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The Soils of Maine

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INTRODUCTION

Maine soils reflect soil forming processes active since the last glacier in Maine melted about 12,500 years ago. The glacier moved across the state in a northwest to southeasterly direction, depositing rock fragments and soil material as till or as water-sorted sediments in glacial streams, rivers, lakes and the ocean. These materials, organic deposits, and recent alluvium are the parent materials of the soils of Maine.

During glaciation, the land surface in Maine was depressed by the weight of the ice. The depressed land did not rebound rapidly when the glacier melted, and as the elevation of the ocean surface increased, much of the present Maine coastline was submerged. The higher ridges protruded above the ocean as islands. The area covered by the ocean received a deposit of fine sediments over the glacial materials. Some of the submerged land eventually rebounded above sea level thereby marking the onset of soil formation in the previously deposited marine sediments. This created a complex pattern of soils derived from till, sediments, sands, and gravel.

SOIL FORMATION

A "soil" does not just happen by chance. Its development is the result of five soil forming factors: (1) climate, (2) parent material, (3) topography or relief, and (4) vegetation all acting over (5) time. In Maine the factors that are most important in differentiating soils are *parent material* and *topography* and to a lesser extent time and vegetation as related to topography (land form, aspect, elevation). Time is important mainly in differentiating soil horizons; for example, in recent flood plain deposits there is little or no horizon differentiation because enough time has not elapsed. *Parent material* and *topography* have the greatest effect on soil horizonation or differentiation as they relate to removal or retention of water in or on the soil. Horizon differentiation in relation to the five soil forming factors is ascribed to materials that can be (1) added to the soil (organic matter, dust), (2) removed from the soil (by leaching and erosion), (3) transferred within the soil (physically or in solution) from one horizon to another, and (4) transformed (chemically) within the soil system. These kinds of changes proceed simultaneously in all soils, but the balance within the combination of changes determines the ultimate character of the soil profile.

Soil horizons result from the effects of interacting soil forming factors on soil forming processes. Soil scientists (pedologists) recognize several regional soil forming processes such as podzolization, argillization, and solonization. The major soil-forming processes active in Maine are podzolization, gleization, and formation of organic soils.

In the podzolization process, iron, aluminum and organic acids are removed from the upper mineral layer and deposited in lower mineral layers. The color of the soil horizon from which these materials were removed (by leaching) is gray to white. These transported materials are deposited and give upper subsoil horizons a red to reddish black color in the zone of deposition in soils with a deep water table. In soils with a water table at shallow depths, the complexed material accumulates in the capillary fringe. Soils formed by podzolization are acidic and low in natural fertility. In Maine, this type of soil formation is common in excessively drained through moderately well drained soils. Occasionally it is also the soil-forming process in some of the somewhat poorly drained and wetter soils. Soils formed by this process are in the Spodosols order of *Soil Taxonomy*[1].

Soils in which the podzolization process is not sufficiently intense to form the required horizons for the Spodosols order are classified in the Inceptisols or Entisols order of *Soil Taxonomy*. Soils in the Inceptisols order have developed a zone of modified soil structure, color or reduction just below the surface horizons. The gleization process is a result of reducing conditions caused by a high water table with organic matter accumulation on the mineral soil surface. In this process, reduction of iron plays a major role and gives to the soil colors dominated by gray to greenish gray and bluish gray colors. The soil may have redoximorphic features consisting of red or yellow spots against a gray, greenish gray, or bluish gray background from near the soil surface to considerable depths. At lower depths black accumulations of manganese oxides may be noted. Many Inceptisols in Maine reflect a predominance of the gleization process.

Soils in the Entisols order lack sufficient morphological evidence of horizon differentiation below the surface horizons due to soil forming processes.

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[1]Soil Conservation Service. 1975. *Soil Taxonomy.* USDA Handbook 436, Washington, DC.
Soil Conservation Service. 1994. *Keys to Soil Taxonomy,* 6th edition. Supt. of Documents, Washington, DC.

Some organic soils are the result of the natural eutrophication of shallow-water impoundments. An organic layer of water-tolerant plants forms on the water surface and gradually thickens. In time the organic mat is able to support mosses and some low-growing plants. As the root mat from these plants and organic residues accumulate, the mosses thicken, and are able to support other species tolerant of wet conditions. Eventually the water area becomes filled with organic materials. Other organic soils form where cool, moist, or shaded conditions inhibit organic matter oxidation, thereby promoting organic matter accumulation. These organic soils are generally shallow or moderately deep over bedrock and commonly occur at high elevations and in damp coastal areas. Soils formed in this manner are in the Histosols order of *Soil Taxonomy*.

The impact of soil formation processes in Maine results in acid soils having low effective cation exchange capacity. Most of the cation retention is associated with the presence of organic acids. The resulting soils are generally infertile and require plant nutrient additions for respectable crop yields. Some native plants are able to adapt to these low fertility levels and will produce annual growth, but their growth is often improved by supplemental fertilization.

SOIL CLASSIFICATION

A soil classification system serves to organize knowledge about soils. It describes soil properties, the relationships of soils to one another and their environment, and allows predicting soil response to use and management.

The soil classification system used in Maine is that described in *Soil Taxonomy*. This is the soil classification system used throughout the United States in the National Cooperative Soil Survey. It is a multi-category system consisting of orders, suborders, great groups, subgroups, families, and series.

There are two soil temperature regimes in Maine as defined in *Soil Taxonomy*. These are *cryic* and *frigid*. The temperature regime of a soil reflects the average annual temperature of the soil. The cryic and frigid soil temperature regimes have an annual mean soil temperature higher than 0° C, but lower than 8° C with the frigid regime having a warmer average summer soil temperature (June, July and August) than in cryic soils. In Maine, there is a 5° C difference between mean summer and winter temperatures. Most Maine soils are frigid, but some at higher elevations meet the cryic requirements.

There are two moisture regimes in Maine soils as defined in *Soil Taxonomy*: *aquic* and *udic*. The aquic moisture regime indicates that reducing conditions are present in the soil as a result of a high water table during the period of the year when the soil temperature is high enough for biological activity. The water in the soil under reducing conditions is stagnant and nearly free of dissolved oxygen. The aquic moisture regime is common in the wetter Maine soils, namely, the somewhat poorly drained, poorly drained, and very poorly drained soils and is commonly left in native vegetation. The moderately well drained, well drained, somewhat excessively drained, and excessively drained soils have a udic moisture regime. A soil with a udic moisture regime is not dry for long periods, and sufficient rainfall exists so that stored soil water plus precipitation generally equals or exceeds evapotranspiration. In the udic moisture regime, water moves through the soil at some time during most years. The soils with udic moisture regimes in Maine are frequently used for farming and other intensive land uses.

The soil orders present in Maine are Spodosols, Inceptisols, Histosols, and Entisols. Each order is subdivided into suborders, great groups, subgroups, families, and series.

The Spodosols are mineral soils in which iron, aluminum, and organic matter have been leached from surface soil horizons and accumulated in lower horizons. Suborders of Spodosols in Maine are Aquods, Cryods, Humods and Orthods.

