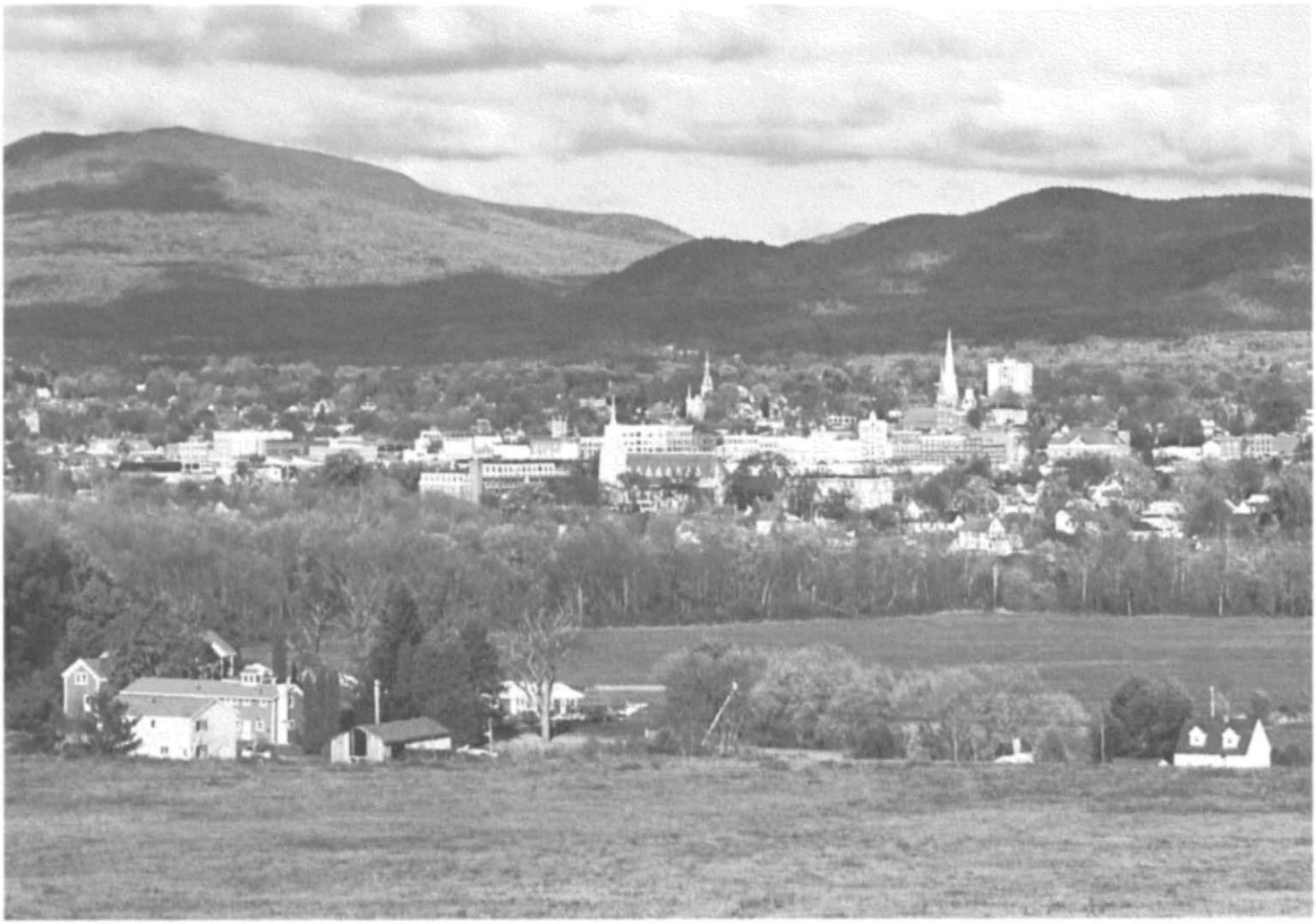
USDA United States Department of Agriculture

Natural Resources Conservation Service and Forest Service

In cooperation with Vermont Agency of Natural Resources and Vermont Agricultural Experiment Station

Soil Survey of Rutland County, Vermont



How to Use This Soil Survey

General Soil Map

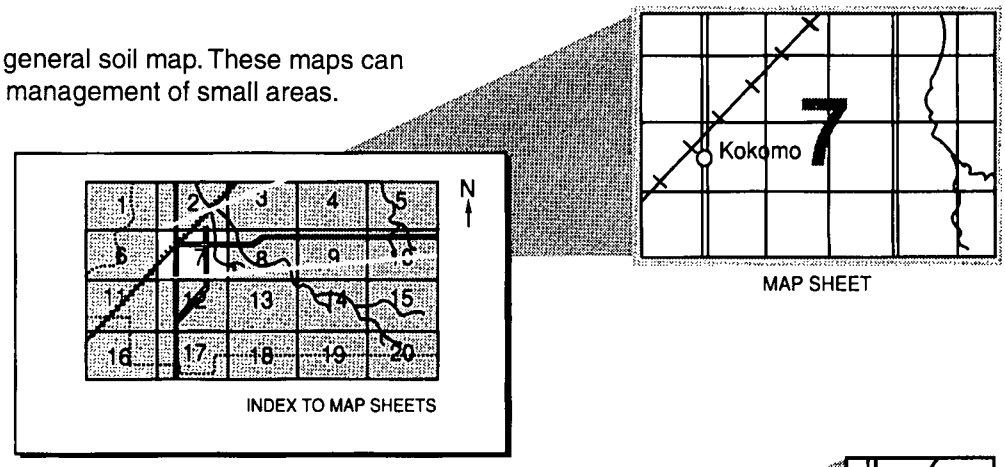
The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

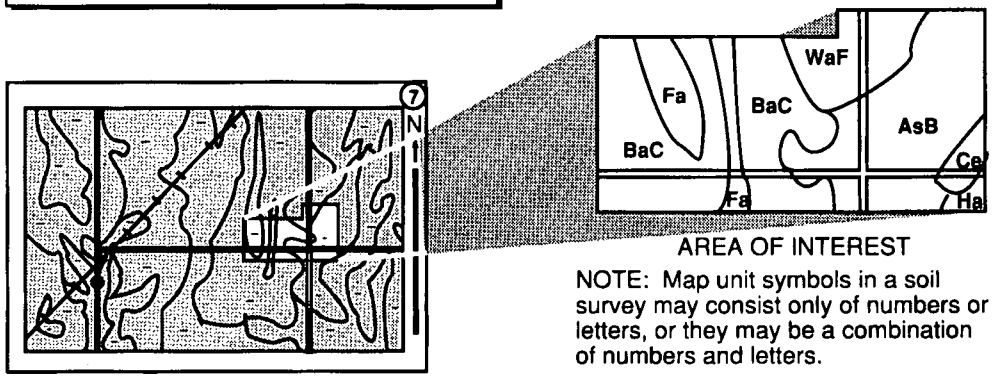
The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.

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



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

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



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, handicap, or age.

Major fieldwork for this soil survey was completed in 1984. Soil names and descriptions were approved in 1985. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1984. This survey was made cooperatively by the Natural Resources Conservation Service, the Forest Service, the Vermont Agency of Natural Resources, and the Vermont Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Ottauquechee, Poultney-Mettawee, Rutland, and White River Natural Resource Conservation Districts.

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

Cover: The city of Rutland is in the Paxton-Georgia-Amenia general soil map unit.

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Issued 1998

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Foreword

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

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

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

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

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Soil Survey of Rutland County, Vermont

By Henry J. Ferguson, Natural Resources Conservation Service

Fieldwork by Henry J. Ferguson, Robert F. Long, Bradford A. Higgins, Gregory W. Howard, John A. Pratt, Thomas R. Villars, and John P. Wulforst, Natural Resources Conservation Service; Fred Putnam Jr. and Donna Duffy, Forest Service; and Douglass W. Gehring and Dwayne R. Williams, Vermont Agency of Natural Resources

United States Department of Agriculture,
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RUTLAND COUNTY is in the southwestern part of Vermont (fig. 1). The county has a land area of 596,787 acres, or 932 square miles. The total area including water is 604,467 acres, or 944 square miles. The county was incorporated in 1781. Rutland, the second largest city in Vermont with a population of 18,435, is the county seat. The 1980 census listed the county population at 58,332.

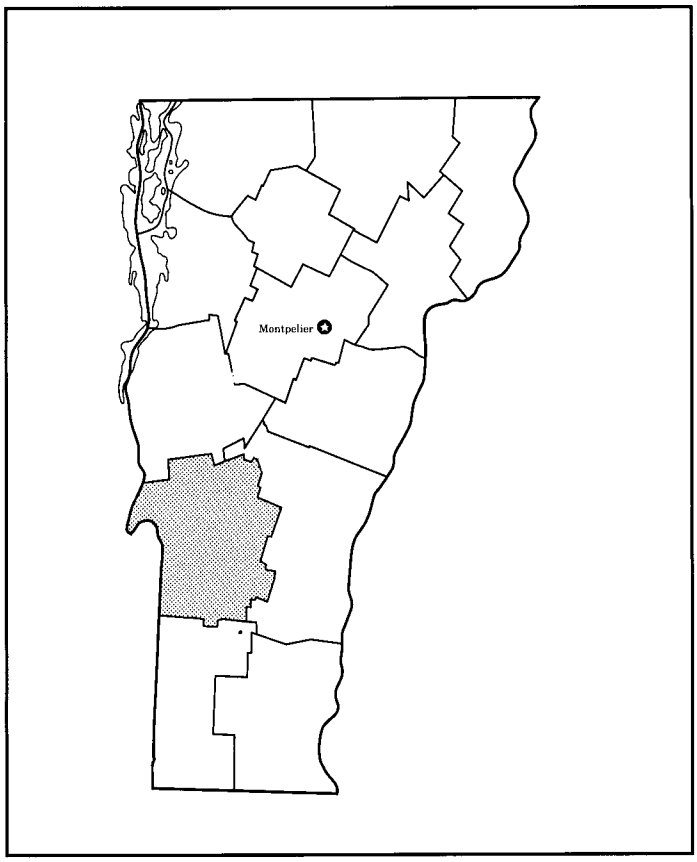

Figure 1.—Location of Rutland County in Vermont.

General Nature of the County

Climate

Prepared by the National Climate Center, Asheville, North Carolina

Winters in Rutland County are cold, and summers are moderately warm with occasional hot spells. The mountainous areas are markedly cooler than the main agricultural areas in the lowlands. The frequency of precipitation is fairly evenly distributed throughout the year. Periods of severe drought are rare. Short dry spells are fairly common in the summer, however, and irrigation may be desirable, especially for high-value truck and fruit crops (*9*). Spray irrigation may also be used to help protect high-value crops, such as strawberries, against late frosts in the spring.

Winter snows occur frequently, occasionally as blizzards, and cover the ground much of the time.

Table 1 gives data on temperature and precipitation

for the survey area as recorded in the period 1951-81. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season. The data in the tables and in this section were recorded at Rutland, which is 600 feet above sea level. However, the average temperature in the survey area decreases by 3.5 degrees for every increase of 1,000 feet in elevation, and rainfall tends to increase as the elevation increases.

In winter the average temperature is 23 degrees F, and the average daily minimum temperature is 14 degrees. The lowest temperature on record, which occurred at Rutland on January 12, 1968, is -26 degrees. In summer the average temperature is 68 degrees, and the average daily maximum temperature is 79 degrees. The highest recorded temperature, which occurred at Rutland on July 2, 1963, is 98 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 35 inches. Of this, 20 inches, or 60 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 17 inches. The heaviest 1-day rainfall during the period of record was 3.26 inches at on June 26, 1965. Thunderstorms occur on about 25 days each year, and most occur in summer.

The average seasonal snowfall is 65 inches. The greatest snow depth at any one time during the period of record was 31 inches. On the average, 50 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 60 percent of the time possible in summer and 40 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 10 miles per hour, in winter.

Land Use, Transportation, and Natural Resources

Rutland county is about 69 percent forestland, 29 percent farmland, and 2 percent urban and residential development (*10*). Approximately 76,638 acres of woodland are in the Green Mountain National Forest. Dairying is the main farm enterprise. Most of the milk produced in Rutland County is shipped to markets within New England, primarily Boston.

The transportation needs of the county are served by six main highways. US route 7 and State routes 22A, 30, and 100 run north-south. US route 4 runs east-west, and State route 103 is a southeastern route. The Vermont Railway, the Claredon and Pittsford, and the Green Mountain Railway handle rail traffic in the county. The Rutland Airport is in Clarendon, and a small airfield is in Fair Haven.

The major natural resources in the county are wood and mined dolostone, marble, and slate. Sand and gravel are also scattered throughout the county. The lakes, mountains and forests throughout the county provide many opportunities for recreation, making Rutland County a center for tourism in New England. Killington and Pico Peaks are major ski resort areas. The Long and Appalachian Trails traverse the county. Fishing and boating are common pastimes. Lake Bomoseen, Lake Hortonia, and Lake St. Catherine are three of the larger lakes in the county. Lake Champlain separates northern Rutland County from Washington County, New York.

Agriculture

Most of the farmland is in the Champlain Valley, the Vermont Valley, and the valleys of the Taconic Mountains. The 1980 Census of Agriculture showed 561 farms in the county and about 71,090 acres of cropland. Hay and corn for silage to feed dairy cattle are the main crops. Other crops are apples, strawberries, and vegetables. Over 210,000 gallons of maple syrup are produced annually in the county (fig. 2). Beef, sheep, poultry, and hogs and pigs are also raised.

Physiography, Relief, and Drainage

Rutland County encompasses four physiographic regions: the Green Mountains, the Champlain Valley, the Taconic Mountains, and the Vermont Valley.

The Green Mountains are in the eastern half of the county. They formed in a sequence of Precambrian, Cambrian, and Ordivician gneisses, phyllites, and schists. The main ridge forms the divide between the watersheds of Lake Champlain and the Connecticut River. The major peaks on this ridge are Shrewsbury (3,737 feet), Pico (3,967 feet), and Killington (4,241 feet), which is the second highest peak in the state. A lower ridge west of the main ridge has elevations ranging from 1,700 to 3,200 feet. Bald Mountain, East

Figure 2.—A maple-sugaring operation on nearly level Duxbury and Colton soils and strongly sloping Paxton soils.

Mountain, and Blue Ridge Mountain are on this ridge.

The Champlain Valley is west of the Green Mountains and north of the Taconic Mountains (fig. 3). The rolling terrain of this valley is composed of lacustrine sediments and low hills formed in limestone or slate. The lowest elevation in the county, 95 feet above sea level, is in this region at the water level of Lake Champlain.

The Taconic Mountains are in the western part of the county, south of Brandon. They formed in a sequence of Cambrian and Ordivician slates and phyllites. The foothills on the western side are known as the slate belt and are quarried extensively. While the topography is rugged, the peaks are lower than those in the Green Mountains. Herrick Mountain (2,727 feet) is one of the higher peaks.

The Vermont Valley is between the ranges of the Green and Taconic Mountains. It is a southward extension of the Champlain Valley. Otter Creek flows through the valley. The city of Rutland is in this physiographic region.

The soils of the Rutland County uplands are derived from materials that were laid down directly from the ice of the last glacier or indirectly through the action of streams and the presence of glacial lakes. Some of this glacial material has been transported downhill by recent streams and redeposited in the lowlands.

The glacial movement in the county generally resulted in the following types and locations of parent material: the uplands are till; some upland valleys are outwash sand and gravel deposited by glacial meltwater; some uplands are clayey lacustrine sediments deposited by a glacial lake; and the low

Figure 3.—Kingsbury and Vergennes soils on the dissected Champlain lake plain are used for crops and pasture.

valleys consist mainly of outwash sand and gravel and loamy alluvial sediments (*4*).

Most of the county is in the Lake Champlain drainage area, but the northeastern corner is in the Connecticut River drainage area. Otter Creek is the major drainageway. Many smaller streams and rivers flow into Otter Creek. From south to north these include Roaring Brook, Mill River, Clarendon River, Furnace Brook, and the Neshobe River. Other major rivers in the western part of the county include the Castleton, Hubbardton, Mettawee, and Poultney. The White and Ottaquechee Rivers drain the northeastern part of the county (*5*).

How This Survey Was Made

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

The soils in the survey area occur in an orderly pattern that is related to the geology, the landforms, relief, climate, and the natural vegetation of the area. Each kind of soil is associated with a particular kind of

landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil at a specific location on the landscape.

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

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

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

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

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

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. These latter soils are called inclusions or included soils.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the

descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soil on the landscape.

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

Survey Procedures

Major field work for this soil survey was performed in the period 1978-84. Soil scientists from the Natural Resources Conservation Service and the Vermont Agency of Natural Resources were responsible for mapping the privately owned land (approximately 520,149 acres) and soil scientists from the Forest Service were responsible for mapping the land in the Green Mountain National Forest (approximately 76,600 acres).

Before the actual field work began, boundaries of historical lakes were plotted on United States Geological Survey topographic maps, using The Surfacial Geology and Pleistocene History of Vermont for reference. Additional study of the temperature regimes within the county was conducted, and approximate boundaries were plotted on USGS topographic maps.

Traverses were made on foot at intervals of about a quarter mile. In the valleys the traverses were made at closer intervals because the soils tend to be more variable there. Traverses were made farther apart over mountaintops and ridge lines where soils patterns tend to be uniform and the use is less intensive than in the valleys.

Soil examinations along traverses were made 100 to 800 yards apart, depending on the landscape and soil pattern. Observations of such items as landforms, trees blown down, vegetation, road banks, rock outcrops, stones on the surface, and animal burrows were made continually without regard to spacing. Soil boundaries and symbols were recorded in the field on aerial photographs. The boundaries were determined on the basis of soil examinations, observations, and aerial photograph interpretation. The soil material was examined with the aid of a bucket auger or a tile spade to a depth of about 5 feet or to bedrock or dense basal till if the depth to bedrock or dense basal till was less than 5 feet.

Soil scientists recorded field notes concerning land use, map unit composition, and soil characteristics. Information on soil depth and surface stone cover were obtained for selected areas using more detailed transects.

Some pedons were studied in pits that were dug with a backhoe, and soil samples were taken for complete characterization. The analyses of the samples were made by the National Soil Survey Laboratory in Lincoln, Nebraska. The results of the analyses are stored in a computerized file at the laboratory. The results and the laboratory procedures can be obtained from the Vermont office of the Natural Resources Conservation Service.

Samples of organic soils were obtained during the winter months while swamps were snow covered. The analysis of the organic material was performed in the field office.

After completion of the soil mapping on aerial photographs, map unit delineations were transferred by hand to orthophotographs at a scale of 1:20,000. Surface drainage was mapped in the field. Cultural features were transferred from USGS topographic maps and were recorded from visual observations.

The Forest Service used an Ecological Classification System to describe the land, vegetation, and soils in the Green Mountain National Forest. The system provides the Forest Service with the location of natural segments of the landscape and associated problems or opportunities and is pertinent to National Forest land use and management.

Prior to starting field work, subsections from the Ecological Classification System were delineated on 1:500,000 LANDSAT photographs. Information for the Ecological Classification System is based on geologic maps, climate information, landscape morphology, and forest cover type distribution. Within each subsection, Ecological Land Types were stereoscopically delineated on 1:42,000 aerial photographs. A set of field data points was established on the 1:42,000 aerial photographs to provide a representative sample of each Ecological Land Type in each subsection.

Each field point was visited, and information was collected along transects. Map unit boundaries were modified as necessary, and additional field data points were established as needed to fully characterize each ecological land type. Field observations included soil, hydrology, landforms, and vegetation succession tendencies. Soil examinations were made using augers, tile spades, and occasionally a backhoe. Vegetation data included species and abundance of five different

layers of above-ground vegetation.. Multiple tree cores and height information were obtained at each field data point. Information was recorded via computer and in field notes.

The Ecological Land Types were correlated to soil associations based on information collected in the field. The map unit delineations placed on the final aerial photographs were transferred to planimetric maps by use of a zoom transfer scope.

General Soil Map Units

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

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

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

Soil Descriptions

Soils That Formed in Water-Deposited Material and Organic Material on Terraces and Lake Plains

1. Hinckley-Warwick-Windsor

Very deep, nearly level to very steep, somewhat excessively drained and excessively drained soils on terraces, outwash plains, and moraines; formed in gravelly and sandy glaciofluvial deposits

This unit consists mainly of broad, nearly level and gently sloping areas and moderately steep and steep areas near the base of hills and mountains and along stream channels. The unit is drained by small streams. Slopes are generally long and smooth. They are commonly 3 to 15 percent but range from 0 to 60 percent.

This unit makes up about 10 percent of the survey area. It is about 20 percent Hinckley and similar soils, 15 percent Warwick and similar soils, and 10 percent Windsor and similar soils. The rest of the unit is minor soils.

The Hinckley soils are excessively drained. They are in the lower valleys on broad terraces and on short side slopes. Typically, the soils have a surface layer and subsoil of gravelly loamy fine sand and a substratum of very gravelly coarse sand.

The Warwick soils are somewhat excessively drained. They are on the foot slopes of mountains and on narrow terraces and side slopes. Typically, the soils have a surface layer of channery fine sandy loam, a subsoil of very channery fine sand, and a substratum of very channery sand.

The Windsor soils are excessively drained. They are on the foot slopes of mountains and on narrow terraces and side slopes. Typically, the soils have a surface layer of loamy sand and a subsoil and substratum of sand.

The minor soils are the very deep, excessively drained Colton, very deep, well drained Duxbury, and very deep, moderately well drained Deerfield soils in landscape positions similar to those of the major soils; the very deep, moderately well drained Castile soils in depressions and low areas near streams; and the very deep, very poorly drained Adrian and Pinnebog soils in depressions and drainageways.

Most of the acreage in this unit has been cleared of trees and is used for cultivated crops, hay, pasture, or community development. The rest is used as woodland consisting of mixed hardwoods and white pine and hemlock.

The major soils are generally suited to cultivated crops and to hay and pasture. In some areas stones on the surface and a low available water capacity are limitations. The slope also is a limitation in the moderately steep to very steep areas.

This unit is suited to trees. Seedling mortality is a hazard because of the low available water capacity. The slope limits the use of equipment in the steeper areas.

A poor filtering capacity in the soils limits onsite sewage disposal. Also, the slope is a limitation on sites for dwellings with basements and for local roads and streets. The major soils are potentially good sources of sand and gravel.

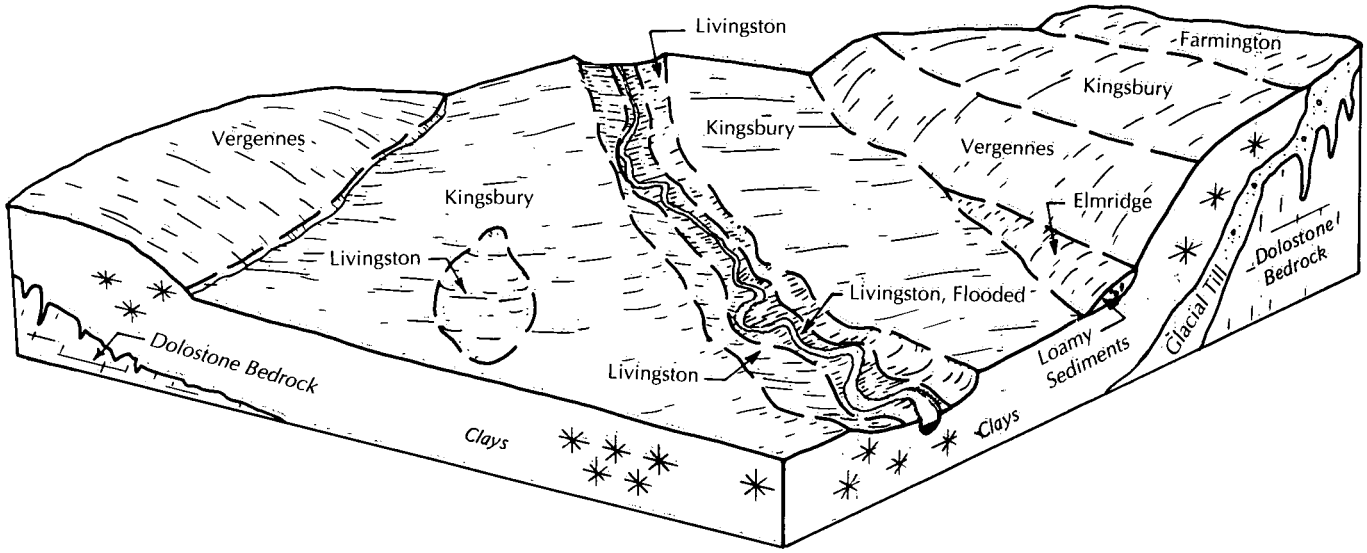

Figure 4.—Typical pattern of soils and underlying material in the Kingsbury-Vergennes unit.

2. Kingsbury-Vergennes

Very deep, nearly level to steep, somewhat poorly drained and moderately well drained soils on lake plains; formed in clayey glaciolacustrine or marine deposits

This unit consists mainly of broad, nearly level areas dissected by gullies that have short, moderately steep and steep side slopes. The unit is drained by small, meandering streams and creeks with gentle gradients. It has some depressional areas, where runoff is slow. Slopes are dominantly 0 to 15 percent but range from 0 to 50 percent.

This unit makes up 6 percent of the survey area. It is about 40 percent Kingsbury soils and 25 percent Vergennes soils (fig. 4). The rest of the unit is minor soils.

The Kingsbury soils are somewhat poorly drained. They are in broad, nearly level and gently sloping areas. Typically, the soils have a surface layer of silty clay loam and a subsoil and substratum of mottled clay.

The Vergennes soils are moderately well drained. They are on nearly level to steep side slopes. Typically, the soils have a surface layer of clay and a subsoil and substratum of mottled clay.

The minor soils are the moderately well drained Bomoseen, Pittstown, and Elmridge soils on ridges and side slopes; the shallow, well drained and somewhat excessively drained Farmington soils near dolostone rock outcrops; and the very deep, very poorly drained Livingston soils on flood plains. In some areas the Livingston soils are subject to flooding.

Most of the acreage in this unit is used for hay, pasture, or silage corn. Areas of the minor soils that are stony or are intermingled with rock outcrop are generally forested. The side slopes of some moderately steep and steep gullies are reverting to woodland.

The major soils are suited to cultivated crops and to hay and pasture. The wetness caused by the seasonal high water table and the clayey surface layer restrict the use of equipment, particularly during the spring. The slope is a limitation in the moderately steep and steep areas. Erosion is a hazard.

The major soils are suited to trees, but few areas of these soils are forested. The clayey surface layer and the wetness caused by the seasonal high water table restrict the use of equipment.

The seasonal high water table and slow or very slow permeability limit onsite sewage disposal. The seasonal high water table, the shrink-swell potential, and low strength are limitations on sites for dwellings with basements and for local roads and streets.

Soils That Formed in Glacial Till in the Vermont Valley, Champlain Valley, Taconic Mountains, and Associated Foothills

3. Taconic-Macomber-Hubbardton

Very shallow to moderately deep, gently sloping to very steep, well drained to excessively drained soils underlain

by slate and schist bedrock on mountains, hills, and ridges; formed in loamy glacial till

This unit consists mainly of rugged terrain with prominent relief. It has many rock outcrops and cliffs. It is drained by small streams with steep gradients. Several ponds and lakes are in areas the unit. Slopes are commonly 15 to 50 percent but range from 3 to 80 percent.

This unit makes up about 24 percent of the survey area. It is about 35 percent Taconic soils, 25 percent Macomber soils, and 10 percent Hubbardton soils. The rest of the unit is minor soils.

The shallow Taconic soils are somewhat excessively drained. They are on ridgetops and side slopes. Typically, the soils have a surface layer of channery silt loam and a subsoil and substratum of very channery silt loam. They are underlain by slate and schist bedrock at a depth of 10 to 20 inches.

The moderately deep Macomber soils are well drained. They are on side slopes and foot slopes. Typically, the soils have a surface layer of channery silt loam and a subsoil and substratum of very channery silt loam. They are underlain by slate and schist bedrock at a depth of 20 to 40 inches.

The very shallow Hubbardton soils are excessively drained. They are on mountaintops, ridgetops, and side slopes. Typically, the soils have a surface layer and subsoil of very flaggy silt loam. They are underlain by slate and schist bedrock at a depth of 2 to 10 inches.

The minor soils are the very deep, well drained Dutchess soils and the very deep, moderately well drained Amenia, Bomoseen, Georgia, and Pittstown soils. These soils are primarily in areas on broad foot slopes where the depth to bedrock is more than 6 feet. Rock outcrop is common in the steeper areas.

Most of the acreage in this unit is used as woodland consisting of hophornbeam, oak, and maple and some areas of hemlock and white pine. Cleared areas are used for pasture.

The depth to bedrock and the slope affect the suitability of this unit for trees. The moderately deep Macomber soils and the very deep minor soils are suited to trees, but the shallow and very shallow soils are poorly suited. The slope and the rock outcrop restrict the use of logging equipment. Erosion is a hazard along logging roads and skid trails.

In general, this unit is unsuited to hay and cultivated crops and is poorly suited to pasture. The main limitations are the slope, the rock outcrop, stones on the surface, and a low or very low available water capacity in the Taconic and Hubbardton soils. Erosion is a hazard in the strongly sloping to very steep areas.

The slope and the depth to bedrock are limitations on sites for sewage disposal systems, dwellings with basements, and local roads and streets. Even shallow excavations generally require blasting.

4. Dutchess-Bomoseen-Pittstown

Very deep, nearly level to very steep, moderately well drained and well drained soils on the side slopes of hills and mountains; formed in glacial till

This unit consists mainly of smooth side slopes of elongated hills. Drumlins are common. Most areas of this unit are drained by small streams. Slopes range from 2 to 60 percent.

This unit makes up 11 percent of the survey area. It is about 30 percent Dutchess soils, 20 percent Bomoseen soils, and 20 percent Pittstown soils (fig. 5). The rest of the unit is minor soils.

The Dutchess soils are well drained. They are on side slopes and foot slopes of hills. Typically, the soils have a surface layer of silt loam, a subsoil of channery silt loam, and a substratum of very channery fine sandy loam.

The Bomoseen soils are moderately well drained. They are on the side slopes and top of knolls and hills. Typically, the soils have a surface layer of channery loam, a subsoil of channery fine sandy loam, and a substratum of firm, dense channery silt loam.

The Pittstown soils are moderately well drained. They are on the side slopes and top of knolls and hills. Typically, the soils have a surface layer of silt loam, a subsoil of mottled silt loam, and a substratum of mottled, firm, dense gravelly silt loam.

The minor soils are the shallow, somewhat excessively drained Taconic soils and the moderately deep, well drained Macomber soils on top and side slopes of hills and mountains; the very deep, poorly and somewhat poorly drained Massena soils and the very deep, very poorly drained Lyons soils in depressions and drainageways.

Most of the acreage in this unit has been cleared of trees and is used for hay, pasture, or cultivated crops. The steeper soils are pastured or wooded.

Where stones have been cleared from the surface, the major soils are suited to cultivated crops and to hay and pasture. Stones on the surface are a limitation where the soils have not been cleared. The slope is a limitation in moderately steep and steep areas. Erosion is a hazard.

The major soils are suited to trees. The slope limits the use of equipment in the steeper areas. Erosion is a hazard.

The seasonal high water table and the slope are limitations on sites for sewage disposal systems, dwellings with basements, and local roads and streets.

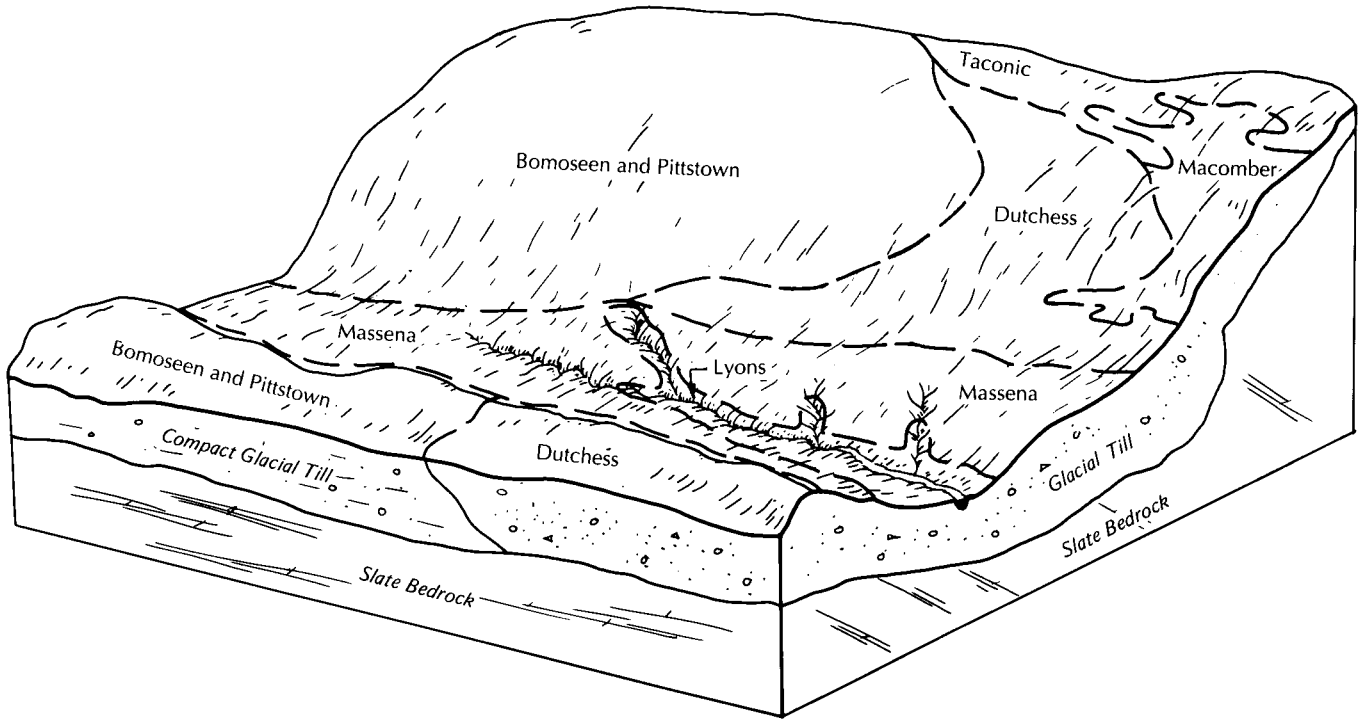

Figure 5.—Typical pattern of soils and underlying material in the Dutchess-Bomoseen-Pittstown unit.

Slow or very slow permeability also is a limitation affecting onsite sewage disposal.

5. Paxton-Georgia-Amenia

Very deep, nearly level to steep, moderately well drained and well drained soils on glacial till plains, foot slopes and side slopes of hills and mountains; formed in glacial till

This unit consists mainly of broad, nearly level to steep areas drained by small streams and creeks. Depressional areas with slow runoff are in places. Slopes are commonly 3 to 15 percent but range from 2 to 50 percent.

This unit makes up about 8 percent of the survey area. It is about 30 percent Paxton soils, 15 percent Georgia soils, and 15 percent Amenia soils. The rest of the unit is minor soils.

The Paxton soils are well drained. They are on broad ridges and side slopes. Typically, the soils have a surface layer, subsoil, and substratum of fine sandy loam. The lower part of the subsoil is mottled in some areas. The substratum is firm, dense, and mottled.

The Georgia soils moderately well drained. They are on the broad ridges, side slopes, and foot slopes of hills. Typically, the soils have a surface layer of loam and a subsoil and substratum of mottled gravelly loam.

The Amenia soils are moderately well drained. They are in landscape positions similar to those of the Georgia soils. Typically, the Amenia soil have a surface layer of loam, a subsoil of mottled gravelly fine sandy loam, and a substratum of fine sandy loam.

The minor soils are the shallow, well drained and somewhat excessively drained Farmington soils; the moderately deep, well drained Galway soils; the very deep, well drained Nellis soils; and the very deep, somewhat poorly drained Massena soils. The Farmington and Galway soils are near rock outcrops. The Nellis soils are on ridges and side slopes, and the Massena soils are in depressions and drainageways.

About half of this unit has been cleared of stones and trees and is used for hay, pasture, cultivated crops, and community development. Several population centers are on this unit, including Rutland. The rest of the unit is used as woodland or unimproved pasture.

The major soils are well suited to cultivated crops

and to hay and pasture. Stones on the surface are a limitation in uncleared areas. The slope is a limitation on the moderately steep and steep areas of the unit. Erosion is a hazard.

This unit is well suited to trees. Gently sloping areas have few limitations. The slope is a limitation in moderately steep and steep areas. Erosion is a hazard.

The seaonal high water table and the slope are limitations on sites for sewage disposal systems, dwellings with basements, and local roads and streets. Slow permeability also is a limitation affecting onsite sewage disposal.

