus Day	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Although the soil surface appears solid, air moves freely in and out of it.



Tunbridge: Vermont State Soil

Tunbridge Soil Profile

Surface layer: very dark brown, partially decomposed organic material

Subsurface layer: gray fine sandy loam

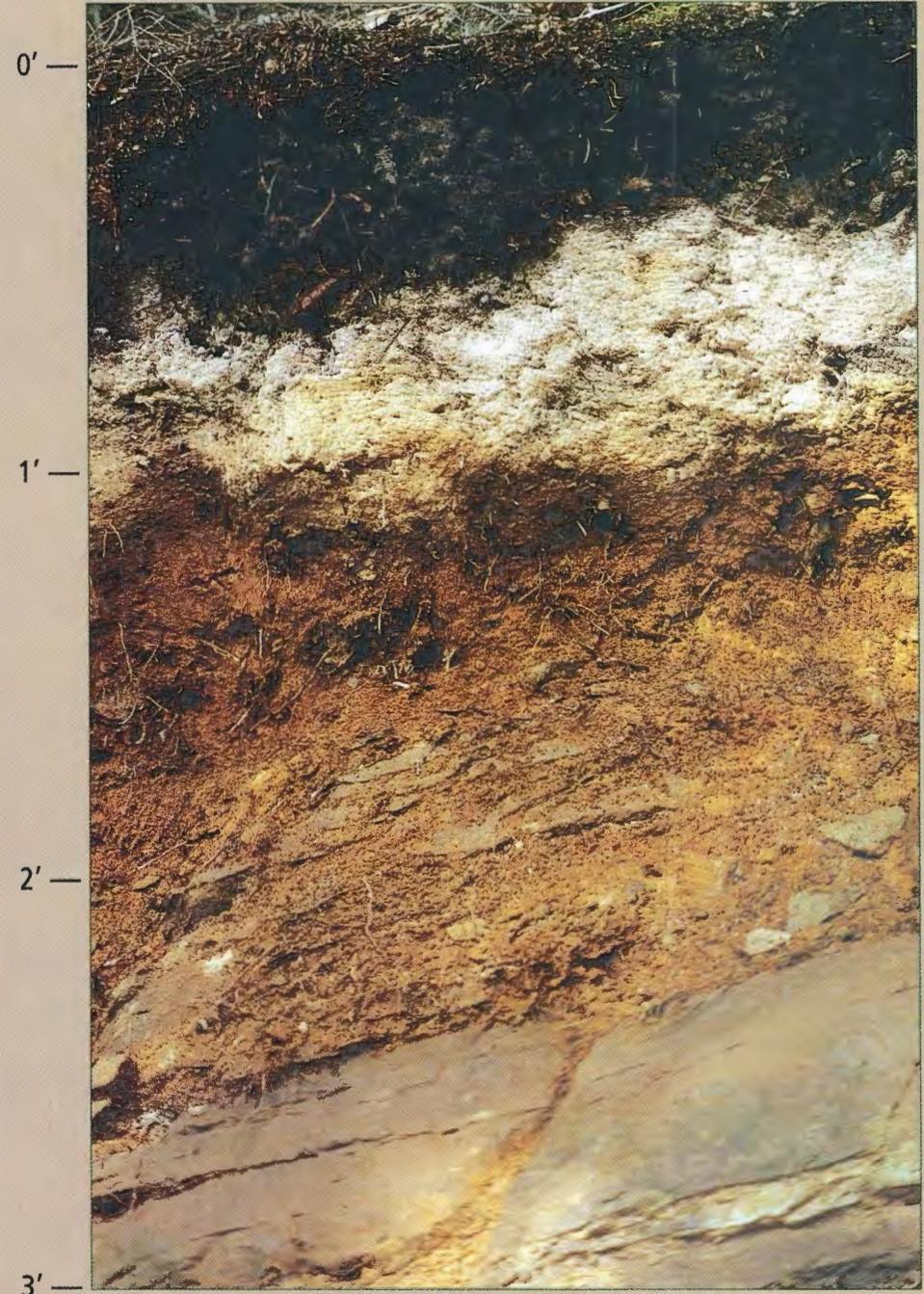
Subsoil: dark brown fine sandy loam in the upper part and brown channery fine sandy loam in the lower part

Bedrock: schist

The Tunbridge series consists of loamy, well-drained soils that formed in Wisconsin-age glacial till. These soils are 20 to 40 inches deep over schist, gneiss, phyllite, or granite bedrock. They occur extensively in mountainous areas of Vermont, Maine, Massachusetts, New Hampshire, and New York. They occur in all but one county in Vermont.

