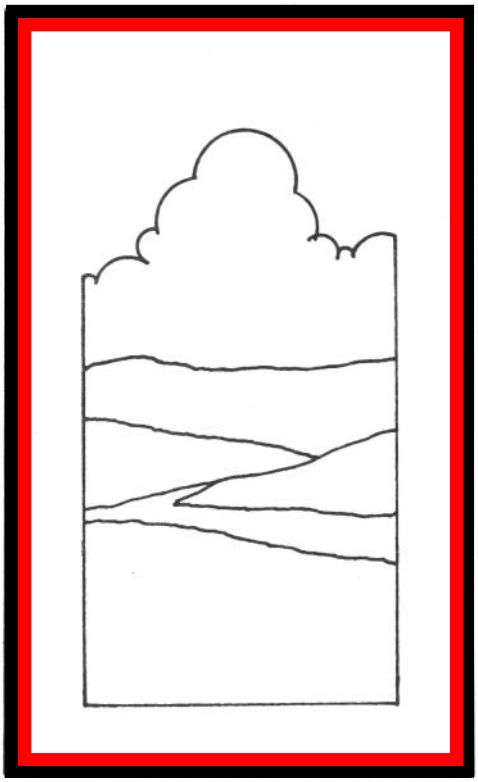

NATURAL SOIL GROUPS OF MARYLAND

TECHNICAL SERIES DECEMBER 1973
GENERALIZED LAND USE PLAN

MARYLAND DEPARTMENT OF STATE PLANNING

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ABSTRACT

THE PREPARATION OF THIS DOCUMENT WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM PRESIDENT'S DISASTER RELIEF FUND AS ADMINISTERED THROUGH THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT IN CONJUNCTION WITH THE APPALACHIAN REGIONAL COMMISSION AND THE ECONOMIC DEVELOPMENT ADMINISTRATION AND THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SECTION 701 OF THE HOUSING ACT OF 1954 AS AMENDED.

ACKNOWLEDGMENTS

The Department of State Planning is deeply indebted to the U.S. Soil Conservation Service for its surveys and its extensive assistance in the natural soil groups mapping project. Without their technical input and supervision, the information and the maps in this manual would have been less extensive and, much less relevant for planning purposes. Particular thanks are due to Robert L. Shields, State Soil Scientist; Harrell C. Krell, of the Hyattsville Cartographic Division, and Harold E. Scholl, State Resource Conservationist, for their continued participation in this project.

It should be noted that this manual has been compiled by several different people and from many diverse scources. Should errors exist in this report, the Department of State Planning would welcome notification of any that are found by users of this manual.

TABLE OF CONTENTS

LIST OF FIGURES

PREFACE

The legislation creating the Maryland Department of State Planning (Articles 41 and 88C, Annotated Code of Maryland) assigns to the Department the responsibility of preparing and keeping up to date "a plan or plans for the development of the State, which plan or plans collectively shall be known as the State Development Plan."

Based on its responsibility as stated above, numerous special studies and projects have been or are being completed by the Department of State Planning, including a study of the Chesapeake Bay, a study of State Wetlands, an Outdoor Recreation and Open Space Plan, and a Historic Preservation Plan.

In addition to the above studies, the Department of State Planning is currently preparing a State Development Plan; this plan aims to provide a coordinated basis to guide the future development of the State in such a way as to assure the general welfare and prosperity of the people of Maryland. It is to be based on studies of social, economic, and physical conditions and trends in the State and will examine these conditions and trends with the intention of establishing objectives within a goals-oriented framework. The plan as presently defined has two major elements, the Land Use Plan and the Human Resources Plan, in order to emphasize equally the best use of the State's physical resources and the well-being of its citizens.

The Land Use Plan will describe desirable general patterns for the development of land related facilities and services, as well as suggest policies for the management of the State's natural resources. It will include:

1. a statement of the goals, policies, standards and criteria upon which the plan is based;
2. recommendations for the most desirable general pattern of land use within the State;
3. recommendations for the major transportation facilities and services within the State which are consistent with and supportive of the Generalized Land Use Plan;
4. recommendations for the major public facilities and services which are consistent with and supportive of the Generalized Land Use Plan;
5. recommendations for the actions required to implement the plan.

The methodolgy utilized for the development of the land use plan was based upon four assumptions.

1. that the State Land Use Plan sets the State Policy for utilization of its land resources, facilities, and services.
2. that the plan is based upon an evaluation of the State's characteristics, land resources, and citizens' needs and aspirations.
3. that priority selection must take place.
4. that the plan and process can have a substantial impact upon the future quality of life and growth of the state.

There are several methodological phases necessary to prepare the Generalized Land Use Plan. They are:

1. preliminary research and analysis
2. capability analysis
3. suitability analysis
4. goal and policy formulation
5. preliminary developments of land use plan alternatives
6. review of alternatives and final plan selection

The capability/suitability phases form the heart of the plan's methodology. They provide the information on which much of the other work is based. Within the context of the Land Use Plan, capability refers to the ability of land to support particular uses based upon the relevant physical characteristics of the land. Capability analysis involves the selection of those factors most important for specific land uses, and then by the consideration of physical constructs the identification of areas of the State which can best support those types of land use. The Department of State Planning has outlined the following parameters for the capability analysis:

1. percentage of slope as an indicator of topography
2. floodplain delineation
3. soil characteristics and qualities
   a. agricultural productivity
   b. erosion susceptibility
   c. permeability
   d. depth to bedrock
   e. depth to water table
   f. stability
4. wildlife and fish habitats
5. forests by type
6. geological setting
   a. type
   b. hardness
   c. stability of cuts
   d. durability
7. aquifers
8. mineral resources
9. unique natural features and scenic areas
10. surface water quality

On the other hand suitability refers to those variables, in addition to basic capability, which relate directly to private and public expenditures or facilities that are programmed over long periods and which can be utilized to determine areas equally capable of supporting various activities. The following factors are to be considered in the plan for the purposes of suitability analysis:

1. existing and proposed land use
2. existing and proposed sewer and water service
3. existing State and Federally owned lands
4. existing and proposed transportation facilities
   a. airports
   b. road intersections
   c. pipe line right of ways
   d. high voltage electric line right of ways
   e. ship channels
   f. rapid transit right of ways
5. existing local and regional plans
6. historical structures or areas

For reasons of economy, no new data was gathered in the preparation of the capability and suitability analyses of the Land Use Plan. Instead, existing information was converted into suitable formats and within this constraint, every effort was made to interrelate, balance, update, translate and transform the diverse data sources. Of necessity, then, **ad hoc** decisions had to be made by the Department of State Planning regarding the selection and analyses of data, based upon information available at that point in time.