6. Farmington-Galway

Shallow and moderately deep, gently sloping to steep, well drained and somewhat excessively well drained soils underlain by dolostone bedrock on the side slopes and top of hills, knolls, and mountains; formed in glacial till

This unit consists mainly of rugged terrain interspersed with smooth, sloping valleys. The rugged areas generally are wooded, and the less sloping areas have been cleared. The unit has many rock outcrops and escarpments. Solution channels are common in the underlying bedrock. Slopes are commonly 8 to 25 percent but range from 3 to 80 percent.

This unit makes up about 4 percent of the survey area. It is about 40 percent Farmington soils and 30 percent Galway soils (fig. 6). The rest of the unit is minor soils.

The shallow Farmington soils are well drained and somewhat excessively drained. They are on hilltops and side slopes. Typically, the soils have a surface layer and subsoil of silt loam. They are underlain by dolostone bedrock at a depth of 10 to 20 inches.

The moderately deep Galway soils are well drained. They are on hilltops and side slopes. Typically, the soils have a surface layer of silt loam and a subsoil of fine sandy loam. They are underlain by dolostone bedrock at a depth of 20 to 40 inches.

The minor soils are the very deep, moderately well drained Amenia and Georgia soils in concave areas and on foot slopes; the shallow somewhat excessively drained and excessively drained Galoo soils near rock outcrops; the very deep, somewhat poorly drained Kingsbury soils in concave areas; and the very deep,

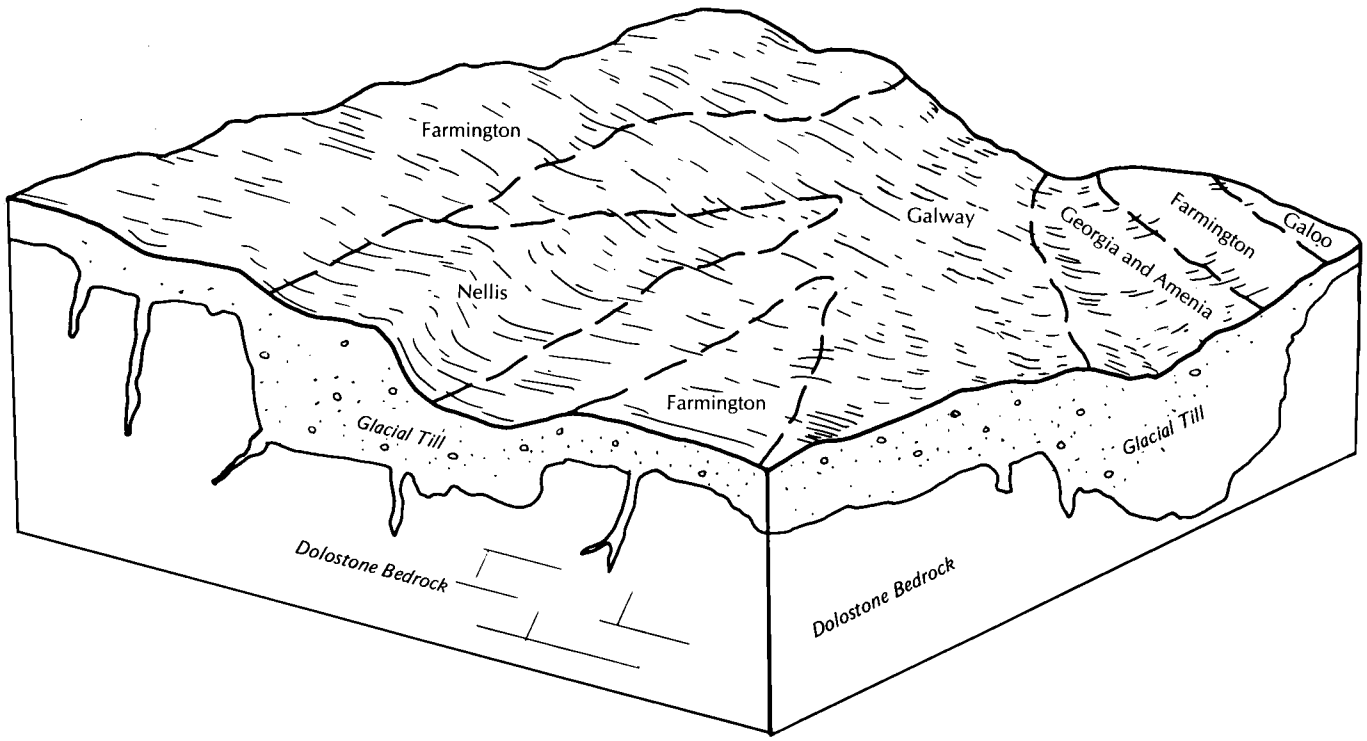

Figure 6.—Typical pattern of soils and underlying material in the Farmington-Galway unit.

well drained Nellis soils on broad ridges and foot slopes.

Most of the acreage in this unit is used as woodland consisting of mixed hardwoods. The soils that have been cleared of surface stones are used for hay and pasture, cultivated crops, and community development.

The major soils of this unit are suited to trees. The slope and the rock outcrop restrict the use of logging equipment. The less sloping areas that have a high percentage of moderately deep Galway soils and very deep minor soils have few limitations.

This unit is generally poorly suited to hay and pasture. Stones on the surface, the rock outcrop, and the slope in the steep areas are limitations. The less sloping areas that have been cleared of stones have few limitations. Erosion is a hazard.

Most of the acreage in this unit is poorly suited to cultivated crops. The depth to bedrock, stones on the surface, and the rock outcrop are limitations. The slope is a limitation in the moderately steep areas. The less steep soils of this unit that have been cleared of surface stones are suited to cultivated crops. Erosion is a hazard.

The major soils are severely limited as sites for sewage disposal systems, dwellings with basements, and local roads and streets. The depth to bedrock and the slope are the main limitations.

Soils That Formed in Glacial Till in the Green Mountains and Associated Foothills

7. Glebe-Stratton

Moderately deep and shallow, strongly sloping to very steep, well drained soils underlain by schist bedrock on mountaintops and side slopes; formed in glacial till

This unit consists mainly of steep mountainous areas at the highest elevations in the survey area. It includes several prominent peaks. Because of the high elevations, the average soil temperatures are lower than those in other units. The unit is drained by small streams with steep gradients. Many rock outcrops are in areas of the unit. Slopes are commonly 25 to 50 percent but range from 8 to 80 percent.

This unit makes up about 1 percent of the survey area. It is about 55 percent Glebe soils and 30 percent Stratton soils (fig. 7). The rest of the unit is minor soils.

The moderately deep Glebe soils are on the ridgetops and side slopes of mountains at the higher elevations. Typically, the soils have a surface layer of gravelly sandy loam, a subsoil of gravelly fine sandy loam, and a substratum of gravelly sandy loam. Schist bedrock is at a depth of 20 to 40 inches.

The shallow Stratton soils are on the ridgetops and side slopes of mountains at the higher elevations. Typically, the soils have a surface layer and subsoil of very cobbly loam. Schist bedrock is at a depth of 10 to 20 inches.

The minor soils are the very shallow, well drained Londonderry soils on mountain ridges and side slopes; the shallow, somewhat excessively drained Lyman soils on the lower ridgetops and side slopes; the moderately deep, well drained Rawsonville soils on mountainsides; and the very shallow to moderately deep, well drained to excessively drained Ricker and shallow, well drained Killington soils on mountain ridges and side slopes. Rock outcrop is common in the steeper areas.

Almost all of the acreage in this unit is used as woodland consisting of balsam fir, red spruce, and some mixed hardwoods.

This unit is poorly suited to trees. Tree growth is slow because of the limited depth to bedrock and the low soil temperatures. The slope and the rock outcrop restrict the use of logging equipment. Erosion is a hazard on logging roads and skid trails.

This unit is unsuited to pasture. The slope, the rock outcrop, and stones on the surface are the main limitations.

This unit is severely limited as a site for sewage disposal systems, dwellings with basements, and local roads and streets. The depth to bedrock, the rock outcrop, and the slope are the main limitations.

8. Rawsonville-Houghtonville

Very deep and moderately deep, strongly sloping to very steep, well drained soils underlain by schist bedrock on mountaintops and side slopes; formed in glacial till

This unit consists mainly of mountains and ridges generally above 2,000 feet in elevation. It is drained by small streams with steep gradients. Rock outcrop is common in areas of the unit. Slopes are commonly 15 to 50 percent but range from 5 to 70 percent.

This unit makes up about 7 percent of the survey area. It is about 45 percent Rawsonville soils and 30 percent Houghtonville soils (fig. 8). The rest of the unit is minor soils.

The moderately deep Rawsonville soils are on mountaintops and the upper side slopes. Typically, the soils have a surface layer and subsoil of gravelly fine sandy loam. Schist bedrock is at a depth of 20 to 40 inches.

The very deep Houghtonville soils are on mountain side slopes. Typically, the soils have a surface layer, subsoil, and substratum of gravelly fine sandy loam.

The minor soils are the shallow, well drained Killington soils near rock outcrops; the very deep, well drained Berkshire and moderately well and well drained

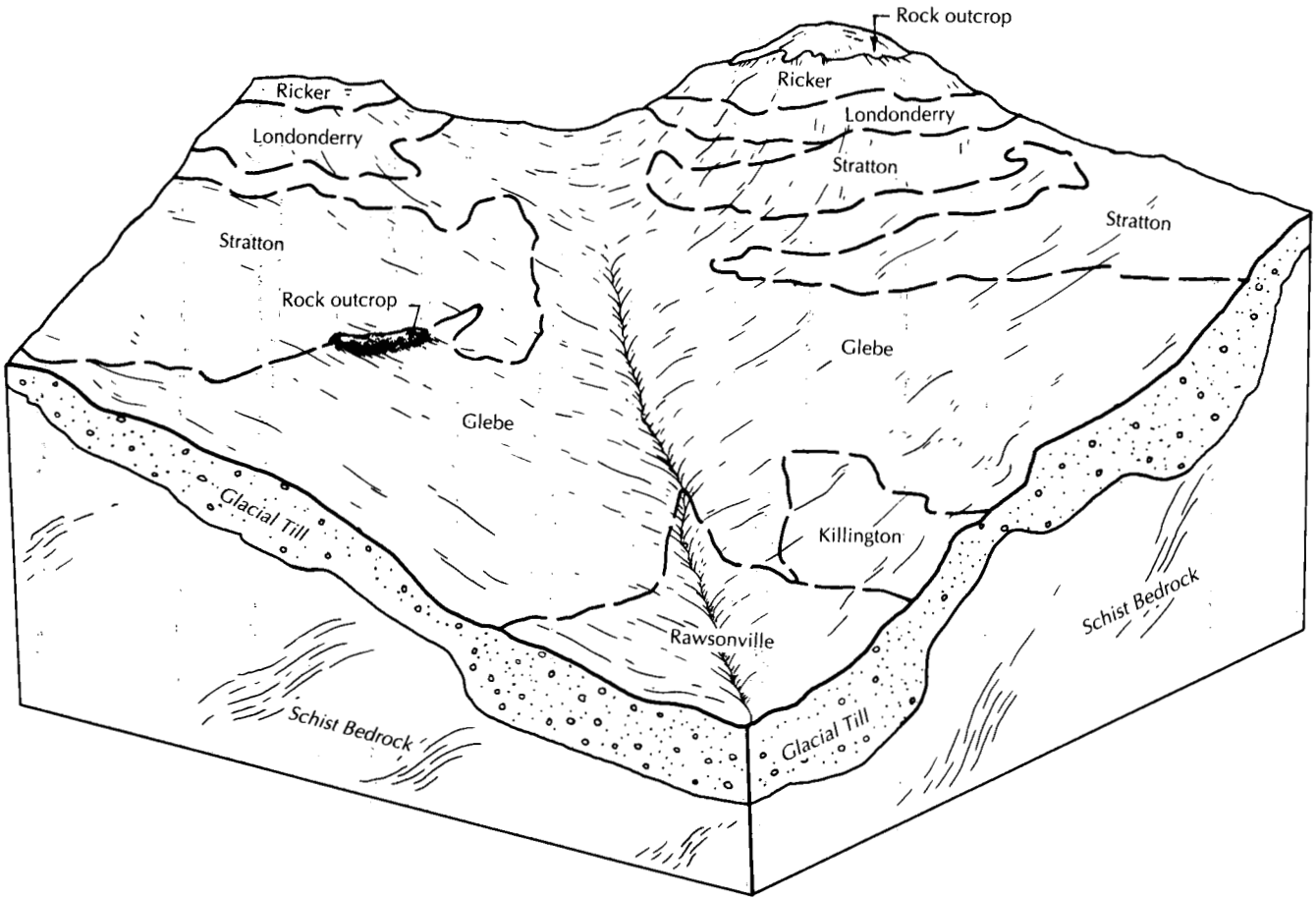

Figure 7.—Typical pattern of soils and underlying material in the Glebe-Stratton unit.

Mundal soils on the lower side slopes; the moderately deep, well drained Tunbridge soils on the lower side slopes and ridgetops; the very deep, moderately well drained Peru soils on the lower side slopes; and the very deep, moderately well drained Sunapee soils in depressions and drainageways. Rock outcrop is common in the steeper areas.

Almost all of the unit is used as woodland consisting of mixed hardwoods.

This unit is suited to trees. The slope and the rock outcrop restrict the use of logging equipment. Erosion is a hazard on logging roads and skid trails.

This unit is poorly suited to hay, pasture, and cultivated crops. The main limitations are the slope, the rock outcrop, stones on the surface, and the erodibility and fragile nature of the soils. The erosion hazard is severe for the moderately steep to very steep soils.

The depth to bedrock is the main limitation on sites for sanitary facilities and buildings. The moderately deep soils are severely limited as sites for sewage disposal systems, dwellings with basements, and local roads and streets. The slope also is a limitation in the moderately steep to very steep areas. The strongly sloping areas of the very deep Houghtonville soils have fewer limitations as sites for these uses.

9. Tunbridge-Berkshire-Peru

Moderately deep to very deep, gently sloping to very steep, well drained and moderately well drained soils underlain by schist bedrock on ridges and side slopes of hills and mountains; formed in glacial till

This unit consists mainly of areas of prominent relief at intermediate elevations. It is drained by small streams with steep gradients. Rock outcrop is common in areas of the unit. Slopes are commonly 15 to 50

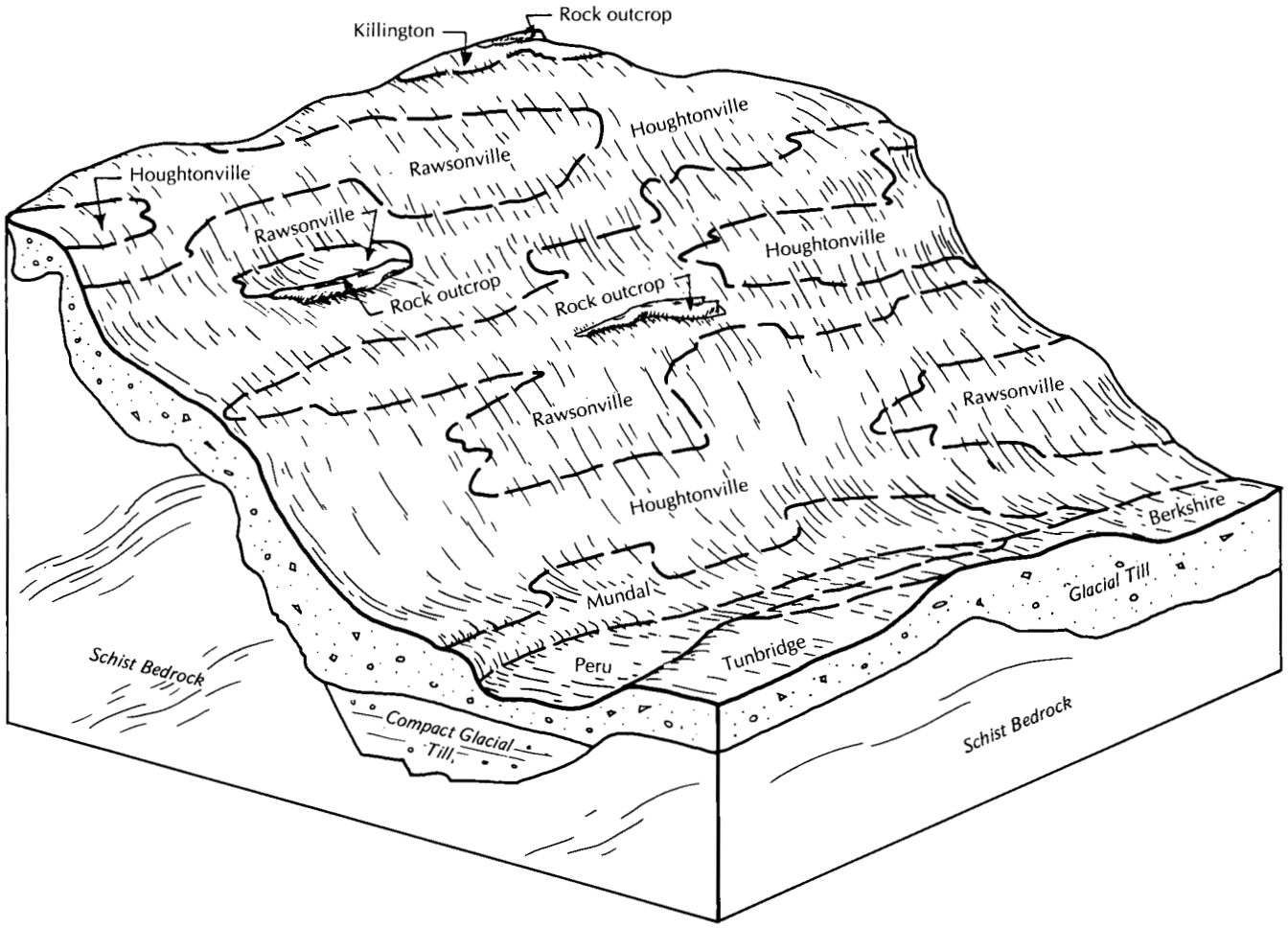

Figure 8.—Typical pattern of soils and underlying material in the Rawsonville-Houghtonville unit.

percent but range from 3 to 75 percent.

This unit makes up about 29 percent of the survey area. It is about 20 percent Tunbridge soils, 20 percent Berkshire soils, and 15 percent Peru soils. The rest of the unit is minor soils.

The moderately deep Tunbridge soils are well drained. They are on ridges and side slopes of hills and mountains. Typically, the soils have a surface layer of gravelly fine sandy loam and a subsoil of very stony fine sandy loam. Schist bedrock is at a depth of 20 to 40 inches.

The very deep Berkshire soils are well drained. They are on the side slopes and foot slopes of hills and mountains. Typically, the soils have a surface layer, subsoil, and substratum of gravelly fine sandy loam.

The very deep Peru soils are moderately well drained. They are on the broad ridges, side slopes, and foot slopes of hills and mountains. Typically, the soils have a surface layer and subsoil of gravelly fine sandy loam and a substratum of firm, dense gravelly sandy loam. The subsoil and substratum are mottled.

The minor soils are the very deep, well drained Marlow soils on side slopes and foot slopes; the very deep, well drained Houghtonville soils on side slopes and mountaintops; and the very deep, moderately well drained Sunapee soils and poorly drained Lyme soils in depressions and drainageways.

Most of the acreage in this unit is used as woodland consisting of sugar maple, beech, birch and red spruce. Some areas have been cleared and are used for pasture.

The soils in this unit are well suited to trees. Gently sloping to moderately steep areas have few limitations. The slope limits the use of logging equipment in the

steep and very steep areas. The rock outcrop also restricts the use of logging equipment in some areas. Erosion is a hazard on logging roads and skid trails.

The soils in this unit are generally poorly suited to hay and pasture. The main limitations are the rock outcrop and stones on the surface. The slope is a limitation in the moderately steep to very steep areas. Erosion is a hazard. Some areas of gently sloping soils have been cleared of stones and are suited to hay and improved pasture.

The depth to bedrock in the Tunbridge soils is the main limitation on sites for sewage disposal systems, dwellings with basements, and local roads and streets. The slope also is a limitation in the the moderately steep to very steep areas. The less sloping areas of the very deep Berkshire soils have few limitations.

Detailed Soil Map Units

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

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

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

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

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Sunapee fine sandy loam, 3 to 8 percent slopes, very stony, is a phase of the Sunapee series.

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

A *soil complex* consists of two or more soils, or one or more soils and a miscellaneous area, in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Lyman-Tunbridge-Rock outcrop complex, 15 to 35 percent slopes, very stony, is an example.

A *soil association* is made up of two or more geographically associated soils that are shown as one unit on the maps. Because of present or anticipated soil uses in the survey area, it was not considered practical or necessary to map the soils separately. The pattern and relative proportion of the soils are somewhat similar. Tunbridge-Berkshire association, very steep, very stony, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in the mapped areas are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Georgia and Amenia soils, 8 to 15 percent slopes, is an undifferentiated group in this survey area.

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

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

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

Soil Descriptions

1B—Marlow fine sandy loam, 3 to 8 percent slopes. This soil is well drained and gently sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on the top and sides of knolls,

hills, and ridges. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark brown fine sandy loam

Subsoil:
8 to 13 inches, dark yellowish brown fine sandy loam
13 to 23 inches, light olive brown fine sandy loam

Substratum:
23 to 60 inches, very firm, olive gravelly fine sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil. In Sherburne and Danby, some areas include soils that have a subsoil and substratum of silt loam.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the moderately well drained Peru and Sunapee soils, and the poorly drained and somewhat poorly drained Brayton soils. Also included, throughout the unit, are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface. Berkshire soils are in landscape positions similar to those of the Marlow soil. Peru, Brayton, and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 14 to 35 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 2.0 to 3.5 feet in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture. Some areas are used as cropland or woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The moderately slow or slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. The seasonal high water table also is a limitation. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Increasing the size of the absorption field helps to overcome the restricted permeability.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIe.

1C—Marlow fine sandy loam, 8 to 15 percent slopes. This soil is well drained and strongly sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches, dark brown fine sandy loam

Subsoil:
7 to 13 inches, dark yellowish brown fine sandy loam
13 to 23 inches, light olive brown fine sandy loam

Substratum:
23 to 60 inches, very firm, olive gravelly fine sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil. In Sherburne and Danby, some areas include soils that have a subsoil and substratum of silt loam.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the moderately well drained Peru and Sunapee soils, and the poorly drained and somewhat poorly drained Brayton soils. Also included are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface. Berkshire

soils are in landscape positions similar to those of the Marlow soil. Peru, Brayton, and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 14 to 35 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 2.0 to 3.5 feet in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture. Some areas are used as cropland or woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The moderately slow or slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. The seasonal high water table and the slope also are limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table and the slope also are limitations. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

1D—Marlow fine sandy loam, 15 to 25 percent slopes. This soil is well drained and moderately steep. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, dark brown fine sandy loam

Subsoil:
6 to 13 inches, dark yellowish brown fine sandy loam
13 to 23 inches, light olive brown fine sandy loam

Substratum:
23 to 60 inches, very firm, olive gravelly fine sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil. In Sherburne and Danby, some areas include soils that have a subsoil and substratum of silt loam.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the moderately well drained Peru and Sunapee soils, and the poorly drained and somewhat poorly drained Brayton soils. Also included are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface. Berkshire soils are in landscape positions similar to those of the Marlow soil. Peru, Brayton, and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 14 to 35 inches
Depth to bedrock: More than 60 inches

Water table: Perched at a depth of 2.0 to 3.5 feet in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for hay or pasture, and some are used as cropland.

This unit is suited to hay and pasture. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The slope severely limits the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Erosion is a hazard. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope.

The slope and the seasonal high water table limit the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the moderately slow or slow permeability in the substratum. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The seasonal high water table and the potential for frost action also are limitations. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is IVe.

2C—Marlow fine sandy loam, 8 to 15 percent slopes, very stony. This soil is well drained and strongly sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than percent 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, dark brown fine sandy loam

Subsoil:
4 to 13 inches, dark yellowish brown fine sandy loam
13 to 23 inches, light olive brown fine sandy loam

Substratum:
23 to 60 inches, very firm, olive gravelly fine sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil. Some areas in Sherburne and Danby include soils that have a subsoil and substratum of silt loam.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the moderately well drained Peru and Sunapee soils, and the poorly drained and somewhat poorly drained Brayton soils. Also included are areas where stones 1 to 5 feet apart cover more than 3 percent of the surface. Berkshire soils are in landscape positions similar to those of the Marlow soil. Peru, Brayton, and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 14 to 35 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 2.0 to 3.5 feet in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used as unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The moderately slow or slow permeability in the substratum and the slope limit the use of this unit as a site for septic tank absorption fields. The seasonal high water table also is a limitation. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIs.

2D—Marlow fine sandy loam, 15 to 35 percent slopes, very stony. This soil is well drained and is moderately steep and steep. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 300 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, dark brown fine sandy loam

Subsoil:
4 to 13 inches, dark yellowish brown fine sandy loam
13 to 23 inches, light olive brown fine sandy loam

Substratum:
23 to 60 inches, very firm, olive gravelly fine sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil. Some areas in Sherburne and Danby include soils that have a subsoil and substratum of silt loam.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the moderately well drained Peru and Sunapee soils, and the poorly drained and somewhat poorly drained Brayton soils. Also included are areas where stones 1 to 5 feet apart cover more than 3 percent of the surface. Berkshire soils are in landscape positions similar to those of the Marlow soil. Peru, Brayton, and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 14 to 35 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 2.0 to 3.5 feet in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used as unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. The seasonal high water table also is a limitation. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the moderately slow or slow permeability in the substratum. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The seasonal high water table and the potential for frost action also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

2E—Marlow fine sandy loam, 35 to 60 percent slopes, very stony. This soil is well drained and steep. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, dark brown fine sandy loam

Subsoil:
4 to 13 inches, dark yellowish brown fine sandy loam
13 to 23 inches, light olive brown fine sandy loam

Substratum:
23 to 60 inches, very firm, olive gravelly fine sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil. Some areas in Sherburne and Danby include soils that have a subsoil and substratum of silt loam.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the moderately well drained Peru and Sunapee soils, and the poorly drained and somewhat poorly drained Brayton soils. Also included are areas where stones 1 to 5 feet apart cover more than 3 percent of the surface. Berkshire soils are in landscape positions similar to those of the Marlow soil. Peru, Brayton, and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 14 to 35 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 2.0 to 3.5 feet in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to unimproved pasture and

generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stone.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the moderately slow or slow permeability. The seasonal high water table also is a limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The seasonal high water table and the potential for frost action also are limitations. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIs.

3B—Peru gravelly fine sandy loam, 3 to 8 percent slopes. This soil is moderately well drained and gently sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on side slopes of mounds, knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, dark brown gravelly fine sandy loam
7 to 17 inches, mottled, dark yellowish brown gravelly fine sandy loam

Substratum:
17 to 29 inches, mottled, firm, light olive brown gravelly sandy loam
29 to 60 inches, mottled, very firm, light olive brown gravelly sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils, the somewhat poorly drained and poorly drained Brayton soils, and the moderately well drained Sunapee soils. Also included are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface. Marlow soils are on knolls and in convex areas, Brayton soils are in depressions and drainageways, and Sunapee soils are in landscape positions similar to those of the Peru soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 16 to 33 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: High

Most areas of this unit are used for cropland or hay and pasture. Some areas are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and

legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept surface runoff help to control erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Windthrow is a hazard. The firm substratum and the seasonal high water table restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and the moderately slow or slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIw.

3C—Peru gravelly fine sandy loam, 8 to 15 percent slopes. This soil is moderately well drained and strongly sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on side slopes of mounds, knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, dark brown gravelly fine sandy loam
7 to 17 inches, mottled, dark yellowish brown gravelly fine sandy loam

Substratum:
17 to 29 inches, mottled, firm, light olive brown gravelly sandy loam
29 to 60 inches, mottled, very firm, light olive brown gravelly sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils, the somewhat poorly drained and poorly drained Brayton soils, and the moderately well drained Sunapee soils. Also included are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface. Marlow soils are on knolls and in convex areas, Brayton soils are in depressions and drainageways, and Sunapee soils are in landscape positions similar to those of the Peru soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 16 to 33 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: High

Most areas of this unit are used for cropland or hay and pasture. Some areas are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept surface runoff help to control erosion. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Windthrow is a hazard. The firm substratum and the seasonal high water table restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope

also is a limitation. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and the moderately slow or slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Installing diversions to intercept water from the higher areas helps to overcome the wetness. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table and the slope also are limitations. Constructing the roads on fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

4B—Peru gravelly fine sandy loam, 3 to 8 percent slopes, very stony. This soil is moderately well drained and gently sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on side slopes of mounds, knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown gravelly fine sandy loam

Subsoil:
4 to 7 inches, dark brown gravelly fine sandy loam
7 to 17 inches, mottled, dark yellowish brown gravelly fine sandy loam

Substratum:
17 to 29 inches, mottled, firm, light olive brown gravelly sandy loam
29 to 60 inches, mottled, very firm, light olive brown gravelly sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils, the somewhat poorly drained and poorly drained Brayton soils, and the moderately well drained Sunapee soils. Also included are areas where stones 1 to 5 feet apart cover more than 3 percent of the surface. Marlow soils are on knolls and in convex areas, Brayton soils are in depressions and drainageways, and Sunapee soils are in landscape positions similar to those of the Peru soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 16 to 33 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some areas are used as unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay or improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of stones, the unit is well suited to cultivation. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Windthrow is a hazard. The firm substratum and the seasonal high water table restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging

during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and the moderately slow or slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is VIs.

4C—Peru gravelly fine sandy loam, 8 to 15 percent slopes, very stony. This soil is moderately well drained and gently sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on side slopes of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 200 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown gravelly fine sandy loam

Subsoil:
3 to 7 inches, dark brown gravelly fine sandy loam
7 to 17 inches, mottled, dark yellowish brown gravelly fine sandy loam

Substratum:
17 to 29 inches, mottled, firm, light olive brown gravelly sandy loam
29 to 60 inches, mottled, very firm, light olive brown gravelly sandy loam

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils, the somewhat poorly drained and poorly drained Brayton soils, and the moderately well drained Sunapee soils. Also included are areas where stones 1 to 5 feet apart cover more than 3 percent of the surface. Marlow soils are on knolls and in convex areas, Brayton soils are in depressions and drainageways, and Sunapee soils are in landscape positions similar to those of the Peru soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 16 to 33 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some areas are used as unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Windthrow is a hazard. The firm substratum and the seasonal high water table restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains, sealing foundations, and land grading that diverts surface water

away from the dwellings help to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and the moderately slow or slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action limits the use of this unit as site for local roads and streets. The seasonal high water table and the slope also are limitations. Constructing the roads on fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIs.

4D—Peru gravelly fine sandy loam, 15 to 25 percent slopes, very stony. This soil is moderately well drained and gently sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on side slopes of hills and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown gravelly fine sandy loam

Subsoil:
2 to 7 inches, dark brown gravelly fine sandy loam
7 to 17 inches, mottled, dark yellowish brown gravelly fine sandy loam

Substratum:
17 to 29 inches, mottled, firm, light olive brown gravelly sandy loam
29 to 60 inches, mottled, very firm, light olive brown gravelly sandy loam.

Some areas of this unit include soils that have an olive gray or dark olive gray subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils, the somewhat poorly drained and poorly drained Brayton soils, and the moderately well drained Sunapee soils. Also included are areas where stones 1 to 5 feet apart cover more than 3 percent of the surface. Marlow soils are on knolls and in convex areas, Brayton soils are in depressions and drainageways, and Sunapee soils are in landscape positions similar to those of the Peru soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid to moderately acid
Depth to dense basal till: 16 to 33 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some areas are used as unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, the stones on the surface, and the seasonal high water table. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. The firm substratum and the seasonal high water table restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Included areas where stones on

the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope and the seasonal high water table limit the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope, the seasonal high water table, and the moderately slow or slow permeability in the substratum. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

6A—Cabot gravelly fine sandy loam, 0 to 8 percent slopes, very stony. This soil is poorly drained and somewhat poorly drained and is nearly level to gently sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is in depressions and drainageways and on toe slopes and foot slopes of swells, knolls, and hills. Areas are irregular in shape and range from 3 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark gray gravelly fine sandy loam

Subsoil:
6 to 12 inches, mottled, grayish brown fine sandy loam

Substratum:
12 to 60 inches, mottled, very firm, olive gray gravelly fine sandy loam

Included in this unit in mapping are small areas of the poorly drained Lyme soils, the very poorly drained Peacham soils, the moderately well drained Peru soils, and the somewhat poorly drained and poorly drained Brayton soils. Also included are areas where stones 1 to 5 feet apart cover more than 3 percent of the surface. Lyme and Peacham soils are in landscape positions similar to those of the Cabot soil, and Peru and Brayton soils are on knolls and in convex areas. Included soils make up 15 to 25 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: Very low to moderate
Soil reaction: Strongly acid to neutral in the surface layer and subsoil and moderately acid to neutral in the substratum
Depth to dense basal till: 12 to 24 inches
Depth to bedrock: More than 60 inches
Water table: Perched within a depth of 2 feet in late fall, in winter, and in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some areas are used as pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. The seasonal high water table is a limitation. Wetness limits the choice of pasture plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop

residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for red maple and sugar maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table and the firm substratum restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the slow or very slow permeability. Onsite investigation is needed to identify included areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is VIs.

7C—Brayton loam, 8 to 15 percent slopes, very stony. This soil is somewhat poorly drained and poorly drained and is strongly sloping. It is shallow or moderately deep to dense basal till and very deep to bedrock. It is on toe slopes and foot slopes of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches, black loam

Subsoil:
7 to 15 inches, mottled, olive gray gravelly sandy loam

Substratum:
15 to 60 inches, mottled, very firm, olive gray gravelly sandy loam

Included in this unit in mapping are small areas of the poorly drained and somewhat poorly drained Cabot soils, the poorly drained Lyme soils, and the moderately well drained Peru soils. Also included are areas where surface stones 1 to 5 feet apart cover more than 3 percent of the surface. Cabot soils are in depressions and drainageways, Lyme soils are in landscape positions similar to those of the Brayton soil, and Peru soils are on knolls and in convex areas. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer, strongly acid to slightly acid in the subsoil, and moderately acid to neutral in the substratum
Depth to dense basal till: 10 to 25 inches
Depth to bedrock: More than 60 inches
Water table: Perched within a depth of 1 foot in late fall, in winter, and in spring
Root zone: Typically extends to the very firm substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some are used as pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the seasonal high water table is a limitation. Some areas are used as unimproved pasture. The wetness caused by the seasonal high water table limits the choice of pasture plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour

help to control erosion. Diversion ditches help to control runoff and erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for red maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table and the firm substratum restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. The slope also is a limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the slow or very slow permeability in the substratum. The slope also is a limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. The slope also is a limitation. Constructing the roads on fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIIs.

9—Pits-Dumps complex. This unit consists of open slate and marble quarries and large mounds of waste rock and soil material (fig. 9). The quarries are very deep and have vertical sides, and the mounds have steep and very steep side slopes. Areas are irregular in shape and range from 3 to 100 acres in size.

Onsite investigation is needed to determine the suitability of this unit for any use.

This unit is not assigned a capability subclass.

11C—Taconic-Hubbardton complex, 8 to 25 percent slopes, very rocky. This unit consists of strongly sloping and moderately steep soils. It is on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 1,500 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent shallow, somewhat excessively drained Taconic soil; 35 percent very shallow, excessively drained Hubbardton soil; and 10 percent other soils. Rock outcrops make up about 5 percent of the unit. The Hubbardton soil is close to the rock outcrops, and the Taconic soil is on the flanks of the outcrops and in troughs between the outcrops. The areas of Taconic and Hubbardton soils are so intermingled that separating them in mapping was not practical.

Typically, the Taconic soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown channery silt loam

Subsoil:
3 to 14 inches, brown and olive brown very channery silt loam

Substratum:
14 to 18 inches, light olive brown very channery silt loam

Bedrock:
18 inches, slightly weathered slate

Typically, the Hubbardton soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown very flaggy silt loam

Subsoil:
3 to 5 inches, dark yellowish brown very flaggy silt loam

Bedrock:
5 inches, slightly weathered slate

Some areas of this unit include soils that have a black or very dark gray subsoil. Some areas have less than 35 percent rock fragments throughout the soil.

Figure 9.—An abandoned quarry and waste slate piles typical of the Pits-Dumps complex.

Included in this unit in mapping are small areas of the well drained, moderately deep Macomber soils in troughs between rock outcrops. Included soils and rock outcrop make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Taconic—very low or low; Hubbardton—very low
Soil reaction: Very strongly acid or strongly acid throughout the profile
Depth to bedrock: Taconic—10 to 20 inches; Hubbardton—2 to 10 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. If cleared of stones, the unit is poorly suited to these uses. Some areas are used as unimproved pasture. The use of equipment is limited by the rock outcrops, the slope, the stones on the surface, and the depth to bedrock. The unit is droughty.