The Tunbridge series became the third official State soil in the country in March 1985. The series was named after the town of Tunbridge, in Orange County, Vermont.

Tunbridge soils are used mainly for woodland. White ash, American beech, white birch, yellow birch, hemlock, white pine, red spruce, red maple, and sugar maple are typical species. Sugar maple is especially important; Vermont produces the largest amount of maple syrup in the United States. Some areas have been cleared and are used for hay and pasture. Recreational uses are common on these soils. They include trails for hiking, mountain biking, snowmobiling, and skiing.



November 2002

October 2002							December 2002						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5	1	2	3	4	5	6	7
6	7	8	9	10	11	12	8	9	10	11	12	13	14
13	14	15	16	17	18	19	15	16	17	18	19	20	21
20	21	22	23	24	25	26	22	23	24	25	26	27	28
27	28	29	30	31			29	30	31				

EVENTS

11-14
U.S. Composting Council Annual Meeting
Bethesda, MD

11-14
Annual Meetings of Soil Science Society of America, American Society of Agronomy, and Crop Science Society of America
Indianapolis, IN

PRIME FARMLAND FACTS

■ What State (Pennsylvania, New York, or Massachusetts) had the largest annual loss of prime farmland in the Northeast to nonagricultural uses during 1992-1997?

Answer is Pennsylvania.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11 Veterans Day	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28 Thanksgiving Day	29	30

Antigo: Wisconsin State Soil

Antigo Soil Profile

Surface layer: dark grayish brown silt loam

Subsurface layer: brown silt loam

Subsoil: dark yellowish brown and brown silt loam in the upper part and dark yellowish brown loam and brown very gravelly sandy loam in the lower part

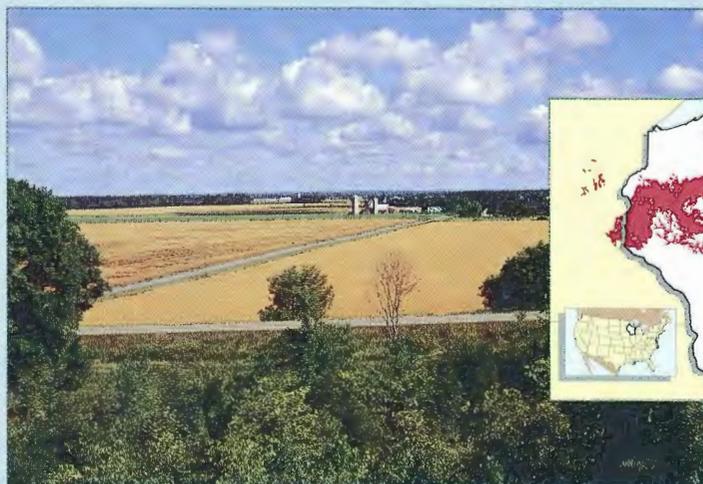
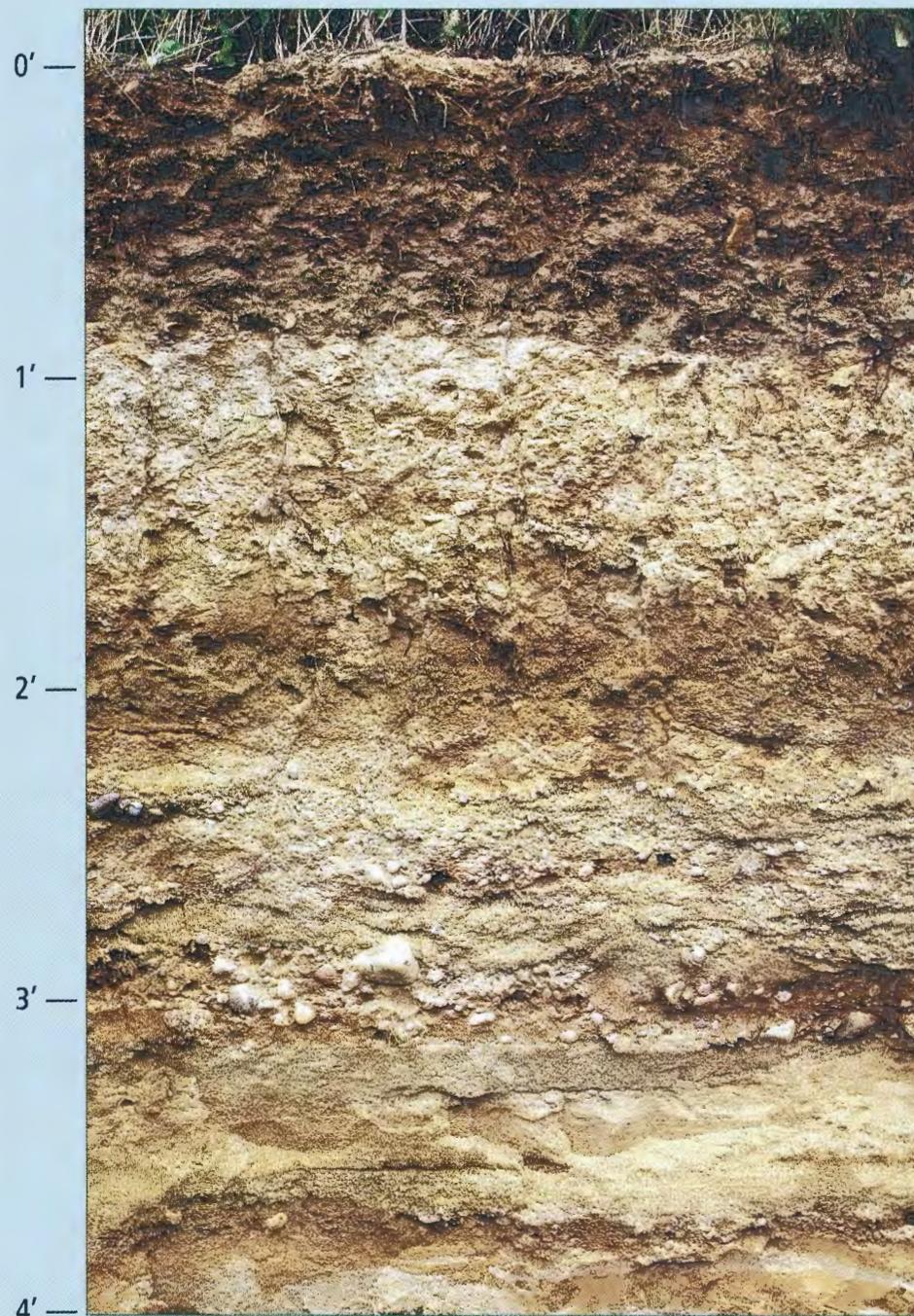
Substratum: brown, stratified coarse sand and gravelly coarse sand