The Inceptisols are mineral soils in which there are weakly expressed zones of illuviation, soil formation, or strongly expressed zones of reduction. Suborders of Inceptisols in Maine are Aquepts and Ochrepts.

The Entisols are mineral soils in which there is very little evidence of soil development. Suborders of Entisols in Maine are Aquents, Fluvents, Orthents, and Psamments.

The Histosols are organic soils commonly known as peat bogs or mucky soils, but include shallow deposits of organic material above bedrock. Suborders of Histosols in Maine are Folists, Fibrists, Hemists, and Saprists.

A soil series is the lowest category in soil classification. A series consist of all soils which are essentially alike in all major profile characteristics. The soil series is the taxonomic category most often used in naming a map unit.

SOIL MAP DERIVATION

A General Soil Map of Maine (see insert) was developed mainly from the State Geographical Data Base Map (STATSGO) prepared by Maine soil scientists working with NRCS, USDA. The STATSGO map units were grouped into new map units based on soils derived from similar or associated parent materials. The resulting general soil map was then reviewed by several Maine soil scientists and the map units and boundaries refined to reflect the latest information on the soils of Maine.

STATSGO data are archived at the National Cartographic and Geospatial Center, Fort Worth, Texas. These digital data are distributed as a complete coverage for Maine and joined with New Hampshire. Questions pertaining to STATSGO should be directed to the State Soil Scientist, NRCS USDA, 5 Godfrey Drive, Orono, Maine, 04473.

Map Legend—General Soil Map of Maine

Map Symbol	Predominant Parent Material
	A. Soils in Basal Till
1	Monson-Elliottsville-Ricker-Telos
2	Telos-Monarda-Monson-Elliottsville
3	Aurelie-Daigle-Perham-Burnham
4	Plaisted-Penquis-Thorndike-Howland
5	Dixfield-Colonel-Lyman-Brayton
6	Skerry-Hermon-Monadnock-Colonel
7	Lyman-Tunbridge-Dixfield
	B. Soils in Loose Till
8	Danforth-Masardis-Shirley
9	Dixmont-Thorndike-Monarda-Burnham
10	Caribou-Mapleton-Conant
11	Hermon-Brayton-Dixfield
12	Enchanted-Saddleback-Ricker
	C. Soils in Glaciofluvial Materials
13	Colton-Adams-Sebago
14	Adams-Croghan-Naumburg
15	Masardis-Stetson-Adams
	D. Soils in Glaciolacustrine or Glaciomarine Materials
16	Swanville-Boothbay-Biddeford
17	Scantic-Lamoine-Buxton-Lyman
18	Nicholville-Buxton-Dixfield-Scantic
	E. Soils in Recent Alluvium
19	Cornish-Fryeburg-Podunk-Ondawa
	F. Soils in Organic Materials
20	Vassalboro-Sebago-Wonsqueak
	G. Soils in Organic Materials and Sandy Materials
21	Sulfihemist-Beaches-Adams-Dune land

MAP UNIT DESCRIPTIONS

1 Monson-Elliottsville-Ricker-Telos

Major areas of this map unit are in Piscataquis and Somerset counties. These loamy and organic soils are formed in till derived mainly from slate, phyllite, metasandstone, and schist or deposits of organic material over bedrock. Surface stones are common. This map unit constitutes about 3% of the land area of Maine.

Monson are somewhat excessively drained, loamy soils underlain by bedrock 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Monson soils are on knolls, ridges, and mountains. Slopes range from 3% to 60%, but are dominantly less than 25%. Monson soils make up about 28% of this unit.

Elliottsville are well drained, loamy soils underlain by bedrock 20 to 40 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Elliottsville soils are on knolls, ridges, and mountains. Slopes range from 3% to 65%, but dominantly are 8% to 15%. Elliottsville soils make up about 21% of this unit.

Ricker are excessively drained through well drained, organic soils underlain by bedrock at 1 to 26 inches. These soils do not have a water table, and the rate of water movement through them is moderate. Ricker soils are on mountains and hills. Slopes range from 3% to 80%. Ricker soils make up about 12% of this unit.

Telos are somewhat poorly drained, loamy soils underlain by loamy basal till at about 20 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 6 and 18 inches below the soil surface from October through June. Bedrock is more than 60 inches below the mineral soil surface. Telos soils have moderate water movement in the upper part and slow water movement in the basal till. Telos soils are on upland ridges. Slopes range from 0% to 25%, but are dominantly 3% to 8%. Telos soils make up about 10% of this unit.

Minor soils in this unit are the moderately well drained Chesuncook, the very poorly drained Burnham, and the well drained Winnecook soils.

These soils are mostly forested. These soils are also used for recreation such as hiking and camping.

2 Telos-Monarda-Monson-Elliottsville

Areas of this map unit are in Washington, Oxford, Franklin, Somerset, Piscataquis, Penobscot, and Aroostook counties. These loamy soils are formed in till derived mainly from slate, phyllite, metasandstone, and schist. Surface stones are common. This map unit constitutes about 18% of the land area of Maine.

Telos are somewhat poorly drained, loamy soils underlain by loamy basal till at about 20 inches. The basal till restricts the downward movement of water resulting in a seasonal high water table in the soil between 6 and 18 inches below the soil surface from October through June. Bedrock is more than 60 inches below the mineral soil surface. Telos soils have moderate water movement in the upper solum and slow water movement in the basal till. Telos soils are on upland ridges. Slopes range from 0% to 25%, but are dominantly 3% to 8%. Telos soils make up about 26% of this unit.

Monarda are poorly drained, loamy soils underlain by loamy basal till at about 20 inches. The basal till restricts the downward movement of water resulting in a seasonal high water table between 12 inches below the soil surface to water at the surface from October through June. Bedrock is more than 60 inches below the mineral soil surface. Monarda soils have moderate water movement in the upper part and slow water movement in the lower basal till. Monarda soils are on lower slopes and slight depressions on glaciated uplands. Slopes range from 0% to 15%, but are dominantly less than 8%. Monarda soils make up about 17% of this unit.

Monson are somewhat excessively drained, loamy soils underlain by bedrock 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Monson soils are on knolls, ridges and mountains. Slopes range from 3% to 60%, but are dominantly less than 25%. Monson soils make up about 14% of this unit.

Elliottsville are well drained, loamy soils underlain by bedrock 20 to 40 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Elliottsville soils are on knolls, ridges, and mountains. Slopes range from 3% to 65%, but dominantly are 8% to 15%. Elliottsville soils make up about 10% of this unit.

Minor soils in this unit are the well drained Danforth, the moderately well drained Chesuncook and Perham, the somewhat poorly drained Daigle, and the very poorly drained Burnham soils.

These soils are mostly forested. Hardwood and softwood trees are common on Monson and Elliottsville soils. Spruce and fir predominate on Telos and Monarda soils. The shore frontage along some lakes and ponds in this unit are developed for seasonal dwellings.