This manual is part of a series produced in conjunction with the preparation of the capability and suitability analyses of the Land Use Plan. These manuals have been prepared so that the major assumptions and techniques utilized in the development of the data base and available to those not directly responsible for its production in the hopes that they will be able to determine if the data may be of use to them, to understand the limitations and qualifications of the data, and to suggest improvements. In addition, the Department of State Planning is concerned that too often general plans have been developed and adopted for a particular area, but have not been accepted by its citizens because the plan methodology could not be understood. In the public sphere, perhaps more than in any other, an understanding of the means of a plan is as important as that of the ends; both must receive approval if any plan is to be given a sufficient level of credulity so as to make it truly effective. It is to foster such an understanding, then, that these manuals are also aimed.

INTRODUCTION

This manual was compiled with the extensive assistance of the U.S. Dept. of Agriculture Soil Conservation Service and hopefully summarizes the results of many months of cooperative efforts. Several initial discussion sessions were held between the Soil Conservation Service staff and the Department of State Planning staff. These meetings were designed to familiarize the participants with the goals of the soil mapping project as well as to make all participants aware of any limitations to the project that may exist. Parameters were then established and methodologies were explored. The next step was to test the methods finally agreed upon; this was followed by the actual processing of the map work. Compilation of this manual was the last phase of the soil mapping project.

This manual has been designed as an interpretative guide to the soil maps. Both the maps and this guide must be used together; otherwise, the utility of the information will be substantially reduced. One need fully understand the parameters of the data collection and the data manipulation process described herein if he is to properly use the maps connected with this publication. The Natural Soil Group maps and Soil Conservation Service detailed Soil Surveys and supporting texts are highly useful resources for land planning. And their utility should not be compromised by improper use.

The remainder of this report is divided into sections which detail specific aspects of the project. They can be used independently or in concert with each other. The glossary and appendices have been included for detailed reference.

SOILS IN PLANNING

The formation of the U.S. Soil Conservation Service in 1935 signaled the beginning of a new era; for the first time planners and other non-argricultural land users would have available to them more accurate and detailed soil maps. Through the combined work of the Soil Conservation Service field personnel and the laboratory support of the Agricultural Experiment Stations, the higher orders of soil classifications were subdivided into more refined types. Today, soil scientists now recognize over 225 soil series and 750 soil types in Maryland.

Since the classification system developed by the Soil Conservation Service is based on the major physical characteristics of soil, its application can be extended to determine the soil's suitability for certain land uses, where the demands of those uses upon the land are understood. It is this fact which forms the rationale for employing soils information in a planning context. The soil scientist supplies the planner with a typology which can be translated to meet planning objectives, just as he provided information suitable for crop farming and other uses.

Two examples of grouping soil types by general characteristics, are the productivity classification and land capability classification systems. In the productivity classification system, yield estimates for crops can be made by considering the necessary non-soil variables (i.e. weather, fertilization) in combination with those specific soil characteristics which relate most directly to crop yields (i.e. depth, drainage, moisture holding capacity). Those soils with similar yield capacity and similar response to management can be grouped together; then areas of these soils can be delineated as groups of soils on maps, thus reducing the detail and clutter on maps. In the land capability classification system, soil properties of texture, color, depth, slope, parent material, etc., reflected in the soil series and type are judged in relation to the needs of particular types of activities. From these basic units, one can choose all those soils which do or do not possess the ability to sustain an activity. Then those which are suitable can be ranked by the relative capacities for a given activity.

Though it is true that most land which can be farmed can also sustain homes and industries, for obvious reasons one would not wish to convert all farmland into urban land. Therefore, it would seem useful to find some means to use the soils data to help planners indicate those areas best suited for each land use.

Soils information has found greatest use at the Conservation District level. Hence, publications were produced for district units and mapping scales were set accordingly. Planning agencies which have larger or smaller spheres of responsibility have been at a disadvantage when using this detailed material. If sub-district information has been necessary, detailing and/or segmentalization could be easily accomplished; at a state level, however, detailing would be execessive. If a technical solution to this problem were to be devised, it would be a simple matter to construct an appropriate conversion system for the basic typology.

With the assistance of the Soil Conservation Service, a suitable classification system was produced; namely Natural Soil Groups. Soils were grouped by productivity, erosion potential, permeability, stoniness and rockiness, depth to bedrock, depth to water table, slope, stability, and susceptibility to flooding; these factors were felt to be the most significant when planning subdivision locations, commercial facilities, roads, sewerage systems, or septic systems.

GEOMORPHOLOGY OF MARYLAND

PHYSIOGRAPHY AND GEOLOGY OF MARYLAND

The land area of Maryland can be divided into three quite different physiographic regions known as the Coastal Plain, the Piedmont Plateau and the Appalachian Province.