Antigo soils are among the most extensive soils in Wisconsin. They occur on about 300,000 acres in the northern part of the State. They are very productive soils for corn, small grain, and hay. In some areas potatoes or snap beans are important crops. The steeper areas are used for pasture or for timber production.

In 1983, the Wisconsin Legislature designated the Antigo series as the official State soil. The series was named after the city of Antigo, Wisconsin.

Antigo soils are well-drained and formed in loess and loamy sediments over stratified sandy outwash. The average annual precipitation ranges from 28 to 33 inches, and the average annual air temperature ranges from 39 to 45 degrees F.

For more information about the series, see <http://www.wi.nrcs.usda.gov/soil/antigo.html>.



December 2002

November 2002							January 2003						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2				1	2	3	4
3	4	5	6	7	8	9	5	6	7	8	9	10	11
10	11	12	13	14	15	16	12	13	14	15	16	17	18
17	18	19	20	21	22	23	19	20	21	22	23	24	25
24	25	26	27	28	29	30	26	27	28	29	30	31	

PRIME FARMLAND FACTS

■ What State (Indiana, Ohio, or Illinois) lost the most prime farmland to nonagricultural uses from 1992 to 1997?

Answer is Ohio.

■ What State (Mississippi, Louisiana, or Arkansas) lost the most prime farmland to nonagricultural uses from 1992 to 1997?

Answer is Mississippi.

■ What State (Georgia, Alabama, or Florida) lost the most prime farmland to nonagricultural uses from 1992 to 1997?