3 Aurelie-Daigle-Perham-Burnham

Major areas of this map unit are in Somerset, Aroostook, and Piscataquis counties. These loamy soils are formed in till derived mainly from slate, phyllite, and metasandstone. Surface stones are common. This map unit constitutes about 16% of the land area in Maine.

Aurelie are poorly drained, loamy soils underlain by loamy basal till at about 20 inches. The basal till restricts the downward movement of water resulting in a seasonal high water table between 12 inches below the soil surface to water at the surface from September through June. Bedrock is more than 60 inches below the mineral soil surface. Aurelie soils have moderate water movement in the upper part and slow water movement in the basal till. These soils are on lower slopes and slight depressions on glaciated uplands. Slopes range from 0% to 15%, but are dominantly less than 8%. Aurelie soils make up about 24% of this unit.

Daigle are somewhat poorly drained, loamy soils underlain by loamy basal till at about 20 inches. The basal till restricts the downward movement of water resulting in a seasonal high water table between 6 and 18 inches below the soil surface from October through June. Bedrock is more than 60 inches below the mineral soil surface. Daigle soils have moderate water movement in the upper part and slow water movement in the basal till. These soils are on upland till ridges. Slopes range from 0% to 25%, but are dominantly 2% to 8%. Daigle soils make up about 24% of this unit.

Perham are moderately well drained, loamy soils underlain by loamy basal till at about 29 inches. The basal till restricts the downward movement of water resulting in a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Bedrock is more than 60 inches below the mineral soil surface. Perham soils have moderate water movement in the upper part and slow water movement in the basal till. Perham soils are on the upper slopes of upland till ridges. Slopes range from 0% to 45%, but are dominantly 2% to 15%. Perham soils make up about 12% of this unit.

Burnham are very poorly drained, loamy soils underlain by loamy basal till at about 18 inches. The basal till restricts the downward movement of water resulting in a seasonal high water table between 6 inches below the soil surface to water on the soil surface from October through July. Bedrock is more than 60 inches below the mineral soil surface. Burnham soils have moderate water movement in the upper part and slow water movement in the basal till. Burnham soils are in slight depressions on glaciated uplands. Slopes range from 0% to 3%. Burnham soils make up about 10% of this unit.

Minor soils in this unit are the somewhat excessively drained Monson, the well drained Elliottsville, the moderately well drained Chesuncook, and the somewhat poorly drained Telos soils.

These soils are mostly forested. Hardwood species predominate on the Perham soils whereas spruce and fir are common on the Aurelie, Daigle, and Burnham soils. Camping and hiking are common uses in some areas. The shore frontage along numerous lakes and ponds in this unit are developed for seasonal dwellings.

4 Plaisted-Penquis-Thorndike-Howland

Major areas of this map unit are in Somerset, Aroostook, and Piscataquis counties. These loamy soils are formed in till derived mainly from phyllite, slate, and metasandstone. Surface stones are common. This map unit constitutes about 2% of the land area of Maine.

Plaisted are well drained, loamy soils underlain by loamy basal till at about 28 inches. These soils may have a thin layer of water perched on the basal till for a brief period during March and April. Bedrock is more than 60 inches below the mineral soil surface. Plaisted soils have moderate water movement in the upper part and slow water movement in the basal till. Plaisted soils are on knolls, hills, and ridges. Slopes range from 0% to 45%, but are dominantly 3% to 25%. Plaisted soils make up about 24% of this unit.

Penquis are well drained, loamy soils underlain by bedrock at 20 to 40 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Penquis soils are on knolls and ridges. Slopes range from 0% to 25%, but are dominantly 3% to 15%. Penquis soils make up about 22% of this unit.

Thorndike are somewhat excessively drained, loamy soils underlain by bedrock at 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Thorndike soils are on knolls, ridges, and mountains. Slopes range from 0% to 45%, but are dominantly less than 25%. Thorndike soils make up about 22% of this unit.

Howland are moderately well drained, loamy soils underlain by loamy basal till at about 25 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Bedrock is more than 60 inches below the mineral soil surface. Howland soils have moderate water movement in the upper part and slow water movement in the basal till. Howland soils are on hills and ridges. Slopes range from 0% to 25%, but are dominantly less than 15%. Howland soils make up about 15% of this unit.

Minor soils in this unit are the poorly drained Monarda, the somewhat excessively drained Monson, and the well drained Elliottsville soils.

The soils in this map unit are frequently forested. Some areas of this unit in Aroostook County are used for crops, hay, and pasture, but other areas once cleared for crops have reverted to woodland.

5 Dixfield-Colonel-Lyman-Brayton

This map unit is in all counties except Knox. These loamy soils are formed in till derived mainly from schist, granite, phyllite and gneiss. Surface stones are common. This map unit constitutes about 23% of the land area of Maine.

Dixfield are moderately well drained, loamy soils underlain by loamy basal till at about 25 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Bedrock is more than 60 inches below the mineral soil surface. Dixfield soils have moderate water movement in the upper part and slow water movement in the basal till. Dixfield soils are on smooth drumlins and ridges. Slopes range from 0% to 50%, but are dominantly less than 20%. Dixfield soils make up about 21% of this unit.

Colonel are somewhat poorly drained, loamy soils underlain by loamy basal till at about 18 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 6 and 18 inches below the soil surface from October through May. Bedrock is more than 60 inches below the mineral soil surface. Colonel soils have moderate water movement in the upper part and slow water movement in the basal till. Colonel soils are on smooth drumlins and ridges. Slopes range from 0% to 35%, but are dominantly less than 10%. Colonel soils make up about 15% of this unit.

Lyman are somewhat excessively drained, loamy soils underlain by bedrock 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Lyman soils are on knolls, ridges, and mountains. Slopes range from 3% to 80%, but are dominantly less than 25%. Lyman soils make up about 13% of this unit.

Brayton are poorly drained, loamy soils underlain by loamy basal till at about 24 inches. This basal till restricts downward movement of water resulting in a seasonal high water table between 12 inches below the soil surface to water at the surface from October through June. Bedrock is more than 60 inches below the mineral soil surface. Brayton soils have moderate water movement in the upper part and slow water movement in the basal till. Brayton soils are on lower slopes and slight depressions on glaciated uplands. Slopes range from 0% to 25%, but are dominantly less than 8%. Brayton soils make up about 11% of this unit.

Minor soils in this unit are the well drained Marlow, the somewhat excessively drained Hermon, the very poorly drained Peacham, the somewhat poorly drained Telos, and the well drained Tunbridge soils.

These soils are mostly forested. A few areas are cleared of stones and used for hay, pasture, or row crops. Areas of this unit in coastal Maine and along many transportation corridors are used for urban and residential development. Within this map unit the shore frontage of numerous lakes and ponds has been developed.

6 Skerry-Hermon-Monadnock-Colonel

Major areas of this map unit are in York, Cumberland, Oxford, and Androscoggin counties. These loamy and sandy soils are formed in till derived mostly from granite, gneiss, and schist. Surface stones and boulders are common. This map unit constitutes about 5% of the land area of Maine.