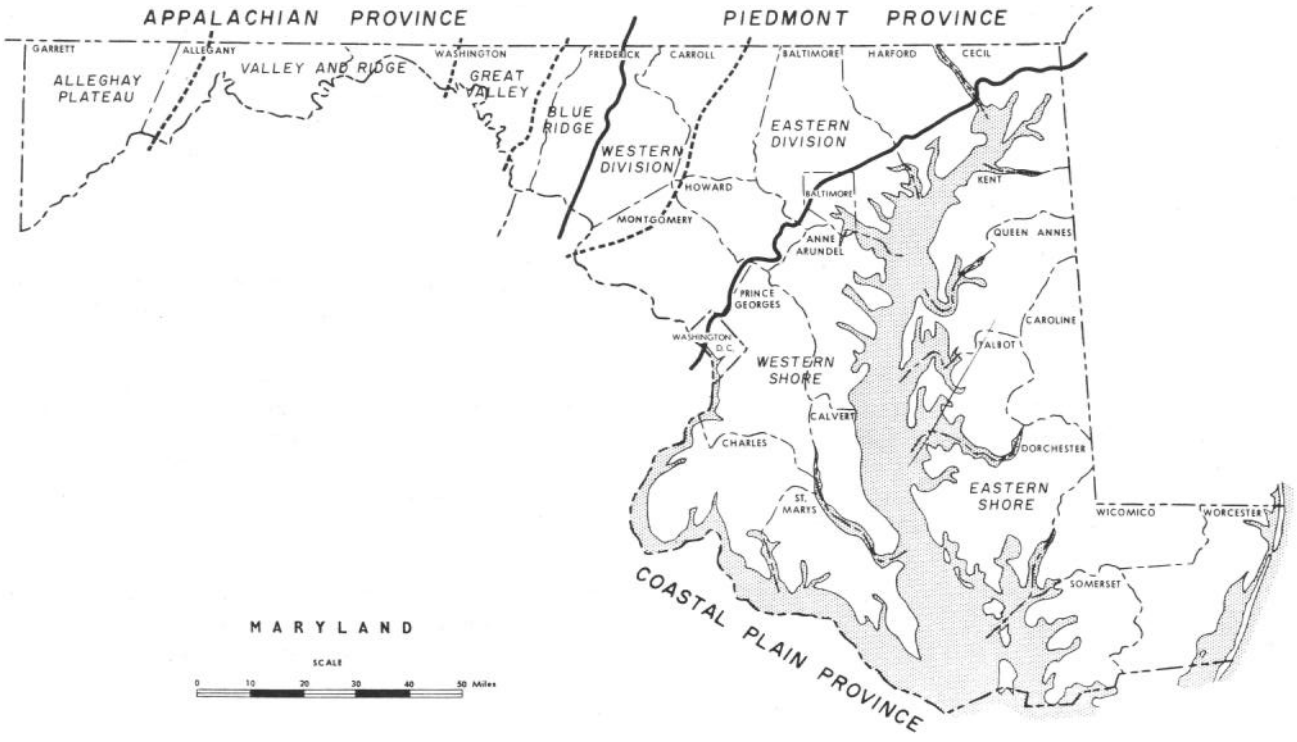


FIGURE 1-PHYSIOGRAPHIC REGIONS AND THEIR DIVISIONS IN MARYLAND

Each region consists of a series of geologic formations of varying rock type and structure, which form belts of different ages parallel to the Atlantic coastline.

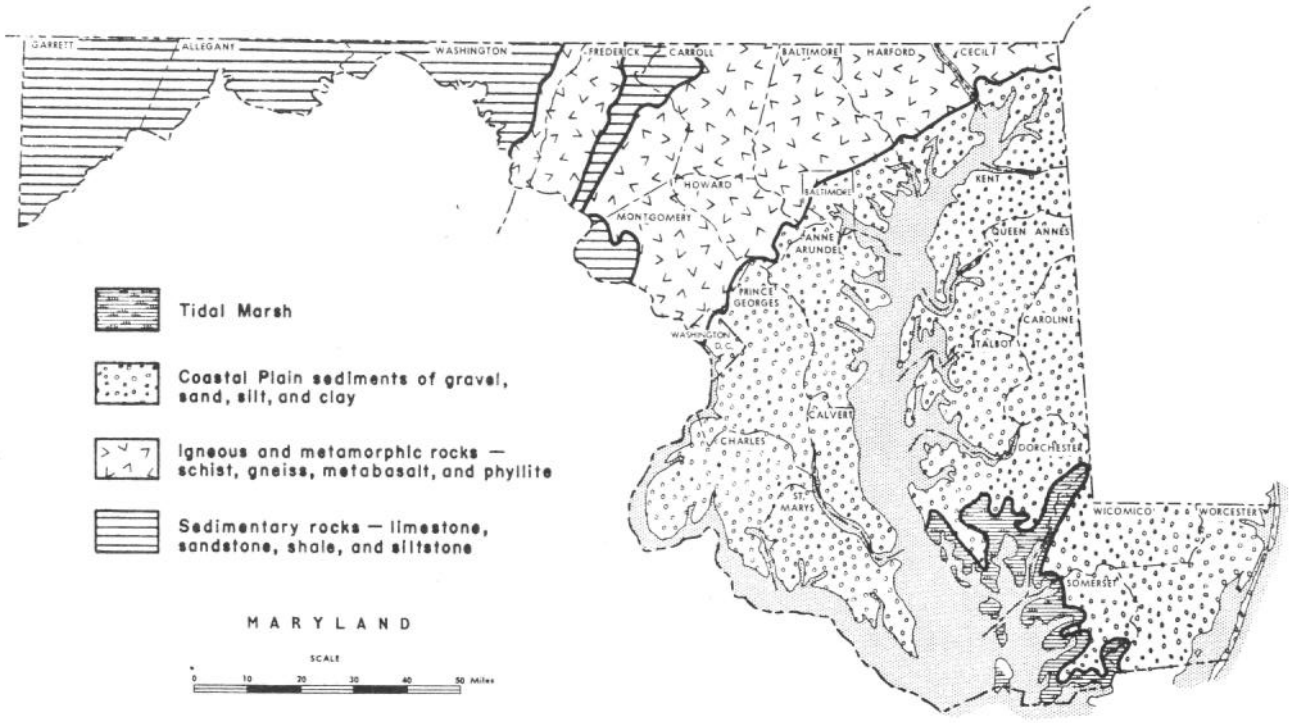


FIGURE 2-ROCKS AND SEDIMENTS IN MARYLAND

The elevation increases gradually across the Coastal Plain and then more rapidly in the Piedmont until the highest relief and elevations are reached in the Allegheny Plateau.

COASTAL PLAIN

The Coastal Plain is low and partially submerged with many islands and marshes. The Chesapeake Bay divides this province into an eastern shore which is nearly flat and a western shore which is higher, more dissected and rolling. The province as a whole consists of a series of south easterly dipping layers of unconsolidated sands and clays. Its streams are slow moving and winding, many becoming tidal estuaries before reaching the Bay.

The boundary between the Coastal Plain and the Piedmont Plateau is called the Fall line. (See Figure 1). The Fall line is an ill-defined line of rapids and waterfalls where streams descend from the crystalline rocks of the Piedmont down to the easily eroded sands and clays of the Coastal Plain.

PIEDMONT PLATEAU

The Piedmont Plateau is a broad undulating land surface with low knobs and ridges. Numerous rather deep and narrow stream valleys have been incised into it; the streams show relatively steep gradients with many rapids. Geologically, the Piedmont is a complex series of metamorphosed rocks including gneiss, slate, schist and marble. Because of the variety of rock types, their varied resistance to erosion and their complicated structural relationships, the Piedmont has diverse topography.

APPALACHIAN REGION

The Appalachian Province is divided into three districts. The first, the Blue Ridge Mountains, consists of Catoctin and South mountains and Middletown Valley. The mountains are formed of the massive, resistant weverton quartzite, while the intervening Middletown Valley consists of weaker metamorphosed volcanic rocks like rhyolite and basalt.