Answer is Alabama.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25 Christmas	26	27	28
29	30	31				

Organizations

Agriculture in the Classroom
U.S. Department of Agriculture
1400 Independence Ave., SW
Stop 2251
Washington, DC 20250
www.agclassroom.org

**American Association for the
Advancement of Science**
1200 New York Ave., NW
Washington, DC 20005
www.aaas.org

**American Association of School
Administrators**
1801 N. Moore St.
Arlington, VA 22209
www.aasa.org

**Association for Supervision and
Curriculum Development**
1703 N. Beauregard St.
Alexandria, VA 22311
www.ascd.org

American Farmland Trust
1200 18th St., NW, Suite 800
Washington, D.C. 20036
www.farmland.org

Boy Scouts of America
P.O. Box 152079
Irving, TX 75015
www.bsa.scouting.org

Canon Envirothon
P.O. Box 855
League City, TX 77574
www.envirothon.org

Girl Scouts of the USA
420 5th Ave.
New York, NY 10018
www.gsusa.org

National Arbor Day Foundation
100 Arbor Ave.
Nebraska City, NE 68410
www.arborday.org

**National Association of Biology
Teachers**
12030 Sunrise Valley Dr., Suite 110
Reston, VA 20191
www.nabt.org

**National Association of Agricultural
Educators**
1410 King St., Suite 400
Alexandria, VA 22314
www.naae.org

**National Association of Conservation
Districts**
NACD Service Center
408 E. Main St.
P.O. Box 855
League City, TX 77574
www.nacdnet.org

**National Association of Elementary
School Principals**
1615 Duke St.
Alexandria, VA 22314
www.naesp.org

**National Association of Secondary
School Principals**
1904 Association Dr.
Reston, VA 20191
www.nassp.org

**National Council for Geographic
Education**
Indiana University of Pennsylvania
16A Leonard Hall
Indiana, PA 15705
www.ncge.org

National Council for the Social Studies
3501 Newark St., NW
Washington, DC 20016
www.ncss.org

National FFA Organization
6060 FFA Drive
P.O. Box 68960
Indianapolis, IN 46268
www.ffa.org

National Indian Education Association
700 North Fairfax St., Suite 210
Alexandria, VA 22314
www.niea.org

National Science Teachers Association
1840 Wilson Blvd.
Arlington, VA 22201
www.nsta.org

**North American Association for
Environmental Education**
410 Tarvin Rd.
Rock Spring, GA 30739
www.naaee.org

Project Food, Land and People
Presidio of San Francisco
P.O. 29474
San Francisco, CA 94129
www.foodlandpeople.org

**Project Learning Tree
American Forest Foundation**
1111 19th St., NW, Suite 780
Washington, DC 20036
www.plt.org

Soil and Water Conservation Society
7515 NE Ankeny Rd.
Ankeny, IA 50021
www.swcs.org

**United Nations Environment
Programme**
Boulevard de los Virreyes 155
Lomas de Virreyes
CP 11000, Mexico, D.F., Mexico
www.educamb@rolac.unep.mx

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Winter: Natural Resources Conservation Service staff

Alabama

Bama soil profile: Julie Best, Public Affairs Specialist, Natural Resources Conservation Service, Auburn, Alabama
Bama landscape: Paul G. (George) Martin, Soil Data Quality Specialist, Natural Resources Conservation Service, Auburn, Alabama

Arizona

Casa Grande soil profile and landscape: Robert W. Wilson, Resource Soil Scientist, Natural Resources Conservation Service, Phoenix Arizona

Delaware

Greenwich soil profile and landscape: Natural Resources Conservation Service staff

Iowa

Tama soil profile and landscape: Lynn Betts, Public Affairs Specialist, Natural Resources Conservation Service, Des Moines, Iowa

Montana

Scobey soil profile and landscape: Natural Resources Conservation Service staff

Nebraska

Holdrege soil profile and landscape: Natural Resources Conservation Service staff

North Carolina

Cecil soil profile and landscape: John A. Kelley, Soil Data Quality Specialist, Natural Resources Conservation Service, Raleigh, North Carolina

Oklahoma

Port soil profile and landscape: Terri B. Daniel, Visual Information Specialist, Natural Resources Conservation Service, Stillwater, Oklahoma

Oregon

Jory soil profile and landscape: Matthew Fillmore, Soil Survey Project Leader, Natural Resources Conservation Service, Corvallis, Oregon

Texas

Houston Black soil profile and landscape: Conrad Neitsch, Soil Data Quality Specialist, Natural Resources Conservation Service, Temple, Texas

Vermont

Tunbridge soil profile and landscape: Thomas R. Villars, Soil Resource Specialist, Natural Resources Conservation Service, White River Junction, Vermont

Wisconsin

Antigo soil profile and landscape: James Barnes, Soil Scientist, Natural Resources Conservation Service, Rhinelander, Wisconsin; Howard Lorenz, District Conservationist, Natural Resources Conservation Service, Marinette, Wisconsin; and Milo Harpstead, Retired Soil Science Professor, University of Wisconsin, Stevens Point, Wisconsin



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