Skerry are moderately well drained, loamy soils underlain by loamy and sandy basal till at about 25 inches. This basal till restricts the downward moment of water resulting in a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Bedrock is more than 60

inches below the mineral soil surface. Skerry soils have moderate water movement in the upper part and slow water movement in the basal till. Skerry soils are on drumlins and glaciated uplands. Slopes range from 0% to 25%, but are dominantly less than 15%. Skerry soils make up about 29% of this unit.

Hermon soils are somewhat excessively drained, sandy soils underlain by loose till at about 32 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Hermon soils are on glaciated uplands, hills, and ridges. Slopes range from 0% to 60%, but are dominantly 3% to 25%. Hermon soils make up about 10% of this unit.

Monadnock are well drained, loamy soils underlain by loose till at about 23 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement is moderate in the upper part and rapid in the loose till. They are on glaciated uplands, hills, and ridges. Slopes range from 3% to 60%, but are dominantly 3% to 25%. Monadnock soils make up about 10% of this unit.

Colonel are somewhat poorly drained, loamy soils underlain by loamy basal till at about 18 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 6 and 18 inches below the soil surface from October through May. Bedrock is more than 60 inches below the mineral soil surface. Colonel soils have moderate water movement in the upper part and slow water movement in the basal till. Colonel soils are on smooth drumlins and ridges. Slopes range from 0% to 35%, but are dominantly less than 10%. Colonel soils make up about 9% of this unit.

Minor soils in this unit are the somewhat excessively drained Lyman, the well drained Tunbridge and Becket, and the poorly drained Brayton soils.

These soils are mostly forested. Areas cleared of trees and stones are used mostly for hay and pasture or for residential uses.

7 Lyman-Tunbridge-Dixfield

Major areas of this map unit are in York, Cumberland, Sagadahoc, Lincoln, Kennebec, Knox, Waldo, Hancock, and Washington counties. These loamy soils are formed in till derived mostly from granite, gneiss, schist, and phyllite. Surface stones and boulders are common. This map unit constitutes about 4% of the land area of Maine.

Lyman are somewhat excessively drained, loamy soils underlain by bedrock 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Lyman soils are on knolls, ridges, and mountains. Slopes range from 3% to 80%, but are dominantly less than 25%. Lyman soils make up about 28% of this unit.

Tunbridge are well drained, loamy soils underlain by bedrock 20 to 40 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Tunbridge soils are on knolls, ridges, and mountains. Slopes range from 0% to 75%, but are dominantly less than 25%. Tunbridge soils make up about 19% of this unit.

Dixfield are moderately well drained, loamy soils underlain by loamy basal till at about 25 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Bedrock is more than 60 inches below the mineral soil surface. Dixfield soils have moderate water movement in the upper part and slow water movement in the basal till. Dixfield soils are on smooth drumlins and ridges. Slopes range from 0% to 50%, but are dominantly less than 20%. Dixfield soils make up about 11 of this unit.

Minor soils in this unit are the excessively drained Abram and Schoodic, the well drained Marlow, the somewhat poorly drained Colonel, and the poorly drained Brayton soils. Areas of Rock outcrop are also a minor inclusion in this unit.

These soils are mostly forested. They are used extensively for urban, residential, and outdoor recreation.

8 Danforth-Masardis-Shirley

Areas of this map unit are in Aroostook, Penobscot, Piscataquis, and Somerset counties. These loamy and sandy soils are formed in loose till or gravel deposits derived mainly from fine grained metasandstone and lesser amounts of granite, gneiss and schist. Surface stones are common. This map unit constitutes about 1% of the land area of Maine.

Danforth are well drained, loamy soils underlain by loose till at about 32 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water

movement through them is moderate in the upper part and rapid in the loose till. Danforth soils are on till plains and the lower slopes of ridges. Slopes range from 3% to 45%, but dominantly are less than 25%. Danforth soils make up about 16% of this unit.

Masardis are somewhat excessively drained, sandy soils underlain by sand and gravel at about 17 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Masardis soils are on glacial deltas, outwash plains, kames, terraces, and eskers. Slopes range from 0% to 80%, but are dominantly less than 25%. Masardis soils make up about 12% of this unit.

Shirley are moderately well drained or somewhat poorly drained, loamy soils underlain by loose till at about 25 inches. Bedrock is more than 60 inches below the mineral soil surface. A seasonal high water table is between 6 and 30 inches below the soil surface from March through May. Water movement is moderate in the upper part and rapid in the loose till. Shirley soils are on till plains and toeslopes of ridges. Slopes range from 3% to 15%. Shirley soils make up about 10% of this unit.

Minor soils in this unit are the somewhat excessively drained Thorndike, the well drained Bangor, the moderately well drained Machias, the poorly drained Monarda, the very poorly drained Peacham soils, and the very poorly drained, organic Wonsqueak and Bucksport soils.

These soil are mostly forested. Some areas are used for hiking and camping.

9 Dixmont-Thorndike-Monarda-Burnham

Major areas of this map unit are in Penobscot, Somerset, Waldo, and Kennebec counties. These loamy soils are formed in till derived mainly from slate, phyllite, and metasandstone. Surface stones are common. This map unit constitutes about 3% of the land area of Maine.

Dixmont are moderately well drained or somewhat poorly drained, loamy soils. Bedrock is more than 60 inches below the mineral soil surface. A seasonal high water table is between 12 and 24 inches below the soil surface from November through June. Dixmont soils have moderate water movement in the upper part and slow water movement in the lower part. These soils are on upland till plains and ridges. Slopes range from 0% to 25%, but are dominantly 3% to 15%. Dixmont soils make up about 30% of this unit.

Thorndike are somewhat excessively drained, loamy soils underlain by bedrock at 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Thorndike soils are on knolls, ridges, and mountains. Slopes range from 0% to 45%, but are dominantly less than 25%. Thorndike soils make up about 16% of this unit.

Monarda are poorly drained, loamy soils underlain by loamy basal till at about 20 inches. The basal till restricts downward movement of water resulting in a seasonal high water table between 12 inches below the soil surface to water at the surface from October through June. Bedrock is more than 60 inches below the mineral soil surface. Monarda soils have moderate water movement in the upper part and slow water movement in the basal till. Monarda soils are on lower slopes and slight depressions on glaciated uplands. Slopes range from 0% to 15%, but are dominantly less than 8%. Monarda soils make up about 15% of this unit.

Burnham are very poorly drained, loamy soils underlain by loamy basal till at about 18 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 6 inches below the surface to water on the surface from October through July. Bedrock is more than 60 inches below the mineral soil surface. Burnham soils have moderate water movement in the upper part and slow water movement in the basal till. Burnham soils are in slight depressions on glaciated uplands. Slopes range from 0% to 3%. Burnham soils make up about 13% of this unit.

Minor soils in this unit are the excessively drained Abram, the well drained Penquis soils, and the very poorly drained, organic Wonsqueak soils.