The second district is called the Ridge and Valley district and includes the land west of the Blue Ridge Mountains to Dan's Mountain, which is at the Allegheny front and marks the beginning of the Allegheny Plateau. This district is divided into the Great Valley (known as Hagerstown Valley in Maryland) to the east and the Allegheny ridge area to the west. The Great Valley is a broad lowland with a gently rolling floor underlain by thick layers of limestone and shales. It is drained by Antietam and Conococheague Creeks which flow into the Potomac River to the south. The Allegheny ridge area is a series of northeasterly tending, massive sandstone-strata mountains and intervening valleys formed by erosion of weaker limestones and shales.

The Allegheny Plateau extends west from Dan's Mountain through the rest of the State. This district is a broad upland across which a series of ridges extend in a northeast - southwest directions. Elevations are near 3000 feet. The strata is made up of shales, coal, and sandstones and lies in broad folds. The surface is strongly dissected, with relief at a maximum. In places the valley walls are nearly vertical and stream gradients are steep, with rocky beds.

CLIMATE

Climate, through its component elements (precipitation, temperature, humidity, and seasonal variability), acts upon the bedrock to produce parent material which continues to be acted upon to produce soils. For example, granite and other rock types exposed in polar regions are weathered only slightly, but these rocks exposed in Maryland have soils formed on them due to the humid, warm climate. Climate also largely determines the vegetation of an area. In addition, soil and vegetation interact with each other such that when soil development has progressed to the point where vegetation can become established, the soil characteristics which finally evolve are a result of both climate and vegetation acting upon parent material. The soil characteristics are further modified by the period of time during which this interaction has been operative and the topographic position of the soil.

Maryland's humid climate is conducive to the growth of trees; if grasslands in Maryland were left untouched on the upland areas, trees would eventually crowd out the grass and become the dominant species. Trees do not have the matted rooting habit of grasses and do not incorporate as much organic matter into soils. Thus, the relatively thin dark portion of the "A" horizon of Maryland soils is a result of coniferous and deciduous trees whose decayed leaves form an organic layer only at the surface.

Climate influences agronomic crops as well as native vegetation through its variability and resulting yield differences. Although the climate of Maryland does not exhibit dramatic differences within the State, there are measurable variations which affect crop yeilds and types of vegetation. This climatic variation is recorded in some of the soils of Maryland through the effects of average annual temperature differences and resulting vegetation changes.

A humid climate with abundant precipitation (30-50 inches per year) for leaching usually produced an acid profile and causes migration of iron and aluminum oxides along with colloidal humus and clay from the "A" horizon to the "B" horizon. Soils formed under humid conditions (30-40 inches) in a cool climate (mean annual temperature less than 45 degrees F) are called Spodosols, which are characterized by a leached, light colored "A2" horizon over an iron and humus-enriched "B" horizon. These soils form under a coniferous forest which produces an acid organic layer at the surface. Only a few local areas of these soils occur in Maryland at higher elevations.

Warmer annual temperatures (45 degrees - 55 degrees F) and increased precipitation (35-45 inches) promote the formation of Alfisols with a less intensely leached "A2" horizon and a clay-enriched "B" horizon. These soils are formed under deciduous forests and are common in Maryland and the Midwest around the Great Lakes. Still warmer annual temperatures (55 degrees - 70 degrees F) and increased precipitation (40-50 inches) cause increased iron oxidation resulting in deep yellow and red colors. These soils are Ultisols which are common in Maryland's Coastal Plain and throughout southeastern United States. Maryland lies in a transition zone between the Alfisols and Ultisols.

The physiographic configuration of Maryland is a principal cause of its climatic variability. The Western Shore and the Delmarva Peninsula areas are influenced by the adjacent bodies of water which tend to moderate the winters and maintain more uniform temperatures during the summer.

Figure 3 shows the average annual temperatures of Maryland. The influences of the Allegheny Plateau and Chesapeake Bay are clearly evident as along the Bay average annual temperatures range from nearly 58 degrees F to 48 degrees F in the Allegheny region. The lowest temperature ever recorded in Maryland was minus 40 degrees F at Oakland in Garrett County in 1912. A record high for Maryland, 109 degrees F, was recorded in Allegheny County in 1898, 1918, and 1936; this temperature was also recorded in Frederick in 1936.