Crop production is generally not practical on this unit because of the slope, the depth to bedrock, the rock outcrops, and the stones on the surface.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion, seedling mortality, and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid

trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Taconic and Hubbardton soils, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is poorly suited to dwellings with basements because of the depth to bedrock and the slope. If this unit is used for dwellings with basements, blasting is necessary.

This unit is generally unsuitable as a site for septic tank absorption fields because of the depth to bedrock and the slope.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope and blasting help to overcome the slope.

The capability subclass is VIIs.

12F—Taconic-Hubbardton-Macomber complex, 25 to 80 percent, slopes, very rocky. This unit consists of steep and very steep soils. It is on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 1,500 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 35 percent shallow, somewhat excessively drained Taconic soil; 30 percent very shallow, excessively drained Hubbardton soil; 25 percent moderately deep, well drained Macomber soil; and 5 percent other soils. Rock outcrops make up about 5 percent of the unit. The Hubbardton soil is close to the rock outcrops, the Taconic soil is on the flanks of the outcrops, and the Macomber soil is in troughs between the outcrops. The areas of Taconic, Hubbardton, and Macomber soils are so intermingled that separating them in mapping was not practical.

Typically, the Taconic soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown channery silt loam

Subsoil:
3 to 14 inches, brown and olive brown very channery silt loam

Substratum:
14 to 18 inches, light olive brown very channery silt loam

Bedrock:
18 inches, slightly weathered slate

Typically, the Hubbardton soil is covered by a thin layer of slightly decomposed leaves needles, and twigs. Under that layer, the typical sequence, depth, composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown very flaggy silt loam

Subsoil:
3 to 5 inches, dark yellowish brown very flaggy silt loam

Bedrock:
5 inches, slightly weathered slate

Typically, the Macomber soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles and twigs. Under that layer, the typical sequence, depth, and composition of the layers in the soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown channery silt loam

Subsoil:
5 to 30 inches, dark yellowish brown very channery silt loam

Substratum:
30 to 36 inches, olive brown very channery silt loam

Bedrock:
36 inches, schist

Some areas of this unit include soils that have a black or very dark gray subsoil. Some areas have less than 35 percent rock fragments throughout the soil.

Included in this unit in mapping are small areas of the well drained, very deep Dutchess soils. These soils are in troughs between rock outcrops and on the lower side slopes of hills and ridges. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Taconic and Hubbardton—moderate or moderately rapid; Macomber—moderate
Available water capacity: Taconic—very low or low; Hubbardton—very low; Macomber—moderate
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: Taconic—10 to 20 inches; Hubbardton—2 to 10 inches; Macomber—20 to 40 inches;
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are developed.

This unit is poorly suited to hay and improved pasture. Some areas are used as unimproved pasture. The use of equipment is limited by the rock outcrops, the slope, the stones on the surface, and the depth to bedrock. The unit is droughty.

This unit is unsuited to cultivated crops because of the slope, the rock outcrops, the stones on the surface, and the depth to bedrock.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion, seedling mortality, and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Taconic and Hubbardton soils, causes a high rate of seedling survival. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the depth to bedrock and the slope. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope and blasting help to overcome the slope.

The capability subclass is VIIs.

13B—Hinckley gravelly loamy fine sand, 0 to 8 percent slopes. This soil is very deep, excessively drained, and nearly level and gently sloping. It is on long, narrow terraces and in broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 150 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows:

Surface layer:
0 to 6 inches, dark brown gravelly loamy fine sand

Subsoil:
6 to 23 inches, dark yellowish brown gravelly loamy fine sand

Substratum:
23 to 60 inches, dark grayish brown very gravelly coarse sand

Some areas of this unit include soils that have less than 35 percent rock fragments throughout. Some areas include soils that have a redder subsoil.

Included in this unit in mapping are small areas of the well drained Paxton soils, the moderately well drained and somewhat poorly drained Sudbury soils, and the excessively drained Windsor soils. Paxton soils are near the edges of the unit, Sudbury soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hinckley soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid in the subsoil and very rapid in the substratum

Available water capacity: Very low
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of at least 60 inches
Potential for frost action: Low

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland or are developed.

This unit is well suited to hay and pasture. The very low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the very low available water capacity.

This unit is suited to cultivated crops, especially drought-tolerant crops. The very low available water capacity, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. There is a hazard of cutbanks caving.

A poor filtering capacity limits this soil as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated, causing a hazard of contamination to ground water. Contamination can be detected by periodic testing of the ground water.

This unit has few limitations as a site for local roads and streets.

The capability subclass is IIIs.

13C—Hinckley gravelly loamy fine sand, 8 to 15 percent slopes. This soil is very deep, excessively drained, and strongly sloping. It is on long, narrow terraces, knolls, and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, dark brown gravelly loamy fine sand

Subsoil:
6 to 23 inches, dark yellowish brown gravelly loamy fine sand

Substratum:
23 to 60 inches, dark grayish brown very gravelly coarse sand

Some areas of this unit include soils that have less than 35 percent rock fragments throughout. Some areas include soils that have a redder subsoil.

Included in this unit in mapping are small areas of the well drained Paxton soils, the moderately well drained and somewhat poorly drained Sudbury soils, and the excessively drained Windsor soils. Paxton soils are near the edges of the unit, Sudbury soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hinckley soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid in the subsoil and very rapid in the substratum
Available water capacity: Very low
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of at least 60 inches
Potential for frost action: Low

Most areas of this unit is used for cropland and hay and pasture. Some areas are developed, and other areas are used as woodland.

This unit is suited to hay and pasture. The very low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the very low available water capacity.

This unit is poorly suited to cultivated crops. The very

low available water capacity, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and tillage across the slope or on the contour help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low available water capacity, is detrimental to seedling survival. The rate of seedling mortality can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. There is a hazard of cutbanks caving.

A poor filtering capacity in the soil limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Effluent moves through the soil readily but often is not adequately treated, causing a hazard of contamination to ground water. Contamination can be detected by periodic testing of the ground water. Installing the effluent lines on the contour helps to overcome the slope.

The slope limits the use of this unit as a site for local roads and streets. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome this limitation.

The capability subclass is IVs.

13D—Hinckley gravelly loamy fine sand, 15 to 25 percent slopes. This soil is very deep, excessively drained, and moderately steep. It is on the sides of long, narrow terraces, knolls, and hills that are higher than the adjacent flood plains and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, dark brown gravelly loamy fine sand

Subsoil:
5 to 23 inches, dark yellowish brown gravelly loamy fine sand

Substratum:
23 to 60 inches, dark grayish brown very gravelly coarse sand

Some areas of this unit include soils that have less than 35 percent rock fragments throughout. Some areas include soils that have a redder subsoil.

Included in this unit in mapping are small areas of the well drained Paxton soils, the moderately well drained and somewhat poorly drained Sudbury soils, and the excessively drained Windsor soils. Paxton soils are near the edges of the unit, Sudbury soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hinckley soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid in the subsoil and very rapid in the substratum
Available water capacity: Very low
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of at least 60 inches
Potential for frost action: Low

Most areas of this unit are used as woodland. Other areas are used for hay or pasture or are developed.

This unit is poorly suited to hay and pasture. The very low available water capacity, low natural fertility, and the slope are the main limitations. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and to control erosion. Planting drought-tolerant species helps to overcome the very low available water capacity. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The very low available water capacity and the slope severely limit the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the

equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. There is a hazard of cutbanks caving.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and a poor filtering capacity in the soil. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

13E—Hinckley gravelly loamy fine sand, 25 to 40 percent slopes. This soil is very deep, excessively drained, and steep. It is on the sides of long, narrow terraces and hills that are higher than the adjacent flood plains and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, dark brown gravelly loamy fine sand

Subsoil:
4 to 23 inches, dark yellowish brown gravelly loamy fine sand

Substratum:
23 to 60 inches, dark grayish brown very gravelly coarse sand

Some areas of this unit include soils that have less than 35 percent rock fragments throughout. Some areas include soils that have a redder subsoil.

Included in this unit in mapping are small areas of the well drained Paxton soils, the moderately well drained and somewhat poorly drained Sudbury soils, and the excessively drained Windsor soils. Paxton soils are near the edges of the unit, Sudbury soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hinckley soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid in the subsoil and very rapid in the substratum
Available water capacity: Very low
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of at least 60 inches
Potential for frost action: Low

Most areas of this unit are used as woodland. Other areas are used for unimproved pasture or are developed.

This unit is poorly suited to pasture and generally unsuited to hay. Erosion is a hazard, and the very low available water capacity, the slope, and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and to control erosion. Planting drought-tolerant species helps to overcome the very low available water capacity. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which may result from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and a poor filtering capacity in the soil. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIs.

14A—Sudbury fine sandy loam, 0 to 3 percent slopes. This soil is very deep, moderately well drained and somewhat poorly drained, and nearly level. It is on long, narrow terraces, and broad areas that are slightly higher than the adjacent flood plain and at the base hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 50 acres in size.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown fine sandy loam

Subsoil:
3 to 9 inches, dark brown fine sandy loam
9 to 19 inches, mottled, light olive brown sandy loam
19 to 27 inches, mottled, light olive brown gravelly sandy loam

Substratum:
27 to 41 inches, mottled, light olive brown very gravelly coarse sand
41 to 60 inches, light olive brown very gravelly coarse sand

Included in this unit in mapping are small areas of the excessively drained Hinckley soils and the poorly drained Walpole soils and a few areas of soils that are subject to flooding. Hinckley soils are on knolls and mounds, Walpole soils are in depressions and drainageways, and the soils that are subject to flooding are on low terraces near streams. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately rapid in the subsoil and rapid in the substratum
Available water capacity: Moderate
Soil reaction: Strongly acid to slightly acid in the surface and subsoil and neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in winter and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used for cropland or pasture or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIw.

14B—Sudbury fine sandy loam, 3 to 8 percent slopes. This soil is very deep, moderately well drained and somewhat poorly drained, and gently sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 75 acres in size.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown fine sandy loam

Subsoil:
3 to 9 inches, dark brown fine sandy loam
9 to 19 inches, mottled, light olive brown sandy loam
19 to 27 inches, mottled, light olive brown gravelly sandy loam

Substratum:
27 to 41 inches, mottled, light olive brown very gravelly coarse sand
41 to 60 inches, light olive brown very gravelly coarse sand

Included in this unit in mapping are small areas of the excessively drained Hinckley soils and the poorly drained Walpole soils and a few areas of soils that are subject to flooding. Hinckley soils are on knolls and mounds, Walpole soils are in depressions and drainageways, and the soils that are subject to flooding are on low terraces near streams. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately rapid in the subsoil and rapid in the substratum
Available water capacity: Moderate
Soil reaction: Strongly acid to slightly acid in the surface and subsoil and neutral in the substratum
Depthto bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in winter and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion.

The potential productivity of this unit is high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and a poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIw.

15A—Walpole fine sandy loam, 0 to 5 percent slopes. This soil is very deep, poorly drained, and nearly level to gently sloping. It is in depressions on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 3 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, very dark gray fine sandy loam

Subsoil:
9 to 20 inches, mottled, dark brown fine sandy loam

Substratum:
20 to 26 inches, mottled, olive brown fine sand
26 to 60 inches, mottled, olive fine sand

Some areas of this unit include soils that have a surface layer and subsoil of loamy sand or sand. In some areas, the subsoil is neutral and the substratum ranges from mildly alkaline to moderately alkaline.

Included in this unit in mapping are small areas of the very poorly drained Adrian and Scarboro soils, the poorly drained Raynham soils, and the moderately well drained and somewhat poorly drained Sudbury soils. Adrian and Scarboro soils are in depressions and drainageways, Sudbury soils are on knolls and in convex areas, and Raynham soils are in landscape positions similar to those of the Walpole soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately rapid in the subsoil and rapid to very rapid in the substratum

Available water capacity: Moderate
Soil reaction: Very strongly acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: Within 1.0 foot of the surface in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for unimproved pasture or woodland.

This unit is suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is poorly suited to cultivated crops if it is not drained. If drained it is suited to cultivation. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and poor filtering capacity. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IVw.

18B—Windsor loamy sand, 3 to 8 percent slopes. This soil is very deep, excessively drained, and gently sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 125 acres in size.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, dark brown loamy sand

Subsoil:
2 to 12 inches, yellowish brown loamy sand
12 to 24 inches, light olive brown sand

Substratum:
24 to 60 inches, light olive brown sand

Some areas of this unit include soils that are slightly acid to mildly alkaline throughout. Some areas include soils that have a surface layer of fine sandy loam and a redder subsoil.

Included in this unit in mapping are small areas of the moderately well drained Deerfield and Ninigret soils and the excessively drained Hinckley soils. Deerfield and Ninigret soils are in depressions and drainageways, and Hinckley soils are in landscape positions similar to those of the Windsor soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid to very rapid
Available water capacity: Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Low

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland or are developed.

This unit is well suited to hay and pasture. The low

available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the low available water capacity.

This unit is suited to cultivated crops, especially drought-tolerant crops. The low available water capacity, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. There is a hazard of cutbanks caving.

A poor filtering capacity in the soil limits this unit use as a site for septic tank absorption fields. Effluent moves through the soil readily, but it often is not adequately treated and can contaminate ground water. Contamination can be detected by periodic testing of the ground water.

This unit has few limitations as a site for local roads and streets.

The capability subclass is IIIs.

18C—Windsor loamy sand, 8 to 15 percent slopes. This soil is very deep, excessively drained, and strongly sloping. It is on long, narrow terraces and knolls and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 100 acres in size.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, dark brown loamy sand

Subsoil:
2 to 12 inches, yellowish brown loamy sand
12 to 24 inches, light olive brown sand

Substratum:
24 to 60 inches, light olive brown sand

Some areas of this unit include soils that are slightly acid to mildly alkaline throughout. Some areas include soils that have a surface layer of fine sandy loam and a redder subsoil.

Included in this unit in mapping are small areas of the moderately well drained Deerfield and Ninigret soils and the excessively drained Hinckley soils. Deerfield and Ninigret soils are in depressions and drainageways, and Hinckley soils are in landscape positions similar to those of the Windsor soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid to very rapid
Available water capacity: Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Low

Most areas of this unit are used for cropland and hay and pasture. Some areas are developed, and other areas are used as woodland.

This unit is well suited to hay and pasture. The low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the low available water capacity.

This unit is suited to cultivated crops, especially drought-tolerant crops. The low available water capacity, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content.

Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. There is a hazard of cutbanks caving.

A poor filtering capacity in the soil limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination can be detected by periodic testing of the ground water. Installing the effluent lines on the contour helps to overcome the slope.

The slope limits the use of this unit as a site for local roads and streets. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome this limitation.

The capability subclass is IVs.

18D—Windsor loamy sand, 15 to 25 percent slopes. This soil is very deep, excessively drained, and moderately steep. It is on the sides of long, narrow terraces and hills that are higher than the adjacent flood plains and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 50 acres in size.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, dark brown loamy sand

Subsoil:
2 to 12 inches, yellowish brown loamy sand
12 to 24 inches, light olive brown sand

Substratum:
24 to 60 inches, light olive brown sand

Some areas of this unit include soils that are slightly acid to mildly alkaline throughout. Some areas include soils that have a surface layer of fine sandy loam and a redder subsoil.

Included in this unit in mapping are small areas of the moderately well drained Deerfield and Ninigret soils and the excessively drained Hinckley soils. Deerfield and Ninigret soils are in drainageways and on toe slopes, and Hinckley soils are in landscape positions similar to those of the Windsor soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Rapid to very rapid
Available water capacity: Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Low

Most areas of this unit are used as woodland. Other areas are used for hay or pasture or are developed.

This unit is suited to hay and pasture. The low available water capacity, low natural fertility, and the slope and are the main limitations. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Planting drought-tolerant species helps to overcome the low available water capacity. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the low available water capacity and the slope. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality and erosion are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting

seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. There is a hazard of cutbanks caving.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and a poor filtering capacity in the soil. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

18E—Windsor loamy sand, 25 to 60 percent slopes. This soil is very deep, excessively drained, and steep. It is on the sides of long, narrow terraces and hills that are higher than the adjacent flood plains and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 50 acres in size.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, dark brown loamy sand

Subsoil:
2 to 12 inches, yellowish brown loamy sand
12 to 24 inches, light olive brown sand

Substratum:
24 to 60 inches, light olive brown sand

Some areas of this unit include soils that are slightly acid to mildly alkaline throughout. Some areas include soils that have a surface layer of fine sandy loam and a redder subsoil.

Included in this unit in mapping are small areas of the moderately well drained Deerfield and Ninigret soils and the excessively drained Hinckley soils. Deerfield and Ninigret soils are in drainageways and on toe slopes, and Hinckley soils are in landscape positions similar to those of the Windsor soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Rapid to very rapid
Available water capacity: Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Low

Most areas of this unit are used as woodland. Other areas are used for unimproved pasture or are developed.

This unit is poorly suited to pasture and generally unsuited to hay. Erosion is a hazard, and the low available water capacity, the slope, and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Planting drought-tolerant species helps to overcome the low available water capacity. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite

investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIs.

21—Rippowam fine sandy loam. This soil is very deep, poorly drained, and nearly level. It is on flood plains. The soil is frequently flooded for brief periods in fall, winter, and spring. Areas are long and narrow or irregular in shape and range from 3 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown fine sandy loam

Subsoil:
5 to 15 inches, mottled, grayish brown fine sandy loam
15 to 25 inches, mottled, olive fine sandy loam

Substratum:
25 to 60 inches, light gray, stratified fine sand and sand

Some areas of this unit include soils that have a subsoil of very fine sandy loam.

Included in this unit in mapping are small areas of the very poorly drained and poorly drained Elvers soils, the poorly drained Saco soils, the moderately well drained and somewhat poorly drained Middlebury soils, and the moderately well drained Pawling soils. Elvers and Saco soils are in drainageways and backswamp areas, and Middlebury and Pawling soils are in the slightly higher positions on the flood plains. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to neutral
Depth to bedrock: More than 60 inches
Water table: Within 1.5 feet of the surface in fall, winter, and spring
Root zone: Typically extends to the water table
Potential for frost action: High

Most areas of this unit are used for hay or pasture. Other areas are used for cropland or woodland.

This unit is suited to hay and pasture. Flooding is a hazard, and the seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion caused by floodwater.

This unit is poorly suited to cultivated crops if it is not drained. If drained it is suited. The seasonal high water table is a limitation. Flooding is a hazard. Flooding is of short duration and usually occurs in spring, delaying spring tillage. Land shaping and ditching to provide surface drainage help to dry the unit after flooding. Where suitable outlets are available subsurface drainage can be used to lower the water table. Growing cover crops, including grasses and legumes in the cropping system, and applying a system of conservation tillage that leaves some or all of the crop residue on the surface help to control the erosion caused by floodwater. Maintaining a permanent plant cover on streambanks helps to control streambank erosion.

The potential productivity of this unit is high for red maple and eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table and the flooding. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and the flooding.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding and the seasonal high water table.

This unit is generally unsuitable as a site for septic tank absorption fields because of the flooding, the seasonal high water table, and a poor filtering capacity.

Flooding, the potential for frost action, and the seasonal high water table limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the flooding and the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IVw.

22—Saco mucky silt loam. This soil is very deep, very poorly drained, and nearly level. It is in depressions on flood plains. The soil is frequently flooded for brief periods in fall, winter, and spring. Areas are long and narrow or irregular in shape and range from 3 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 11 inches, very dark gray mucky silt loam

Substratum:
11 to 22 inches, mottled, gray silt loam
22 to 34 inches, gray silt loam
34 to 50 inches, very dark grayish brown and gray silt loam
50 to 60 inches, black very fine sandy loam

Included in this unit in mapping are small areas of the very poorly drained Adrian soils, the poorly drained and very poorly drained Elvers soils, and the poorly drained Limerick soils. Adrian soils are in landscape positions similar to those of the Saco soil, and Elvers and Limerick soils are in the slightly higher positions on the flood plains. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and upper part of the substratum and moderately acid to neutral in the lower part of the substratum
Depth to bedrock: More than 60 inches
Water table: Within 0.5 feet of the surface in fall, winter, spring, and early summer
Root zone: Typically extends to the seasonal high water table
Potential for frost action: High

Most areas of this unit are used as woodland. Other areas are used as unimproved pasture.

This unit is poorly suited to hay and pasture. Flooding is a hazard, and the seasonal high water table is a limitation. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion caused by floodwater.

Crop production is generally not practical on this unit because of the seasonal high water table and the flooding.

The potential productivity of this unit is moderate for red maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table and the flooding. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and the flooding.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding and the seasonal high water table.

This unit is generally unsuitable as a site for septic tank absorption fields because of the flooding and the seasonal high water table.

Flooding, the potential for frost action, and the seasonal high water table limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the flooding and the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is VIw.

23—Adrian muck. This soil is very deep, very poorly drained, and nearly level. It is in bogs and swamps. Ponding is common on this soil in fall, winter, and spring. Areas are irregular in shape and range from 3 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 19 inches, black muck

Substratum:
19 to 60 inches, light brownish gray loamy sand

Some areas of this unit include soils that have an organic surface layer less than 16 inches thick. Some areas include soils that have loam in the substratum.

Included in this unit in mapping are small areas of the poorly drained and somewhat poorly drained Fredon soils, the very poorly drained Pinnebog soils, and the poorly drained Walpole soils. Fredon and Walpole soils

are near the edges of the unit, and Pinnebog soils are in landscape positions similar to those of the Adrian soil but generally are near the center of the unit. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately slow to moderately rapid in the organic material and rapid and very rapid in the substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral throughout the profile
Depth to bedrock: More than 60 inches
Water table: Within 1 foot of the surface or above the surface in fall, winter, and spring
Root zone: Typically is restricted to the surface layer by the apparent water table
Potential for frost action: High

Most areas of this unit are swamps and bogs. Some areas are used as woodland.

This unit is poorly suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

Crop production is generally not practical on this unit because of the seasonal high water table. Outlets for drainage are generally not available.

The potential productivity of this unit is moderate for red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and ponding.

This unit is generally unsuitable as a site for dwellings with basements because of ponding and subsidence of the organic layers.

This unit is generally unsuitable as a site for septic tank absorption fields. Ponding and subsidence of the organic layers are the major limitations.

Subsidence in the organic layers, ponding, and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material, installing drainage systems, and providing suitable base material help to overcome these limitations.

The capability subclass is Vw.

24—Pinnebog muck. This soil is very deep, very poorly drained, and nearly level. It is in bogs and swamps (fig. 10). Ponding is common on this soil in late fall, in winter, in spring, and in early summer. Areas are irregular in shape and range from 3 to 1,500 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

0 to 13 inches, black muck
13 to 35 inches, very dark gray, black, and dark reddish brown muck
35 to 60 inches, black, reddish brown, and dark reddish brown mucky peat

Included in this unit in mapping are small areas of the very poorly drained Adrian and Linwood soils. These soils are near the edges of the bogs and swamps. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate to moderately rapid
Available water capacity: High
Soil reaction: Moderately acid to mildly alkaline throughout the profile
Depth to bedrock: More than 60 inches
Water table: Within 1 foot of the surface or above the surface in fall, winter, spring, and early summer
Root zone: Typically is restricted to the upper 1 foot of the soil by the apparent water table
Potential for frost action: High

Most areas of this unit are swamps and bogs. Some areas are used as woodland.

This unit is poorly suited to hay and pasture. The seasonal high water table is a limitation. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion caused by floodwater.

Crop production is generally not practical on this unit because of the seasonal high water table.

The potential productivity of this unit is moderate for

Figure 10.—The Claredon River meanders through Pinnebog soils in the Tinmouth Channel.

red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and the flooding.

This unit is generally unsuitable as a site for dwellings with basements because of ponding, low strength, and subsidence.

This unit is generally unsuitable as a site for septic tank absorption fields. Ponding and subsidence of the organic layers are the major limitations.

Subsidence of the organic layers, ponding, and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material, installing drainage systems and providing suitable base material helps to overcome these limitations.

The capability subclass is Vw.

25A—Belgrade silt loam, 0 to 3 percent slopes. This soil is very deep, moderately well drained, and nearly level. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 18 inches, yellowish brown silt loam
8 to 32 inches, mottled, yellowish brown silt loam

Substratum:
32 to 60 inches, mottled, stratified yellowish brown, grayish brown, and reddish brown silt loam

Some areas of this unit include soils that have a substratum of fine sandy loam.

Included in this unit in mapping are small areas of the well drained Hartland soils and the poorly drained Raynham soils. Also included, in landscape positions similar to those of the Belgrade soil, are soils that are very fine sand in the subsoil and substratum. Hartland soils are on knolls and in convex areas, and Raynham soils are in depressions and drainageways. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow to moderately rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to neutral in the surface layer and subsoil and slightly acid to neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for hay or pasture and cultivated cropland. A small acreage is wooded. Other areas are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and the slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIw.

25B—Belgrade silt loam, 3 to 8 percent slopes. This soil is very deep, moderately well drained, and gently sloping. It is on knolls, long, narrow terraces, and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 18 inches, yellowish brown silt loam
18 to 32 inches, mottled, yellowish brown silt loam

Substratum:
32 to 60 inches, mottled, stratified yellowish brown, grayish brown, and reddish brown silt loam

Some areas of this unit include soils that have a substratum of fine sandy loam.

Included in this unit in mapping are small areas of the well drained Hartland soils and the poorly drained Raynham soils. Also included, in landscape positions similar to those of the Belgrade soil, are soils that are very fine sand in the subsoil and substratum. Hartland soils are on knolls and in convex areas, and Raynham soils are in depressions and drainageways. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow to moderately rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to neutral in the surface

layer and subsoil and slightly acid to neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for hay or pasture and cultivated cropland. A small acreage is wooded. Other areas are developed.

This soil is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and the slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIe.

25C—Belgrade silt loam, 8 to 15 percent slopes. This soil is very deep, moderately well drained, and strongly sloping. It is on dissected terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 18 inches, yellowish brown silt loam
18 to 32 inches, mottled, yellowish brown silt loam

Substratum:
32 to 60 inches, mottled, stratified yellowish brown, grayish brown, and reddish brown silt loam

Some areas of this unit include soils that have a substratum of fine sandy loam.

Included in this unit in mapping are small areas of the well drained Hartland soils and the poorly drained Raynham soils. Also included, in landscape positions similar to those of the Belgrade soil, are soils that are very fine sand in the subsoil and substratum. The Hartland soils are on knolls and in convex areas, the Raynham soils are in depressions and drainageways. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow to moderately rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to neutral in the surface layer and subsoil and slightly acid to neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for hay or pasture. Some areas are used for cultivated crops or woodland, and some areas are developed.

This unit is well suited to hay and pasture. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion.

This unit is suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff also help

to control erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and the moderately slow or slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table and the slope also are limitations. Constructing the roads on fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

26A—Raynham silt loam, 0 to 4 percent slopes. This soil is very deep, poorly drained, and nearly level and gently sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 3 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam

Subsoil:
9 to 22 inches, mottled, olive silt loam

Substratum:
22 to 60 inches, mottled, firm, olive gray silt

Included in this unit in mapping are small areas of the moderately well drained Belgrade soils, the very poorly drained Birdsall soils, and the poorly drained Canandaigua and Walpole soils. Belgrade soils are on swells, Birdsall and Canandaigua soils are in depressions and drainageways, and Walpole soils are in landscape positions similar to those of the Raynham soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately slow in the subsoil and slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and subsoil and moderately acid to mildly alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 0.5 foot to 2.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

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

This unit is suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is poorly suited to cultivated crops if it is not drained. If drained it is suited. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is moderate for red maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by

Figure 11.—An area of Udifluvents and Fluvaquents.

the wetness associated with the seasonal high water table.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IVw.

28—Udifluvents and Fluvaquents, nearly level. These very deep, nearly level soils formed in recently deposited alluvial material. They are near perennial streams and rivers and are frequently flooded (fig. 11). The Udifluvents are moderately well drained to excessively drained, and the Fluvaquents are poorly drained or somewhat poorly drained. Areas typically are long and narrow and range from 4 to 40 acres in size.

The total acreage of this unit is about 45 percent Udifluvents, 45 percent Fluvaquents, and 10 percent other soils. Some areas are mainly Udifluvents, some

are mainly Fluvaquents, and some consist of both. The use and management of these soils are so similar that separating them in mapping was not necessary.

Important soil properties—

Permeability: Very rapid to moderately slow
Available water capacity: Very low to high
Soil reaction: Strongly acid to neutral throughout the profile
Depth to bedrock: More than 60 inches
Depth to the water table: 0.5 foot to 3.0 feet in fall, winter, and spring
Root zone: Typically extends to the seasonal high water table
Potential for frost action: Low to high

Included in this unit in mapping are Hamlin, Middlebury, Teel, and Tioga soils. These soils make up 10 percent of the unit.

Because of the flooding, this unit is generally unsuitable for most uses.

This unit is not assigned to a capability subclass.

29—Histosols and Aquents, ponded. These are nearly level, very deep, very poorly drained soils that are organic or loamy. They are generally in marsh areas or swamps, most of which are always ponded. Areas are irregular in shape and range from 3 to 100 acres in size.

The total acreage of this unit is about 45 percent Histosols, 45 percent Aquents, and 10 percent water. Some areas are mainly Histosols, some are mainly Aquents, and some consist of both. The use and management of these soils are so similar that separating them in mapping was not necessary.

Important soil properties—

Permeability: Moderate to slow
Available water capacity: High
Soil reaction: Slightly acid to neutral throughout the profile
Depth to bedrock: More than 60 inches
Water table: At or above the surface during most of the year
Root zone: Typically extends throughout the surface layer
Potential for frost action: Moderate to high

Included with these soils in mapping are small areas of open water that make up about 10 percent of the unit.

This unit is generally unsuited to most uses other than wetland wildlife habitat.

This unit is not assigned to a capability subclass.

30B—Paxton fine sandy loam, 2 to 8 percent slopes. This soil is very deep, well drained, and nearly level to gently sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 400 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 12 inches, dark brown fine sandy loam

Subsoil:
12 to 26 inches, yellowish brown fine sandy loam

Substratum:
26 to 60 inches, mottled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface, soils that have a friable substratum, and soils that are more than 35 percent rock fragments throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till: 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit have been developed. Some areas are used for crops or pasture. A few areas are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The slow permeability in the substratum limits this unit as a site for septic tank absorption fields. Increasing the size of the absorption field helps to overcome this limitation.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIe.

30C—Paxton fine sandy loam, 8 to 15 percent slopes. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 10 inches, dark brown fine sandy loam

Subsoil:
10 to 26 inches, yellowish brown fine sandy loam

Substratum:
26 to 60 inches, mottled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface, soils that have a friable substratum, and soils that are more than 35 percent rock fragments throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till: 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are developed or are used for cultivated crops or pasture. Some areas are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table and the slope limit the use of this unit as a site for dwellings with basements. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Increasing the area

of absorption fields helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The seasonal high water table, the potential for frost action, and the slope limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

30D—Paxton fine sandy loam, 15 to 25 percent slopes. This soil is very deep, well drained, and moderately steep. It is on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark brown fine sandy loam

Subsoil:
9 to 26 inches, yellowish brown fine sandy loam

Substratum:
26 to 60 inches, mottled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface, soils that have a friable substratum, and soils that are more than 35 percent rock fragments throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till: 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used as pasture or are developed.

This unit is suited to hay and pasture. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The slope severely limits the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Erosion is a hazard. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope.

The slope limits the use of this unit as a site for dwellings with basements. The seasonal high water table also is a limitation. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the slow permeability in the substratum. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The seasonal high water table and the potential for frost action also are limitations. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the

contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is IVe.

31B—Paxton fine sandy loam, 2 to 8 percent slopes, very stony. This soil is very deep, well drained, nearly level to gently sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark brown fine sandy loam

Subsoil:
9 to 26 inches, yellowish brown fine sandy loam

Substratum:
26 to 60 inches, mottled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are soils that have a friable substratum and soils that average more than 35 percent rock fragments throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till: 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of stones, the unit is well suited to cultivation. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. Increasing the size of the absorption field helps to overcome this limitation. In some areas large stones interfere with excavation.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing a drainage system and providing coarser textured base material helps to overcome these limitations.

The capability subclass is VIs.

31C—Paxton fine sandy loam, 8 to 15 percent slopes, very stony. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark brown fine sandy loam

Subsoil:
9 to 26 inches, yellowish brown fine sandy loam

Substratum:
26 to 60 inches, mottled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are soils that have a friable substratum and soils that are more than 35 percent rock fragments throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till: 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table and the slope limit the use of this unit as a site for dwellings with basements. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action, the slope, and the seasonal high water table limit the use of this unit as a site for local roads and streets. Installing a drainage system and providing coarser textured base material help to prevent the damage caused by frost action and wetness. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIs.

31D—Paxton fine sandy loam, 15 to 25 percent slopes, very stony. This soil is very deep, well drained, and moderately steep. It is on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark brown fine sandy loam

Subsoil:
9 to 26 inches, yellowish brown fine sandy loam

Substratum:
26 to 60 inches, mottled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have

carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are soils that have a friable substratum and soils that are more than 35 percent rock fragments throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till: 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used as unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Logging during periods of snow cover minimizes the equipment limitation caused by surface stone.

The slope limits the use of this unit as a site for dwellings with basements. The seasonal high water table also is a limitation. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the slow permeability in the substratum. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

31E—Paxton fine sandy loam, 25 to 35 percent slopes, very stony. This soil is very deep, well drained, and steep. It is on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 75 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches, dark brown fine sandy loam

Subsoil:
7 to 26 inches, yellowish brown fine sandy loam

Substratum:
26 to 60 inches, mottled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are soils that have a friable substratum and soils that are more than 35 percent rock fragments

throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till: 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used as unimproved pasture.

This soil is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Logging during periods of snow cover minimizes the equipment limitation caused by surface stone.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the slow permeability in the substratum. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIs.

38A—Tisbury silt loam, 0 to 3 percent slopes. This soil is very deep, moderately well drained, and nearly level. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 150 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 12 inches, dark brown silt loam

Subsoil:
12 to 16 inches, mottled, yellowish brown very fine sandy loam
16 to 22 inches, mottled, light olive brown very fine sandy loam

Substratum:
22 to 60 inches, light olive brown very gravelly and extremely gravelly coarse sand

Some areas of this unit include soils that have a more yellow subsoil.

Included in this unit in mapping are small areas of the moderately well drained Belgrade and Castile soils and the poorly drained and somewhat poorly drained Fredon soils. Also included are soils that are not mottled in the subsoil and soils that do not have rock fragments in the substratum. Fredon soils are in depressions and drainageways. Belgrade and Castile soils and the soils that do not have rock fragments in the substratum are in landscape positions similar to those of the Tisbury soil. The soils that are not mottled in the subsoil are on knolls and swells. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and rapid to very rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used as cropland. Some areas are used for hay or pasture, and some are used as woodland or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and a poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIw.

39B—Galway-Nellis-Farmington complex, 3 to 8 percent slopes. This unit consists of gently sloping soils on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size.

This unit is about 40 percent moderately deep, well drained Galway soil; 40 percent very deep, well drained Nellis soil; 10 percent shallow, well drained and somewhat excessively drained Farmington soil; and 10 percent other soils. The Farmington soil is slightly higher on the landscape than the Galway and Nellis soils. The Galway soil is in areas between the Farmington soil and the Nellis soil. The Galway, Nellis, and Farmington soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Galway soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsoil:
8 to 20 inches, dark yellowish brown fine sandy loam
20 to 24 inches, dark yellowish brown gravelly fine sandy loam

Bedrock:
24 inches, dolostone

The typical sequence, depth, and composition of the layers in the Nellis soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsoil:
8 to 21 inches, brown gravelly fine sandy loam

Substratum:
21 to 60 inches, dark grayish brown gravelly fine sandy loam

The typical sequence, depth, and composition of the layers in the Farmington soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsoil:
8 to 12 inches, dark yellowish brown silt loam

Bedrock:
12 inches, dolostone

Included in this unit in mapping are small areas of the moderately well drained Amenia and Belgrade soils and areas of exposed bedrock. Also included are soils that are more than 35 percent rock fragments and areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface. Amenia and Belgrade soils are in depressions and drainageways. Exposed bedrock is on knolls. Included areas make up about 10 percent of the unit.

Important soil properties—

Permeability: Galway and Farmington—moderate; Nellis—moderate in the subsoil and moderately slow or moderate in the substratum

Available water capacity: Galway—moderate; Nellis—high; Farmington—low or very low

Soil reaction: Galway—moderately acid to neutral in the surface layer, moderately acid to mildly alkaline in the subsoil; Nellis—moderately acid to neutral in the surface layer and upper part of the subsoil, moderately acid to mildly alkaline in the lower part of the subsoil, and mildly alkaline or moderately

alkaline in the substratum; Farmington—strongly acid to slightly acid in the surface layer and moderately acid to mildly alkaline in the subsoil
Depth to bedrock: Galway—20 to 40 inches; Nellis—more than 60 inches; Farmington—10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Galway, and Farmington—typically extends to bedrock; Nellis—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture. Other areas are used for cropland or woodland or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

These soils are well suited to cultivated crops. The depth to bedrock is a limitation. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Included areas of exposed bedrock and surface stones interfere with tillage.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard on the Farmington soil. Droughtiness, which results from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The depth to bedrock in the moderately deep Galway soil and in the shallow Farmington soil limits the use of this unit as a site for dwellings with basements. The seasonal high water table in the Galway soil also is a limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Onsite investigation is needed to identify included areas of better suited very deep soils.