These soils are mostly forested. Significant areas of this unit are also used for agriculture. Dixmont soils are used for silage corn, potatoes, small grains, and hay. Thorndike soils are used primarily for hay and pasture. Some areas of this unit, especially along roadways, are used for residential development.

10 Caribou-Mapleton-Conant

This map unit is in northeastern Aroostook County. These loamy soils are formed in friable till derived mainly from metamorphosed limestone, calcareous sandstone, and shale. Most of these soils have been cleared of surface stones. This map unit constitutes about 2% of the land area of Maine.

Caribou are well drained, loamy soils underlain by friable till at about 36 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Caribou soils are on till ridges. Slopes range from 0% to 45%, but are dominantly 2% to 8%. Caribou soils make up about 47% of this unit.

Mapleton are somewhat excessively drained or well drained, loamy soils. Bedrock is 12 to 28 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Mapleton soils are on till ridges. Slopes range from 0% to 45%, but are dominantly 5% to 15%. Mapleton soils make up about 18% of this unit.

Conant are moderately well drained or somewhat poorly drained, loamy soils underlain by friable till at about 35 inches. Bedrock is more than 60 inches below the mineral soil surface. A seasonal high water table is between 12 and 30 inches below the soil surface from November through May. Water movement is moderate in these soils. Conant soils are typically on the lower slopes of till ridges. Slopes range from 0% to 15%, but are dominantly 2% to 8%. Conant soils make up about 13% of this unit.

Minor soils in this unit are the poorly drained Monarda and Easton, and the very poorly drained Burnham soils.

Most of this map unit is cultivated and used for potatoes, grain, peas, mixed grass and clover hay. Some small areas are forested and others are used for urban development.

11 Hermon-Brayton-Dixfield

Major areas of this map unit are in York, Cumberland, Hancock, Washington, Penobscot, and Piscataquis counties. These sandy and loamy soils are formed in till derived mainly from granite, gneiss, schist, and phyllite. Surface stones and boulders are common. This map unit constitutes about 4% of the land area of Maine.

Hermon are somewhat excessively drained, sandy soils underlain by loose till at about 32 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and water movement through them is rapid. Hermon soils are on glaciated uplands, hills, and ridges. Slopes range from 0% to 60%, but are dominantly 3% to 25%. Hermon soils make up about 29% of this unit.

Brayton are poorly drained, loamy soils underlain by loamy basal till at about 24 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table 12 inches below the soil surface to water at the surface from October through June. Bedrock is more than 60 inches below the mineral soil surface. Brayton soils have moderate water movement in the upper part and slow water movement in the basal till. Brayton soils are on lower slopes and slight depressions on glaciated uplands. Slopes range from 0% to 25%, but are dominantly less than 8%. Brayton soils make up about 13% of this unit.

Dixfield are moderately well drained, loamy soils underlain by loamy basal till at about 25 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Bedrock is more than 60 inches below the mineral soil surface. Dixfield soils have moderate water movement in the upper part and slow water movement in the basal till. Dixfield soils are on smooth drumlins and till ridges. Slopes range from 0% to 50%, but are dominantly less than 20%. Dixfield soils make up about 8% of this unit.

Minor soils in this unit are the somewhat excessively drained Lyman, the well drained Monadnock, the moderately well drained Skerry, the somewhat poorly drained Colonel, the excessively drained Colton, and the excessively drained or somewhat excessively drained Adams soils.

Most of this unit is forested, but some areas are used for hay, pasture, and low bush blueberries. Some areas, particularly in southwestern Maine, are used for residential development. The shore frontage of many lakes and ponds within this soil unit are developed for seasonal or year round dwellings.

12 Enchanted-Saddleback-Ricker

Areas of this map unit are on mountains in Oxford, Franklin, Somerset, and Piscataquis counties. The loamy soils are formed in till derived mainly from metasandstone, slate, granite, schist and gneiss. Organic soils are in deposits of organic material over bedrock. Surface stones and boulders are common. This map unit constitutes about 1% of the land area of Maine. These soils have the coldest soil temperatures in Maine.

Enchanted are well drained, loamy soils underlain by bedrock at 40 to 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate in the upper part and rapid in the underlying loose till. Enchanted soils are on sides and tops of mountains. Slopes range from 15% to 80%. Enchanted soils make up about 31% of this unit.

Saddleback are well drained, loamy soils underlain by bedrock at 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. Saddleback soils are on mountains. Slopes range from 3% to 80%. Saddleback soils make up about 28% of this unit.

Ricker are excessively drained through well drained, organic soils underlain by bedrock at 1 to 26 inches. These soils do not have a water table, and the rate of water movement through them is moderate. Ricker soils are on hills and mountains. Slopes range from 3% to 80%. Ricker soils make up about 12% of this unit.

Minor soils in this unit are the well drained Sisk, the moderately well drained or somewhat poorly drained Surplus, the poorly drained Bemis, and the somewhat excessively drained, organic Mahoosuc soils.

Nearly all of this unit is forested; however, trees generally grow slowly because of the cool and short growing season. Areas not forested have shrubs, mosses, and lichens.

13 Colton-Adams-Sebago

Major areas of this map unit are in York, Cumberland, and Washington counties. These sandy or organic soils are formed in sandy and gravelly glaciofluvial materials derived mainly from granite, gneiss, schist, or from organic materials. Surface stones and boulders are typically absent on these soils. This map unit constitutes about 2% of the land area of Maine.

Colton are excessively drained, sandy soils underlain by strata of sand and gravel at about 22 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Colton soils are on glacial outwash terraces, deltas, plains, kames, and eskers. Slopes range from 0% to 70%, but dominantly are less than 25%. Colton soils make up about 40% of this unit.

Adams are excessively drained or somewhat excessively drained, sandy soils underlain by sand at about 30 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Adams soils are on sand plains, kames, eskers, deltas, and terraces. Slopes range from 0% to 70%, but are dominantly less than 25%. Adams soils make up about 19% of this unit.

Sebago are very poorly drained, moderately decomposed, organic soils. Bedrock is more than 60 inches below the soil surface. These soils have a seasonal high water table from 6 inches below the soil surface to water on the surface from September through July. Water movement is moderate in these soils. Sebago soils are in bogs and swamps. Slopes range from 0% to 2%. Sebago soils make up about 11% of this unit.

Minor soils in this unit are the moderately well drained Duane and Croghan, the somewhat poorly drained or poorly drained Naumburg, the poorly drained Rumney soils, and the very poorly drained, organic Vassalboro soils.

These soils are mostly forested although some of the Adams and Colton soils have been cleared for agriculture including low bush blueberries. Significant areas of this unit in southwestern Maine are used for urban and residential development.

14 Adams-Croghan-Naumburg

Major areas of this map unit are in York, Cumberland, Androscoggin, Sagadahoc, Franklin, and Oxford counties. These sandy soils are formed in glaciofluvial materials derived mainly from granite, gneiss, and metasandstone. Surface stones and boulders are typically absent on these soils. This map unit constitutes about 2% of the land area in Maine.