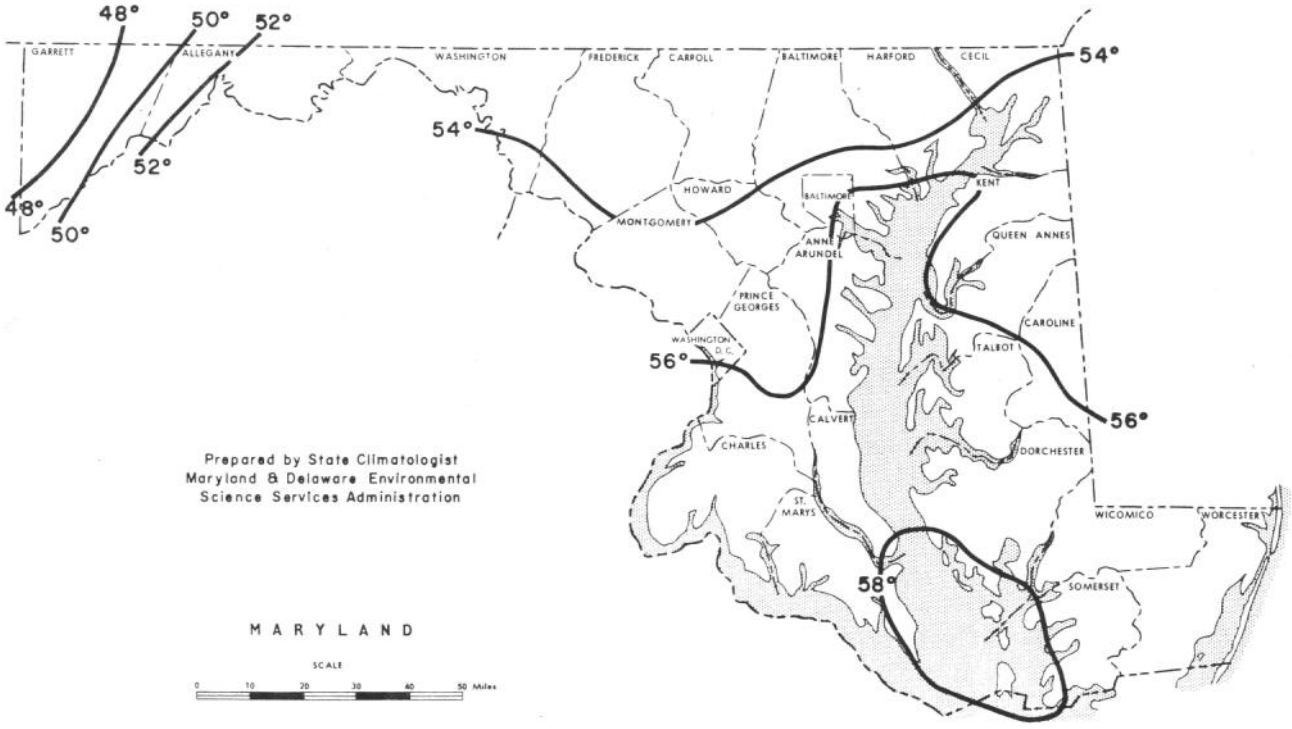


FIGURE 3-ANNUAL AVERAGE TEMPERATURES IN MARYLAND

The average number of days per year with temperatures below freezing varies from more than 150 days on the Allegheny Plateau to less than 70 days along the southern reaches of the Chesapeake Bay region. These data are reflected in the longer period between the average dates of the last and first killing frosts (Figure 4) in the Chesapeake and lower Eastern Shore region (more than 200 days) as compared with the higher Allegheny Plateau (130 days). Thus, the "growing season" for frost susceptible crops is much longer on the Eastern Shore and Bay region than in western Maryland. The warmer temperatures of southern and eastern Maryland are reflected in part by the stronger brown and red colors exhibited by soils in this region.

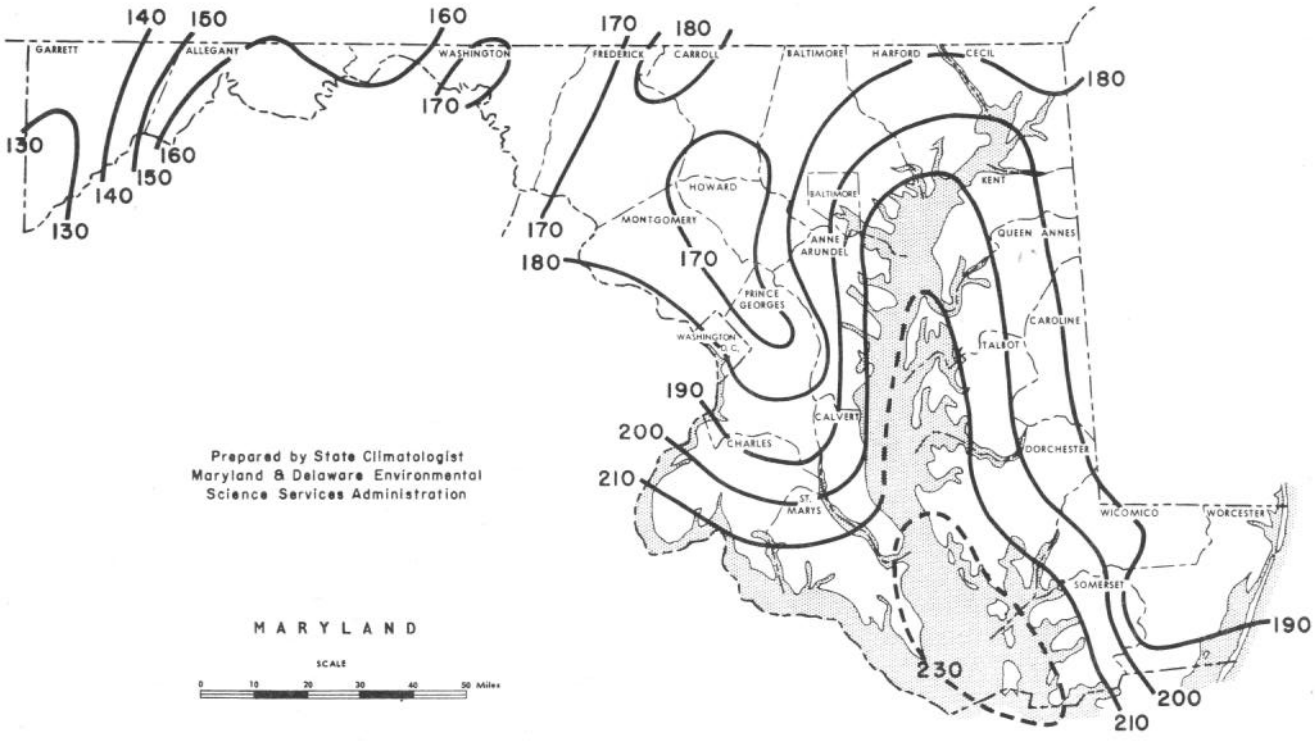


FIGURE 4-AVERAGE NUMBER OF DAYS IN MARYLAND GROWING SEASON

The Allegheny Mountains and Plateau in western Maryland modify the precipitation distribution across this portion of the State by acting as a barrier to the passage of storms from the Ohio Valley. The formation of precipitation is increased as air masses ascend the mountains from the west. This ascent is commonly the "trigger action" required to induce rain and snow which falls on the Allegheny Plateau. As the air masses cross this barrier, they descend on the leeward slopes. The descending air is warmed causing the dissipation of clouds. Thus, east of the mountains, less precipitation is recorded. This area is termed the "rain shadow" and is illustrated in Figure 5 which shows the 10 to 12 inch annual average precipitation difference between Garrett and Allegany Counties.