The depth to bedrock in the moderately deep Galway soil and in the shallow Farmington soil and the slow permeability in the Nellis soil limit the use of this unit as a site for septic tank absorption fields. Onsite investigations are needed to locate areas of suitable very deep soils, or special designs are needed to overcome these limitations.

The depth to bedrock in the shallow Farmington soil limits the use of this unit as a site for local roads and streets. The seasonal high water table and the potential for frost action also are limitations. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Installing a drainage system and providing coarser textured base material helps to overcome the wetness and prevent the damage caused by frost action.

The capability subclass is IIe.

40C—Galway-Nellis-Farmington complex, 8 to 15 percent slopes, rocky. This unit consists of strongly sloping soils on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 150 acres in size.

This unit is about 45 percent moderately deep, well drained Galway soil; 35 percent very deep, well drained Nellis soil; 10 percent shallow, well drained and somewhat excessively drained Farmington soil; and 9 percent other soils. Rock outcrops make up about 1 percent of the unit. The Farmington soil is close to the rock outcrops and at slightly higher positions on the landscape than the Galway and Nellis soils. The Galway soil is on the flanks of the outcrops, and the Nellis soil is in between the outcrops. The Galway, Nellis, and Farmington soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Galway soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 20 inches, dark yellowish brown fine sandy loam
20 to 24 inches, dark yellowish brown gravelly fine sandy loam

Bedrock:
24 inches, dolostone

The typical sequence, depth, and composition of the layers in the Nellis soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsoil:
8 to 21 inches, brown gravelly fine sandy loam

Substratum:
21 to 60 inches, dark grayish brown gravelly fine sandy loam

The typical sequence, depth, and composition of the layers in the Farmington soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 12 inches, dark yellowish brown silt loam

Bedrock:
12 inches, dolostone

Included in this unit in mapping are small areas of the moderately well drained Amenia and Belgrade soils and areas of exposed bedrock. Also included are soils that are more than 35 percent rock fragments and areas where stones 5 to 25 feet apart cover as much as 3 percent of the surface. Amenia and Belgrade soils are in depressions and drainageways. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Galway and Farmington—moderate; Nellis—moderate in the subsoil and moderately slow or moderate in the substratum
Available water capacity: Galway—moderate; Nellis—high; Farmington—low or very low
Soil reaction: Galway—moderately acid to neutral in the surface layer, moderately acid to mildly alkaline in the subsoil; Nellis—moderately acid to neutral in the surface layer and upper part of the subsoil, moderately acid to mildly alkaline in the lower part of the subsoil, and mildly alkaline or moderately alkaline in the substratum; Farmington—strongly acid to slightly acid in the surface layer and moderately acid to mildly alkaline in the subsoil
Depth to bedrock: Galway—20 to 40 inches; Nellis—more than 60 inches; Farmington—10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Galway and Farmington—typically extends to bedrock; Nellis—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture. Some areas are used as woodland or cropland or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

These soils are suited to cultivated crops. The depth to bedrock and the exposed bedrock are limitations. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour help to control erosion. The depth to bedrock and the exposed bedrock interfere with tillage.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard on the Farmington soil. Droughtiness, which results from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The depth to bedrock in the moderately deep Galway soil and in the shallow Farmington soil limits the use of this unit as a site for dwellings with basements. The seasonal high water table in the Galway soil is a limitation. The slope also is a limitation. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included areas of soils that are better suited to these uses.

The depth to bedrock in the moderately deep Galway soil and in the shallow Farmington soil and the slow permeability in the Nellis soil limit the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Onsite investigation is needed to identify included areas of soils that are better suited to these uses, or special designs are needed to overcome the limitations. Installing the effluent lines on the contour helps to overcome the slope.

The depth to bedrock in the shallow Farmington soil limits the use of this unit as a site for local roads and streets. The seasonal high water table, the slope, and the potential for frost action also are limitations. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Installing drainage systems and providing coarser textured base material helps to overcome the wetness and prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is IIIe.

40D—Galway-Nellis-Farmington complex, 15 to 25 percent slopes, rocky. This unit consists of moderately steep soils on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3

percent of the surface and are typically 5 to 25 feet apart.

This unit is about 45 percent moderately deep, well drained Galway soil; 30 percent very deep, well drained Nellis soil; 15 percent shallow, well drained and somewhat excessively drained Farmington soil; and 9 percent other soils. Rock outcrops make up about 1 percent of the unit. The Farmington soil is close to the rock outcrops and is slightly higher on the landscape than the Galway and Nellis soils. The Galway soil is on the flanks of the outcrops, and the Nellis soil is between the outcrops. The Galway, Nellis, and Farmington soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Galway soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 20 inches, dark yellowish brown fine sandy loam
20 to 24 inches, dark yellowish brown gravelly fine sandy loam

Bedrock:
24 inches, dolostone

The typical sequence, depth, and composition of the layers in the Nellis soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown silt loam

Subsoil:
2 to 5 inches, dark brown silt loam
5 to 21 inches, brown gravelly fine sandy loam

Substratum:
21 to 60 inches, dark grayish brown gravelly fine sandy loam

The typical sequence, depth, and composition of the layers in the Farmington soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 12 inches, dark yellowish brown silt loam

Bedrock:
12 inches, dolostone

Included in this unit in mapping are small areas of the moderately well drained Amenia and Belgrade soils and areas of exposed bedrock. Also included are soils that are more than 35 percent rock fragments. Amenia and Belgrade soils are in depressions and drainageways. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Galway and Farmington—moderate; Nellis—moderate in the subsoil and moderately slow or moderate in the substratum
Available water capacity: Galway—moderate; Nellis—high; Farmington—low or very low
Soil reaction: Galway—moderately acid to neutral in the surface layer, moderately acid to mildly alkaline in the subsoil; Nellis—moderately acid to neutral in the surface layer and upper part of the subsoil, moderately acid to mildly alkaline in the lower part of the subsoil, and mildly alkaline or moderately alkaline in the substratum; Farmington—strongly acid to slightly acid in the surface layer and moderately acid to mildly alkaline in the subsoil
Depth to bedrock: Galway—20 to 40 inches; Nellis—more than 60 inches; Farmington—10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Galway, and Farmington—typically extends to bedrock; Nellis—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used for hay or pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Erosion is a hazard, and the slope and rock outcrops are limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, the depth to bedrock, stones on the surface, and exposed bedrock. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Erosion is a hazard. Seedling mortality is a hazard on the Farmington soil. Droughtiness, which results from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from

spring rains. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope.

The slope limits the use of this unit as a site for dwellings with basements. The seasonal high water table and the depth to bedrock also are limitations. Extensive land shaping and grading are needed to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included areas of soils that are better suited to these uses.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIs.

41C—Farmington-Galway-Galoo complex, 5 to 25 percent slopes, very rocky. This unit consists of gently sloping to moderately steep soils on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 1,100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 45 percent shallow, well drained and somewhat excessively drained Farmington soil; 25 percent moderately deep, well drained Galway soil; 20 percent very shallow, somewhat excessively drained and excessively drained Galoo soil; and 5 percent other soils. Rock outcrops make up about 5 percent of the unit. The Galoo soil is close to the rock outcrops, the Farmington soil is on the flanks of the outcrops, and the Galway soil is in troughs between the outcrops. The Farmington, Galway, and Galoo soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Farmington soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 12 inches, dark yellowish brown silt loam

Bedrock:
12 inches, dolostone

Typically, the Galway soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 20 inches, dark yellowish brown fine sandy loam
20 to 24 inches, dark yellowish brown gravelly fine sandy loam

Bedrock:
24 inches, dolostone

Typically, the Galoo soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray silt loam

Bedrock:
3 inches, dolostone

Included in this unit in mapping are small areas of the very deep, moderately well drained Amenia soils; the excessively drained Hubbardton soils; the somewhat poorly drained Kingsbury soils; the well drained Nellis soils; and the somewhat excessively drained Taconic soils. Also included are soils that are more than 35 percent rock fragments. Amenia and Kingsbury soils are in depressions, and Hubbardton and Taconic soils are in landscape positions similar to those of the Galoo and Farmington soils. Nellis soils are in troughs between rock outcrops. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Farmington—very low to low; Galoo—very low; Galway—moderate

Soil reaction: Farmington—strongly acid to slightly acid in the surface layer and moderately acid to mildly alkaline in the subsoil; Galway—moderately acid to neutral in the surface layer and moderately acid to mildly alkaline in the subsoil; Galoo—moderately acid to mildly alkaline
Depth to bedrock: Farmington—10 to 20 inches; Galway—20 to 40 inches; Galoo—2 to 10 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used as unimproved pasture. Some areas are developed.

Because of the stones on the surface, these soils are unsuited to hay and improved pasture. If cleared of stones, they are poorly suited to these uses. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, stones on the surface, and the depth to bedrock in the very shallow soils. The unit is droughty.

Crop production is generally not practical on this unit because of the slope, the depth to bedrock, rock outcrops and stones on the surface.

The potential productivity of this unit is moderate for sugar maple. Erosion, seedling mortality, and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Galoo and Farmington soils, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is generally unsuitable as a site for dwellings with basements because of the depth to bedrock. The slope also is a limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the depth to bedrock and the slope. The seasonal high water table in the Galway soil also is a limitation. Onsite investigation is needed to identify included areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting road design to the slope and blasting help to overcome the slope.

The capability subclass is VIs.

41E—Farmington-Galway-Galoo complex, 25 to 50 percent slopes, very rocky. This unit consists of steep soils on the top and sides of hills and ridges. Areas are irregular in shape and range from 5 to 1,100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent shallow, well drained and somewhat excessively drained Farmington soil; 25 percent moderately deep, well drained Galway soil; 15 percent very shallow, somewhat excessively drained and excessively drained Galoo soil; and 5 percent other soils. Rock outcrops make up about 5 percent of the unit. The Galoo soil is close to the rock outcrops, the Farmington soil is on the flanks of the outcrops, and the Galway soil is in troughs between the outcrops. The Farmington, Galway, and Galoo soils are in areas so intermingled that separating them in mapping was not practical.

This unit is about 45 percent shallow, well drained and somewhat excessively drained Farmington soil; 25 percent moderately deep, well drained Galway soil; 20 percent very shallow, somewhat excessively drained and excessively drained Galoo soil; and 5 percent other soils. Rock outcrops make up about 5 percent of the unit. The Galoo soil is close to the rock outcrops, the Farmington soil is on the flanks of the outcrops, and the Galway soil is in troughs between the outcrops. The Farmington, Galway, and Galoo soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Farmington soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 12 inches, dark yellowish brown silt loam

Bedrock:
12 inches, dolostone

Typically, the Galway soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsoil:
3 to 20 inches, dark yellowish brown fine sandy loam
20 to 24 inches, dark yellowish brown gravelly fine sandy loam

Bedrock:
24 inches, dolostone

Typically, the Galoo soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray silt loam

Bedrock:
3 inches, dolostone

Included in this unit in mapping are small areas of the very deep, moderately well drained Amenia soils; the excessively drained Hubbardton soils; the somewhat poorly drained Kingsbury soils; the well drained Nellis soils; and the somewhat excessively drained Taconic soils. Also included are soils that are more than 35 percent rock fragments. Amenia and Kingsbury soils are in depressions, and Hubbardton and Taconic soils are in landscape positions similar to those of the Galoo and Farmington soils. Nellis soils are in troughs between rock outcrops. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Farmington—very low to low; Galoo—very low; Galway—moderate
Soil reaction: Farmington—strongly acid to slightly acid in the surface layer and moderately acid to mildly alkaline in the subsoil; Galway—moderately acid to neutral in the surface layer and moderately acid to mildly alkaline in the subsoil; Galoo—moderately acid to mildly alkaline
Depth to bedrock: Farmington—10 to 20 inches; Galway—20 to 40 inches; Galoo—2 to 10 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are used as unimproved pasture.

This unit is unsuited to hay and improved pasture. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, stones on the surface, and the depth to bedrock in the very shallow soils. The unit is droughty.

This unit is unsuited to cultivated crops because of the slope, rock outcrops, stones on the surface, and the depth to bedrock. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple. Erosion, seedling mortality, and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Galoo and Galway soils, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent, areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful

planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting road design to the slope and blasting help to overcome the slope.

The capability subclass is VIIs.

42C—Macomber-Taconic complex, 8 to 15 percent slopes, rocky. This unit consists of strongly sloping soils on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 300 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 60 percent moderately deep, well drained Macomber soil; 30 percent shallow, somewhat excessively drained Taconic soil; and 9 percent other soils. Rock outcrops make up about 1 percent of the unit. The Macomber soil is in troughs between the outcrops, and the Taconic soil is on the flanks of the outcrops. The Macomber and Taconic soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Macomber soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown channery silt loam

Subsoil:
6 to 30 inches, dark yellowish brown very channery silt loam

Substratum:
30 to 36 inches, olive brown very channery silt loam

Bedrock:
36 inches, schist

Typically, the Taconic soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown channery silt loam

Subsoil:
3 to 14 inches, brown and olive brown very channery silt loam

Substratum:
14 to 18 inches, light olive brown very channery silt loam

Bedrock:
18 inches, slate

Some areas of this unit include soils that are black or very dark gray throughout, and some areas include soils that have fine sandy loam in the surface layer and subsoil. Other areas include soils that are less than 35 percent rock fragments.

Included in this unit in mapping are small areas of the very deep, moderately well drained Bomoseen, Georgia, and Pittstown soils and the very deep, well drained Dutchess soils. Bomoseen, Dutchess, Georgia, and Pittstown soils are in landscape positions similar to those of the Macomber soil. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Macomber—moderate; Taconic—moderate or moderately rapid
Available water capacity: Macomber—low; Taconic—low or very low
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: Macomber—20 to 40 inches; Taconic—10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland or pasture. Other areas are used for cultivated crops or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and rock outcrops are a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, the depth to bedrock and the exposed bedrock are limitations. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Shallow bedrock and exposed bedrock interfere with tillage.

The potential productivity of this unit is moderate for sugar maple. Few limitations affect timber production

and harvesting. Windthrow and seedling mortality are hazards. The depth to bedrock in the Taconic soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Droughtiness, which results from the very low available water capacity of the Taconic soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rain. Included areas that have stones on the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the depth to bedrock. The slope also is a limitation. Onsite investigation is needed to identify included areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the depth to bedrock. The slope also is a limitation. Onsite investigation is needed to identify included areas that may be better suited to this use.

The depth to bedrock, the potential for frost action, and the slope limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIs.

42D—Macomber-Taconic complex, 15 to 25 percent slopes, rocky. This unit consists of moderately steep soils on the top and sides of mountains, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 500 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Macomber soil; 35 percent shallow, somewhat excessively drained Taconic soil; and 9 percent other soils. Rock outcrops make up about 1 percent of the unit. The Macomber soil is in troughs between the outcrops, and the Taconic soil is on the flanks of the outcrops. The Macomber and Taconic soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Macomber soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown channery silt loam

Subsoil:
6 to 30 inches, dark yellowish brown very channery silt loam

Substratum:
30 to 36 inches, olive brown very channery silt loam

Bedrock:
36 inches, schist

Typically, the Taconic soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown channery silt loam

Subsoil:
3 to 14 inches, brown and olive brown very channery silt loam

Substratum:
14 to 18 inches, light olive brown very channery silt loam

Bedrock:
18 inches, slate

Some areas of this unit include soils that are black or very dark gray throughout, and some areas include soils that have fine sandy loam in the surface layer and subsoil. Other areas include soils that are less than 35 percent rock fragments.

Included in this unit in mapping are small areas of the very deep, moderately well drained Bomoseen, Georgia, and Pittstown soils and the very deep, well drained Dutchess soils. Bomoseen, Dutchess, Georgia, and Pittstown soils are in landscape positions similar to those of the Macomber soil. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Macomber—moderate; Taconic—moderate or moderately rapid
Available water capacity: Macomber—low; Taconic—low or very low
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: Macomber—20 to 40 inches; Taconic—10 to 20 inches

Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are in pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope and rock outcrops are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is generally unsuited to cultivated crops. The slope, surface stones, the depth to bedrock, and exposed bedrock are limitations. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple. Erosion, windthrow, and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. The depth to bedrock in the Taconic soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Droughtiness, which results from the very low available water capacity of the Taconic soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rain. Stones on the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIs.

42F—Macomber-Taconic complex, 25 to 80 percent slopes, rocky. This unit consists of steep and very steep soils on the top and sides of mountains, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 700 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Macomber soil; 35 percent shallow, somewhat excessively drained Taconic soil; and about 9 percent other soils. Rock outcrops make up about 1 percent of the unit. The Macomber soil is in troughs between the outcrops, and the Taconic soil is on the flanks of the outcrops. The Macomber and Taconic soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Macomber soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown channery silt loam

Subsoil:
5 to 30 inches, dark yellowish brown very channery silt loam

Substratum:
30 to 36 inches, olive brown very channery silt loam

Bedrock:
36 inches, schist

Typically, the Taconic soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown channery silt loam

Subsoil:
3 to 14 inches, brown and olive brown very channery silt loam

Substratum:
14 to 18 inches, light olive brown very channery silt loam

Bedrock:
18 inches, slate

Some areas of this unit include soils that are black or very dark gray throughout, and some areas include soils that have fine sandy loam in the surface laye rand subsoil. Other areas include soils that are less than 35 percent rock fragments.

Included in this unit in mapping are small areas of the very deep, moderately well drained Bomoseen, Georgia, and Pittstown soils and the very deep, well drained Dutchess soils. Bomoseen, Dutchess, Georgia, and Pittstown soils are in landscape positions similar to those of the Macomber soil. Included soils and rock outcrop make up about 10 percent of the unit.

Important soil properties—

Permeability: Macomber—moderate; Taconic—moderate or moderately rapid
Available water capacity: Macomber—low; Taconic—low or very low
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: Macomber—20 to 40 inches; Taconic—10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are in pasture.

This unit is poorly suited to hay and improved pasture. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, and stones on the surface.

This unit is unsuited to cultivated crops because of the slope, rock outcrops, and stones on the surface.

The potential productivity of this unit is moderate for sugar maple. Erosion, windthrow, and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the steep and very steep slopes. In some areas rock outcrops interfere with the operation of equipment. The depth to bedrock in the Taconic soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. The droughtiness that results from the very low available water capacity causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rain. Stones on the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Onsite investigation is needed to identify included areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the depth to bedrock and the slope. Onsite investigation is needed to identify included areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIs.

43C—Taconic-Macomber complex, 8 to 25 percent slopes, very rocky. This unit consists of strongly sloping and moderately steep soils on the top and sides mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 500 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 55 percent shallow, somewhat excessively drained Taconic soil; 30 percent moderately deep, well drained Macomber soil; and 10 percent other soils. Rock outcrops make up about 5 percent of the unit. The Macomber soil is in troughs between the outcrops, and the Taconic soil is on the flanks of the outcrops. The Taconic and Macomber soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Taconic soil is covered by a thin layer of slightly decomposed and moderately decomposed

leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown channery silt loam

Subsoil:
3 to 14 inches, brown and olive brown very channery silt loam

Substratum:
14 to 18 inches, light olive brown very channery silt loam

Bedrock:
18 inches, slate

Typically, the Macomber soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown channery silt loam

Subsoil:
6 to 30 inches, dark yellowish brown very channery silt loam

Substratum:
30 to 36 inches, olive brown very channery silt loam

Bedrock:
36 inches, schist

Some areas of this unit include soils that are black or very dark gray throughout, and some areas include soils that have fine sandy loam in the surface layer and subsoil. Other areas include soils that are less than 35 percent rock fragments.

Included in this unit in mapping are small areas of the very deep, moderately well drained Bomoseen, Georgia, and Pittstown soils; the very deep, somewhat poorly drained Kingsbury soils; and the very deep, well drained Dutchess soils. Bomoseen, Dutchess, Kingsbury, Georgia, and Pittstown soils are in landscape positions similar to those of the Macomber soil. Included soils and rock outcrop make up about 15 percent of the unit.

Important soil properties—

Permeability: Taconic—moderate or moderately rapid; Macomber—moderate
Available water capacity: Taconic—low or very low; Macomber—low
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: Taconic—10 to 20 inches; Macomber—20 to 40 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland or pasture. Other areas are used for cultivated crops or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, and stones on the surface. This unit is droughty.

This unit is generally unsuited to cultivated crops. The slope, surface stones, the depth to bedrock, and exposed bedrock are limitations.

The potential productivity of this unit is moderate for sugar maple. Erosion, windthrow, and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. The depth to bedrock in the Taconic soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Droughtiness, which results from the very low available water capacity of the Taconic soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rain. Stones on the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the depth to bedrock. The slope also is a limitation. Onsite investigation is needed to identify included areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify included areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of

this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIs.

44B—Dutchess silt loam, 3 to 8 percent slopes. This soil is very deep, well drained, and gently sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 70 acres in size.

The typical sequence, depth, and composition of the layers in the Dutchess soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown silt loam

Subsoil:
5 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the moderately well drained Bomoseen soils and the moderately deep, well drained Macomber soils. Also included are soils that are more than 35 percent rock fragments and areas where flagstones cover less than 1 percent to 3 percent of the surface. Bomoseen soils are in depressions and drainageways, and Macomber soils are in landscape positions similar to those of the Dutchess soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture or cultivated crops. Other areas are wooded or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

This unit has few limitations as a site for dwellings with basements. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements.

This unit has few limitations as a site for septic tank absorption fields. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation.

The potential for frost action limits the use of this unit as a site for local roads and streets. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIe.

44C—Dutchess silt loam, 8 to 15 percent slopes. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in the Dutchess soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown silt loam

Subsoil:
5 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the moderately well drained Bomoseen soils and the moderately deep, well drained Macomber soils. Also included are soils that are more than 35 percent rock fragments and areas where flagstones cover less than 1 percent to 3 percent of the surface. Bomoseen soils are in depressions and drainageways, and Macomber soils are in landscape positions similar to those of the Dutchess soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture or cultivated crops. Other areas are wooded or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The slope limits the use of this unit as a site for dwellings with basements. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The slope limits the use of this unit as a site for septic tank absorption fields. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

44D—Dutchess silt loam, 15 to 25 percent slopes. This soil is very deep, well drained, and moderately steep. It is on the sides of hills and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in the Dutchess soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown silt loam

Subsoil:
4 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the moderately well drained Bomoseen soils and the moderately deep, well drained Macomber soils. Also included are soils that are more than 35 percent rock fragments and areas where flagstones cover less than 1 percent to 3 percent of the surface. Bomoseen soils are in depressions and drainageways, and Macomber soils are in landscape positions similar to those of the Dutchess soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches

Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are in hay and pasture or are developed.

This unit is suited to hay and pasture. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The slope limits the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Erosion is a hazard. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent, less sloping areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is IVe.

47B—Dutchess silt loam, 3 to 8 percent slopes, very stony. This soil is very deep, well drained, and gently sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 50 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsurface layer:
3 to 4 inches, dark grayish brown silt loam

Subsoil:
4 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the moderately well drained Bomoseen soils; the moderately deep, well drained Macomber soils; and the somewhat excessively drained Warwick soils. Also included are soils that are more than 35 percent rock fragments. Bomoseen soils are in depressions and drainageways, Macomber soils are in landscape positions similar to those of the Dutchess soil, and Warwick soils are near the edges of the unit. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are in unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of

surface stones, the unit is well suited to cultivation. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

This unit has few limitations as a site for dwellings with basements. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements.

This unit has few limitations as a site for septic tank absorption fields. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation.

The potential for frost action limits the use of this unit as a site for local roads and streets. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is VIs.

47C—Dutchess silt loam, 8 to 15 percent slopes, very stony. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 150 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsurface layer:
3 to 4 inches, dark grayish brown silt loam

Subsoil:
4 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the moderately well drained Bomoseen soils; the moderately deep, well drained Macomber soils; and the somewhat excessively drained Warwick soils. Also included are soils that are more than 35 percent rock fragments. Bomoseen soils are in depressions and drainageways, Macomber soils are in landscape positions similar to those of the Dutchess soil, and Warwick soils are near the edges of the unit. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are in unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion (fig. 12). Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The slope limits the use of this unit as a site for dwellings with basements. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

Figure 12.—Stripcropping with corn and hay on Dutchess silt loam, 8 to 15 percent slopes, very stony.

The slope limits the use of this unit as a site for septic tank absorption fields. Stones in the substratum may interfere with excavation but do not generally pose a significant limitation. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Stones on the surface may interfere with the operation of equipment. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIs.

47D—Dutchess silt loam, 15 to 25 percent slopes, very stony. This soil is very deep, well drained, and moderately steep. It is on the sides of hills and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 200 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown silt loam

Subsurface layer:
2 to 4 inches, dark grayish brown silt loam

Subsoil:
4 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the moderately well drained Bomoseen soils; the moderately deep, well drained Macomber soils; and the somewhat excessively drained Warwick soils. Also included are soils that are more than 35 percent rock fragments. Bomoseen soils are in depressions and drainageways, Macomber soils are in landscape positions similar to those of the Dutchess soil, and Warwick soils are near the edges of the unit. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are in unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of stones on the surface and the slope. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

47E—Dutchess silt loam, 25 to 60 percent slopes, very stony. This soil is very deep, well drained, and steep. It is on the sides of hills, mountains, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 200 acres in size. Flagstones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsurface layer:
3 to 4 inches, dark grayish brown silt loam

Subsoil:
4 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the moderately well drained Bomoseen soils; the moderately deep, well drained Macomber soils; and the somewhat excessively drained Warwick soils. Also included are soils that are more than 35 percent rock fragments. Bomoseen soils are in depressions and drainageways, Macomber soils are in landscape positions similar to those of the Dutchess soil, and Warwick soils are near the edges of the unit. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Other areas are in unimproved pasture.

This unit is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places. Included areas that have large stones and boulders on the surface interfere with the excavation and grading of roads.

The capability subclass is VIIs.

50A—Massena silt loam, 0 to 8 percent slopes. This soil is very deep and is somewhat poorly drained and poorly drained. It is nearly level and gently sloping and is in depressions, in drainageways, and on the toe slopes of hills and ridges. The areas irregular in shape and range from 3 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, very dark gray silt loam

Subsoil:
9 to 15 inches, mottled, olive and olive gray channery loam
15 to 26 inches, mottled, olive gray channery loam

Substratum:
26 to 38 inches, mottled, grayish brown channery loam
38 to 60 inches, mottled, dark grayish brown channery loam

Included in this unit in mapping are small areas of the moderately well drained Bomoseen and Pittstown soils, the poorly drained and very poorly drained Lyons soils, and the well drained, moderately deep Macomber soils. Also included are areas where stones cover as much as 1 percent of the surface. Bomoseen, Macomber, and Pittstown soils are on knolls and in convex areas. Lyons soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately slow or slow
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsoil and neutral to moderately alkaline in the substratum

Depth to bedrock: More than 60 inches
Depth to the water table: 0.5 foot to 1.5 feet in winter and spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Other areas are in pasture or hayland.

This unit is suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is poorly suited to cultivated crops if it is not drained. If drained it is suited to cultivation. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is very high for eastern white pine and moderate for red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table and the firm substratum restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table.

This unit is generally unsuitable as a site for dwellings with basements because of seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the moderately slow or slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIIw.

52B—Macomber-Dutchess complex, 3 to 8 percent slopes. This unit consists of gently sloping soils on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 150 acres in size.

This unit is about 60 percent moderately deep, well drained Macomber soil; 25 percent very deep, well drained Dutchess soil; and 15 percent other soils. The Macomber soil is slightly higher on the landscape than the Dutchess soil. The Macomber and Dutchess soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of are layers of the Macomber soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown channery silt loam

Subsoil:
6 to 30 inches, dark yellowish brown very channery silt loam

Substratum:
30 to 36 inches, olive brown very channery silt loam

Bedrock:
36 inches, schist

The typical sequence, depth, and composition of the layers in the Dutchess soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam

Subsurface layer:
3 to 4 inches, dark grayish brown silt loam

Subsoil:
4 to 10 inches, yellowish brown silt loam
10 to 26 inches, brown channery silt loam

Substratum:
26 to 60 inches, olive very channery fine sandy loam

Some areas of this unit include soils that are black or very dark gray throughout, and some areas include soils that have fine sandy loam in the surface layer and subsoil.

Included in this unit in mapping are small areas of the very deep, moderately well drained Bomoseen, Georgia, and Pittstown soils and the shallow,

excessively drained Taconic soils. Also included are areas where stones cover less than 1 percent to 3 percent of the surface. Bomoseen, Georgia, and Pittstown soils are in landscape positions similar to those of the Dutchess soil. Taconic soils are on knolls. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Macomber—low; Dutchess—high
Soil reaction: Macomber—very strongly acid to moderately acid; Dutchess—very strongly acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: Macomber—20 to 40 inches; Dutchess—more than 60 inches
Depth to the water table: At least 60 inches
Root zone: Macomber—typically extends to bedrock; Dutchess—typically extends to a depth of at least 60 inches
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture or cultivated crops. Other areas are wooded or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Included areas that have stones on the surface are unsuited to hay and improved pasture. The stones must be removed before the areas are suitable for these uses.

This unit is well suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Included areas of shallow soils, exposed bedrock, and areas that have stones on the surface interfere with tillage.

The potential productivity of this unit is moderate for sugar maple. Few limitations affect timber production and harvesting.

The depth to bedrock in the moderately deep Macomber soil limits the use of this unit as a site for dwellings with basements. The high content of rock fragments in the substratum of the Dutchess soil also is a limitation. Onsite investigations are needed to locate areas of suitable very deep soils or special designs are needed to overcome these limitations.

The depth to bedrock in the moderately deep Macomber soil limits the use of this unit as a site for septic tank absorption fields. The restricted permeability and the high content of rock fragments in the substratum of the Dutchess soil also are limitations. Onsite investigations are needed to locate areas of suitable very deep soils or special designs are needed to overcome these limitations.

The depth to bedrock in the moderately deep Macomber soil and the potential for frost action in both soils limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIe.

53—Elvers silt loam. This soil is very deep, poorly drained and very poorly drained, and nearly level. It is in depressions on flood plains. The soil is frequently flooded for long periods in fall, winter, and spring. Areas are long and narrow or irregular in shape and range from 3 to 150.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark gray silt loam

Substratum:
6 to 17 inches, mottled, dark grayish brown silt loam
17 to 60 inches, very dark grayish brown and dark brown muck

Some areas of this unit include soils that are fine sandy loam or sandy loam in the surface layer and in the upper part of the substratum.

Included in this unit in mapping are small areas of the poorly drained Limerick soils, the very poorly drained Pinnebog and Saco soils, and the moderately well drained and somewhat poorly drained Teel soils. Limerick and Teel soils are generally on the side of the unit nearest the stream, and the Pinnebog and Saco soils are in backswamp areas. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the surface layer and upper part of the substratum; moderately rapid in the lower part of the substratum
Available water capacity: High
Soil reaction: Moderately acid to mildly alkaline
Depth to bedrock: More than 60 inches
Depth to the water table: Within 1.0 foot or above the surface in late fall, in winter, and in spring

Root zone: Typically restricted to the upper part of the soil by the seasonal high water table
Potential for frost action: High

Most areas of this unit are used for hay or pasture. Some areas are used for row crops, mainly silage corn. Other areas are used as woodland.

This unit is poorly suited to hay and pasture if not drained. If drained it is suited. Flooding is a hazard, and the seasonal high water table is a limitation. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and to control erosion caused by floodwater.

This unit is poorly suited to cultivated crops if it is not drained. If drained it is suited. The seasonal high water table is a limitation. Flooding is a hazard. Flooding is of short duration and usually occurs in spring, delaying spring tillage. Land shaping and ditching to provide surface drainage help to dry the unit after flooding. Where suitable outlets are available subsurface drainage can be used to lower the water table. Growing cover crops, including grasses and legumes in the cropping system, and applying a system of conservation tillage that leaves some or all of the crop residue on the surface help to control the erosion caused by floodwater. Maintaining a permanent plant cover on streambanks helps to control streambank erosion.

The potential productivity of this unit is moderate for red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table and the flooding. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and the flooding.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding. The seasonal high water table and low strength also are limitations.

This unit is generally unsuitable as a site for septic tank absorption fields because of the flooding and the seasonal high water table.

Flooding, the potential for frost action, and the seasonal high water table limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the flooding and the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is VIw.

54A—Ninigret fine sandy loam, 0 to 4 percent slopes. This soil is very deep, moderately well drained, and nearly level and gently sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base hills and mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark brown fine sandy loam

Subsoil:
9 to 20 inches, light olive brown fine sandy loam

Substratum:
20 to 37 inches, mottled, light olive brown loamy sand
37 to 60 inches, mottled, olive brown gravelly sand

Some areas of this unit include soils that have a surface layer of silt loam or soils that are slightly acid or neutral in reaction throughout.

Included in this unit in mapping are small areas of the moderately well drained Belgrade and Deerfield soils and the poorly drained Walpole soils. Belgrade and Deerfield soils are in landscape positions similar to those of the Ninigret soil, and Walpole soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil and rapid or very rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for row crops or hay crops, mainly silage corn and alfalfa. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and a poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIw.

56B—Colton-Duxbury complex, 2 to 8 percent slopes, very stony. This unit consists of very deep, nearly level and gently sloping soils. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent excessively drained Colton soil, 35 percent well drained Duxbury soil, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Colton soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, black very gravelly fine sandy loam

Subsurface layer:
2 to 6 inches, light brownish gray very gravelly sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

Typically, the Duxbury soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, pinkish gray fine sandy loam

Subsoil:
1 to 2 inches, dark brown fine sandy loam
2 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover more than 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Colton—rapid in the subsoil and very rapid in the substratum; Duxbury—moderately rapid in the subsoil and rapid to very rapid in the substratum

Available water capacity: Colton—very low; Duxbury—moderate
Soil reaction: Colton—extremely acid to very strongly acid in the surface layer and subsurface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury—extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland or unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. The very low available water capacity of the Colton soil and low natural fertility also are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage. Planting drought-tolerant species helps to overcome the very low available water capacity.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The very low available water capacity of the Colton soil, a low organic matter content, and low natural fertility are limitations. Erosion is a hazard. Crops that are tolerant of drought grow best. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low available water capacity of the Colton soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. Included areas where more than 3 percent of the surface is covered by stones interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit has few limitations as a site for dwellings with basements. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements.

A poor filtering capacity in the soils limits the unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination can be detected by periodic testing of the ground water. Special designs are needed to overcome these limitations. In some areas large stones may interfere with excavation but generally do not pose a significant limitation.

This unit has few limitations as a site for local roads and streets. In some areas large stones on the surface interfere with the excavation and grading of roads.

The capability subclass is VIs.

56C—Colton-Duxbury complex, 8 to 15 percent slopes, very stony. This unit consists of very deep, strongly sloping soils. It is on knolls, long, narrow terraces, and broad areas that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 125 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent excessively drained Colton soils, 35 percent well drained Duxbury soils, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Colton soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, black very gravelly fine sandy loam

Subsurface layer:
2 to 6 inches, light brownish gray very gravelly sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

Typically, the Duxbury soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, pinkish gray fine sandy loam

Subsoil:
1 to 2 inches, dark brown fine sandy loam
2 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover more than 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Colton—rapid in the subsoil and very rapid in the substratum; Duxbury—moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Colton—very low; Duxbury—moderate
Soil reaction: Colton—extremely acid to very strongly acid in the surface layer and subsurface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury—extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland or unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. The very low available water capacity of the Colton soil and low natural fertility also are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage. Planting drought-tolerant species helps to overcome the very low available water capacity.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The very low available water capacity of the Colton soil, a low organic matter content, and low natural fertility are limitations. Erosion is a hazard. Crops that are tolerant of drought grow best. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low available water capacity of the Colton soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Large stones may interfere with excavation but do not pose a significant limitation. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination can be detected by periodic testing of the ground water. Installing the effluent lines on the contour helps to overcome the slope. Large stones may interfere with excavation but do not pose a significant limitation.

The slope limits the use of this unit as a site for local roads and streets. Large stones may interfere with excavation but do not pose a significant limitation. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIs.

56D—Colton-Duxbury complex, 15 to 25 percent slopes, very stony. This unit consists of very deep, moderately steep soils. It is on the sides of long, narrow terraces and hills that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent excessively drained Colton soil, 35 percent well drained Duxbury soil, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Colton soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, black very gravelly fine sandy loam

Subsurface layer:
2 to 6 inches, light brownish gray very gravelly sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

Typically, the Duxbury soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, pinkish gray fine sandy loam

Subsoil:
1 to 2 inches, dark brown fine sandy loam
2 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover more than 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Colton—rapid in the subsoil and very rapid in the substratum; Duxbury—moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Colton—very low; Duxbury—moderate
Soil reaction: Colton—extremely acid to very strongly acid in the surface layer and subsurface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury—extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland or unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard. The very low available water capacity of the Colton soil, the slope, stones on the surface, and low natural fertility are main limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Planting drought-tolerant species helps to overcome the very low available water capacity. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. The very low available water capacity of the Colton soil also is a limitation. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the very low available water capacity of the Colton soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in some areas. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIs.