Adams are excessively drained or somewhat excessively drained, sandy soils underlain by sand at about 30 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Adams soils are on sand plains, kames, eskers, deltas, and terraces. Slopes range from 0% to 70%, but are dominantly less than 25%. Adams soils make up about 39% of this unit.

Croghan are moderately well drained, sandy soils underlain by sand at about 36 inches. Bedrock is more than 60 inches below the mineral soil surface. Croghan soils have a seasonal high water table between 18 and 36 inches below the soil surface from November through May. Water movement is rapid in these soils. Croghan soils are on terraces and sand plains. Slopes range from 0% to 8%. Croghan soils make up about 14% of this unit.

Naumburg are somewhat poorly drained or poorly drained, sandy soils underlain by sand at about 31 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table between 6 and 18 inches below the soil surface from December through May. Water movement is rapid in these soils. Naumburg soils are on sand plains and terraces. Slopes range from 0% to 8%. Naumburg soils make up about 13% of this unit.

Minor soils in this unit are the excessively drained Colton, the moderately well drained or somewhat poorly drained Madawaska, the very poorly drained Searsport, the somewhat excessively drained Hermon soils, and the very poorly drained, organic Chocorua soils. These soils are mostly forested although some areas are used for hay and pasture. Some areas of this unit in coastal and southwestern Maine are used extensively for urban and residential development.

15 Masardis-Stetson-Adams

Major areas of this map unit are in Somerset, Piscataquis, Penobscot, Washington and Aroostook counties. These sandy soils are formed in sandy or gravelly glaciofluvial materials derived mainly from slate, shale, phyllite and some granite, gneiss and limestone. Surface stones and boulders are typically absent on these soils. This map unit constitutes about 2% of the land area of Maine.

Masardis are somewhat excessively drained, sandy soils underlain by sand and gravel at about 17 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Masardis soils are on glacial deltas, outwash plains, kames, terraces, and eskers. Slopes range from 0% to 80%, but are dominantly less than 25%. Masardis soils make up about 21% of this unit.

Stetson are somewhat excessively drained or well drained, sandy soils underlain by sand and gravel at about 27 inches. Bedrock is more that 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Stetson soils are on glacial outwash plains, terraces, kames, and eskers. Slopes range from 0% to 60%, but dominantly are less than 25%. Stetson soils make up about 16% of this unit.

Adams are excessively drained or somewhat excessively drained, sandy soils underlain by sand at about 30 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Adams soils are on sand plains, kames, deltas, eskers, and terraces. Slopes range from 0% to 70%, but are dominantly less than 25%. Adams soils make up about 10% of this unit.

Minor soils in this unit are the well drained Allagash, the moderately well drained or somewhat poorly drained Madawaska, the poorly drained Charles, the very poorly drained Medomak soils, and the very poorly drained, organic Wonsqueak and Vassalboro soils.

These soils are mostly forested. Some areas of Stetson soils are used for hay, pasture, or cultivated crops. Some areas of Adams soils are used for hay, pasture, and small grains. Some areas of this unit, especially along roadways, are used for residential and urban development.

16 Swanville-Boothbay-Biddeford

Most areas of this map unit are in Waldo, Knox, Lincoln, Penobscot, and Somerset counties. These loamy and clayey soils are formed in glaciolacustrine or glaciomarine sediments. Surface stones and boulders are typically absent on these soils. This map unit constitutes about 4% of the land area of Maine.

Swanville are poorly drained, loamy soils underlain by firm loamy sediments at about 22 inches. Bedrock is more than 60 inches below the mineral soil surface. A seasonal high water table is at the soil surface to 12 inches below the surface from October through June. Water movement is moderate in the upper part and slow in underlying sediments. Swanville soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 0% to 8%. Swanville soils make up about 25% of this unit.

Boothbay are moderately well drained or somewhat poorly drained, loamy soils underlain by firm loamy sediments at about 22 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table between 12 and 30 inches below the soil surface from November through May. Water movement is moderate in the upper part and slow in the underlying sediments. Boothbay soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 3% to 45%, but are dominantly 3% to 15%. Boothbay soils make up about 21% of this unit.

Biddeford are very poorly drained, clayey soils underlain by clayey sediments at about 16 inches. Bedrock is more than 60 inches below the mineral soil surface. A seasonal high water table is on the soil surface to 6 inches below the soil surface from October through July. Water movement is slow throughout these soils. Biddeford soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 0% to 3%. Biddeford soils make up about 10% of this unit.

Minor soils in this unit are the excessively drained or somewhat excessively drained Adams, the somewhat excessively drained Lyman soils, and the very poorly drained, organic Bucksport and Wonsqueak organic soils.

These soils are mostly forested or idle. Cleared areas of Boothbay and Swanville soils are used mainly for hay and pasture. These soils are also used for urban and residential development.

17 Scantic-Lamoine-Buxton-Lyman

Major areas of this map unit are in York, Cumberland, Androscoggin, Kennebec, Hancock, and Washington counties. These clayey and loamy soils are formed in clayey glaciomarine or glaciolacustrine sediments and loamy till. Surface stones and boulders are typically absent on the clayey soils, but are common on the loamy soils. This map unit constitutes about 7% of the land area of Maine.

Scantic are poorly drained, clayey soils underlain by clayey sediments at about 16 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table at the soil surface to 12 inches below the surface from October through June. Water movement is moderate in the upper part and slow in the clayey sediments. Scantic soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 0% to 8%. Scantic soils make up about 23% of this unit.

Lamoine are somewhat poorly drained, clayey soils underlain by clayey sediments at about 21 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table between 6 and 18 inches below the soil surface from November through June. Water movement is moderate in the upper part and slow in the clayey sediments. Lamoine soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 0% to 15%, but are dominantly 3% to 8%. Lamoine soils make up about 16% of this unit.

Buxton are moderately well drained, clayey soils underlain by clayey sediments at about 21 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Water movement is moderate in the upper part and slow in the clayey sediments. Buxton soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 3% to 50%, but are dominantly 8% to 25%. Buxton soils make up about 10% of this unit.

Lyman are somewhat excessively drained, loamy soils underlain by bedrock at 10 to 20 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Lyman soils are on knolls and ridges of glaciolacustrine and glaciomarine plains in coastal lowlands and river valleys. Slopes range from 3% to 80%, but are dominantly less than 25%. Lyman soils make up about 8% of this unit.

Minor soils in this unit are the somewhat excessively drained Hermon, the moderately well drained Dixfield, the well drained Tunbridge, and the excessively drained Schoodic soils.

Most areas are forested with cleared areas of Scantic, Lamoine, and Buxton soils used mainly for hay and pasture. Other areas of this unit are used for urban development.

18 Nicholville-Buxton-Dixfield-Scantic

Major areas of this map unit are in Androscoggin County. These loamy and clayey soils are formed in glaciolacustrine or glaciomarine sediments and till. Surface stones and boulders are typically absent on the glaciolacustrine and glaciomarine soils, but are common on the till soils. This map unit constitutes less than 1% of the land area of Maine.