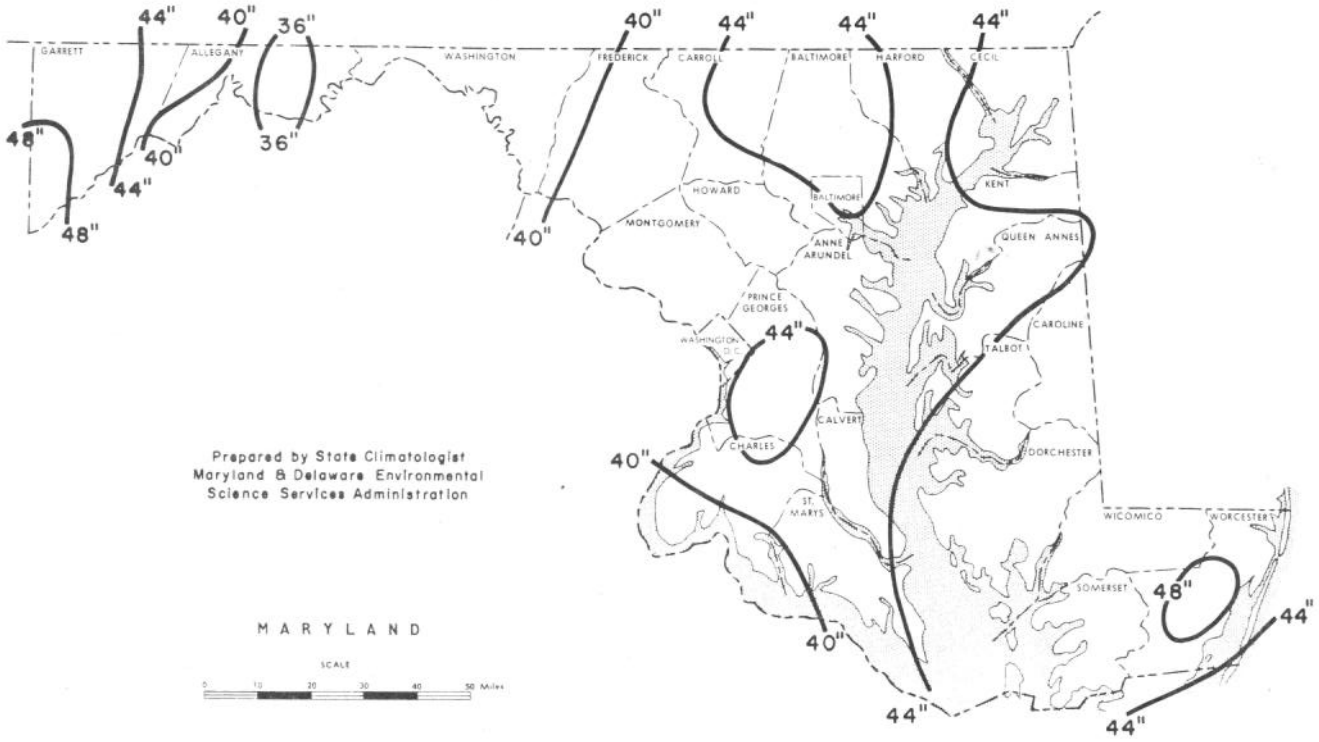


FIGURE 5-AVERAGE PRECIPITATION IN MARYLAND

The average annual rainfall in Maryland ranges from 48 inches on the west side of Backbone Ridge and southern Eastern Shore to 36 inches in the "rain shadow". The precipitation is rather uniformly distributed throughout the year, although the heaviest rains occur in the summer months. Most months range between 2 to 4 inches, but droughts, hurricanes, and summer storms cause considerable variation in monthly averages.

Thus, climate is a dominant factor in soil formation through its influence on the amount and kind of weathering it produces upon bedrock and through the environment it provides for vegetative growth.

Climatic data provided by Mr. W. J. Moyer, State Climatologist, from the Maryland Soils Report, Cooperative Extension Service, University of Maryland, College Park, Bulletin 212 1967.

EVOLUTION OF THE NATURAL SOIL GROUPS

HISTORY OF SOIL CLASSIFICATION

In 1899, the National Cooperative Soil Survey program was initiated in response to the recognized need for helping farmers locate themselves on soils responsive to management. In addition, the program was needed for helping farmers decide what crops and management practices were best suited for the particular kinds of soils on which their farms were located. Cecil was the first county to be mapped in Maryland. Mapping was started in 1899 and completed the next year through the cooperation of the Maryland Agricultural Experiment Station and the United States Department of Agriculture. By 1922, the entire State had been mapped and soil survey publications were available for every county by 1926. Between 1925 and 1930, all counties mapped prior to 1910 were remapped. These earlier surveys were very general and corresponded to the higher orders of classification which we recognize today. Continued research and broader concepts of soil science produced the ability to make better soil surveys.

Formation of the Soil Conservation Service in 1935 necessitated the use of more accurate and detailed soil maps and thus provided the impetus for using new ideas and methods for making soil surveys. Kent County was the first county in Maryland to organize a local Soil Conservation District in 1938, and with that event the organized detailed soil survey program using modern standards was initiated in Maryland. The Kent County survey was published in 1945 as a "Physical Land Survey" (16). The Maryland Agricultural Experiment Station has contributed to every survey that began after 1938 through its soil research efforts. Since 1952, soil maps have been published on an aerial photographic base with a scale of 3.2 or 4 inches to the mile.

The Soil Conservation Service provides soil scientists in Maryland for field mapping and the Maryland Agricultural Experiment Station is constantly conducting research on soils which fortifies the basis for sound interpretation. On October 16, 1973, the last acre of the modern, detailed soil map for Maryland was completed in St. Mary's County, making Maryland the third state in the U.S. to have available, a coordinated detailed soil data bank. Sixteen counties have modern detailed soil surveys published and six more are in some stage of completion prior to publication. Soil scientists recognize about 225 soil series and 750 soil types in Maryland, which have been organized into groups having similar use and management requirements. These are the Natural Soil Groups described in this manual.

WHY AND HOW OF SOIL CLASSIFICATION

Classification has long been helpful to the scientist in organizing his knowledge and recognizing various relationships. Soil science is no exception. The land masses of the world and populated with many individual soils, but by considering various properties, it is possible to group them into classes. To do this, some property is chosen as the basis for the class; it is called the differentiating characteristic. Individual soils possessing the same differentiating criteria are placed in the same group. As more differentiating characteristics are considered, the classes or groups become more narrowly defined and contain fewer numbers of individual soils which meet the requirements.

A classification system must have an objective. Properties or differentiating characteristics chosen in the light of a specific objective may not be important for another objective, thus, a single classification system may not serve two or more objectives equally well. However, soil scientists are interested not only in the origin and nature of soils, but in the application and use of the soil data base by all disciplines concerned. For this reason many soil properties are considered in the development of the concept of an individual soil with the objective of satisfying the needs of many different disciplines.

Soil properties which are considered in classification are texture, structure, color, depth, parent material, drainage, slope, base status, erosion, stoniness, and horizon arrangement, type and thickness. Use of these differentiating characteristics forms the basis for the natural classification system used by soil scientists today. This type of classification performs the function of organizing, naming, and defining the classes that are the basic units used (a) to identify the soil individuals, (b) to discover various relationships, (c) to formulate generalizations from these relationships, and (d) to apply these generalizations to specific cases that have not been studied. The type and precision of predictions that can be made from a classification system are dependent on the degree of variation within the classes. The more limited or

narrower the range in properties admitted in a class, the more precise the behavior of the soil can be predicted. If texture were the only property known about a soil, our predictions about its behavior would be much less precise than if we knew many other properties of this soil.