56E—Colton-Duxbury complex, 25 to 50 percent slopes, very stony. This unit consists of very deep, steep soils. It is on the sides of long, narrow terraces and hills. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent excessively drained Colton soil, 35 percent well drained Duxbury soil, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Colton soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, black very gravelly fine sandy loam

Subsurface layer:
2 to 6 inches, light brownish gray very gravelly sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

Typically, the Duxbury soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, pinkish gray fine sandy loam

Subsoil:
1 to 2 inches, dark brown fine sandy loam
2 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover more than 3 percent of the surface.

Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Colton—rapid in the subsoil and very rapid in the substratum; Duxbury—moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Colton—very low; Duxbury—moderate
Soil reaction: Colton—extremely acid to very strongly acid in the surface layer and subsurface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury—extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland.

This unit is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the very low available water capacity in the Colton soil, the slope, stones on the surface, and low natural fertility are the main limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Planting drought-tolerant species helps to overcome the low available water capacity. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, stones on the surface, and the very low available water capacity of the Colton soil. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the very low available water capacity of the Colton soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in most places. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIIs.

57B—Duxbury-Colton complex, 2 to 8 percent slopes. This unit consists of very deep, nearly level and gently sloping soils. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 150 acres in size.

This unit is about 50 percent well drained Duxbury soils, 35 percent excessively drained Colton soils, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Duxbury soil are as follows—

Surface layer:
0 to 6 inches, dark brown fine sandy loam

Subsoil:
6 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

The typically sequence, depth, and composition of the layers in the Colton soil are as follows—

Surface layer:
0 to 6 inches, black very gravelly fine sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover as much as 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Duxbury—moderately rapid in the subsoil and rapid to very rapid in the substratum; Colton—rapid in the subsoil and very rapid in the substratum
Available water capacity: Duxbury—moderate; Colton—very low
Soil reaction: Duxbury—extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum; Colton—extremely acid to very strongly acid in the surface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used for hay or pasture or row crops. Other areas are developed or are wooded.

This unit is well suited to hay and pasture. The very low available water capacity of the Colton soil and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the very low available water capacity.

This unit is well suited to cultivated crops, especially drought-tolerant crops. The very low available water capacity of the Colton soil, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low available water capacity of the Colton soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination can be detected by periodic testing of the ground water.

This unit has few limitations as a site for local roads and streets.

The capability subclass is IIe.

58C—Colton-Duxbury complex, 8 to 15 percent slopes. This unit consists of very deep, strongly sloping soils. It is on knolls, long, narrow terraces, and broad areas that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 150 acres in size.

This unit is about 50 percent excessively drained Colton soils, 35 percent well drained Duxbury soils, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

The typically sequence, depth, and composition of the layers in the Colton soil are as follows—

Surface layer:
0 to 6 inches, black very gravelly fine sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

The typical sequence, depth, and composition of the layers in the Duxbury soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover as much as 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Colton—rapid in the subsoil and very rapid in the substratum; Duxbury—moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Colton—very low; Duxbury—moderate
Soil reaction: Colton—extremely acid to very strongly acid in the surface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury—extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used for hay or pasture. Some areas are in row crops. Other areas are wooded or are developed.

This unit is suited to hay and pasture. The very low available water capacity of the Colton soil and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the very low available water capacity.

This unit is suited to cultivated crops, especially drought-tolerant crops. The very low available water capacity of the Colton soil, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low available water capacity of the Colton soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination can be detected by periodic testing of the ground water. Installing the effluent lines on the contour helps to overcome the slope.

The slope limits the use of this unit as a site for local roads and streets. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome this limitation.

The capability subclass is IVs.

58D—Colton-Duxbury complex, 15 to 25 percent slopes. This unit consists of very deep, moderately steep soils. It is on the sides of long, narrow terraces and hills that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

This unit is about 50 percent excessively drained Colton soils, 35 percent well drained Duxbury soils, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

The typically sequence, depth, and composition of the layers in the Colton soil are as follows—

Surface layer:
0 to 6 inches, black very gravelly fine sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

The typical sequence, depth, and composition of the layers in the Duxbury soil are as follows—

Surface layer:
0 to 4 inches, dark brown fine sandy loam

Subsoil:
4 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover as much as 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Colton—rapid in the subsoil and very rapid in the substratum; Duxbury—moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Colton—very low; Duxbury—moderate
Soil reaction: Colton—extremely acid to very strongly acid in the surface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury—extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland. Some areas are used as pasture or are developed.

This unit is poorly suited to hay and pasture. Erosion is a hazard, and the very low available water capacity of the Colton soil, the slope, and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Planting drought-tolerant species helps to overcome the very low available water capacity. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope. The very low available water capacity of the Colton soils also is a limitation. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the very low available water capacity of the Colton soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. Included areas where stones cover as much as 3 percent of the surface can interfere with the operation of equipment. Logging during periods of snow cover minimizes the

equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

59A—Deerfield loamy sand, 0 to 4 percent slopes. This soil is very deep, moderately well drained, and nearly level and gently sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of more sloping hills and mountains. Areas are irregular in shape and range from 5 to 350.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 11 inches, dark brown loamy sand

Subsoil:
11 to 19 inches, yellowish brown sand
19 to 24 inches, mottled, light olive brown sand
24 to 32 inches, mottled, yellowish brown sand

Substratum:
32 to 44 inches, mottled, olive brown sand
44 to 60 inches, mottled, olive gray sand

Some areas of this unit include soils that are redder in the subsoil or soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the moderately well drained Eldridge and Ninigret soils, the very poorly drained Scarboro soils, and the poorly drained Walpole soils. Eldridge and Ninigret soils are in landscape positions similar to those of the Deerfield soil, and Scarboro and Walpole soils are in depressions and drainageways. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid
Available water capacity: Low
Soil reaction: Very strongly acid to neutral in the surface layer and subsoil and moderately acid to neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture or row crops. Other areas are developed or are wooded.

This unit is well suited to hay and pasture. The low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the low available water capacity.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and a poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIIw.

61A—Eldridge fine sandy loam, 0 to 3 percent slopes. This soil is very deep, moderately well drained, and nearly level. It is on broad flats. Areas are irregular in shape and range from 5 to 50 acres in size.The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 10 inches, very dark grayish brown fine sandy loam

Subsoil:
10 to 13 inches, yellowish brown loamy coarse sand
13 to 24 inches, mottled, light olive brown sand
24 to 30 inches, mottled, olive brown sand

Substratum:
30 to 33 inches, mottled, olive gray silt loam
33 to 35 inches, mottled, dark brown silt loam
35 to 60 inches, mottled, light olive brown silt loam

Some areas of this unit include soils that have fine sandy loam or sandy loam in the subsoil.

Included in this unit in mapping are small areas of the moderately well drained Deerfield soils and the poorly drained Enosburg soils. Also included, in landscape positions similar to those of the Deerfield soil, are soils that have a sandy surface layer and a subsoil that is less than 16 inches thick. Deerfield soils are in landscape positions similar to those of the Eldridge soil. Enosburg soils are in depressions and drainageways. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid in the subsoil and moderately slow in the substratum
Available water capacity: Moderate
Soil reaction: Strongly acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: 1.0 to 2.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table, a poor filtering capacity in the subsoil, and the moderately slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIw.

61B—Eldridge fine sandy loam, 3 to 8 percent slopes. This soil is very deep, moderately well drained, and gently sloping. It is in broad areas. Areas are irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 10 inches, very dark grayish brown fine sandy loam

Subsoil:
10 to 13 inches, yellowish brown loamy coarse sand
13 to 24 inches, mottled, light olive brown sand
24 to 30 inches, mottled, olive brown sand

Substratum:
30 to 33 inches, mottled, olive gray silt loam
33 to 35 inches, mottled, dark brown silt loam
35 to 60 inches, mottled, light olive brown silt loam

Some areas of this unit include soils that have fine sandy loam or sandy loam in the subsoil.

Included in this unit in mapping are small areas of the moderately well drained Deerfield soils and the poorly drained Enosburg soils. Also included, in landscape positions similar to those of the Deerfield soil, are soils that have a sandy surface layer and a subsoil that is less than 16 inches thick. Deerfield soils are in landscape positions similar to those of the Eldridge soil. Enosburg soils are in depressions and

drainageways. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid in the subsoil and moderately slow in the substratum
Available water capacity: Moderate
Soil reaction: Strongly acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: 1.0 to 2.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion.

The potential productivity of this unit is high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table, a poor filtering capacity in the subsoil, and the moderately slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIw.

62—Enosburg loamy fine sand. This soil is very deep, poorly drained, and nearly level. It is on broad flats. Areas are irregular in shape and range from 3 to 50 acres in size.

Typically, this soil is covered by a thin layer of moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown loamy fine sand

Substratum:
6 to 16 inches, mottled olive gray sand
16 to 27 inches, greenish gray gravelly coarse sand
27 to 34 inches, mottled, olive silt
34 to 43 inches, mottled, gray silt
43 to 60 inches, gray silt

Included in this unit in mapping are small areas of the moderately well drained Eldridge soils and the very poorly drained Scarboro soils. Eldridge soils are on knolls and in convex areas, and Scarboro soils are in depressions. Included soils make up about 10 to 15 percent of the unit.

Important soil properties—

Permeability: Rapid in the upper part of the substratum and moderately slow in the lower part of the substratum
Available water capacity: Moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer and moderately acid to neutral in the substratum
Depth to bedrock: More than 60 inches
Water table: At or near the surface in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used as woodland or pasture. Other areas are used as cropland or are developed.

This unit is suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is poorly suited to cultivated crops if it is not drained. If drained it is suited to cultivation. The seasonal high water table is a limitation. Tillage and

harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is moderate for sugar maple and red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

Because of the seasonal high water table, a poor filtering capacity in the subsoil, and the moderately slow permeability in the substratum, this unit is unsuitable as a site for septic tank absorption fields. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IVw.

64B—Stockbridge gravelly silt loam, 3 to 8 percent slopes. This soil is very deep, well drained, and gently sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown gravelly silt loam

Subsoil:
6 to 13 inches, brown gravelly silt loam
13 to 28 inches, yellowish brown gravelly silt loam

Substratum:
28 to 60 inches, olive gravelly silt loam

Some areas of this unit include soils that are mottled within a depth of 30 inches. Other areas include soils that have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the well drained Dutchess and Paxton soils. Also included, throughout the unit, are areas where stones cover as much as 3 percent of the surface. Amenia and Georgia soils are in depressions and drainageways. Dutchess and Paxton soils are in landscape positions similar to those of the Stockbridge soil. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for row crops or hay crops, mainly silage corn and alfalfa. Other crops include are grain corn and truck crops. Some areas are used as pasture, are developed, or are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements.

The moderately slow or slow permeability in the substratum limits the use of this unit as a site for septic

tank absorption fields. Increasing the size of the absorption field helps to overcome this limitation.

The potential for frost action limits the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to overcome this limitation.

The capability subclass is IIe.

64C—Stockbridge gravelly silt loam, 8 to 15 percent slopes. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 200 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown gravelly silt loam

Subsoil:
6 to 13 inches, brown gravelly silt loam
13 to 28 inches, yellowish brown gravelly silt loam

Substratum:
28 to 60 inches, olive gravelly silt loam

Some areas of this unit include soils that are mottled within a depth of 30 inches. Other areas include soils that have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the well drained Dutchess and Paxton soils. Also included, throughout the unit, are areas where stones cover as much as 3 percent of the surface. Amenia and Georgia soils are in depressions and drainageways. Dutchess and Paxton soils are in landscape positions similar to those of the Stockbridge soil. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for row crops or hay crops, mainly silage corn and alfalfa. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The moderately slow or slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. Increasing the size of the absorption field helps to overcome this limitation.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

64D—Stockbridge gravelly silt loam, 15 to 25 percent slopes. This soil is very deep, well drained, and moderately steep. It is on the sides of hills and ridges. Areas are irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown gravelly silt loam

Subsoil:
6 to 13 inches, brown gravelly silt loam
13 to 28 inches, yellowish brown gravelly silt loam

Substratum:
28 to 60 inches, olive gravelly silt loam

Some areas of this unit include soils that are mottled within a depth of 30 inches. Other areas include soils that have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the well drained Dutchess and Paxton soils. Also included, throughout the unit, are areas where stones cover as much as 3 percent of the surface. Amenia and Georgia soils are in depressions and drainageways. Dutchess and Paxton soils are in landscape positions similar to those of the Stockbridge soil. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used as pasture or cropland or are developed.

This unit is suited to hay and pasture. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The slope severely limits the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Erosion is a hazard. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent, less sloping areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is IVe.

65B—Stockbridge gravelly silt loam, 3 to 8 percent slopes, very stony. This soil is very deep, well drained, and gently sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 50 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown gravelly silt loam

Subsoil:
6 to 13 inches, brown gravelly silt loam
13 to 28 inches, yellowish brown gravelly silt loam

Substratum:
28 to 60 inches, olive gravelly silt loam

Some areas of this unit include soils that are mottled within a depth of 30 inches. Other areas include soils that have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the well drained Dutchess and Paxton soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Amenia and Georgia soils are in depressions and drainageways. Dutchess and Paxton soils are in landscape positions

similar to those of the Stockbridge soil. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland or unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of surface stones, the unit is well suited to cultivation. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The moderately slow or slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. Increasing the size of the absorption field helps to overcome this limitation.Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The potential for frost action limits the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to overcome this limitation.

The capability subclass is VIs.

65C—Stockbridge gravelly silt loam, 8 to 15 percent slopes, very stony. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown gravelly silt loam

Subsoil:
6 to 13 inches, brown gravelly silt loam
13 to 28 inches, yellowish brown gravelly silt loam

Substratum:
28 to 60 inches, olive gravelly silt loam

Some areas of this unit include soils that are mottled within a depth of 30 inches. Other areas include soils that have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the well drained Dutchess and Paxton soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Amenia and Georgia soils are in depressions and drainageways. Dutchess and Paxton soils are in landscape positions similar to those of the Stockbridge soil. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland or unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The moderately slow or slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Increasing the area of absorption fields helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIs.

65D—Stockbridge gravelly silt loam, 15 to 25 percent slopes, very stony. This soil is very deep, well drained, and moderately steep. It is on the sides of hills and ridges. Areas are irregular in shape and range from 5 to 200 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown gravelly silt loam

Subsoil:
6 to 13 inches, brown gravelly silt loam
13 to 28 inches, yellowish brown gravelly silt loam

Substratum:
28 to 60 inches, olive gravelly silt loam

Some areas of this unit include soils that are mottled within a depth of 30 inches. Other areas include soils that have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the well drained Dutchess and Paxton soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Amenia and Georgia soils are in depressions and drainageways. Dutchess and Paxton soils are in landscape positions similar to those of the Stockbridge soil. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland or unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope

helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the slow or moderately slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

65E—Stockbridge gravelly silt loam, 25 to 45 percent slopes, very stony. This soil is very deep, well drained, and steep. It is on the sides of hills and ridges. Areas are irregular in shape and range from 5 to 125 acres in size. Stones cover less than 1 percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown gravelly silt loam

Subsoil:
6 to 13 inches, brown gravelly silt loam
13 to 28 inches, yellowish brown gravelly silt loam

Substratum:
28 to 60 inches, olive gravelly silt loam

Some areas of this unit include soils that are mottled within a depth of 30 inches. Other areas include soils that have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the well drained Dutchess and Paxton soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Amenia and Georgia soils are in depressions and drainageways. Dutchess and Paxton soils are in landscape positions similar to those of the Stockbridge soil. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a

hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stone.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the slow or moderately slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment.

The capability subclass is VIIs.

66B—Georgia and Amenia soils, 3 to 8 percent slopes. This unit is very deep, moderately well drained, and gently sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 200 acres in size.

This unit is about 40 percent Georgia soil, 40 percent Amenia soil, and 20 percent other soils. Some areas are mainly Georgia soil, some are mainly Amenia soil, and some consist of both. These soils are so similar in use and management that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Georgia soil are as follows—

Surface layer:
0 to 10 inches, dark brown loam

Subsoil:
10 to 22 inches, mottled, olive brown gravelly loam
22 to 30 inches, mottled, olive gravelly loam

Substratum:
30 to 60 inches, mottled, olive gravelly loam

The typical sequence, depth, and composition of the layers in the Amenia soil are as follows—

Surface layer:
0 to 8 inches, dark brown loam

Subsoil:
8 to 17 inches, olive brown gravelly loam
17 to 24 inches, mottled, olive brown gravelly fine sandy loam

Substratum:
24 to 46 inches, dark grayish brown gravelly fine sandy loam
46 to 60 inches, dark grayish brown fine sandy loam

Some areas of this unit include soils that have sandy loam in the subsoil and substratum. Other areas include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the poorly drained and very poorly drained Lyons soils, the poorly drained and somewhat poorly drained Massena soils, and the well drained Paxton soils. Also included, throughout the unit, are areas where stones cover as much as 3 percent of the surface. Lyons soils and Massena soils are in depressions and drainageways, and Paxton soils are on knolls and in convex areas. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow in the substratum
Available water capacity: High
Soil reaction: Georgia—strongly acid to neutral; Amenia—moderately acid to neutral in the surface layer and subsoil, and mildly alkaline or moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 3.0 feet in fall, winter, and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture or row crops. Other areas are developed or are wooded.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of

plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and the moderately slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action limits the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIe.

66C—Georgia and Amenia soils, 8 to 15 percent slopes. This unit is very deep, moderately well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 150 acres in size.

This unit is about 40 percent Georgia soil, 40 percent Amenia soil, and 20 percent other soils. Some areas are mainly Georgia soil, some are mainly Amenia soil, and some consist of both. These soils are so similar in use and management that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Georgia soil are as follows—

Surface layer:
0 to 10 inches, dark brown loam

Subsoil:
10 to 22 inches, mottled, olive brown gravelly loam
22 to 30 inches, mottled, olive gravelly loam

Substratum:
30 to 60 inches, mottled, olive gravelly loam

The typical sequence, depth, and composition of the layers in the Amenia soil are as follows—

Surface layer:
0 to 8 inches, dark brown loam

Subsoil:
8 to 17 inches, olive brown gravelly loam
17 to 24 inches, mottled, olive brown gravelly fine sandy loam

Substratum:
24 to 46 inches, dark grayish brown gravelly fine sandy loam
46 to 60 inches, dark grayish brown fine sandy loam

Some areas of this unit include soils that have sandy loam in the subsoil and substratum. Other areas include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the poorly drained and very poorly drained Lyons soils, the poorly drained and somewhat poorly drained Massena soils, and the well drained Paxton soils. Also included, throughout the unit, are areas where stones cover as much as 3 percent of the surface. Lyons soils and Massena soils are in depressions and drainageways, and Paxton soils are on knolls and in convex areas. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow in the substratum
Available water capacity: High
Soil reaction: Georgia—strongly acid to neutral; Amenia—moderately acid to neutral in the surface layer and subsoil, and mildly alkaline or moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 3.0 feet in fall, winter, and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture or row crops. Other areas are wooded or are developed.

This unit is well suited to hay and pasture. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at

the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion.

This unit is suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour help to control erosion. Diversion ditches that intercept runoff also help to control erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and the moderately slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action limits the use of this unit as a site for local roads and streets. The slope and the seasonal high water table also are limitations. Constructing the roads on fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

67B—Georgia and Amenia soils, 3 to 8 percent slopes, very stony. This unit is very deep, moderately well drained, and gently sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 40 percent Georgia soil, 40 percent Amenia soil, and 20 percent other soils. Some areas are mainly Georgia soil, some are mainly Amenia soil, and some consist of both. These soils are so similar in use and management that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Georgia soil are as follows—

Surface layer:
0 to 10 inches, dark brown loam

Subsoil:
10 to 22 inches, mottled, olive brown gravelly loam
22 to 30 inches, mottled, olive gravelly loam

Substratum:
30 to 60 inches, mottled, olive gravelly loam

The typical sequence, depth, and composition of the layers in the Amenia soil are as follows—

Surface layer:
0 to 8 inches, dark brown loam

Subsoil:
8 to 17 inches, olive brown gravelly loam
17 to 24 inches, mottled, olive brown gravelly fine sandy loam

Substratum:
24 to 46 inches, dark grayish brown gravelly fine sandy loam
46 to 60 inches, dark grayish brown fine sandy loam

Some areas of this unit include soils that have sandy loam in the subsoil and substratum. Other areas include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the poorly drained and very poorly drained Lyons soils, the poorly drained and somewhat poorly drained Massena soils, and the well drained Paxton soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Lyons soils and Massena soils are in depressions and drainageways, and Paxton soils are on knolls and in convex areas. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow in the substratum
Available water capacity: High

Soil reaction: Georgia—strongly acid to neutral; Amenia—moderately acid to neutral in the surface layer and subsoil, and mildly alkaline or moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 3.0 feet in fall, winter, and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland or unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of stones, the unit is well suited to cultivation. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and the moderately slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIs.

67C—Georgia and Amenia soils, 8 to 15 percent slopes, very stony. This unit is very deep, moderately well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 40 percent Georgia soil, 40 percent Amenia soil, and 20 percent other soils. Some areas are mainly Georgia soil, some are mainly Amenia soil, and some consist of both. These soils are so similar in use and management that separating them in mapping was not practical.

Typically, the Georgia soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark brown loam

Subsoil:
9 to 22 inches, mottled, olive brown gravelly loam
22 to 30 inches, mottled, olive gravelly loam

Substratum:
30 to 60 inches, mottled, olive gravelly loam

Typically, the Amenia soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark brown loam

Subsoil:
8 to 17 inches, olive brown gravelly loam
17 to 24 inches, mottled, olive brown gravelly fine sandy loam

Substratum:
24 to 46 inches, dark grayish brown gravelly fine sandy loam
46 to 60 inches, dark grayish brown fine sandy loam

Some areas of this unit include soils that have sandy loam in the subsoil and substratum. Other areas include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the poorly drained and very poorly drained Lyons soils, the poorly drained and somewhat poorly drained Massena soils, and the well drained Paxton soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Lyons soils and Massena soils are in depressions and drainageways, and Paxton soils are on knolls and in convex areas. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow in the substratum
Available water capacity: High
Soil reaction: Georgia—strongly acid to neutral; Amenia—moderately acid to neutral in the surface layer and subsoil, and mildly alkaline or moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 3.0 feet in fall, winter, and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland or unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and the moderately slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table and the slope also are limitations. Constructing the roads on fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIs.

67D—Georgia and Amenia soils, 15 to 25 percent slopes, very stony. This unit is very deep, moderately well drained, and moderately steep. It is on the sides of hills and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 40 percent Georgia soil, 40 percent Amenia soil, and 20 percent other soils. Some areas are mainly Georgia soil, some are mainly Amenia soil, and some consist of both. These soils are so similar in use and management that separating them in mapping was not practical.

Typically, the Georgia soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark brown loam

Subsoil:
8 to 22 inches, mottled, olive brown gravelly loam
22 to 30 inches, mottled, olive gravelly loam

Substratum:
30 to 60 inches, mottled, olive gravelly loam

Typically, the Amenia soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark brown loam

Subsoil:
8 to 17 inches, olive brown gravelly loam
17 to 24 inches, mottled, olive brown gravelly fine sandy loam

Substratum:
24 to 46 inches, dark grayish brown gravelly fine sandy loam
46 to 60 inches, dark grayish brown fine sandy loam

Some areas of this unit include soils that have sandy loam in the subsoil and substratum. Other areas include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the poorly drained and very poorly drained Lyons soils, the poorly drained and somewhat poorly drained Massena soils, and the well drained Paxton soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Lyons soils and Massena soils are in depressions and drainageways, and Paxton soils are on knolls and in convex areas. Included soils make up about 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and slow in the substratum
Available water capacity: High
Soil reaction: Georgia—strongly acid to neutral; Amenia—moderately acid to neutral in the surface layer and subsoil, and mildly alkaline or moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 3.0 feet in fall, winter, and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland or unimproved pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Harvesting during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope and the seasonal high water table limit the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in

basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. The seasonal high water table and the slow permeability in the substratum also are limitations. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

68A—Massena silt loam, 0 to 8 percent slopes, very stony. This soil is very deep, poorly drained and somewhat poorly drained, and nearly level and gently sloping. It is in depressions and drainageways and on toe slopes of knolls, hills, and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 3 to 50 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, gray silt loam

Subsoil:
9 to 15 inches, mottled, olive and olive gray channery loam
15 to 26 inches, mottled, olive gray channery loam

Substratum:
26 to 38 inches, mottled, firm grayish brown channery loam
38 to 60 inches, mottled, firm dark grayish brown channery loam

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils, the poorly drained and very poorly drained Lyons soils, and the well drained Stockbridge soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Amenia, Georgia, and Stockbridge soils are on knolls and in convex areas. Lyons soils are in depressions and drainageways. Included soils make up 10 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the surface layer and moderately slow or slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsoil and neutral to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 0.5 foot to 1.5 feet in fall, winter, and spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used as woodland or pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. The seasonal high water table is a limitation. Wetness limits the choice of pasture plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for red maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are

more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table. Included areas where stones on the surface are 1 to 5 feet apart interfere with the operation of equipment. Harvesting during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generaly unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this soil as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Included areas that have large stones and boulders on and below the surface interfere with the excavation and grading of roads.

The capability subclass is VIs.

71A—Castile gravelly fine sandy loam, 0 to 3 percent slopes. This soil is very deep, moderately well drained, and nearly level. It is on broad flats and long, narrow terraces that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 100 acre.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:

0 to 8 inches, dark grayish brown gravelly fine sandy loam

Subsoil:

8 to 12 inches, dark yellowish brown very gravelly fine sandy loam

12 to 26 inches, mottled, dark brown very gravelly fine sandy loam

Substratum:

26 to 60 inches, dark grayish brown extremely gravelly loamy sand

Included in this unit in mapping are small areas of the poorly drained and somewhat poorly drained Fredon soil and the excessively drained Warwick soils. Also included, throughout the unit, are soils that have a subsoil of very gravelly sand. Fredon soils are in depressions and drainageways, and Warwick soils are on knolls and in convex areas. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Low
Soil reaction: Moderately acid in the surface layer and subsoil and moderately acid to neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 2.0 feet in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for row crops or hay crops, mainly silage corn and alfalfa. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is moderate for sugar maple. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and a poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The potential for frost action limits the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser

textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIw.

72A—Fredon gravelly loam, 0 to 3 percent slopes. This soil is very deep, poorly drained and somewhat poorly drained, and nearly level. It is in drainageways and depressions, on long, narrow terraces that are slightly higher than the adjacent flood plain, and at the base of hills and mountains. Areas are irregular in shape and range from 3 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown gravelly loam

Subsoil:
8 to 12 inches, mottled, olive gravelly loam
12 to 18 inches, mottled, olive gray gravelly loam
18 to 24 inches, mottled, olive gray gravelly fine sandy loam

Substratum:
24 to 28 inches, mottled, olive gray gravelly loamy sand
28 to 60 inches, mottled, olive gray very gravelly sand

Included in this unit in mapping are small areas of the very poorly drained Adrian and Birdsall soils and the moderately well drained Castile soils. Also included, throughout the unit, are soils that have a subsoil of sand or gravelly sand. Adrian soils and Birdsall soils are in depressions and drainageways, and Castile soils are in convex areas. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately slow or slow in the subsoil and rapid in the substratum
Available water capacity: Moderate
Soil reaction: Moderately acid to neutral in the surface layer and subsoil and slightly acid to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Water table: Within a depth of 1.5 feet in fall, winter, and spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used as woodland or pasture. Other areas are used as cropland or are developed.

This unit is suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is poorly suited to cultivated crops if it is not drained. If drained it is suited. The seasonal high water table is a limitation. Tillage and harvesting are often delayed because of wetness. Where suitable outlets are available subsurface drainage can be used to lower the seasonal high water table.

The potential productivity of this unit is moderate for red maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and a poor filtering capacity in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIIw.

73—Scarboro muck. This soil is very deep, very poorly drained, and nearly level. It is in depressions on broad flats and terraces. Areas are irregular in shape and range from 3 to 200 acres in size.

Typically, this soil is covered by a layer of slightly decomposed leaves, needles, and twigs. Under that

layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, black muck

Subsurface layer:
9 to 16 inches, mottled, dark grayish brown sand

Substratum:
16 to 32 inches, mottled, grayish brown sand
32 to 60 inches, mottled, olive sand

Some areas of this unit include soils that have a thinner surface layer.

Included in this unit in mapping are small areas of the very poorly drained Adrian soils, the moderately well drained Deerfield soils, and the poorly drained Walpole soils. Adrian soils are in depressions and drainageways, Deerfield soils are on knolls and in convex areas, and Walpole soils are in landscape positions similar to those of the Scarboro soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid to very rapid
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches
Water table: Above the surface or within 1 foot of the surface in late fall, in winter, and in spring
Root zone: Extends to the substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some areas are developed.

This unit is poorly suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is unsuited to cultivated crops because of the seasonal high water table. Outlets for drainage are generally not available.

The potential productivity of this unit is moderate for red maple and high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and ponding.

This unit is generally unsuitable as a site for dwellings with basements because of ponding. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is unsuitable as a site for septic tank absorption fields because of ponding and a poor filtering capacity in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

Ponding and the potential for frost action limit the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the ponding and wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is Vw.

80A—Kingsbury silty clay loam, 0 to 3 percent slopes. This soil is very deep, somewhat poorly drained, and nearly level. It is on broad flats. Areas are irregular in shape and range from 5 to 600 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silty clay loam

Subsoil:
9 to 13 inches, mottled, dark grayish brown clay
13 to 20 inches, mottled, brown clay

Substratum:
20 to 60 inches, brown clay and strata of mottled, gray silt

Some areas of this unit include soils that have a surface layer and subsoil of fine sandy loam. Other areas include soils that have a surface layer of silt loam.

Included in this unit in mapping are small areas of the moderately well drained Elmridge and Vergennes soils and the very poorly drained Livingston soils. Elmridge soils are in landscape positions similar to those of the Kingsbury soil. Vergennes soils are on swells and in convex areas, and Livingston soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Slow or very slow
Available water capacity: High
Soil reaction: Strongly acid to mildly alkaline in the surface layer and subsoil and moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 0.5 foot to 2.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High
Shrink-swell potential: Moderate in the surface layer and high in the subsoil and substratum

Most areas of this unit are used for cropland or hay and pasture. Other areas are used as woodland or are developed.

This unit is well suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. The seasonal high water table is the main limitation. The low soil temperature, poor tilth, and droughtiness also are management concerns. A surface drainage system, such as land smoothing and shallow ditches, is necessary for the best growth of most crops. The soil warms slowly in spring, and the low soil temperature and wetness delay planting. Because of the clayey surface layer, the soil cannot be easily plowed and harrowed. It is generally plowed in fall, and freezing and thawing in winter make harrowing easier in spring.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the clayey surface layer and the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during dry periods or during winter. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality results from the wetness and from the droughtiness associated with the clayey surface layer. Planting during late spring reduces the seedling mortality rate.

The seasonal high water table and the high shrink-swell potential limit the use of this unit as a site for dwellings with basements. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Backfilling with sandy material and reinforcing footings and foundations help to prevent the structural damage caused by shrinking and swelling.

The seasonal high water table and the slow or very slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for spetic tank absorption fields.

The seasonal high water table, the potential for frost action, and low strength limit the use of this unit as a site for local roads and streets. Shrink-swell potential also is a hazard. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action, shrinking and swelling, and low strength.

The capability subclass is IIIw.

80B—Kingsbury silty clay loam, 3 to 8 percent slopes. This soil is very deep, somewhat poorly drained, and gently sloping. It is on broad upland areas. Areas are irregular in shape and range from 5 to 600 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silty clay loam

Subsoil:
9 to 13 inches, mottled, dark grayish brown clay
13 to 20 inches, mottled, brown clay

Substratum:
20 to 60 inches, brown clay and strata of mottled, gray silt

Some areas of this unit include soils that have a surface layer and subsoil of fine sandy loam. Other areas include soils that have a surface layer of silt loam.

Included in this unit in mapping are small areas of the moderately well drained Elmridge and Vergennes soils and the very poorly drained Livingston soils. Elmridge soils are in landscape positions similar to those of the Kingsbury soil. Vergennes soils are on swells and in convex areas, and Livingston soils are in

depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Slow or very slow
Available water capacity: High
Soil reaction: Strongly acid to mildly alkaline in the surface layer and subsoil and moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 0.5 foot to 2.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High
Shrink-swell potential: Moderate in the surface layer and high in the subsoil and substratum

Most areas of this unit are used for cropland or hay and pasture. Other areas are used as woodland or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. The seasonal high water table is the main limitation. The low soil temperature, poor tilth, and droughtiness also are management concerns. Erosion is a hazard. A surface drainage system, such as land smoothing and shallow ditches, is necessary for the best growth of most crops. The soil warms slowly in spring, and the cold soil temperature and wetness delay planting. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion. Because of the clayey surface layer, the soil cannot be easily plowed and harrowed. It is generally plowed in fall, and freezing and thawing in winter make harrowing easier in spring.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the clayey surface layer and the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during dry periods or during winter. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality results from the wetness and from the droughtiness associated with the clayey surface layer. Planting during late spring reduces the seedling mortality rate.

The seasonal high water table and the high shrink-swell potential limit the use of this unit as a site for dwellings with basements. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Backfilling with sandy material and reinforcing footings and foundations help to prevent the structural damage caused by shrinking and swelling.

The seasonal high water table and the slow or very slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The seasonal high water table, the potential for frost action, and low strength limit the use of this unit as a site for local roads and streets. The shrink-swell potential also is a hazard. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action, shrinking and swelling, and low strength.

The capability subclass is IIIw.

81—Livingston silty clay loam. This soil is very deep, very poorly drained, and nearly level. It is in depressions on broad flats. Areas are irregular in shape and range from 3 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches, very dark gray silty clay loam

Subsoil:
7 to 44 inches, mottled, firm, gray clay

Substratum:
44 to 60 inches, mottled, firm, gray clay

Included in this unit in mapping are small areas of soils that are subject to flooding and soils that have a thinner surface layer than in the Livingston soil. The soils that are subject to flooding are in drainageways or near streams. The soils that have thinner a surface layer are in landscape positions similar to those of the Livingston soil. Included soils make up 5 to 10 percent of the unit.

Important soil properties—

Permeability: Slow or very slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to mildly alkaline in the subsoil, and mildly alkaline to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Water table: Within 1 foot of the surface throughout the year
Root zone: Typically extends to the substratum
Potential for frost action: High
Shrink-swell potential: Moderate

Most areas of this unit are in scrub woods or pasture.

This unit is poorly suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is unsuited to cultivated crops because of the seasonal high water table. Outlets for drainage are generally not available.

The potential productivity of this unit is moderate for red maple. The main problem affecting timber production and harvesting is the equipment limitation. Operating logging equipment is difficult because of the clayey surface layer and the wetness caused by seasonal high water table. Logging activities are more efficiently carried out during dry periods or during winter. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the clayey surface layer and the seasonal high water table. Planting during early summer reduces the seedling mortality rate.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. The shrink-swell potential also is a limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the slow or very slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table, the potential for frost action, and low strength limit the use of this unit as a site for local roads and streets. Shrink-swell potential also is a hazard. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action, shrinking and swelling, and low strength.

The capability subclass is Vw.

82B—Vergennes clay, 3 to 8 percent slopes. This soil is very deep, moderately well drained, and gently sloping. It is on broad upland areas and knolls. Areas are irregular in shape and range from 5 to 200 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown clay

Subsurface layer:
9 to 11 inches, brown and dark brown clay

Subsoil:
11 to 18 inches, mottled, dark brown clay

Substratum:
18 to 60 inches, mottled, brown clay

Included in this unit in mapping are small areas of the moderately well drained Elmridge soils, the somewhat poorly drained Kingsbury soils, and the very poorly drained Livingston soils. Also included, along the edges of the unit, are soils that have bedrock within 6 feet of the surface. Elmridge soils are in landscape positions similar to those of the Vergennes soil. Kingsbury and Livingston soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Slow or very slow in the subsoil and very slow in the substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsurface layer, mildly alkaline to moderately alkaline in the subsoil, and moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.0 to 3.0 feet in winter and spring
Potential for frost action: Moderate

Root zone: Typically extends to the substratum
Shrink-swell potential: Moderate

Most areas of this unit are used for cropland or hay and pasture. Other areas are developed or are wooded.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. Erosion is a hazard. The seasonal high water table is the main limitation. The low soil temperature, poor tilth, and droughtiness also are management concerns. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion. A surface drainage system, such as land smoothing and shallow ditches, is necessary for the best growth of most crops. The soil warms slowly in spring, and the cold soil temperature and wetness delay planting. Because of the clayey surface layer, the soil cannot be easily plowed and harrowed. It is generally plowed in fall, and freezing and thawing in winter make harrowing easier in spring.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. The wetness and the droughtiness caused by the clayey surface layer result in a high rate of seedling mortality. The clayey surface layer and the wetness caused by the seasonal high water table limit the use of equipment. Logging activities are more efficiently carried out during winter or during dry periods.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Shrink-swell potential also is a limitation. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Backfilling with sandy material and reinforcing footings and foundations help to prevent the structural damage caused by shrinking and swelling.