Nicholville are moderately well drained, loamy soils underlain by strata of very fine sand and silt at about 30 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table between 18 and 24 inches below the soil surface from November through May. Water movement is moderate in these soils. Nicholville soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 0% to 15%. Nicholville soils make up about 19% of this unit.

Buxton are moderately well drained, clayey soils underlain by clayey sediments at about 21 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Water movement is moderate in the upper part and slow in the clayey sediments. Buxton soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 3% to 50%, but are dominantly 8% to 25%. Buxton soils make up about 16% of this unit.

Dixfield are moderately well drained, loamy soils underlain by loamy basal till at about 25 inches. This basal till restricts the downward movement of water resulting in a seasonal high water table between 18 and 30 inches below the soil surface from November through May. Bedrock is more than 60 inches below the mineral soil surface. Dixfield soils have moderate water movement in the upper part and slow water movement in the basal till. Dixfield soils are on smooth drumlins and ridges. Slopes range from 0% to 50%, but dominantly are less than 20%. Dixfield soils make up about 13% of this unit.

Scantic are poorly drained, clayey soils underlain by clayey sediments at about 16 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table at the soil surface to 12 inches below the soil surface from October through June. Water movement is moderate in the upper part and slow in the clayey sediments. Scantic soils are on glaciolacustrine or glaciomarine plains of coastal lowlands and river valleys. Slopes range from 0% to 8%. Scantic soils make up about 12% of this unit.

Minor soils in this unit are the somewhat poorly drained Colonel and Lamoine, the well drained Marlow, and the somewhat excessively drained Lyman soils.

Many areas of Nicholville soils are used for hay, small grains, potatoes, and vegetables. Buxton soils are used mainly for forage crops and pasture, but some areas are used for silage corn and vegetables. Dixfield soils are used for hay, pasture, and some row crops. A few small areas of Scantic are used for hay and pasture. Areas not used for farming are mostly woodland or used for urban development.

19 Cornish-Fryeburg-Podunk-Ondawa

Major areas of this map unit are along the larger rivers and streams in Oxford, Franklin, and Somerset counties. These loamy soils are formed in recent alluvial materials deposited on flood plains of rivers and streams. Stones and boulders are typically absent on these soils. This map unit constitutes less than 1% of the land area of Maine.

Cornish are somewhat poorly drained, loamy soils and may be underlain by strata of sands, gravels, or silts at about 40 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils have a seasonal high water table between 6 and 18 inches below the soil surface from November through May. Water movement is moderate in these soils. Cornish soils are on flood plains of rivers and streams. Slopes range from 0% to 2%. Cornish soils make up about 13% of this unit.

Fryeburg are well drained, loamy soils and may be underlain by strata of sands, gravels, or silts at about 40 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is moderate. They are on flood plains of rivers and streams. Slopes range from 0% to 8%. Fryeburg soils make up about 13% of this unit.

Podunk are moderately well drained, loamy soils underlain by strata of sand or gravel at about 30 inches. Bedrock is more than 60 inches below the mineral soil surface. A seasonal high water table is between 18 and 36 inches below the soil surface from November through May. Water movement is moderate in the upper part and rapid in the sand and gravel strata. Podunk soils are on flood plains of rivers and streams. Slopes range from 0% to 3%. Podunk soils make up about 13% of this unit.

Ondawa are well drained, loamy soils underlain by strata of sand or gravel at about 30 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement is moderate in the upper part and rapid in the sand and gravel strata. Ondawa soils are on flood plains of rivers and streams. Slopes range from 0% to 3%. Ondawa soils make up about 10% of this unit.

Minor soils in this unit are the poorly drained Charles and Rumney, the moderately well drained Lovewell and Skerry, and the very poorly drained Medomak soils.

The well drained and moderately well drained soils of this unit are used for hay, pasture, potatoes, and truck crops, and are among the best agricultural soils in Maine. The wetter soils in this unit are used for hay, pasture, forest, or are idle.

20 Vassalboro-Sebago-Wonsqueak

Major areas of this map unit are in Penobscot and Washington counties. These soils are formed in organic materials. This map unit constitutes about 1% of the land area of Maine.

Vassalboro are very poorly drained, slightly decomposed, organic soils. Bedrock is more than 60 inches below the soil surface. These soils have a seasonal high water table from 6 inches below the soil surface to water on the surface from September through July. Water movement is moderate in these soils. Vassalboro soils are in bogs. Slopes range from 0% to 2%. Vassalboro soils make up about 25% of this unit.

Sebago are very poorly drained, moderately decomposed, organic soils. Bedrock is more than 60 inches below the soil surface. These soils have a seasonal high water table from 6 inches below the soil surface to water on the surface from September through July. Water movement is moderate in these soils. Sebago soils are in bogs and swamps. Slopes range from 0% to 2%. Sebago soils make up about 20% of this unit.

Wonsqueak are very poorly drained, highly decomposed, organic soils underlain by loamy materials at about 32 inches. Bedrock is more than 60 inches below the soil surface. These soils have a seasonal high water table from 6 inches below the soil surface to water on the surface from September through July. Water movement is moderate in these soils. Wonsqueak soils are in bogs and swamps. Slopes range from 0% to 2%. Wonsqueak soils make up about 11% of this unit.

Minor soils in this unit are the very poorly drained Biddeford, Burnham, and Medomak, the poorly drained Charles and Monarda soils, and the very poorly drained, organic Waskish soils.

These soils are mostly forested or are covered mostly by mosses, sedges, shrubs, and cattails.

21 Sulfihemists-Beaches-Adams-Dune land

This map unit occurs in two small areas adjacent to the coastline in York and Cumberland counties. The soils are formed in organic and sandy materials. This map unit constitutes less than 1% of the land area of Maine.

Sulfihemists are very poorly drained, organic soils. These soils are subject to tidal inundation. Sulfihemists are on tidal marshes. Slopes range from 0% to 1%. Sulfihemists make up about 29% of this unit.

Beaches are a miscellaneous area consisting of sandy, gravelly, or cobbly shores washed and rewashed by waves. The areas may be partly covered with water during high tides or storms. Beaches make up about 23% of this unit.

Adams are excessively drained and somewhat excessively drained, sandy soils underlain by sand at about 30 inches. Bedrock is more than 60 inches below the mineral soil surface. These soils do not have a water table, and the rate of water movement through them is rapid. Adams soils are on stabilized sand dunes and remnant beaches. Slopes range from 0% to 70%, but are dominantly less than 15%. Adams soils make up about 13% of this unit.

Dune land is a miscellaneous area consisting of sand in ridges and intervening troughs that shift with the wind. They are very fragile, unstable areas. Dune land makes up about 9% of this unit.

Minor soils in this unit are the very poorly drained, organic Sebago soils, and the excessively drained Colton, and the somewhat excessively drained Lyman mineral soils.

This map unit is used mainly for recreation and wildlife.