METHODS OF SOIL CLASSIFICATION

HOW SURVEYS ARE MADE

The appropriate classification of a soil is determined by field and laboratory examination. In the field, a trained soil scientist systematically examines the characteristics of each soil horizon to a depth of at least 42 inches. For the more commonly occurring soils, samples of these horizons are sent to the laboratory to further characterize the profile and aid the scientist in its proper classification and use capability. The soil scientist walks over the landscape and bores holes every three to five acres to note the characteristics and changes of each soil. The soil types and phases (defined below) are delineated on an aerial photograph and identified with a symbol along with the slope and amount of erosion. The resulting soil map indicates by a symbol those soil properties common to a given soil type. Thus, a soil map shows the profile characteristics associated with a given soil type, in addition to the slope on which the profile has developed and the amount of erosion which has occurred. Over 1000 different soil mapping units are used in Maryland.

TRADITIONAL CLASSIFICATION SYSTEM

ORDER: In 1938, a system of soil classification was adopted in the United States in which the broadest grouping of soils was divided into three categories or orders. This system, revised in 1949, uses factors of soil formation as the differentiatefor classification. The first order, termed zonal soils, consists of soils whose characteristics are determined essentially by the climate and vegetation under which they formed. The second order, called intrazonal soils, consists of soils whose properties reflect the dominant influence of a local condition, such as poor drainage or salt accumulations despite climate. The third order, called azonal soils, consists of soils which are devoid of profile characteristics because soil development has not occurred due to lack of sufficient time or conditions.

SUBORDERS: The three orders were further divided into suborders on the basis of specific climate, vegetative regions, and type of local factor influencing soil development and associated properties.

GREAT SOIL GROUPS: Continued division of the suborders resulted in the "great soil groups." This category of classification was characterized by grouping the same general profile characteristics. Soils developed under similar climate, vegetation, topography, and time have profiles possessing horizons of similar kind, sequence, and degree of expression. Thus, the conditions defining the great soil groups are more specific than the conditions or differentiate necessary for classifying soils in higher or broader categories such as orders and suborders.

SOIL SERIES: Application of more differentiating characteristics to further categorize soils has resulted in the series, type, and phase grouping of soils. These are the most refined categories of classification and represent the other end of the classification system which starts with the broad orders.

A soil series is a group of soils developed by the same genetic combination of processes. Its horizons have similar differentiating characteristics and arrangement in the profile, and the soil has developed from the same kind of parent material. Except for the "A" horizon texture (which is used to classify the series into types), all soils having similar physical, chemical and morphological characteristics such as structure, texture, pH, base saturation, organic matter content, topographic position, drainage, depth, color, parent material and horizon thickness, type and arrangement belong to the same series. Cultivation will change certain characteristics, especially in the topsoil or "A" horizon. The pH changes and the amount of organic matter decreases in the topsoil when soils are brought into cultivation.

Soil series are named for the geographic location where they were first described and defined. Thus, names such as Hagerstown, Beltsville, Glenelg, Pocomoke, Sassafras, Holston, Fauquier, and many others are common series names for Maryland soils.

SOIL TYPE: The soil type, a subdivision of the series, is based on the texture of the "A" horizon. Soil individuals belonging to the same type have similar characteristics as required by the series

plus the same surface texture. Soil types derive their name by adding the surface texture to the series name. A soil belonging to the Hagerstown series with a silt loam surface would have the soil type name of Hagerstown silt loam.

PHASE: The lowest subdivision in soil classification is the phase. This category is not a differentiating characteristic of the soil profile, but it is important in land-use considerations. The three most important characteristics are slope, stoniness, and degree of accelerated erosion.

NEW CLASSIFICATION SYSTEM

Criticism of the soil classification system has been based on the fact that the classes have been vaguely defined and that classification has been based primarily on the genesis or properties of the virgin soil. In the last few years, soil scientists have incorporated more recent data and developed a classification system based on the characteristics of the soil which can be quantitatively measured. The most recent effort toward this goal was published in 1960. This system recognizes 10 orders. The four most commonly occurring orders in Maryland are the Entisols (recent soils--Azonal). Inceptisols (beginning or young soils--Humic Gley). Alfisols (aluminum, iron accumulation--Gray Brown Podzolic), and Ultisols (ultiment development--Red Yellow Podzolic). This new system, at its present stage of development, deals mostly with the higher categories of classification. Thus, the concept of the soil series, type, and phase is still accepted by soil scientists at present.

NATURAL SOIL GROUPINGS

Soil classified in the aforementioned manner can be reclassified to meet other objectives. As part of the capability analyses input of State Land Use Plan, the soils of Maryland have been assembled into groups having similar major properties and features. These have been named Natural Soil Groups. The soil typologies of each county were regrouped around six characteristics of interest; agricultural productivity, erosion susceptability, permeability, depth to bedrock, depth to watertable, and stability.

In general, the Natural Soil Groups are arranged in order of increasing limitations or problems for most uses. Drainage class or wetness characteristics is one of the prime considerations. Thus, the better drained soils are the first groups. Groups are divided on the basis of drainage class, depth, permeability, flooding stoniness and rockiness. Subgroups are divided only on the basis of slope steepness, where this is an important feature affecting use.

Only soil series names and land types are shown in the system. However, soil mapping units are placed in the system by slope phase if subgroups are listed for the soil series and group. If an asterisk appears beside the soil series name, this indicates that all stony or rocky mapping units of that soil series are automatically in Group H1, if stony, or Group H2, if rocky.

Soils on floodplains are divided into two groups. Group G1 consists of the better drained alluvial soils, and Group G2 the wetter alluvial soils. Although both groups are subject to flooding, Group G1 has a generally greater potential for high yields of farm crops and is more adaptable for some nonfarm uses, such as parks and play areas.

It must be realized that groupings, such as these, force generalizations on specific soils. Thus, any interpretation for a group cannot be as accurate as an interpretation for a specific soil in the group. On the other hand, the groupings are accurate enough for preparing generalized maps showing soil groups with properties nearly alike and for preparing generalized soil interpretive maps. The maps themselves have been prepared by using existing soil survey and mapping units, wiping out unnecessary detail by overlooking small areas, and delineating Natural Soil Groups as the interpretive units on the existing mapping units.

The detailed soil survey maps are intended to serve the needs of people having many different problems and disciplines. Information of a more general nature is usually requested and the soil types are grouped in various ways according to the specific objectives of the user. Thus, the detailed soil survey maps serve as the base from which many groupings can be made such as soils which are poorly drained, soils which are good for agriculture, soils which are suitable for road building, and other more specific objectives which do not necessarily warrant a map as detailed as the soil type separation.