The seasonal high water table and the very slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

Low strength limits the use of this unit as a site for local roads and streets. Shrink-swell potential and frost action also are limitations. Providing coarser textured base material helps to overcome these limitations.

The capability subclass is IIe.

82C—Vergennes clay, 8 to 15 percent slopes. This soil is very deep, moderately well drained, and strongly sloping. It is on knolls and on upland hills and ridges. Areas are irregular in shape and range from 5 to 200 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown clay

Subsurface layer:
8 to 11 inches, brown and dark brown clay

Subsoil:
11 to 18 inches, mottled, dark brown clay

Substratum:
18 to 60 inches, mottled, brown clay

Included in this unit in mapping are small areas of the moderately well drained Elmridge soils, the somewhat poorly drained Kingsbury soils, and the very poorly drained Livingston soils. Also included, along the edges of the unit, are soils that have bedrock within 6 feet of the surface. Elmridge soils are in landscape positions similar to those of the Vergennes soil. Kingsbury and Livingston soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Slow or very slow in the subsoil and very slow in the substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsurface layer, mildly alkaline to moderately alkaline in the subsoil, and moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.0 to 3.0 feet in winter and spring
Potential for frost action: Moderate
Root zone: Typically extends to the substratum
Shrink-swell potential: Moderate

Most areas of this unit are used for cropland or hay and pasture. Other areas are developed or are wooded.

This unit is well suited to hay and pasture. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at

the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion.

This unit is suited to cultivated crops. Erosion is a hazard. The seasonal high water table is a limitation. The low soil temperature, poor tilth, and droughtiness also are management concerns. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff can also be used to control erosion. Because of the clayey surface layer, the soil cannot be easily plowed and harrowed. It is generally plowed in fall, and freezing and thawing in winter make harrowing easier in spring. The soil warms slowly in spring, and the low soil temperature and wetness delay planting.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. The wetness and the droughtiness caused by the clayey surface layer result in a high rate of seedling mortality. The clayey surface layer and the wetness caused by the seasonal high water table limit the use of equipment. Logging activities are more efficiently carried out during winter or during dry periods. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope and the shrink-swell potential also are limitations. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Backfilling with sandy material and reinforcing footings and foundations help to prevent the structural damage caused by shrinking and swelling. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and the very slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing the effluent lines on the contour helps to overcome the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

Low strength limits the use of this unit as a site for local roads and streets. The slope, the potential for frost action, and the shrink-swell potential also are limitations. Providing coarser textured base material helps to prevent the damage caused by frost action, shrinking and swelling, and low strength. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

82D—Vergennes clay, 15 to 25 percent slopes. This soil is very deep, moderately well drained, and moderately steep. It is on the sides of hills and gullies. Areas are irregular in shape and range from 5 to 200 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown clay

Subsurface layer:
3 to 6 inches, brown clay

Subsoil:
6 to 11 inches, brown and dark brown clay
11 to 18 inches, mottled, dark brown clay

Substratum:
18 to 60 inches, mottled, brown clay

Included in this unit in mapping are small areas of the somewhat poorly drained Kingsbury soils and the very poorly drained Livingston soils. Also included, along the edges of the unit, are soils that have bedrock within 6 feet of the surface. Kingsbury and Livingston soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Slow or very slow in the subsoil and very slow in the substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsurface layer, mildly alkaline to moderately alkaline in the subsoil, and moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.0 to 3.0 feet in winter and spring
Potential for frost action: Moderate

Root zone: Typically extends to the substratum
Shrink-swell potential: Moderate

Most areas of this unit are used as pasture or hayland. Other areas are used as cropland or woodland or are developed.

This soil is poorly suited to hay and pasture. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

Crop production is generally not practical on this unit because of the slope. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation caused by the clayey surface layer and the slope. The wetness and the droughtiness caused by the clayey surface layer result in a high rate of seedling mortality. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Logging activities are more efficiently carried out during winter or during dry periods.

The slope and the seasonal high water table limit the use of this unit as a site for dwellings with basements. Shrink-swell potential also is a limitation. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Backfilling with sandy material and reinforcing footings and foundations help to prevent the structural damage caused by shrinking and swelling. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope, the seasonal high water table, and the slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

Low strength and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action and the shrink-swell potential also are limitations. Providing coarser textured base material helps to prevent the damage caused by frost action, shrinking and swelling, and low strength. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is IVe.

82E—Vergennes clay, 25 to 50 percent slopes. This soil is very deep, moderately well drained, and steep. It is on the sides of hills and gullies. Areas are long and narrow or irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown clay

Subsurface layer:
3 to 6 inches, brown clay

Subsoil:
6 to 11 inches, brown and dark brown clay
11 to 18 inches, mottled, dark brown clay

Substratum:
18 to 60 inches, mottled, brown clay

Included in this unit in mapping are small areas of the somewhat poorly drained Kingsbury soils and the very poorly drained Livingston soils. Also included, along the edges of the unit, are soils that have bedrock within 6 feet of the surface. Kingsbury and Livingston soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Slow or very slow in the subsoil and very slow in the substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsurface layer, mildly alkaline to moderately alkaline in the subsoil, and moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.0 to 3.0 feet in winter and spring
Potential for frost action: Moderate
Root zone: Typically extends to the substratum
Shrink-swell potential: Moderate

Most areas of this unit are used as woodland or pasture.

This unit is poorly suited to pasture and generally unsuited to hay. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation caused by the clayey surface layer and the slope. The wetness and the droughtiness caused by the clayey surface layer result in a high rate of seedling mortality. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the adjacent areas or on the less steep areas of the unit minimizes the equipment limitation caused by the slope. Logging activities are more efficiently carried out during winter or during dry period.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope, the seasonal high water table, and the slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

Low strength and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action and the shrink-swell potential also are limitations. Providing coarser textured base material helps to prevent the damage caused by frost action, shrinking and swelling, and low strength. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIe.

86—Linwood muck. This soil is very deep, very poorly drained, and nearly level. It is in bogs and swamps on flood plains and broad, flat areas. Ponding is common in late fall, in winter, in spring, and in early summer. Areas are irregular in shape and range from 3 to 350 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 36 inches, dark reddish brown and dark gray muck

Substratum:
36 to 60 inches, light brownish gray sandy loam

Some areas of this unit include soils that have an organic surface layer less than 16 inches thick. Other areas include soils that have a sandy substratum.

Included in this unit in mapping are small areas of the very poorly drained Pinnebog soils generally near the center of the unit. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately slow or slowly rapid in the surface layer and moderate in the substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral
Depth to bedrock: More than 60 inches
Water table: Above the surface or within a depth of 1 foot in late fall, in winter, in spring, and in early summer
Root zone: Extends throughout the surface layer
Potential for frost action: High

Most areas of this unit are scrub woods.

This unit is poorly suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is unsuited to cultivated crops because of the seasonal high water table. Outlets for drainage are generally not available.

The potential productivity of this unit is moderate for red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the

uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and ponding.

This unit is generally unsuitable as a site for dwellings with basements because of ponding and subsidence in the organic layer. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is unsuitable as a site for septic tank absorption fields because of ponding and subsidence in the organic layer. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for local roads and streets because of ponding, the potential for frost action, and subsidence in the organic layer.

The capability subclass is Vw.

88—Birdsall muck. This soil is very deep, very poorly drained, and nearly level. It is in depressions on broad flat, upland areas. Areas are irregular in shape and range from 3 to 150 acres in size.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown muck
6 to 13 inches, mottled, very dark grayish brown silt loam

Subsoil:
13 to 28 inches, mottled, olive gray silt loam

Substratum:
28 to 60 inches, olive gray silt loam

Some areas of this unit include soils that have a thinner surface layer.

Included in this unit in mapping are small areas of the poorly drained Canandaigua and Raynham soils. Also included, near streams, are soils that are subject to flooding. Canandaigua and Raynham soils are in convex areas. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately slow or slow in the subsoil and slow in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and strongly acid to neutral in the subsoil and substratum
Depth to bedrock: More than 60 inches
Water table: Within 1.0 foot of the surface throughout the year
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are scrub woods or pasture.

This unit is poorly suited to hay and pasture. The seasonal high water table is a limitation. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is unsuited to cultivated crops because of the seasonal high water table. Outlets for drainage are generally not available.

The potential productivity of this unit is moderate for red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and ponding.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is Vw.

90B—Hartland silt loam, 3 to 8 percent slopes. This soil is very deep, well drained, and gently sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the

base of hills and mountains. Slopes generally are smooth. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, dark brown silt loam

Subsoil:
6 to 17 inches, brown silt loam

Substratum:
17 to 40 inches, stratified pale olive very fine sandy loam and brown silt loam
40 to 60 inches, yellowish brown silt loam

Some areas of this unit include soils that have a reddish brown subsoil.

Included in this unit in mapping are small areas of the moderately well drained Belgrade soils and the excessively drained Windsor soils. Belgrade soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hartland soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: High

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are used as woodland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements.

The moderately slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. Increasing the size of the absorption field helps to overcome this limitation.

The potential for frost action limits the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to overcome this limitation.

The capability subclass is IIe.

90C—Hartland silt loam, 8 to 15 percent slopes. This soil is very deep, well drained, and strongly sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Slopes generally are smooth. Areas are irregular in shape and range from 5 to 125 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, dark brown silt loam

Subsoil:
6 to 17 inches, brown silt loam

Substratum:
17 to 40 inches, stratified pale olive very fine sandy loam and brown silt loam
40 to 60 inches, yellowish brown silt loam

Some areas of this unit include soils that have a reddish brown subsoil.

Included in this unit in mapping are small areas of the moderately well drained Belgrade soils and the excessively drained Windsor soils. Belgrade soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hartland soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: High

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are wooded.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The moderately slow permeability in the substratum limits the use of this unit as a site for septic tank absorption fields. Increasing the size of the absorption field helps to overcome this limitation.

The potential for frost action limits the use of this unit as a site for local roads and streets. The slope also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

90D—Hartland silt loam, 15 to 25 percent slopes. This soil is very deep, well drained, and moderately steep. It is on the sides of hills, gullies, and long, narrow terraces that are higher than the adjacent flood plain and at the base of mountains. Slopes generally are smooth. Areas are irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, dark brown silt loam

Subsoil:
6 to 17 inches, brown silt loam

Substratum:
17 to 40 inches, stratified pale olive very fine sandy loam and brown silt loam
40 to 60 inches, yellowish brown silt loam

Some areas of this unit include soils that have a reddish brown subsoil.

Included in this unit in mapping are small areas of the moderately well drained Belgrade soils and the excessively drained Windsor soils. Belgrade soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hartland soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: High

Most areas of this unit are used for hay or pasture. Other areas are used for cropland or are wooded or developed.

This unit is suited to hay and pasture. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The slope limits the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Erosion is a hazard. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for

construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is IVe.

95—Udorthents, loamy. These nearly level to steep, well drained to somewhat poorly drained soils are in areas that have been disturbed. In some areas, the original surface layer and subsurface layer and some of the substratum have been removed and loamy material is exposed. In other areas the original soil has been covered with loamy fill material. Areas are irregular in shape and range from 3 to 100 acres in size.

Important soil properties—

Permeability: Moderately rapid to very slow
Available water capacity: High to very low
Soil reaction: Extremely acid to neutral
Depth to bedrock: 2 inches to more than 60 inches
Depth to the water table: 2.0 feet to more than 60 inches
Root zone: The root zone extends into the surface layer and upper part of the substratum
Potential for frost action: Moderate to high.

Included areas of undisturbed soils make up less than 5 percent of this unit.

Most areas of this unit are used for landfills or are developed. Onsite investigation is necessary to determine the hazards and degree of limitations for specific uses.

This unit is not assigned to a capability subclass.

96—Udipsamments, nearly level. These nearly level, excessively drained to somewhat poorly drained soils are in areas that have been disturbed, such as in gravel pits and foundry fills. In some areas, the original surface layer and subsurface layer and some of the substratum have been removed and sandy material is exposed. In other areas the original soil has been covered with sandy fill material. Areas are irregular in shape and range from 3 to 100 acres in size.

Important soil properties—

Permeability: Moderately rapid to very rapid
Available water capacity: Low to very low
Soil reaction: Extremely acid to moderately alkaline
Depth to bedrock: 2 inches to more than 60 inches
Depth to the water table: 2.0 feet to more than 60 inches
Root zone: Typically there are few to no roots, but the zone extends into the surface layer and upper part of the substratum
Potential for frost action: Low

Included in this unit in mapping are small areas of Paxton, Colton, Duxbury, Sudbury and Windsor soils. These soils make up 5 percent of the unit.

Most areas of this unit are used for landfills or gravel pits or are developed. Onsite investigation is necessary to determine the hazards and degree of limitations for specific uses.

This unit is not assigned to a capability subclass.

97A—Warwick-Quonset complex, 0 to 3 percent slopes. This unit consists of nearly level soils on long, narrow terraces and broad flat areas that are higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 350 acres in size.

This unit is about 55 percent very deep, somewhat excessively drained Warwick soil; 25 percent very deep, excessively drained Quonset soil; and 20 percent other soils. The Warwick and Quonset soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Warwick soil are as follows—

Surface layer:
0 to 6 inches, dark brown channery fine sandy loam

Subsoil:
6 to 12 inches, dark yellowish brown very channery fine sandy loam
12 to 27 inches, light olive brown very channery fine sandy loam

Substratum:
27 to 60 inches, olive brown very channery sand

The typical sequence, depth, and composition of the layers in the Quonset soil are as follows—

Surface layer:
0 to 7 inches, dark brown very gravelly loamy sand

Subsoil:
7 to 13 inches, yellowish brown very gravelly and very channery loamy sand
13 to 20 inches, olive brown very gravelly and very channery loamy coarse sand

Substratum:
20 to 60 inches, light olive brown very channery coarse sand

Included in this unit in mapping are small areas of the moderately well drained Castile soils and the well drained Dutchess and Hartland soils. Castile soils are in depressions and drainageways, Dutchess soils are near the edges of the unit, and Hartland soils are in landscape positions similar to those of the Warwick and Quonset soils. Included soils make up about 20 percent of the unit.

Important soil properties—

Permeability: Warwick—moderately rapid in the subsoil and very rapid in the substratum; Quonset—moderately rapid to rapid in the subsoil and very rapid in the substratum
Available water capacity: Warwick—low; Quonset—very low
Soil reaction: Warwick—extremely acid to slightly acid in the surface layer, very strongly acid to moderately acid in the subsoil, and slightly acid to very strongly acid in the substratum; Quonset—extremely acid to strongly acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Warwick—typically extends to the top of the substratum; Quonset—typically extends into the subsoil
Potential for frost action: Low

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are used as woodland.

This unit is well suited to hay and pasture. The very low or low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the low and very low available water capacity.

This unit is well suited to cultivated crops, especially drought-tolerant crops. The very low or low available water capacity, low natural fertility, and a low organic matter content are limitations. Growing cover crops, including grasses and legumes in the cropping system, and using supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low or low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. There is a hazard of cutbanks caving.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination may be detected by periodic testing of the ground water.

This unit has few limitations as a site for local roads and streets.

The capability subclass is IIs.

97B—Warwick-Quonset complex, 3 to 8 percent slopes. This unit consists of gently sloping soils on tops of terraces and broad flat areas that are higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 125 acres in size.

This unit is about 50 percent very deep, somewhat excessively drained Warwick soil; 30 percent very deep, excessively drained Quonset soil; and 20 percent other soils. The Warwick and Quonset soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Warwick soil are as follows—

Surface layer:
0 to 6 inches, dark brown channery fine sandy loam

Subsoil:
6 to 12 inches, dark yellowish brown very channery fine sandy loam
12 to 27 inches, light olive brown very channery fine sandy loam

Substratum:
27 to 60 inches, olive brown very channery sand

The typical sequence, depth, and composition of the layers in the Quonset soil are as follows—

Surface layer:
0 to 7 inches, dark brown very gravelly loamy sand

Subsoil:
7 to 13 inches, yellowish brown very gravelly and very channery loamy sand
13 to 20 inches, olive brown very gravelly and very channery loamy coarse sand

Substratum:
20 to 60 inches, light olive brown very channery coarse sand

Included in this unit in mapping are small areas of the moderately well drained Castile soils and the well drained Dutchess and Hartland soils. Castile soils are in depressions and drainageways, Dutchess soils are near the edges of the unit, and Hartland soils are in landscape positions similar to those of the Warwick and Quonset soils. Included soils make up about 20 percent of the unit.

Important soil properties—

Permeability: Warwick—moderately rapid in the subsoil and very rapid in the substratum; Quonset—moderately rapid to rapid in the subsoil and very rapid in the substratum
Available water capacity: Warwick—low; Quonset—very low
Soil reaction: Warwick—extremely acid to slightly acid in the surface layer, very strongly acid to moderately acid in the subsoil, and slightly acid to very strongly acid in the substratum; Quonset—extremely acid to strongly acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Warwick—typically extends to the top of the substratum; Quonset—typically extends into the subsoil
Potential for frost action: Low

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are wooded.

This unit is well suited to hay and pasture. The very low or low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the low and very low available water capacity.

This unit is well suited to cultivated crops, especially drought-tolerant crops. The very low or low available water capacity, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low or low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. There is a hazard of cutbanks caving.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination may be detected by periodic testing of the ground water.

This unit has few limitations as a site for local roads and streets.

The capability subclass is IIe.

97C—Warwick-Quonset complex, 8 to 15 percent slopes. This unit consists of strongly sloping soils on long, narrow terraces, knolls, and broad flat areas that are higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 100 acres in size.

This unit is about 40 percent very deep, somewhat excessively drained Warwick soil; 40 percent very deep, excessively drained Quonset soil; and 20 percent other soils. The Warwick and Quonset soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Warwick soil are as follows—

Surface layer:
0 to 6 inches, dark brown channery fine sandy loam

Subsoil:
6 to 12 inches, dark yellowish brown very channery fine sandy loam
12 to 27 inches, light olive brown very channery fine sandy loam

Substratum:
27 to 60 inches, olive brown very channery sand

The typical sequence, depth, and composition of the layers in the Quonset soil are as follows—

Surface layer:
0 to 7 inches, dark brown very gravelly loamy sand

Subsoil:
7 to 13 inches, yellowish brown very gravelly and very channery loamy sand
13 to 20 inches, olive brown very gravelly and very channery loamy coarse sand

Substratum:
20 to 60 inches, light olive brown very channery coarse sand

Included in this unit in mapping are small areas of the moderately well drained Castile soils and the well drained Dutchess and Hartland soils. Castile soils are in depressions and drainageways, Dutchess soils are near the edges of the unit, and Hartland soils are in landscape positions similar to those of the Warwick and Quonset soils. Included soils make up about 20 percent of the unit.

Important soil properties—

Permeability: Warwick—moderately rapid in the subsoil and very rapid in the substratum; Quonset—moderately rapid to rapid in the subsoil and very rapid in the substratum
Available water capacity: Warwick—low; Quonset—very low
Soil reaction: Warwick—extremely acid to slightly acid in the surface layer, very strongly acid to moderately acid in the subsoil, and slightly acid to very strongly acid in the substratum; Quonset—extremely acid to strongly acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Warwick—typically extends to the top of the substratum; Quonset—typically extends into the subsoil
Potential for frost action: Low

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are wooded.

This unit is well suited to hay and pasture. The very low or low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the low and very low available water capacity.

This unit is suited to cultivated crops, especially drought-tolerant crops. The very low or low available water capacity, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low or low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. There is a hazard of cutbanks caving.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination may be detected by periodic testing of the ground water.

The slope limits the use of this unit as a site for local roads and streets. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome this limitation.

The capability subclass is IIIe.

97D—Warwick-Quonset complex, 15 to 25 percent slopes. This unit consists of moderately steep soils. It is on long, narrow terraces and hills that are higher than the adjacent flood plain and at the base of mountains. Areas are long and narrow or irregular in shape and range from 5 to 75 acres in size.

This unit is about 40 percent very deep, somewhat excessively drained Warwick soil; 40 percent very deep, excessively drained Quonset soil; and 20 percent other soils. The Warwick and Quonset soils are in areas so intermingled that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Warwick soil are as follows—

Surface layer:
0 to 6 inches, dark brown channery fine sandy loam

Subsoil:
6 to 12 inches, dark yellowish brown very channery fine sandy loam
12 to 27 inches, light olive brown very channery fine sandy loam

Substratum:
27 to 60 inches, olive brown very channery sand

The typical sequence, depth, and composition of the layers in the Quonset soil are as follows—

Surface layer:
0 to 7 inches, dark brown very gravelly loamy sand

Subsoil:
7 to 13 inches, yellowish brown very gravelly and very channery loamy sand
13 to 20 inches, olive brown very gravelly and very channery loamy coarse sand

Substratum:
20 to 60 inches, light olive brown very channery coarse sand

Included in this unit in mapping are small areas of the moderately well drained Castile soils and the well drained Dutchess and Hartland soils. Castile soils are in depressions and drainageways, Dutchess soils are near the edges of the unit, and Hartland soils are in landscape positions similar to those of the Warwick and Quonset soils. Included soils make up about 20 percent of the unit.

Important soil properties—

Permeability: Warwick—moderately rapid in the subsoil and very rapid in the substratum; Quonset—moderately rapid to rapid in the subsoil and very rapid in the substratum

Available water capacity: Warwick—low; Quonset—very low

Soil reaction: Warwick—extremely acid to slightly acid in the surface layer, very strongly acid to moderately acid in the subsoil, and slightly acid to very strongly acid in the substratum; Quonset—extremely acid to strongly acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum

Depth to bedrock: More than 60 inches

Depth to the water table: At least 60 inches

Root zone: Warwick—typically extends to the top of the substratum; Quonset—typically extends into the subsoil

Potential for frost action: Low

Most areas of this unit are used for hay or pasture. Other areas are used for cropland or are wooded or developed.

This unit is poorly suited to hay and pasture. Erosion is a hazard, and the low or very low available water capacity, the slope, and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and to control erosion. Planting drought-tolerant species helps to overcome the low and very low available water capacity. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The slope limits the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the very low or low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant

cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use. There is a hazard of cutbanks caving.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and a poor filtering capacity in the soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in some areas.

The capability subclass is IVe.

98E—Quonset-Warwick complex, 25 to 45 percent slopes. This unit consists of steep soils. It is on the sides of long, narrow terraces and hills that are higher than the adjacent flood plain and at the base of mountains. Areas are long and narrow irregular in shape and range from 5 to 75 acres in size.

This unit is about 50 percent very deep, excessively drained Quonset soil; 35 percent very deep, somewhat excessively drained Warwick soil; and 15 percent other soils. The Quonset and Warwick soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Quonset soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches, dark brown very gravelly loamy sand

Subsoil:
7 to 13 inches, yellowish brown very gravelly and very channery loamy sand
13 to 20 inches, olive brown very gravelly and very channery loamy coarse sand

Substratum:
20 to 60 inches, light olive brown very channery coarse sand

Typically, the Warwick soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, dark brown channery fine sandy loam

Subsoil:
6 to 12 inches, dark yellowish brown very channery fine sandy loam
12 to 27 inches, light olive brown very channery fine sandy loam

Substratum:
27 to 60 inches, olive brown very channery sand

Included in this unit in mapping are small areas of the moderately well drained Castile soils and the well drained Dutchess soils. Castile soils are in depressions and drainageways, and Dutchess soils are near the edges of the unit. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Quonset—moderately rapid to rapid in the subsoil and very rapid in the substratum; Warwick—moderately rapid in the subsoil and very rapid in the substratum
Available water capacity: Quonset—very low; Warwick—low
Soil reaction: Quonset—extremely acid to strongly acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum; Warwick—extremely acid to slightly acid in the surface layer, very strongly acid to moderately acid in the subsoil, and slightly acid to very strongly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Quonset—typically extends into the subsoil; Warwick—typically extends to the top of the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland or pasture.

This unit is poorly suited to pasture and generally unsuited to hay. Erosion is a hazard, and the low or very low available water capacity, the slope, and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Planting drought-tolerant species helps to overcome the very low and low available water capacity. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion and seedling mortality are hazards. The main

problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Droughtiness, which results from the very low or low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and a poor filtering capacity in the soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. Constructing the roads across the slope or on the contour helps to overcome this limitation. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIs.

99B—Copake gravelly fine sandy loam, 2 to 8 percent slopes. This soil is very deep, well drained and somewhat excessively drained, and nearly level to gently sloping. It is on knolls, long, narrow terraces, and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches, brown gravelly fine sandy loam

Subsoil:
8 to 15 inches, yellowish brown gravelly fine sandy loam
15 to 27 inches, light olive brown gravelly fine sandy loam

Substratum:
27 to 60 inches, olive very gravelly loamy coarse sand

Included in this unit in mapping are small areas of the moderately well drained Castile and Tisbury soils, the excessively drained Quonset soils, and the somewhat excessively drained Warwick soils. Castile and Tisbury soils are in depressions and drainageways, and Quonset and Warwick soils are in landscape positions similar to those of the Copake soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid in the subsoil and very rapid in the substratum
Available water capacity: Moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer, strongly acid to neutral in the subsoil, and slightly acid to neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are wooded.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. There is a hazard of cutbanks caving.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination may be detected by periodic testing of the ground water.

This unit has few limitations as a site for local roads and streets.

The capability subclass is IIe.

104B—Groton gravelly loam, 2 to 8 percent slopes. This soil is very deep, excessively drained, and nearly level to gently sloping. It is on knolls, long, narrow terraces, and broad areas that are slightly higher than

the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches, very dark brown gravelly loam

Subsoil:
9 to 13 inches, dark brown very gravelly sandy loam

Substratum:
13 to 60 inches, very dark grayish brown extremely gravelly loamy coarse sand

Some areas of this unit include soils that do not have carbonates within a depth of 40 inches.

Included in this unit in mapping are small areas of the well drained Copake soils and the moderately well drained Tisbury soils. Tisbury soils are in depressions and drainageways, and Copake soils are in landscape positions similar to those of the Groton soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately rapid to rapid in the subsoil and very rapid in the substratum
Available water capacity: Low
Soil reaction: Moderately acid to neutral in the surface layer and subsoil and mildly alkaline to neutral in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are wooded.

This unit is suited to hay and pasture. The low available water capacity is the main limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the low available water capacity.

This unit is suited to cultivated crops, especially drought-tolerant crops. The low available water capacity and a low organic matter content are limitations. Erosion is a hazard. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity of the unit and help to maintain the fertility and organic matter content of the unit. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. There is a hazard of cutbanks caving.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination may be detected by periodic testing of the ground water.

This unit has few limitations as a site for local roads and streets.

The capability subclass is IIIs.

105—Tioga fine sandy loam. This soil is very deep, well drained, and nearly level. It is on flood plains. The soil is occasionally flooded for brief periods in late fall, in winter, and in spring. Areas are long and narrow or irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 12 inches, dark grayish brown fine sandy loam

Subsoil:
12 to 28 inches, light olive brown fine sandy loam

Substratum:
28 to 60 inches, light olive brown fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the well drained Hamlin soils and the moderately well drained and somewhat poorly drained Middlebury soils. Also included, along stream channels, are soils that are loamy sand or sand throughout. Hamlin soils are in landscape positions similar to those of the Tioga soil. Middlebury soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid in the subsoil and moderate to rapid in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and subsoil and moderately acid to mildly alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 3.0 to 6.0 feet in winter and spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland.

This unit is well suited to hay and pasture. Flooding is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion caused by floodwater.

This unit is well suited to cultivated crops. Flooding is a hazard. Flooding is of short duration and usually occurs in spring, delaying spring tillage. Growing cover crops, including grasses and legumes in the cropping system, and applying a system of conservation tillage that leaves some or all of the crop residue on the surface help to control the erosion caused by floodwater. Land shaping and ditching to provide surface drainage will allow the soil to be tilled soon after flooding. Maintaining a permanent plant cover on streambanks helps to control streambank erosion.

The potential productivity of this unit is moderate for sugar maple. Few limitations affect timber production and harvesting. The seedling mortality rate is high because of the flooding. Planting in late spring reduces the mortality rate.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and a poor filtering capacity in the substratum. Flooding is a hazard. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

Flooding limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Constructing the roads on raised fill material helps to overcome the flooding. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability class is I.

106—Middlebury loam. This soil is very deep, moderately well drained and somewhat poorly drained, and nearly level. It is on flood plains. The soil is occasionally flooded for brief periods in late fall, in winter, and in spring. Areas are long and narrow or irregular in shape and range from 5 to 150 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 12 inches, very dark grayish brown loam

Subsoil:
12 to 18 inches, mottled, olive brown loam
18 to 24 inches, mottled, olive very fine sandy loam

Substratum:
24 to 57 inches, mottled, olive gray fine sandy loam
57 to 60 inches, mottled, grayish brown sandy loam

Some areas of this unit include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the poorly drained Limerick soils and the moderately well drained and somewhat poorly drained Teel soils. Limerick soils are in depressions and drainageways, and Teel soils are in landscape positions similar to those of the Middlebury soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately rapid to rapid in the substratum
Available water capacity: High
Soil reaction: Strongly acid to slightly acid in the surface layer and moderately acid to neutral in the subsoil and substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 0.5 foot to 2.0 feet in winter and spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland.

This unit is well suited to hay and pasture. Flooding is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and

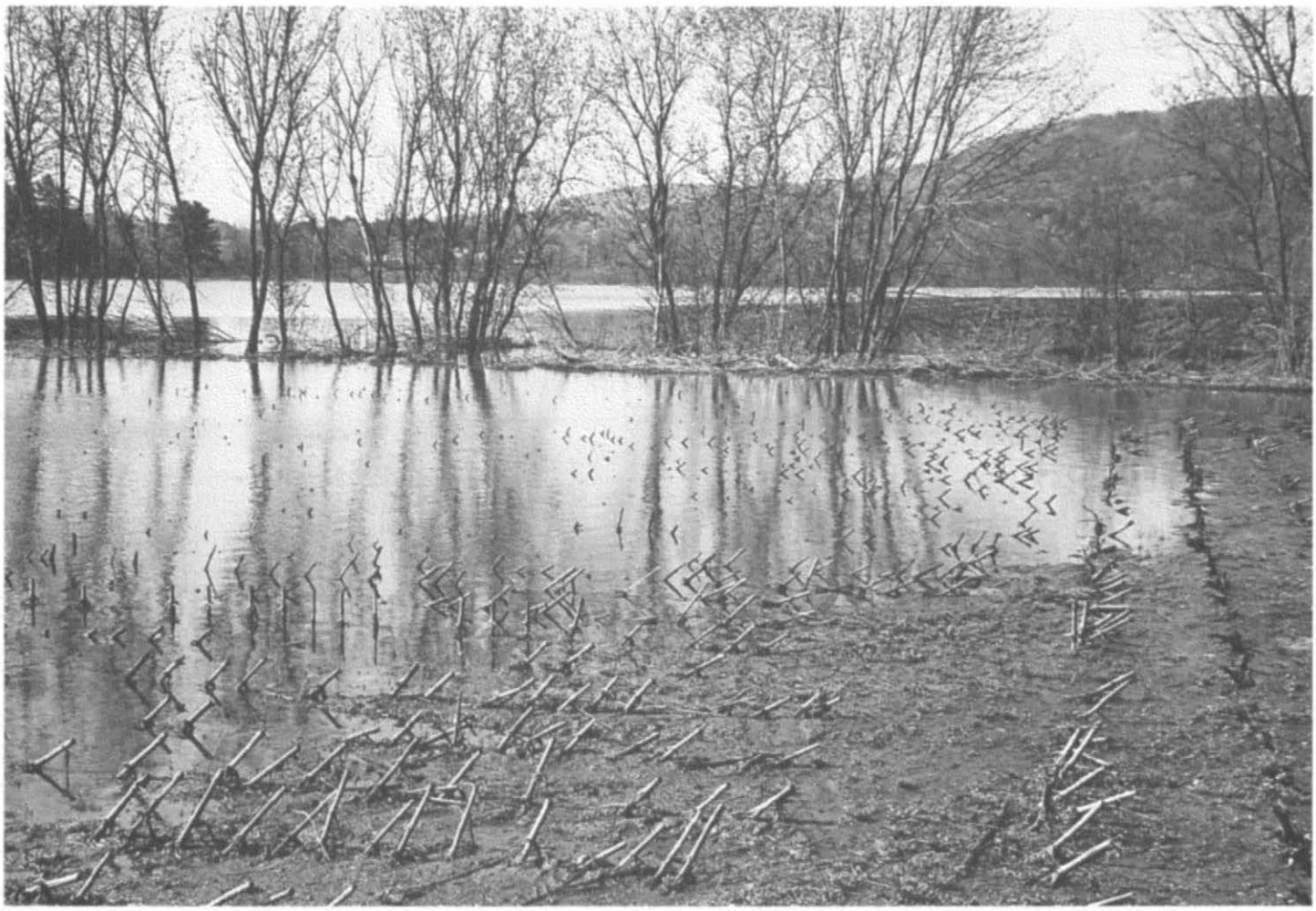

Figure 13.—A flooded field of Middlebury loam near Otter Creek.

forage and help to control erosion caused by floodwater.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Flooding is a hazard. Flooding is of short duration and usually occurs in spring, delaying spring tillage (fig. 13). Land shaping and ditching to provide surface drainage helps to dry the soil after flooding. Where suitable outlets are available subsurface drainage can be used to lower the water table. Growing cover crops, including grasses and legumes in the cropping system, and applying a system of conservation tillage that leaves some or all of the crop residue on the surface help to control the erosion caused by floodwater. Maintaining a permanent plant cover on streambanks helps to control streambank erosion.

The potential productivity of this unit is moderate for sugar maple. Few limitations affect timber production and harvesting. The seedling mortality rate is high because of the flooding. Planting in late spring reduces the mortality rate.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding and the seasonal high water table. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and a poor filtering capacity in the substratum. Flooding is a hazard. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

Flooding, the potential for frost action, and the seasonal high water table limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems

help to overcome the flooding and the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIw.

108—Hamlin silt loam. This soil is very deep, well drained, and nearly level. It is on flood plains. The soil is occasionally flooded for brief periods in late fall, in winter, and in spring. Areas are long and narrow or irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 12 inches, dark brown silt loam

Subsoil:
12 to 24 inches, dark yellowish brown silt loam
24 to 40 inches, yellowish brown silt loam

Substratum:
40 to 60 inches, light olive brown fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the moderately well drained and somewhat poorly drained Middlebury and Teel soils and the well drained Tioga soils. Middlebury and Teel soils are in depressions and drainageways, and Tioga soils are in landscape positions similar to those of the Hamlin soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Strongly acid to neutral above a depth of 24 inches and moderately acid to mildly alkaline below 24 inches
Depth to bedrock: More than 60 inches
Depth to the water table: 3.0 to 6.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland.

This unit is well suited to hay and pasture. Flooding is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion caused by floodwater.

This unit is well suited to cultivated crops. Flooding is a hazard. Flooding is of short duration and usually occurs in spring, delaying spring tillage. Growing cover crops, including grasses and legumes in the cropping system, and applying a system of conservation tillage that leaves some or all of the crop residue on the surface help to control the erosion caused by floodwater. Land shaping and ditching to provide surface drainage will allow the soil to be tilled soon after flooding. Maintaining a permanent plant cover on streambanks helps to control streambank erosion.

The potential productivity of this unit is moderate for sugar maple. This unit few limitations for producing and harvesting timber. The seedling mortality rate is high because of the flooding. Planting in late spring reduces the mortality rate.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table. Flooding is a hazard. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

Flooding and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material helps to overcome the flooding. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability class is I.

109—Teel silt loam, sandy substratum. This soil is very deep, moderately well drained and somewhat poorly drained, and nearly level. It is on flood plains. The soil is occasionally flooded for brief periods in late fall, in winter, and in spring. Areas are irregular in shape and range from 5 to 150 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 11 inches, dark grayish brown silt loam

Subsoil:
11 to 19 inches, dark brown silt loam
19 to 31 inches, mottled, brown silt loam

Substratum:
31 to 41 inches, gray silt loam
41 to 60 inches, dark gray loamy coarse sand

Some areas of this unit include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of

the poorly drained Limerick soils, the moderately well drained and somewhat poorly drained Middlebury soils, and the very poorly drained Saco soils. Limerick and Saco soils are in depressions, and Middlebury soils are in landscape positions similar to those of the Teel soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the surface layer, subsoil, and upper part of the substratum and moderately rapid in the lower part of the substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 2.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to substratum
Potential for frost action: High

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture or woodland.