SUMMARY

A soil map is a convenient way of showing the location and extent of the kinds of soil in an area. Many kinds of soil maps are being made throughout the world today. These soil maps can be classified into three broad categories:(1) Soil Survey Maps which are made by field methods, (2) Generalized Soil Maps which are made by combining the delineations of existing soil survey maps, and (3) Schematic Soil Maps which are made by predicting the geographic distribution of different kinds of soils from sources of information other than existing soil survey maps. The attached (enclosed) “General Soil Map of Maine” is a combination of a Generalized Soil Map and a Schematic Soil Map.

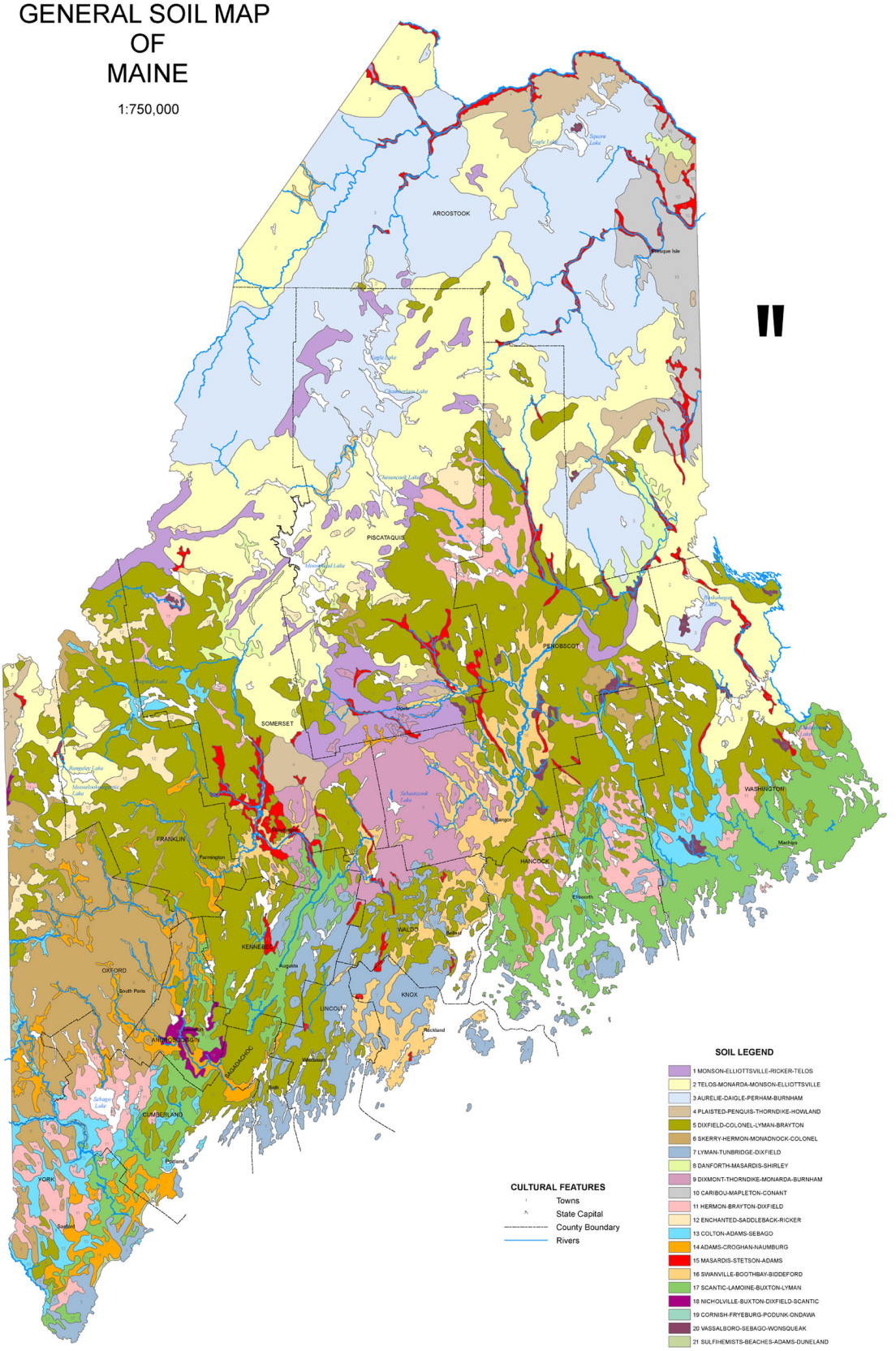
What can be shown on a soil map depends primarily on its scale. One must keep in mind that the soil pattern on the ground is fixed. It does not change perceptively for long periods (hundreds of years) except for natural catastrophic events and disturbance by humans. This “General Soil Map of Maine” shows the basic soil resources and their distribution in the state. It is useful for planning the broad use of the state’s soil resources. It is not adequate for planning small plots of land for development or for siting septic systems. These uses require more detailed soil information than that provided by a General Soil Map.

In general any "classification" (system) is an organization of the knowledge about a subject of the moment. Changes will be made as knowledge increases. Our knowledge and concepts of soil change as we learn more about our soils. *Soil Taxonomy* is an attempt to classify all the soils on planet Earth. As our knowledge and concept of soils change so will *Soil Taxonomy*. Not only will soil classification change, but technology will enable future soil scientists to more accurately delineate soils and interpret their potentials and uses.

A full-size (22" x 33") soil map is available on the Maine Agricultural & Forest Experiment Station web site: www.umaine.edu/mafes/elec_pubs/miscrepts/mesoilmap.pdf

GENERAL SOIL MAP OF MAINE

1:750,000



CULTURAL FEATURES

- Towns
- State Capital
- County Boundary
- Rivers

SOIL LEGEND

1. MONSON-ELLIOTTSVILLE-RICKER-TELOS
2. TELOS-MONARDA-MONSON-ELLIOTTSVILLE
3. AURELIE-DAIGLE-PERHAM-BURNHAM
4. PLAISTED-PENQUIS-THORNDIKE-HOWLAND
5. DIXFIELD-COLONEL-LYMAN-BRAYTON
6. SKERRY-HERMON-MONADNOCK-COLONEL
7. LYMAN-TUNBRIDGE-DIXFIELD
8. DANFORTH-MASARDIS-SHIRLEY
9. DIXMONT-THORNDIKE-MONARDA-BURNHAM
10. CARIBOU-MAPLETON-CONANT
11. HERMON-BRAYTON-DIXFIELD
12. ENCHANTED-SADDLEBACK-RICKER
13. COLTON-ADAMS-SEBAGO
14. ADAMS-CROGHAN-NAUMBURG
15. MASARDIS-STETSON-ADAMS
16. SWANVILLE-BOOTHBAY-BIDDEFORD
17. SCANTIC-LAMOINE-BUXTON-LYMAN
18. NICHOLVILLE-BUXTON-DIXFIELD-SCANTIC
19. CORNISH-FRYEBURG-PODUNK-ONDAWA
20. VASSALBORO-SEBAGO-WONSQUEAK
21. SULFIHEMISTS-BEACHES-ADAMS-DUNELAND

Source:
State Soil Geographic Data Base (STATSGO)
UTM projection Zone 19 NAD 1927

USDA NRCS