This unit is well suited to hay and pasture. Flooding is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion caused by floodwater.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation. Flooding is a hazard. Flooding is of short duration and usually occurs in spring, delaying spring tillage. Land shaping and ditching to provide surface drainage helps to dry the soil after flooding. Where suitable outlets are available subsurface drainage can be used to lower the water table. Growing cover crops, including grasses and legumes in the cropping system, and applying a system of conservation tillage that leaves some or all of the crop residue on the surface help to control the erosion caused by floodwater. Maintaining a permanent plant cover on streambanks helps to control streambank erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. The seedling mortality rate is high because of the flooding. Planting in late spring reduces the mortality rate.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding and the seasonal high water table. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table. Flooding is a hazard. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

Flooding and the potential for frost action limit the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Constructing the roads on raised fill material and installing drainage systems help to overcome the flooding and the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIw.

110—Limerick silt loam. This soil is very deep, poorly drained, and nearly level. It is on flood plains. The soil is frequently flooded for brief periods in late fall, in winter, and in spring. Areas are long and narrow or irregular in shape and range from 3 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown silt loam

Substratum:
7 to 13 inches, mottled, dark gray silt loam
13 to 25 inches, mottled, dark grayish brown silt loam
25 to 60 inches, mottled, dark gray silt loam

Some areas of this unit include soils that have an organic substratum at a depth of more than 40 inches.

Included in this unit in mapping are small areas of the very poorly drained Elvers and Saco soils and the somewhat poorly drained and moderately well drained Teel soils. Also included, throughout the unit, are soils that are sand and gravelly sand. Elvers and Saco soils are in backswamp areas. Teel soils are on swells. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: High
Soil reaction: Moderately acid to neutral
Depth to bedrock: More than 60 inches
Depth to the water table: Within 1.5 feet of the surface in late fall, in winter, in spring, and in early summer
Root zone: Typically extends into the substratum but is restricted by the seasonal high water table
Potential for frost action: High

Most areas of this unit are used for row crops or hay and pasture. Other areas are used as woodland.

This unit is poorly suited to hay and pasture if not drained. If drained it is suited. Flooding is a hazard, and

the seasonal high water table is a limitation. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Excessive water usually can be removed by surface ditches or tile drains if a suitable outlet is available. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and to control erosion caused by floodwater.

This unit is poorly suited to cultivated crops unless drained. If drained it is suited. The seasonal high water table is a limitation. Flooding is a hazard. Flooding is of short duration and usually occurs in spring, delaying spring tillage. Land shaping and ditching to provide surface drainage help to dry the soil after flooding. Where suitable outlets are available subsurface drainage can be used to lower the water table. Growing cover crops, including grasses and legumes in the cropping system, and applying a system of conservation tillage that leaves some or all of the crop residue on the surface help to control the erosion caused by floodwater. Maintaining a permanent plant cover on streambanks helps to control streambank erosion.

The potential productivity of this unit is moderate for sugar maple and red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table and the flooding. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and the flooding.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding and the seasonal high water table. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table. Flooding is a hazard. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

Flooding, the potential for frost action, and the seasonal high water table limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the flooding and the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIIw.

111—Livingston silty clay loam, frequently flooded. This soil is very deep, very poorly drained, and nearly level. It is on flood plains. The soil is frequently flooded for long periods in late fall, in winter, and in late spring. Areas are long and narrow or irregular in shape and range from 3 to 100.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches, very dark gray silty clay loam

Subsoil:
7 to 44 inches, mottled, firm, gray clay

Substratum:
44 to 60 inches, mottled, firm, gray clay

Some areas of this unit include soils that have a lighter-colored surface layer.

Included in this unit in mapping are small areas of the very poorly drained Limerick soils and soils that are not subject to flooding. Included soils are throughout the unit. They make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderately slow to very slow
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and upper part of the subsoil, neutral to mildly alkaline in the lower part of the subsoil, and mildly alkaline to moderately alkaline in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: Within 1.0 foot of the surface throughout the year
Root zone: Typically extends into the substratum but is restricted by the seasonal high water table
Potential for frost action: High
Shrink-swell: High

Most areas of this unit are swamps or are used as pasture. Other areas are used as woodland.

This unit is poorly suited to hay and pasture. Flooding is a hazard, and the seasonal high water table is a limitation. In some areas excessive water can be removed by surface ditches or tile drains if a suitable outlet is available. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush

control increase the quantity and quality of feed and forage and help to control erosion caused by floodwater.

Crop production is generally not practical on this soil because of the seasonal high water table and the flooding.

The potential productivity of this unit is moderate for red maple. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table and the flooding. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table and the flooding.

This unit is generally unsuitable as a site for dwellings with basements because of the flooding, the seasonal high water table, and the shrink-swell potential. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table and the moderately slow to very slow permeability in the substratum. Flooding is a hazard. Onsite investigation is needed to identify adjacent areas that may be better suited to this use.

Flooding, the seasonal high water table, and low strength limit the use of this unit as a site for local roads and streets. The potential for frost action and the shrink-swell potential also are limitations. Constructing on raised fill material and installing drainage systems help to overcome the flooding and the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action and low strength.

The capability subclass is Vw.

118C—Adams loamy fine sand, 8 to 15 percent slopes. This soil is very deep, well drained to excessively drained, and strongly sloping. It is on long, narrow terraces, knolls, and broad areas that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 75 acres in size.

Typically, this soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, black loamy fine sand

Subsoil:
5 to 8 inches, dark reddish gray sand
8 to 22 inches, yellowish red sand
22 to 31 inches, strong brown sand

Substratum: 31 to 60 inches, yellowish brown sand

Some areas of this unit include soils that are less red in the subsoil.

Included in this unit in mapping are small areas of the well drained Berkshire and Duxbury soils, the excessively drained Colton soils, and the moderately well drained Sheepscot soils. Berkshire, Colton, and Duxbury soils are in landscape positions similar to those of the Adams soil, and Sheepscot soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Rapid in the subsoil and very rapid in the substratum
Available water capacity: Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil and moderately acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches.
Potential for frost action: Low

Most areas of this unit are used for row crops, mainly silage corn. Other crops include grain corn and truck crops. Some areas are used as pasture, are developed, or are wooded.

This unit is suited to hay and pasture. The very low available water capacity and low natural fertility are the main limitations. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage. Planting drought-tolerant species helps to overcome the very low available water capacity.

This unit is suited to cultivated crops. The very low available water capacity, low natural fertility, and a low organic matter content are limitations. Erosion is a hazard. Crops that are tolerant of drought are best suited to this soil. A system of conservation tillage that leaves all or part of the crop residue on the surface, cover crops, a cropping system that includes grasses and legumes, and contour tillage help to control erosion. Supplemental applications of organic material increase the available water capacity and maintain

fertility and the organic matter content. Irrigation is necessary for the optimum growth of high-value truck crops during dry years.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Seedling mortality is a hazard. Droughtiness, which results from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. There is a hazard of cutbanks caving.

A poor filtering capacity limits the use of this unit as a site for septic tank absorption fields. Effluent moves through the soil readily but often is not adequately treated and can contaminate ground water. Contamination may be detected by periodic testing of the ground water.

The slope limits the use of this unit as a site for local roads and streets. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome this limitation.

The capability subclass is IVe.

122B—Lyme fine sandy loam, 2 to 8 percent slopes, very stony. This soil is very deep, poorly drained, and gently sloping. It is in depressions and drainageways and on toe slopes and foot slopes of hills and ridges. Areas are irregular in shape and range from 3 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 10 inches, very dark grayish brown fine sandy loam

Subsoil:
10 to 22 inches, mottled, dark grayish brown fine sandy loam
22 to 24 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:
24 to 60 inches, mottled, light olive brown gravelly sandy loam

Included in this unit in mapping are small areas of the somewhat poorly drained and poorly drained Cabot and Brayton soils and the moderately well drained Sunapee soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Cabot and Brayton soils are in landscape positions similar to those of the Lyme soil. Sunapee soils are on knolls and in convex areas. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: High
Soil reaction: Strongly acid or very strongly acid
Depth to bedrock: More than 60 inches
Depth to the water table: Within 1.5 feet of the surface in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some areas are used as pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. The seasonal high water table is a limitation. Wetness limits the choice of pasture plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control are practices that help to increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for red maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by

the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Harvesting during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is VIIs.

122C—Lyme fine sandy loam, 8 to 15 percent slopes, very stony. This soil is very deep, poorly drained, and strongly sloping. It is in depressions and on foot slopes of hills and ridges. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:

0 to 10 inches, very dark grayish brown fine sandy loam

Subsoil:

10 to 22 inches, mottled, dark grayish brown fine sandy loam

22 to 24 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:

24 to 60 inches, mottled, light olive brown gravelly sandy loam

Included in this unit in mapping are small areas of the somewhat poorly drained and poorly drained Cabot and Brayton soils and the moderately well drained Sunapee soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Cabot and Brayton soils are in landscape positions similar to those of the Lyme soil. Sunapee soils are on knolls and in convex areas. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: High
Soil reaction: Strongly acid or very strongly acid
Depth to bedrock: More than 60 inches
Depth to the water table: Within 1.5 feet of the surface in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: High

Most areas of this unit are used as woodland. Some areas are used as pasture.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the seasonal high water table is a limitation. Some areas are used as unimproved pasture. The wetness caused by the seasonal high water table limits the choice of pasture plants and the period of cutting or grazing and increases the risk of winterkill. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for red maple and very high for eastern white pine. The main problem affecting timber production and harvesting is the equipment limitation. Windthrow and seedling mortality are hazards. Operating logging equipment is difficult because of the wetness caused by the seasonal high water table. Logging activities are more efficiently carried out during winter or during dry periods. The seasonal high water table restricts the

rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. A high rate of seedling mortality is caused by the wetness associated with the seasonal high water table. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Harvesting during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. The slope also is a limitation. Constructing the roads on fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIIs.

123B—Sheepscot fine sandy loam, 2 to 8 percent slopes. This soil is very deep, moderately well drained, and nearly level to gently sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 3 to 125 acres in size.

Typically, this soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsurface layer:
2 to 5 inches, pale brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, dark brown gravelly fine sandy loam
7 to 14 inches, brown gravelly fine sandy loam
14 to 19 inches, mottled, strong brown very gravelly loamy sand

Substratum:
19 to 60 inches, light olive brown extremely gravelly loamy sand

Included in this unit in mapping are small areas of the excessively drained Colton soils, the well drained Duxbury soils, and the poorly drained Lyme soils. Also included, throughout the unit, are areas where less than 1 percent to 3 percent of the surface is covered with stones. Colton and Duxbury soils are on knolls and in convex areas, and Lyme soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Low
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil and very strongly acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland. Some areas are used for hay, pasture, or cropland.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and a poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The seasonal high water table limits the use of this unit as a site for local roads and streets. Installing drainage systems helps to overcome this limitation.

The capability subclass is IIe.

123C—Sheepscot fine sandy loam, 8 to 15 percent slopes. This soil is very deep, moderately well drained, and strongly sloping. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 50 acres in size.

Typically, this soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsurface layer:
2 to 5 inches, pale brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, dark brown gravelly fine sandy loam
7 to 14 inches, brown gravelly fine sandy loam
14 to 19 inches, mottled, strong brown very gravelly loamy sand

Substratum:
19 to 60 inches, light olive brown extremely gravelly loamy sand

Included in this unit in mapping are small areas of the excessively drained Colton soils, the well drained Duxbury soils, and the poorly drained Lyme soils. Also included, throughout the unit, are areas where less than 1 percent to 3 percent of the surface is covered with stones. Colton and Duxbury soils are on knolls and in convex areas, and Lyme soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Low
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil and very strongly acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 2.5 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Low

Most areas of this unit are used as woodland. Some areas are used for hay, pasture, or cropland.

This unit is suited to hay and pasture. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion.

This unit is suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff also help to control erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and a poor filtering capacity limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations.

The seasonal high water table and the slope limit the use of this unit as a site for local roads and streets. Installing drainage systems helps to overcome the wetness. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

124B—Sunapee fine sandy loam, 3 to 8 percent slopes, very stony. This soil is very deep, moderately well drained, and gently sloping. It is on toe slopes of hills and side slopes of knolls and ridges. Areas are irregular in shape and range from 5 to 100 acres in

size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows:—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark brown gravelly fine sandy loam
14 to 28 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:
28 to 35 inches, mottled, light yellowish brown and brown very gravelly fine sandy loam
35 to 50 inches, mottled, pale olive very gravelly fine sandy loam
50 to 60 inches, mottled, light olive brown very gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the poorly drained Lyme soils, and the moderately well drained Peru soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Berkshire soils are on back slopes. Peru soils are in landscape positions similar to those of the Sunapee soil. Lyme soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately rapid in the substratum
Available water capacity: High
Soil reaction: Extremely acid to strongly acid in the surface layer and subsoil and extremely acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of stones, the unit is well suited to cultivation. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table limits the use of this unit as a site for septic tank absorption fields. Special designs such as diversions and drains are needed to overcome these limitations.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is VIs.

124C—Sunapee fine sandy loam, 8 to 15 percent slopes, very stony. This soil is very deep, moderately well drained, and strongly sloping. It is on foot slopes and side slopes of knolls, hills, and ridges. The areas of this unit are irregular in shape and range from 5 to 200 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows:—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark brown gravelly fine sandy loam
14 to 28 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:
28 to 35 inches, mottled, light yellowish brown and brown very gravelly fine sandy loam
35 to 50 inches, mottled, pale olive very gravelly fine sandy loam
50 to 60 inches, mottled, light olive brown very gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the poorly drained Lyme soils, and the moderately well drained Peru soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Berkshire soils are on back slopes. Peru soils are in landscape positions similar to those of the Sunapee soil. Lyme soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately rapid in the substratum
Available water capacity: High
Soil reaction: Extremely acid to strongly acid in the surface layer and subsoil and extremely acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion. Tillage and harvesting are often delayed because of wetness. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Special designs such as installing diversions and drains to intercept water from the higher areas and installing the effluent lines on the contour are needed to overcome the limitations. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The seasonal high water table, the potential for frost action, and the slope limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is VIs.

124D—Sunapee fine sandy loam, 15 to 35 percent slopes, very stony. This soil is very deep, moderately well drained, and moderately steep and steep. It is on the sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 200 acres in size. Stones cover less than 1 percent to 3 percent of

the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows:—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark brown gravelly fine sandy loam
14 to 28 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:
28 to 35 inches, mottled, light yellowish brown and brown very gravelly fine sandy loam
35 to 50 inches, mottled, pale olive very gravelly fine sandy loam
50 to 60 inches, mottled, light olive brown very gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the poorly drained Lyme soils, and the moderately well drained Peru soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Berkshire soils are on back slopes. Peru soils are in landscape positions similar to those of the Sunapee soil. Lyme soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately rapid in the substratum
Available water capacity: High
Soil reaction: Extremely acid to strongly acid in the surface layer and subsoil and extremely acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Harvesting during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope and the seasonal high water table limit the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The seasonal high water table and the potential for frost action also are limitations. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIs.

124E—Sunapee fine sandy loam, 35 to 50 percent slopes, very stony. This soil is very deep, moderately well drained, and steep. It is on the sides of mountains, hills, and ridges. Areas are long and narrow or irregular in shape and range from 5 to 50 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark brown gravelly fine sandy loam
14 to 28 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:
28 to 35 inches, mottled, light yellowish brown and brown very gravelly fine sandy loam
35 to 50 inches, mottled, pale olive very gravelly fine sandy loam
50 to 60 inches, mottled, light olive brown very gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the well drained Berkshire soils, the poorly drained Lyme soils, and the moderately well drained Peru soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Berkshire soils are on back slopes. Peru soils are in landscape positions similar to those of the Sunapee soil. Lyme soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately rapid in the substratum
Available water capacity: High
Soil reaction: Extremely acid to strongly acid in the surface layer and subsoil and extremely acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Harvesting during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The seasonal high water table and the potential for frost action also are limitations. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIs.

125B—Berkshire gravelly fine sandy loam, 3 to 8 percent slopes, very stony. This soil is very deep, well drained, and gently sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 100 acres in size. Stones cover

less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand. Other areas include soils that have less red in the subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils and the moderately well drained Peru and Sunapee soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Marlow soils are in landscape positions similar to those of the Berkshire soil. Peru and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of stones, the unit is well suited to cultivation. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit has few limitations as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements.

This unit has few limitations as a site for septic tank absorption fields. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The potential for frost action and low strength limits the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to overcome these limitations. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIs.

125C—Berkshire gravelly fine sandy loam, 8 to 15 percent slopes, very stony. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam

7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand. Other areas include soils that have less red in the subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils and the moderately well drained Peru and Sunapee soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Marlow soils are in landscape positions similar to those of the Berkshire soil. Peru and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The slope limits the use of this unit as a site for septic tank absorption fields. Special designs such as installing the effluent lines on the contour may be used to overcome the limitations. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The potential for frost action, low strength, and the slope limit the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action and low strength. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIs.

125D—Berkshire gravelly fine sandy loam, 15 to 35 percent slopes, very stony. This soil is very deep, well drained, and moderately steep and steep. It is on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 200 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam

22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand. Other areas include soils that have less red in the subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils and the moderately well drained Peru and Sunapee soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Marlow soils are in landscape positions similar to those of the Berkshire soil. Peru and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stone.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas. Included areas that have large stones and boulders on and below the surface interfere with the excavation and grading of roads.

The capability subclass is VIs.

125E—Berkshire gravelly fine sandy loam, 35 to 50 percent slopes, very stony. This soil is very deep, well drained, and steep. It is on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 125 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand. Other areas include soils that have less red in the subsoil.

Included in this unit in mapping are small areas of the well drained Marlow soils and the moderately well drained Peru and Sunapee soils. Also included, throughout the unit, are areas where more than 3 percent of the surface is covered with stones. Marlow soils are in landscape positions similar to those of the Berkshire soil. Peru and Sunapee soils are in depressions and drainageways. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope and the stones on the surface. Erosion is a hazard. The use of this unit for pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stone.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places. Included areas where stones cover more than 3 percent of the surface interfere with the excavation and grading of roads.

The capability subclass is VIIs.

127C—Houghtonville gravelly fine sandy loam, 8 to 15 percent slopes, very stony. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and mountains. Areas are irregular in shape and range from 5 to 50 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 2 inches, light brownish gray gravelly fine sandy loam

Subsoil:
2 to 3 inches, dark reddish brown gravelly fine sandy loam
3 to 6 inches, reddish brown gravelly fine sandy loam
6 to 29 inches, dark yellowish brown gravelly fine sandy loam

Substratum:
29 to 60 inches, light yellowish brown gravelly fine sandy loam

Included in this unit in mapping are small areas of the well drained Berkshire soils and the moderately deep, well drained Rawsonville soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface and soils that are more than 35 percent rock fragments. Berkshire soils are generally in areas below 2,000 feet in elevation. Rawsonville soils are throughout the unit. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately to moderately rapid
Available water capacity: High
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, erosion is a hazard and a short growing season is a limitation. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour help to control erosion. Diversion ditches help to control runoff and erosion. Because of the short growing season, cool-season crops should be selected for planting.

The potential productivity of this unit is moderate for sugar maple. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The slope limits the use of this unit as a site for septic tank absorption fields. Special designs such as installing the effluent lines on the contour may be used to overcome the limitations. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The potential for frost action limits the use of this unit as a site for local roads and streets. The slope also is a limitation. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope. Stones on the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIs.

127D—Houghtonville gravelly fine sandy loam, 15 to 35 percent slopes, very stony. This soil is very deep, well drained, and moderately steep and steep. It is on the top and sides of hills and mountains. Areas are irregular in shape and range from 5 to 500 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 2 inches, light brownish gray fine gravelly sandy loam

Subsoil:
2 to 3 inches, dark reddish brown gravelly fine sandy loam
3 to 6 inches, reddish brown gravelly fine sandy loam
6 to 29 inches, dark yellowish brown gravelly fine sandy loam

Substratum:
29 to 60 inches, light yellowish brown gravelly fine sandy loam

Included in this unit in mapping are small areas of the well drained Berkshire soils and the moderately deep, well drained Rawsonville soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface and soils that are more than 35 percent rock fragments. Berkshire soils are generally in areas below 2,000 feet in elevation. Rawsonville soils are throughout the unit. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately to moderately rapid
Available water capacity: High
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, stones on the surface, and a short growing season. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope limits the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIIs.

127E—Houghtonville gravelly fine sandy loam, 35 to 60 percent slopes, very stony. This soil is very deep, well drained, and steep. It is on the top and sides of hills and mountains. Areas are irregular in shape and range from 5 to 1,500 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 2 inches, light brownish gray fine gravelly sandy loam

Subsoil:
2 to 3 inches, dark reddish brown gravelly fine sandy loam
3 to 6 inches, reddish brown gravelly fine sandy loam
6 to 29 inches, dark yellowish brown gravelly fine sandy loam

Substratum:
29 to 60 inches, light yellowish brown gravelly fine sandy loam

Included in this unit in mapping are small areas of the well drained Berkshire soils and the moderately

deep, well drained Rawsonville soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface and soils that are more than 35 percent rock fragments. Berkshire soils are generally in areas below 2,000 feet in elevation. Rawsonville soils are throughout the unit. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderately to moderately rapid
Available water capacity: High
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops. The slope, stones on the surface, and a short growing season are limitations. Erosion is a hazard. The use of this unit for pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action. Constructing the roads across the slope and on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation.

The capability subclass is VIIs.

128C—Rawsonville-Houghtonville complex, 8 to 15 percent slopes, rocky. This unit consists of strongly sloping soils on the top and sides of knolls, hills, and mountains. Areas are irregular in shape and range from 5 to 75 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Rawsonville soil; 30 percent very deep, well drained Houghtonville soil; and 14 percent other soils. Rock outcrops make up about 1 percent of the unit. The Rawsonville soil is on the flanks of the outcrops, and the Houghtonville soil is between the outcrops. The Rawsonville and Houghtonville soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Rawsonville soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray gravelly fine sandy loam

Subsoil:
3 to 10 inches, dark brown gravelly fine sandy loam
10 to 23 inches, dark yellowish brown gravelly fine sandy loam
23 to 30 inches, yellowish brown gravelly sandy loam

Bedrock:
30 inches, schist

Typically, the Houghtonville soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 2 inches, light brownish gray gravelly fine sandy loam

Subsoil:
2 to 3 inches, dark reddish brown gravelly fine sandy loam
3 to 6 inches, reddish brown gravelly fine sandy loam
6 to 29 inches, dark yellowish brown gravelly fine sandy loam

Substratum:
29 to 60 inches, light yellowish brown gravelly fine sandy loam

Included in this unit in mapping are small areas of the very deep, well drained Berkshire soils; the moderately deep, well drained Tunbridge soils; and the shallow, well drained Killington soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Berkshire and Tunbridge soils are generally in areas below 2,000 feet in elevation. Tunbridge soils are on the flanks of the outcrops, and Berkshire soils are in troughs between the outcrops. Killington soils are near the rock outcrops. Included soils and rock outcrop make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: High
Soil reaction: Rawsonville—extremely acid to strongly acid; Houghtonville—extremely acid to moderately acid
Depth to bedrock: Rawsonville—20 to 40 inches; Houghtonville—more than 60 inches
Depth to the water table: At least 60 inches
Root zone: Rawsonville—typically extends to bedrock; Houghtonville—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are wooded or are used for recreation. Some areas are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and rock outcrops are a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of stones, the unit is poorly suited to cultivation. In areas that have been cleared, the exposed bedrock and a short growing season are limitations. Erosion is a hazard. Short-season crops should be selected for planting. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour help to control erosion. The exposed bedrock and the included areas of shallow soils interfere with tillage.

The potential productivity of this unit is moderate for sugar maple. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The depth to bedrock in the moderately deep Rawsonville soil limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

The depth to bedrock in the moderately deep Rawsonville soil limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Special designs are needed to overcome these limitations. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The potential for frost action limits the use of this unit as a site for local roads and streets. The slope of both soils and the depth to bedrock in the moderately deep Rawsonville soil also are limitations. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIs.

128D—Rawsonville-Houghtonville complex, 15 to 35 percent slopes, rocky. This unit consists of moderately steep and steep soils on the top and sides of hills and mountains. Areas are irregular in shape and range from 5 to 1,000 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Rawsonville soil; 30 percent very deep, well drained Houghtonville soil; and 14 percent other soils. Rock outcrops make up about 1 percent of the unit. The Rawsonville soil is on the flanks of the outcrops, and the Houghtonville soil is between the outcrops. The Rawsonville and Houghtonville soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Rawsonville soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray gravelly fine sandy loam

Subsoil:
3 to 10 inches, dark brown gravelly fine sandy loam
10 to 23 inches, dark yellowish brown gravelly fine sandy loam
23 to 30 inches, yellowish brown gravelly sandy loam

Bedrock:
30 inches, schist

Typically, the Houghtonville soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 2 inches, light brownish gray gravelly fine sandy loam

Subsoil:
2 to 3 inches, dark reddish brown gravelly fine sandy loam
3 to 6 inches, reddish brown gravelly fine sandy loam
6 to 29 inches, dark yellowish brown gravelly fine sandy loam

Substratum:
29 to 60 inches, light yellowish brown gravelly fine sandy loam

Included in this unit in mapping are small areas of the very deep, well drained Berkshire soils; the moderately deep, well drained Tunbridge soils; and the shallow, well drained Killington soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Berkshire and Tunbridge soils are generally in areas below 2,000 feet in elevation. Tunbridge soils are on the flanks of the outcrops, and Berkshire soils are in troughs between the outcrops. Killington soils are near the rock outcrops. Included soils and rock outcrops make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: High
Soil reaction: Rawsonville—extremely acid to strongly acid; Houghtonville—extremely acid to moderately acid
Depth to bedrock: Rawsonville—20 to 40 inches; Houghtonville—more than 60 inches
Depth to the water table: At least 60 inches
Root zone: Rawsonville—typically extends to bedrock; Houghtonville—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are wooded or are used for recreation. Some areas are developed.

This unit is poorly suited to hay and improved pasture. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, stones on the surface, and the depth to bedrock in the shallow included soils.

This unit are generally unsuited to cultivated crops. The slope, surface stones, the exposed bedrock, and a short growing season are limitations. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. The depth to bedrock in the shallow

included soils restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope of both soils and the depth to bedrock in the moderately deep Rawsonville soil limit the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope of both soils and the depth to bedrock in the moderately deep Rawsonville soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. The depth to bedrock in the moderately deep Rawsonville soil also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIs.

128E—Rawsonville-Houghtonville complex, 35 to 60 percent slopes, rocky. This unit consists of steep soils on the top and sides of hills and mountains. Areas are irregular in shape and range from 5 to 750 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Rawsonville soil; 30 percent very deep, well drained Houghtonville soil; and 14 percent other soils. Rock outcrops make up about 1 percent of the unit. The Rawsonville soil is on the flanks of the outcrops, and the Houghtonville soil is between the outcrops. The Rawsonville and Houghtonville soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Rawsonville soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray gravelly fine sandy loam

Subsoil:
3 to 10 inches, dark brown gravelly fine sandy loam
10 to 23 inches, dark yellowish brown gravelly fine sandy loam
23 to 30 inches, yellowish brown gravelly sandy loam

Bedrock:
30 inches, schist

Typically, the Houghtonville soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 2 inches, light brownish gray gravelly fine sandy loam

Subsoil:
2 to 3 inches, dark reddish brown gravelly fine sandy loam
3 to 6 inches, reddish brown gravelly fine sandy loam
6 to 29 inches, dark yellowish brown gravelly fine sandy loam

Substratum:
29 to 60 inches, light yellowish brown gravelly fine sandy loam

Included in this unit in mapping are small areas of the very deep, well drained Berkshire soils; the moderately deep, well drained Tunbridge soils; and the shallow, well drained Killington soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Berkshire and Tunbridge soils are generally in areas below 2,000 feet in elevation. Tunbridge soils are on the flanks of the outcrops, and Berkshire soils are in troughs between the outcrops. Killington soils are near the rock outcrops. Included soils and rock outcrop make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: High
Soil reaction: Rawsonville—extremely acid to strongly acid; Houghtonville—extremely acid to moderately acid
Depth to bedrock: Rawsonville—20 to 40 inches; Houghtonville—more than 60 inches
Depth to the water table: At least 60 inches
Root zone: Rawsonville—typically extends to bedrock; Houghtonville—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are wooded or are used for recreation.

This unit is poorly suited to hay and improved pasture. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, stones on the surface, and the depth to bedrock in the very shallow included soils.

This unit are generally unsuited to cultivated crops. The slope, surface stones, the exposed bedrock, and a short growing season are limitations. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. The depth to bedrock in the shallow included soils restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope of both soils and the depth to bedrock in the Rawsonville soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope of both soils and the depth to bedrock in the moderately deep Rawsonville soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. The depth to bedrock in the Rawsonville soil also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIs.

129D—Killington-Rawsonville complex, 15 to 35 percent slopes, very rocky. This unit consists of moderately steep and steep soils on the top and sides of hills and mountains. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 50 percent shallow, well drained Killington soil; 30 percent moderately deep, well drained Rawsonville soil; and 15 percent other soils. Rock outcrops make up about 5 percent of the unit. The Killington soil is near the outcrops, and the Rawsonville soil is in troughs between the outcrops. The Killington and Rawsonville soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Killington soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black very cobbly loam

Subsoil:
1 to 6 inches, dark reddish brown very cobbly loam
6 to 17 inches, reddish brown very stony loam

Bedrock:
17 inches, schist

Typically, the Rawsonville soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray gravelly fine sandy loam

Subsoil:
3 to 10 inches, dark brown gravelly fine sandy loam
10 to 23 inches, dark yellowish brown gravelly fine sandy loam
23 to 30 inches, yellowish brown gravelly sandy loam

Bedrock:
30 inches, schist

Included in this unit in mapping are small areas of the very deep, well drained Houghtonville soils; the moderately deep, well drained Tunbridge soils; and the shallow, somewhat excessively drained Lyman soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Houghtonville soils are in troughs between rock outcrops and are slightly lower on the landscape than the Killington and Rawsonville soils. Lyman and Tunbridge soils are generally in areas below 2,000 feet in elevation. Lyman soils are close to the rock outcrops, and Tunbridge soils are on the flanks of the outcrops or in troughs. Included soils and rock outcrops make up about 20 percent of this unit.

Important soil properties—

Permeability: Killington—moderately rapid; Rawsonville—moderate or moderately rapid
Available water capacity: Killington—very low; Rawsonville—high
Soil reaction: Killington—very strongly acid or strongly acid in the surface layer and very strongly acid to moderately acid in the subsoil; Rawsonville—extremely acid to strongly acid
Depth to bedrock: Killington—10 to 20 inches; Rawsonville—20 to 40 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is generally unsuited to hay and pasture. Erosion is a hazard. The slope, stones on the surface, and the rock outcrops are limitations.

This unit is unsuited to cultivated crops because of the slope, stones on the surface, the rock outcrops, and a short growing season. Erosion is a hazard. Using the unit for long-term hay and pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple. Erosion, seedling mortality, and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Killington soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock in the Killington soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock in the shallow Killington soil and the potential for frost action and the slope in areas of both soils limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting road design to the slope and blasting help to over come the slope.

The capability subclass is VIIs.

129F—Killington-Rawsonville complex, 35 to 70 percent slopes, very rocky. This unit consists of steep and very steep soils on the top and sides of hills and mountains. Areas are irregular in shape and range from 5 to 350 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 50 percent shallow, well drained Killington soil; 30 percent moderately deep, well drained Rawsonville soil; and 15 percent other soils. Rock outcrops make up about 5 percent of the unit. The Killington soil is near the outcrops, and the Rawsonville soil is in troughs between the outcrops. The Killington

and Rawsonville soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Killington soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black very cobbly loam

Subsoil:
1 to 6 inches, dark reddish brown very cobbly loam
6 to 17 inches, reddish brown very stony loam

Bedrock:
17 inches, schist

Typically, the Rawsonville soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray gravelly fine sandy loam

Subsoil:
3 to 10 inches, dark brown gravelly fine sandy loam
10 to 23 inches, dark yellowish brown gravelly fine sandy loam
23 to 30 inches, yellowish brown gravelly sandy loam

Bedrock:
30 inches, schist

Included in this unit in mapping are small areas of the very deep, well drained Houghtonville soils; the moderately deep, well drained Tunbridge soils; and the shallow, somewhat excessively drained Lyman soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Houghtonville soils are in troughs between rock outcrops and are slightly lower on the landscape than the Killington and Rawsonville soils. Lyman and Tunbridge soils are generally in areas below 2,000 feet in elevation. Lyman soils are close to the rock outcrops, and Tunbridge soils are on the flanks of the outcrops or in troughs. Included soils and rock outcrops make up about 20 percent of the unit.

Important soil properties—

Permeability: Killington—moderately rapid; Rawsonville—moderate or moderately rapid
Available water capacity: Killington—very low; Rawsonville—high
Soil reaction: Killington—very strongly acid or strongly acid in the surface layer and very strongly acid to moderately acid in the subsoil; Rawsonville—extremely acid to strongly acid
Depth to bedrock: Killington—10 to 20 inches; Rawsonville—20 to 40 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is generally unsuited to hay and pasture. Erosion is a hazard. The slope, stones on the surface, and rock outcrops are limitations.

This unit is unsuited to cultivated crops because of the slope, rock outcrops, stones on the surface, and depth to bedrock.

The potential productivity of this unit is moderate for sugar maple. Erosion, seedling mortality and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Killington soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock in the Killington soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock in the shallow Killington soil

and the potential for frost action and the slope in areas of both soils limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting road design to the slope and blasting help to overcome the slope.

The capability subclass is VIIs.

130B—Tunbridge-Berkshire complex, 3 to 8 percent slopes, rocky. This unit consists of gently sloping soils on the top and sides of mountains, knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 50 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Tunbridge soil; 30 percent very deep, well drained Berkshire soil; and 14 percent other soils. Rock outcrops make up about 1 percent of the unit. The Tunbridge soil is on the flanks of the outcrops, and the Berkshire soil is between the outcrops. The Tunbridge and Berkshire soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Tunbridge soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown gravelly fine sandy loam

Subsurface layer:
2 to 4 inches, brown gravelly fine sandy loam

Subsoil:
4 to 16 inches, strong brown very stony fine sandy loam
16 to 25 inches, brown very stony fine sandy loam
25 to 35 inches, yellowish brown stony fine sandy loam

Bedrock:
35 inches, schist

Typically, the Berkshire soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Included in this unit in mapping are small areas of the shallow, somewhat excessively drained Lyman soils; the well drained Marlow soils; and the moderately well drained Sunapee soils. Also included, throughout the unit, are soils that have a substratum of silt loam or loamy sand and areas where stones cover more than 3 percent of the surface. Lyman soils are near rock outcrops. Sunapee soils are in depressions and drainageways. Marlow soils are in landscape positions similar to those of the Berkshire soil. Included soils and rock outcrop make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: Tunbridge—20 to 40 inches; Berkshire—more than 60 inches
Depth to the water table: At least 60 inches
Root zone: Tunbridge—typically extends to bedrock; Berkshire—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. If cleared of stones, the unit is well suited to cultivation. In areas that have been cleared, the exposed bedrock is a limitation. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying

a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Included areas of shallow soils interfere with tillage.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The depth to bedrock in the moderately deep Tunbridge soils limits the use of this unit as a site for dwellings with basements. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Onsite investigation is needed to identify included or adjacent deeper soils that may be better suited as sites for dwellings.

The depth to bedrock in the moderately deep Tunbridge soil limits the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Onsite investigation is needed to identify included or adjacent deeper soils that may be better suited to this use.

The depth to bedrock in the moderately deep Tunbridge soil, low strength in the Berkshire soil, and the potential for frost action in both soils limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action and low strength.

The capability subclass is VIs.

130C—Tunbridge-Berkshire complex, 8 to 15 percent slopes, rocky. This unit consists of strongly sloping soils on the top and sides of mountains, knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Tunbridge soil; 30 percent very deep, well drained Berkshire soil; and 14 percent other soils. Rock outcrops make up about 1 percent of the unit. The Tunbridge soil is on the flanks of the outcrops, and the Berkshire soil is between the outcrops. The Tunbridge and Berkshire soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Tunbridge soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown gravelly fine sandy loam

Subsurface layer:
2 to 4 inches, brown gravelly fine sandy loam

Subsoil:
4 to 16 inches, strong brown very stony fine sandy loam
16 to 25 inches, brown very stony fine sandy loam
25 to 35 inches, yellowish brown stony fine sandy loam

Bedrock:
35 inches, schist

Typically, the Berkshire soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam
Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Included in this unit in mapping are small areas of the shallow, somewhat excessively drained Lyman soils; the well drained Marlow soils; and the moderately well drained Sunapee soils. Also included, throughout the unit, are soils that have a substratum of silt loam or loamy sand and areas where stones cover more than 3 percent of the surface. Lyman soils are near rock outcrops. Sunapee soils are in depressions and drainageways. Marlow soils are in landscape positions similar to those of the Berkshire soil. Included soils and rock outcrops make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: Tunbridge—20 to 40 inches; Berkshire—more than 60 inches

Depth to the water table: At least 60 inches
Root zone: Tunbridge—typically extends to bedrock; Berkshire—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and rock outcrops are a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion.

This unit is unsuited to cultivated crops unless the stones are cleared from the surface. In areas that have been cleared, the exposed bedrock is a limitation. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. The exposed bedrock and the included areas of shallow soils interfere with tillage.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Few limitations affect timber production and harvesting. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The depth to bedrock in the moderately deep Tunbridge soil limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

The depth to bedrock in the moderately deep Tunbridge soil limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Special designs are needed to overcome these limitations. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The depth to bedrock in the moderately deep Tunbridge soil, low strength in the Berkshire soil, and the potential for frost action and slope in areas of both soils limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action and low strength. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIs.

130D—Tunbridge-Berkshire complex, 15 to 35 percent slopes, rocky. This unit consists of moderately steep and steep soils on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 1,000 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Tunbridge soil; 30 percent very deep, well drained Berkshire soil; and 14 percent other soils. Rock outcrops make up about 1 percent of the unit. The Tunbridge soil is on the flanks of the outcrops, and the Berkshire soil is between the outcrops. The Tunbridge and Berkshire soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Tunbridge soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown gravelly fine sandy loam

Subsurface layer:
2 to 4 inches, brown gravelly fine sandy loam

Subsoil:
4 to 16 inches, strong brown very stony fine sandy loam
16 to 25 inches, brown very stony fine sandy loam
25 to 35 inches, yellowish brown stony fine sandy loam

Bedrock:
35 inches, schist

Typically, the Berkshire soil is covered by a thin layer of undecomposed and moderately decomposed leaves,

needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam
Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Included in this unit in mapping are small areas of the shallow, somewhat excessively drained Lyman soils; the well drained Marlow soils; and the moderately well drained Sunapee soils. Also included, throughout the unit, are soils that have a substratum of silt loam or loamy sand and areas where stones cover more than 3 percent of the surface. Lyman soils are near rock outcrops. Sunapee soils are in depressions and drainageways. Marlow soils are in landscape positions similar to those of the Berkshire soil. Included soils and rock outcrops make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: Tunbridge—20 to 40 inches; Berkshire—more than 60 inches
Depth to the water table: At least 60 inches
Root zone: Tunbridge—typically extends to bedrock; Berkshire—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland. Some areas are used for unimproved pasture or are developed.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope and rock outcrops are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

The slope, the exposed bedrock, and stones on the surface limit the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. The depth to bedrock in the shallow included soils restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope of both soils and the depth to bedrock in the moderately deep Tunbridge soil limit the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome this limitation. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope of both soils and the depth to bedrock in the moderately deep Tunbridge soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The depth to bedrock in the moderately deep Tunbridge soil, low strength in the Berkshire soil, and the potential for frost action in both soils also are limitations. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action and low strength. Adapting the

design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIs.

130E—Tunbridge-Berkshire complex, 35 to 60 percent slopes, rocky. This unit consists of steep soils on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 750 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Tunbridge soil; 30 percent very deep, well drained Berkshire soil; and 14 percent other soils. Rock outcrops make up about 1 percent of the unit. The Tunbridge soil is on the flanks of the outcrops, and the Berkshire soil is between the outcrops. The Tunbridge and Berkshire soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Tunbridge soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown gravelly fine sandy loam

Subsurface layer:
2 to 4 inches, brown gravelly fine sandy loam

Subsoil:
4 to 16 inches, strong brown very stony fine sandy loam
16 to 25 inches, brown very stony fine sandy loam
25 to 35 inches, yellowish brown stony fine sandy loam

Bedrock:
35 inches, schist

Typically, the Berkshire soil is covered by a thin layer of undecomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 1 inch, black gravelly fine sandy loam

Subsurface layer:
1 to 5 inches, brown gravelly fine sandy loam
Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Included in this unit in mapping are small areas of the shallow, somewhat excessively drained Lyman soils; the well drained Marlow soils; and the moderately well drained Sunapee soils. Also included, throughout the unit, are soils that have a substratum of silt loam or loamy sand and areas where stones cover more than 3 percent of the surface. Lyman soils are near rock outcrops. Sunapee soils are in depressions and drainageways. Marlow soils are in landscape positions similar to those of the Berkshire soil. Included soils and rock outcrops make up about 15 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: Tunbridge—20 to 40 inches; Berkshire—more than 60 inches
Depth to the water table: At least 60 inches
Root zone: Tunbridge—typically extends to bedrock; Berkshire—typically extends to a depth of more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to hay and improved pasture. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, stones on the surface, and the depth to bedrock in the shallow included soils.

This unit is unsuited to cultivated crops. The slope, surface stones, and the exposed bedrock are limitations. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. The depth to bedrock in the shallow included soils restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Included

areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

This unit is generally unsuitable as a site for dwellings with basements because of the slope of both soils and the depth to bedrock in the moderately deep Tunbridge soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope of both soils and the depth to bedrock in the moderately deep Tunbridge soil. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The slope limits the use of this unit as a site for local roads and streets. The depth to bedrock in the moderately deep Tunbridge soil, low strength in the Berkshire soil, and the potential for frost action in both soils also are limitations. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action and low strength. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIs.

131D—Lyman-Tunbridge-Rock outcrop complex, 15 to 35 percent slopes, very stony. This unit consists of moderately steep and steep soils on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 400 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 40 percent shallow, somewhat excessively drained Lyman soil; 35 percent moderately deep, well drained Tunbridge soil; 15 percent other soils; and 10 percent Rock outcrop. The Lyman soil is near the outcrops, and the Tunbridge soil is in troughs between the outcrops. The Lyman and Tunbridge soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Lyman soil is covered by a thin layer of undecomposed and moderately decomposed leaves, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, very dark gray fine sandy loam

Subsoil:
4 to 6 inches, dark brown fine sandy loam
6 to 11 inches, brown fine sandy loam

Bedrock:
11 inches, schist

Typically, the Tunbridge soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown gravelly fine sandy loam

Subsurface layer:
2 to 4 inches, brown gravelly fine sandy loam

Subsoil:
4 to 16 inches, strong brown very stony fine sandy loam
16 to 25 inches, brown very stony fine sandy loam
25 to 35 inches, yellowish brown stony fine sandy loam

Bedrock:
35 inches, schist

Included in this unit in mapping are small areas of the very deep, well drained Berkshire soils. Also included, throughout the unit, are soils that are more than 35 percent rock fragments, soils that have a substratum of silt loam, and areas where stones cover more than 3 percent of the surface. Berkshire soils are in troughs between rock outcrops. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Lyman—moderately rapid; Tunbridge—moderate or moderately rapid
Available water capacity: Lyman—very low to low; Tunbridge—moderate
Soil reaction: Lyman—extremely acid to moderately acid; Tunbridge—extremely acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: Lyman—8 to 20 inches; Tunbridge—20 to 40 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. If cleared, the soils are poorly suited to hay and improved

pasture. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, and stones on the surface. The unit is droughty.

The slope, the exposed bedrock, and stones on the surface limit the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion, seedling mortality, and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Lyman soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock in the Lyman soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock in the shallow Lyman soil and the slope of both soils limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting road design to the slope and blasting help to overcome the slope.

The capability subclass is VIIs.

131E—Lyman-Tunbridge-Rock outcrop complex, 35 to 60 percent slopes, very stony. This unit consists of steep soils on the top and sides of mountains, hills, and ridges. Areas are irregular in shape and range from 5 to 1,000 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 40 percent shallow, somewhat excessively drained Lyman soil; 35 percent moderately deep, well drained Tunbridge soil; 15 percent other soils; and 10 percent Rock outcrop. The Lyman soil is near the outcrops, and the Tunbridge soil is in troughs between the outcrops. The Lyman and Tunbridge soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Lyman soil is covered by a thin layer of undecomposed and moderately decomposed leaves, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, very dark gray fine sandy loam

Subsoil:
4 to 6 inches, dark brown fine sandy loam
6 to 11 inches, brown fine sandy loam

Bedrock:
11 inches, schist

Typically, the Tunbridge soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown gravelly fine sandy loam

Subsurface layer:
2 to 4 inches, brown gravelly fine sandy loam

Subsoil:
4 to 16 inches, strong brown very stony fine sandy loam
16 to 25 inches, brown very stony fine sandy loam
25 to 35 inches, yellowish brown stony fine sandy loam

Bedrock:
35 inches, schist

Included in this unit in mapping are small areas of the very deep, well drained Berkshire soils. Also included, throughout the unit, are soils that average more than 35 percent rock fragments, soils that have a substratum of silt loam, and areas where stones cover more than 3 percent of the surface. Berkshire soils are

in troughs between rock outcrops. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Lyman—moderately rapid; Tunbridge—moderate or moderately rapid
Available water capacity: Lyman—very low to low; Tunbridge—moderate
Soil reaction: Lyman—extremely acid to moderately acid; Tunbridge—extremely acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to bedrock: Lyman—8 to 20 inches; Tunbridge—20 to 40 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to hay and improved pasture. Some areas are used as unimproved pasture. The use of equipment is limited by rock outcrops, the slope, and stones on the surface. The unit is droughty.

This unit are unsuited to cultivated crops. The slope, surface stones, and areas of exposed bedrock are limitations. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion, seedling mortality and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. In some areas rock outcrops interfere with the operation of equipment. Droughtiness, which results from the very low available water capacity of the Lyman soil, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. The depth to bedrock in the Lyman soil restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones and rock outcrops.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock in the shallow Lyman soil and the slope of both soils limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting road design to the slope and blasting help to overcome the slope.

The capability subclass is VIIs.

132C—Glebe-Stratton complex, 8 to 25 percent slopes, very stony. This unit consists of strongly sloping and moderately steep soils on the top and sides of mountains. Areas are irregular in shape and range from 5 to 500 acres in size. Stones cover less then 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Glebe soil; 30 percent shallow, well drained Stratton soil; and 15 percent other soils. The Stratton soils are at slightly higher positions on the landscape than the Glebe soils. The Glebe and Stratton soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Glebe soil is covered by a layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, gray gravelly sandy loam

Subsoil:
4 to 8 inches, very dark gray fine sandy loam
8 to 18 inches, strong brown gravelly fine sandy loam

Substratum:
18 to 24 inches, light olive brown gravelly sandy loam

Bedrock:
24 inches, schist

Typically, the Stratton soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs.

Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, very dark gray very cobbly loam

Subsoil:
5 to 18 inches, very dark gray very cobbly loam

Bedrock:
18 inches, schist

Included in this unit in mapping are small areas of the well drained, very deep Houghtonville soils; the well drained, shallow Killington soils; and the well drained to excessively drained, very shallow to moderately deep Ricker soils. Houghtonville soils are in troughs. Ricker and Killington soils are in landscape positions similar to those of the Stratton soil. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Glebe—moderately rapid; Stratton—moderate or moderately rapid
Available water capacity: Glebe—high; Stratton—low
Soil reaction: Extremely acid to strongly acid
Depth to bedrock: Glebe—20 to 40 inches; Stratton—10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Glebe—high; Stratton—moderate

Most areas of this unit are wooded or are used for recreation.

This unit is generally unsuited to hay and pasture. Erosion is a hazard. The slope, the depth to bedrock, and stones on the surface are limitations.

This unit are unsuited to cultivated crops. The surface stones, the depth to bedrock in the shallow Stratton soil, and low soil temperatures are limitations.

The potential productivity of this unit is moderate for red spruce. Generally producing and harvesting timer is not economically feasible on this unit. Erosion and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. The low soil temperature also is a management concern.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock in the shallow Stratton soil and the potential for frost action and slope in areas of both soils limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIs.

132E—Glebe-Stratton complex, 25 to 60 percent slopes, very stony. This unit consists of steep soils on the top and sides of mountains. Areas are irregular in shape and range from 5 to 1,500 acres in size. Stones cover less then 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 55 percent moderately deep, well drained Glebe soil; 30 percent shallow, well drained Stratton soil; and 15 percent other soils. The Stratton soils are at slightly higher positions on the landscape than the Glebe soils. The Glebe and Stratton soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Glebe soil is covered by a layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, gray gravelly sandy loam

Subsoil:
4 to 8 inches, very dark gray fine sandy loam
8 to 18 inches, strong brown gravelly fine sandy loam

Substratum:
18 to 24 inches, light olive brown gravelly sandy loam

Bedrock:
24 inches, schist

Typically, the Stratton soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, very dark gray very cobbly loam

Subsoil:
5 to 18 inches, very dark gray very cobbly loam

Bedrock:
18 inches, schist

Included in this unit in mapping are small areas of the well drained, very deep Houghtonville soils; the well drained, shallow Killington soils; and the well drained to excessively drained, very shallow to moderately deep Ricker soils. Houghtonville soils are in troughs. Ricker and Killington soils are in landscape positions similar to those of the Stratton soil. Included soils make up about 15 percent of the unit.

Important soil properties—

Permeability: Glebe—moderately rapid; Stratton—moderate or moderately rapid
Available water capacity: Glebe—high; Stratton—low
Soil reaction: Extremely acid to strongly acid
Depth to bedrock: Glebe—20 to 40 inches; Stratton—10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Glebe—high; Stratton—moderate

Most areas of this unit are wooded or are used for recreation.

This unit is generally unsuited to hay and pasture. Erosion is a hazard. The slope, the depth to bedrock in the shallow Stratton soil, and stones on the surface are limitations.

This unit are unsuited to cultivated crops. The surface stones, the depth to bedrock in the shallow Stratton soil, the slope, and low soil temperatures are limitations.

The potential productivity of this unit is moderate for red spruce. Generally producing and harvesting timber is not on this unit. Erosion and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. The low soil temperature also is a management concern.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock in the shallow Stratton soil and the potential for frost action and slope in areas of both soils limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIs.

134F—Stratton-Londonderry-Ricker complex, 15 to 80 percent slopes, very rocky. This unit consists of moderately steep to very steep soils on the top and sides of hills and mountains. Areas are irregular in shape and range from 5 to 400 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

This unit is about 40 percent shallow, well drained Stratton soil; 25 percent very shallow, well drained Londonderry soil; 20 percent very shallow to moderately deep, well drained to excessively drained Ricker soil; and 10 percent other soils. Rock outcrop makes up about 5 percent of the unit. The Stratton, Londonderry, and Ricker soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Stratton soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, very dark gray very cobbly loam

Subsoil:
5 to 18 inches, very dark gray very cobbly loam

Bedrock:
18 inches, schist

Typically, the Londonderry soil is covered by a thin layer of undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, reddish gray gravelly fine sandy loam

Substratum:
6 to 7 inches, light gray fine sandy loam

Bedrock:
7 inches, schist

The typical sequence, depth, and composition of the layers in the Ricker soil are as follows—

Surface layer:
0 to 13 inches, black undecomposed and moderately decomposed organic matter

Subsurface layer:
13 to 15 inches, reddish gray loamy fine sand

Subsoil:
15 to 16 inches, dark reddish brown very cobbly fine sandy loam

Bedrock:
16 inches, schist

Included in this unit in mapping are small areas of the moderately deep, well drained Glebe soils. These soils are in troughs between areas of exposed rock. Included soils and rock outcrop make up about 15 percent of the unit.

Important soil properties—
Permeability: Moderate
Available water capacity: Stratton—low; Londonderry—very low ; Ricker—moderate
Soil reaction: Stratton and Londonderry—extremely acid to strongly acid; Ricker—extremely acid to very strongly acid
Depth to bedrock: Stratton—10 to 20 inches; Londonderry—2 to 10 inches; Ricker—2 to 26 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Stratton and Londonderry—moderate; Ricker—low

Most areas of this unit are wooded or are used for recreation.

This unit are unsuited to hay and pasture. Erosion is a hazard. The slope, the depth to bedrock in the very shallow soils, and stones on the surface are limitations.

This unit is unsuited to cultivated crops. The surface stones, depth to bedrock, the slope, and low soil temperatures are limitations.

The potential productivity of this unit is moderate for red spruce. Generally producing and harvesting timber is not economically feasible on this unit. Erosion and windthrow are hazards. The main problem affecting timber production and harvesting is the equipment limitation. The low soil temperature also is a management concern.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Large stones on the surface interfere with the operation of equipment. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock, the potential for frost action, and the slope limit the use of this unit as a site for local roads and streets. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting road design to the slope and blasting help to overcome the slope.

The capability subclass is VIIs.

135D—Mundal loam, 15 to 35 percent slopes, very stony. This soil is moderately well drained and well drained and is moderately steep and steep. It is moderately deep to dense basal till and very deep to bedrock. It is on the sides of hills and mountains. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed and undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, dark reddish brown highly decomposed leaf litter
0 to 6 inches, black loam

Subsurface layer:
6 to 9 inches, light reddish brown fine sandy loam

Subsoil:
9 to 13 inches, dusky red loam
13 to 16 inches, dark reddish brown loam
16 to 19 inches, dark brown loam
19 to 24 inches, mottled, dark brown gravelly loam

Substratum:
24 to 60 inches, mottled, firm, light olive brown gravelly fine sandy loam

Included in this unit in mapping are areas of the well drained Marlow soils and the moderately well drained Peru soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Marlow and Peru soils are generally in areas below 1,800 feet in elevation and are in landscape positions similar to those of the Mundal soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum
Depth to dense basal till: 20 to 30 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in fall, winter, and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

Because of the stones on the surface, this unit is unsuited to hay and improved pasture. The stones must be removed before the unit is suitable for these uses. Erosion is a hazard, and the slope is a limitation. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, stones on the surface, and a short growing season. Erosion is a hazard. Using the unit for long-term pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stones.

The slope and the seasonal high water table limit the use of this unit as a site for dwellings with basements. Extensive land shaping and grading are needed to overcome the slope. Installing footing drains, sealing foundations, and land grading that diverts surface water away from the dwellings help to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment but generally do not pose a significant limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for dwellings with basements.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope, the seasonal high water table, and the moderately slow or slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in some areas.

The capability subclass is VIIs.

135E—Mundal loam, 35 to 60 percent slopes, very stony. This soil is moderately well drained and well drained and is steep. It is moderately deep to dense basal till and very deep to bedrock. It is on the sides of hills and mountains. Areas are irregular in shape and range from 5 to 250 acres in size. Stones cover less than 1 percent to 3 percent of the surface and typically are 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed and undecomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, dark reddish brown highly decomposed leaf litter
0 to 6 inches, black loam

Subsurface layer:
6 to 9 inches, light reddish brown fine sandy loam

Subsoil:
9 to 13 inches, dusky red loam
13 to 16 inches, dark reddish brown loam
16 to 19 inches, dark brown loam
19 to 24 inches, mottled, dark brown gravelly loam

Substratum:
24 to 60 inches, mottled, firm, light olive brown gravelly fine sandy loam

Included in this unit in mapping are areas of the well drained Marlow soils and the moderately well drained

Peru soils. Also included, throughout the unit, are areas where stones cover more than 3 percent of the surface. Marlow and Peru soils are generally in areas below 1,800 feet in elevation and are in landscape positions similar to those of the Mundal soil. Included soils make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate
Soil reaction: Extremely acid to moderately acid in the surface and subsoil and strongly acid to slightly acid in the substratum
Depth to dense basal till: 20 to 30 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in fall, winter, and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used as woodland.

This unit is poorly suited to unimproved pasture and generally unsuited to hay and improved pasture. Erosion is a hazard, and the slope and the stones on the surface are limitations. Some areas are used as unimproved pasture. Timely deferment of grazing, rotational grazing, and weed and brush control increase the quantity and quality of forage and help to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, stones on the surface, and a short growing season. Erosion is a hazard. Using the unit for long-term pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Erosion is a hazard. The main problem affecting timber production and harvesting is the equipment limitation. Logging during winter or during dry periods, constructing skid trails and logging roads across the slope, and installing culverts and water bars as necessary help to control erosion. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope. Included areas where stones cover more than 3 percent of the surface interfere with the operation of equipment. Logging during periods of snow cover minimizes the equipment limitation caused by surface stone.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the seasonal high water table. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope, the seasonal high water table, and the moderately slow or slow permeability in the substratum. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The potential for frost action and the slope limit the use of this unit as a site for local roads and streets. The seasonal high water table also is a limitation. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Constructing the roads across the slope or on the contour helps to overcome the slope. Extensive land shaping and grading are necessary in most places.

The capability subclass is VIIs.

138C—Berkshire gravelly fine sandy loam, 8 to 15 percent slopes. This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches, dark brown gravelly fine sandy loam

Subsoil:
5 to 7 inches, yellowish red gravelly fine sandy loam
7 to 11 inches, dark yellowish brown gravelly fine sandy loam
11 to 22 inches, olive brown gravelly fine sandy loam
22 to 32 inches, light olive brown gravelly fine sandy loam

Substratum:
32 to 60 inches, olive gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the well drained Marlow and Tunbridge soils and the moderately well drained Peru and Sunapee soils. Also included, throughout the unit, are areas where less than 1 percent to 3 percent of the surface is covered with stones. Marlow soils are in landscape positions similar to those of the Berkshire soil. Peru and Sunapee soils are in depressions and drainageways. Tunbridge soils are on knolls. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate or moderately rapid
Available water capacity: Moderate

Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends more than 60 inches
Potential for frost action: Moderate

Most areas of this unit are used for cultivated crops or hay and pasture. Other areas are wooded or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is suited to cultivated crops. Erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches help to control runoff and erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The slope limits the use of this unit as a site for dwellings with basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Land grading can divert surface water away from the dwellings and thus helps to prevent wetness in basements. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The slope limits the use of this unit as a site for septic tank absorption fields. Special designs such as installing the effluent lines on the contour may be used to overcome the limitation.

The potential for frost action, the slope, and low strength limit the use of this unit as a site for local roads and streets. Providing coarser textured base material helps to prevent the damage caused by frost action and low strength. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

139B—Sunapee fine sandy loam, 3 to 8 percent slopes. This soil is very deep, moderately well drained, and gently sloping. It is on toe slopes and on sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown fine sandy loam

Subsoil:
6 to 14 inches, dark brown gravelly fine sandy loam
14 to 28 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:
28 to 35 inches, mottled, light yellowish brown and brown very gravelly fine sandy loam
35 to 50 inches, mottled, pale olive very gravelly fine sandy loam
50 to 60 inches, mottled, light olive brown very gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the poorly drained Lyme soils and the moderately well drained Peru soils. Also included, throughout the unit, are areas where less than 1 percent to 3 percent of the surface is covered with stones. Lyme soils are in depressions and drainageways, and Peru soils are in landscape positions similar to those of the Sunapee soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately rapid in the substratum
Available water capacity: High
Soil reaction: Extremely acid to strongly acid in the surface layer and subsoil and extremely acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for cultivated crops or hay and pasture. Other areas are wooded or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and

legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table limits the use of this unit as a site for septic tank absorption fields. Special designs such as diversions and drains are needed to overcome these limitations.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome these limitations.

The capability subclass is IIw.

139C—Sunapee fine sandy loam, 8 to 15 percent slopes. This soil is very deep, moderately well drained, and strongly sloping. It is on the sides of hills and ridges. Areas are irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown fine sandy loam

Subsoil:
6 to 14 inches, dark brown gravelly fine sandy loam
14 to 28 inches, mottled, yellowish brown gravelly fine sandy loam

Substratum:
28 to 35 inches, mottled, light yellowish brown and brown very gravelly fine sandy loam
35 to 50 inches, mottled, pale olive very gravelly fine sandy loam
50 to 60 inches, mottled, light olive brown very gravelly fine sandy loam

Some areas of this unit include soils that have a substratum of sand or gravelly sand.

Included in this unit in mapping are small areas of the poorly drained Lyme soils and the moderately well drained Peru soils. Also included, throughout the unit, are areas where less than 1 percent to 3 percent of the surface is covered with stones. Lyme soils are in depressions and drainageways, and Peru soils are in landscape positions similar to those of the Sunapee soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties—

Permeability: Moderate in the subsoil and moderate or moderately rapid in the substratum
Available water capacity: High
Soil reaction: Extremely acid to strongly acid in the surface layer and subsoil and extremely acid to moderately acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the substratum
Potential for frost action: Moderate

Most areas of this unit are used for cultivated crops or hay and pasture. Other areas are wooded or are developed.

This unit is suited to hay and pasture. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion.

This unit is suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Few limitations affect timber production and harvesting.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table limits the use of this unit as a site for septic tank absorption fields. The slope also is a limitation. Special designs such as installing diversions and drains to intercept water from the higher areas and installing the effluent lines on the contour are needed to overcome the limitations. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The seasonal high water table, the potential for frost action, and the slope limit the use of this unit as a site for local roads and streets. Installing drainage systems and providing coarser textured base material help to overcome the wetness and prevent the damage caused by frost action. Adapting the design of the roads to the natural slope or land shaping and grading help to overcome the slope.

The capability subclass is IIIe.

140C—Benson very channery loam, 3 to 15 percent slopes. This soil is shallow, somewhat excessively drained and exdcessively drained, and gently sloping and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 50 acres

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, dark brown very channery loam

Subsoil:
4 to 8 inches, yellowish brown very channery loam

Substratum:
8 to 19 inches, yellowish brown extremely channery loam

Bedrock:
19 inches, calcareous shale

Included in this unit in mapping are small areas of the moderately deep, well drained Galway soils and the moderately well drained Vergennes soils. These soils are in troughs and on the edges of the unit. They make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Very low
Soil reaction: Moderately acid to mildly alkaline in the surface layer and slightly acid to mildly alkaline in the subsoil and substratum
Depth to bedrock: 10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture or cropland. Some areas are used as woodland or are developed.

This unit is suited to hay and pasture. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion.

The depth to bedrock and the very low available water capacity severely limit the use of this unit for cultivated crops. Erosion is a hazard. Using the unit for long-term hay or pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Windthrow and seedling mortality are hazards. The depth to bedrock restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Droughtiness, which results from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains.

This unit is generally unsuitable as a site for dwellings with basements because of the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock limits the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IVe.

140D—Benson very channery loam, 15 to 25 percent slopes. This soil is shallow, somewhat excessively drained and excessively drained, and moderately steep. It is on the top and sides of hills and ridges. Areas are long and narrow or irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, dark brown very channery loam

Subsoil:
4 to 8 inches, yellowish brown very channery loam

Substratum:
8 to 19 inches, yellowish brown extremely channery loam

Bedrock:
19 inches, calcareous shale

Included in this unit in mapping are small areas of the moderately deep, well drained Galway soils and the moderately well drained Vergennes soils. These soils are in troughs and on the edges of the unit. They make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Very low
Soil reaction: Moderately acid to mildly alkaline in the surface layer and slightly acid to mildly alkaline in the subsoil and substratum
Depth to bedrock: 10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used for hay or pasture. Some areas are used as woodland or are developed.

This unit is poorly suited to hay and pasture. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion. Operating equipment up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, the depth the bedrock, and the very low available water capacity. Erosion is a hazard. Using the unit for long-term pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion, windthrow and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. The depth to bedrock restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Droughtiness, which may result from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the slope.

This unit is generally unsuitable as a site for dwellings with basements because of the depth to bedrock. The slope also is a limitation. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIe.

140E—Benson very channery loam, 25 to 50 percent slopes. This soil is shallow, somewhat excessively drained and excessively drained, and steep. It is on the sides of hills and ridges. Areas are long and narrow or irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches, dark brown very channery loam

Subsoil:
4 to 8 inches, yellowish brown very channery loam

Substratum:
8 to 19 inches, yellowish brown extremely channery loam

Bedrock:
19 inches, calcareous shale

Included in this unit in mapping are small areas of the moderately deep, well drained Galway soils and the

moderately well drained Vergennes soils. These soils are in troughs and on the edges of the unit. They make up 10 to 15 percent of the unit.

Important soil properties—

Permeability: Moderate
Available water capacity: Very low
Soil reaction: Moderately acid to mildly alkaline in the surface layer and slightly acid to mildly alkaline in the subsoil and substratum
Depth to bedrock: 10 to 20 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to bedrock
Potential for frost action: Moderate

Most areas of this unit are used as pasture or woodland.

This unit is poorly suited to pasture and generally unsuited to hay. Erosion is a hazard, and the slope is a limitation. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, and weed and brush control increase the quantity and quality of forage and to control erosion. Operating equipment in the adjacent areas or up and down the slope helps to overcome the equipment limitation caused by the slope.

This unit is unsuited to cultivated crops because of the slope, the depth to bedrock, and the very low available water capacity. Erosion is a hazard. Using the unit for long-term pasture is effective in controlling erosion.

The potential productivity of this unit is moderate for sugar maple and high for eastern white pine. Erosion, windthrow, and seedling mortality are hazards. The main problem affecting timber production and harvesting is the equipment limitation. Constructing skid trails and logging roads across the slope and installing culverts and water bars as necessary help to control erosion. Harvesting during winter or during dry periods reduces the hazard of erosion. The depth to bedrock restricts the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard. Droughtiness, which may result from the very low available water capacity, causes a high rate of seedling mortality. The rate can be reduced by planting seedlings in early spring, thus allowing them to obtain moisture from spring rains. Operating logging equipment in the less steep areas of the unit minimizes the equipment limitation caused by the steep slopes.

This unit is generally unsuitable as a site for dwellings with basements because of the slope and the depth to bedrock. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

This unit is generally unsuitable as a site for septic tank absorption fields because of the depth to bedrock and the slope. Onsite investigation is needed to identify included or adjacent areas that may be better suited to this use.

The depth to bedrock and the slope limit the use of this unit as a site for local roads and streets. The potential for frost action also is a limitation. Careful planning of road grades and locations helps to avoid the need for removal of the bedrock. In some areas blasting is necessary to remove the bedrock. Providing coarser textured base material helps to prevent the damage caused by frost action. Adapting the design of the roads to the natural slope, land shaping and grading, and blasting help to overcome the slope.

The capability subclass is VIIe.

148B—Bomoseen and Pittstown soils, 2 to 8 percent slopes. These soils are moderately well drained and nearly level and gently sloping. They are shallow or moderately deep to dense basal till and very deep to bedrock. They are on the top and sides of hills and ridges. Slopes are generally smooth. Areas are oval or irregular in shape and range from 5 to 75 acres in size.

This unit is about 40 percent Bomoseen soil, 40 percent Pittstown soil, and 20 percent other soils. Some areas are mainly Bomoseen soil, some are mainly Pittstown soil, and some consist of both. These soils are so similar in use and management that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Bomoseen soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown channery loam

Subsoil:
9 to 11 inches, light olive brown channery fine sandy loam
11 to 17 inches, mottled, olive brown channery fine sandy loam
17 to 21 inches, mottled, light olive brown channery fine sandy loam
21 to 27 inches, mottled, olive channery silt loam

Substratum:
27 to 35 inches, mottled, firm, olive gray and olive channery silt loam
35 to 60 inches, mottled, firm, olive channery silt loam

The typical sequence, depth and composition of the layers in the Pittstown soil are as follows—

Surface layer:
0 to 9 inches, dark brown silt loam

Subsoil:
9 to 15 inches, light olive brown silt loam
15 to 18 inches, mottled, olive silt loam
18 to 22 inches, mottled, olive gravelly silt loam

Substratum:
22 to 60 inches, mottled, very firm, olive gray gravelly silt loam

Some areas of this unit include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the somewhat poorly drained and poorly drained Massena soils in depressions and drainageways. Also included, throughout the unit, are soils that have a friable substratum and areas where less than 1 percent to 3 percent of the surface is covered with stones.

Important soil properties—

Permeability: Bomoseen—moderate in the subsoil and very slow in the substratum; Pittstown—moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: Moderate
Soil reaction: Bomoseen—moderately acid to neutral in the surface layer and subsoil and slightly acid to moderately alkaline in the substratum; Pittstown—very strongly acid to moderately acid throughout the profile
Depth to dense basal till: Bomoseen—15 to 35 inches; Pittstown—15 to 30 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used for cultivated crops or hay and pasture. Other areas are wooded or are developed.

This unit is well suited to hay and pasture. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage.

This unit is well suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Windthrow is a hazard. The firm substratum and the seasonal high water table restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements.

The seasonal high water table and the very slow or slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The seasonal high water table and the potential for frost action limit the use of this unit as a site for local roads and streets. Constructing the roads on raised fill material and installing drainage systems help to overcome the wetness. Providing coarser textured base material helps to prevent the damage caused by frost action.

The capability subclass is IIw.

148C—Bomoseen and Pittstown soils, 8 to 15 percent slopes. These soils are moderately well drained and strongly sloping. They are shallow or moderately deep to dense basal till and very deep to bedrock. They are on the top and sides of hills and ridges. Slopes are generally smooth. Areas are irregular in shape and range from 5 to 100 acres in size.

This unit is about 40 percent Bomoseen soil, 40 percent Pittstown soil, and 20 percent other soils. Some areas are mainly Bomoseen soil, some are mainly Pittstown soil, and some consist of both. These soils are so similar in use and management that separating them in mapping was not practical.

The typical sequence, depth, and composition of the layers in the Bomoseen soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown channery loam

Subsoil:
9 to 11 inches, light olive brown channery fine sandy loam
11 to 17 inches, mottled, olive brown channery fine sandy loam
17 to 21 inches, mottled, light olive brown channery fine sandy loam
21 to 27 inches, mottled, olive channery silt loam

Substratum:
27 to 35 inches, mottled, firm, olive gray and olive channery silt loam
35 to 60 inches, mottled, firm, olive channery silt loam

The typical sequence, depth and composition of the layers in the Pittstown soil are as follows—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
9 to 15 inches, light olive brown silt loam
15 to 18 inches, mottled, olive silt loam
18 to 22 inches, mottled, olive gravelly silt loam

Substratum:
22 to 60 inches, mottled, very firm, olive gray gravelly silt loam

Some areas of this unit include soils that do not have gray mottles in the subsoil.

Included in this unit in mapping are small areas of the somewhat poorly drained and poorly drained Massena soils in depressions and drainageways. Also included, throughout the unit, are soils that have a friable substratum and areas where less than 1 percent to 3 percent of the surface is covered with stones.

Important soil properties—

Permeability: Bomoseen—moderate in the subsoil and very slow in the substratum; Pittstown—moderate in the subsoil and slow or moderately slow in the substratum
Available water capacity: Moderate
Soil reaction: Bomoseen—moderately acid to neutral in the surface layer and subsoil and slightly acid to moderately alkaline in the substratum; Pittstown—very strongly acid to moderately acid throughout the profile
Depth to dense basal till: Bomoseen—15 to 35 inches
Pittstown—15 to 30 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 3.0 feet in late fall, in winter, and in spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Most areas of this unit are used for cultivated crops or hay and pasture. Other areas are wooded or are developed.

This unit is suited to hay and pasture. Erosion is a hazard. Timely deferment of grazing, rotational grazing, applications of lime and fertilizer, harvesting at the proper stage of plant growth, and weed and brush control increase the quantity and quality of feed and forage and help to control erosion.

This unit is suited to cultivated crops. The seasonal high water table is a limitation, and erosion is a hazard. Growing cover crops, including grasses and legumes in the cropping system, applying a system of conservation tillage that leaves some or all of the crop residue on the surface, and tilling across the slope or on the contour help to control erosion. Diversion ditches that intercept runoff help to control erosion. Tillage and harvesting are often delayed because of the wetness caused by the seasonal high water table. Subsurface drainage can be used to lower the seasonal high water table if a suitable outlet is available.

The potential productivity of this unit is moderate for sugar maple and very high for eastern white pine. Windthrow is a hazard. The firm substratum and the seasonal high water table restrict the rooting depth, resulting in the uprooting of some trees during windy periods. Selective cutting minimizes the windthrow hazard.

The seasonal high water table limits the use of this unit as a site for dwellings with basements. The slope also is a limitation. Installing footing drains and sealing foundations help to prevent wetness in basements. Land grading can divert surface water away from the dwellings and thus also helps to prevent wetness in basements. Designing the buildings so that they conform to the natural slope or land shaping and grading help to overcome the slope. Erosion is a hazard in areas cleared for construction. Preserving as much of the existing plant cover as possible and establishing a plant cover in disturbed areas during or soon after construction help to control erosion.

The seasonal high water table and the slow or very slow permeability in the substratum limit the use of this unit as a site for septic tank absorption fields. Special designs are needed to overcome these limitations. Installing diversions and drains to intercept water from the higher areas helps to overcome the wetness. Onsite investigation is needed to identify included or adjacent areas that may be better suited as sites for septic tank absorption fields.

The seasonal high water table, the potential for frost action and the slope limit the use of this unit as a site for local roads and streets. Constructing the roads on fill material and installing drainage systems help to

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