However, the Natural Soil Group maps are prepared for use as a county or statewide planning tools and should not be substituted for the detailed soil survey delineations and interpretative techniques, which are applicable to specific tracts of land. These maps and more detailed information are available from the various soil conservation district offices.

DESCRIPTION OF NATURAL SOIL GROUPS IN MARYLAND

NATURAL SOIL GROUP INDENTIFICATION SYMBOLS

Each soil group is designated on the Natural Soil Group Map by a capital letter and a number, such as B1. If a group contains soils that have a wide range in slope, then the group is subdivided into slope ranges indicated by the addition of a lower case letter (see Figure 6). A lower case letter **a** means that slopes range from 0 to 8 or 10 percent; **b**, 8 to 15 or 10 to 15 percent; and **c**, steeper than 15 percent. On the Eastern Shore, practically all soils mapped have slopes of less than 10 percent; therefore, to reduce map clutter, only the capital letter and number are designated for soils on the Eastern Shore. For example, B1 on the Eastern Shore and B1a in the Piedmont region both indicate soils in Group B1 with slopes of 0 to 10 percent.

The Natural Soil Group symbols are not connotative, although the lower case letters a, b, and c indicate specific slope ranges. In general, the Natural Soil Groups are arranged in order of increasing limitations or problems for most uses. Drainage class or wetness is one of the prime considerations in land use. Thus, the system is connotative in that the soils, in general, get progressively wetter moving from A to G in the alphabet. Also, in general, the number designation indicates the intensity of an unfavorable feature such as wetness, droughtiness, or very high or low permeability. For example, the soils in Group A are sandy and droughty, but A1 is not so droughty as A2. The soils in Groups B1, B2, and B3 are all deep and well drained, but have progressively slower permeability. Thus, the numbers indicate increasing limitations within the capital letter designation. In most groups, the numbers represent increasing limitations of permeability.

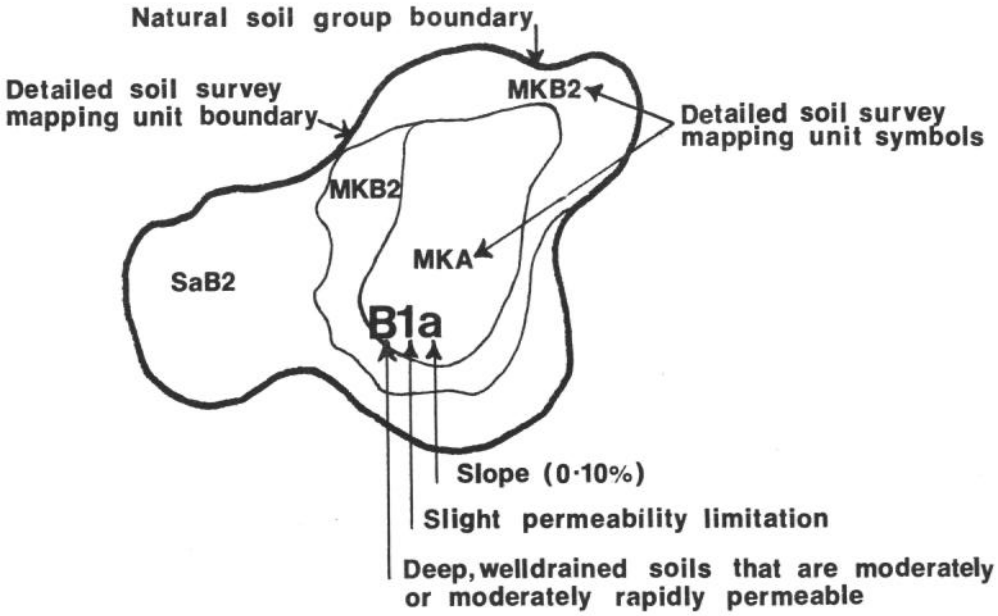


FIGURE 6

NATURAL SOIL GROUPS IN MARYLAND

A1

A1 - This group consists of deep, very sandy, somewhat excessively to excessively drained soils. The landform is nearly level to undulating in the Lower Coastal Plain, but dominantly rolling to steep in the Upper Coastal Plain, especially in Southern Maryland. There are large concentrations of these soils adjacent to some of the major streams, such as the Patuxent River.

They are strongly to extremely acid, very rapidly permeable and have low to very low moisture capacity. They are extremely susceptible to erosion by wind when dry and without vegetative cover. Because these soils are extremely sandy and rapidly permeable, applied lime and fertilizer tend to leach through the soil rapidly. Therefore, frequent small applications are of greater benefit than large, infrequent applications.

UNIQUE VALUE: A1a, A1b, A1c - Source of sand, roadfill, and some gravel; A1a - irrigated truck crop land; possible groundwater recharge areas.

CROPLAND: A1a - These soils are easily worked over a wide range of moisture content. They are fairly well suited to many crops, but in most places are used for early vegetable crops, particularly garden and truck crops. Tobacco of good quality is grown on these soils in Southern Maryland. They have low to very low available moisture capacity and low natural fertility. These soils are subject to erosion, particularly soil blowing, when their surfaces become dry and are not covered by protective vegetation. Soil losses, however, may cause more damage to other nearby areas where washed or blown sands are deposited than to these soils.

A1b - Differ from A1a in that they have a generally shorter slope of 10 to 15 percent grade, are subject to more erosion by water, are somewhat more droughty, and are less adaptable for truck crop farming and irrigation that A1a soils. However, A1b units are often inclusions in large areas of A1a and, as a result, are used and managed the same. If so, they are the least productive areas in a given field.

A1c - In the Lower Coastal Plain, these soils occur as moderately to very steep short slopes in and around A1a units, but in Southern Maryland they occur as dominantly long, wooded slopes that were previously farmed and are rather severely eroded. Because of the steep slopes, droughtiness, and low natural fertility, these soils are not well suited for cropland. They are better used for woodland, recreation, and wildlife areas.

URBAN: A1a - These soils have good potential for urban development. Their only serious shortcoming is their droughtiness for lawns, shrubs, gardens and other features of landscaping. They provide nearly level, dry sites for foundations of buildings and, in most places for basements. However, along the Lower Coastal Plain, and especially on the Eastern Shore, some areas of these soils are located on water tables that would rise above basement floor levels. This is especially likely where soils in this group are associated with the wet, sandy soils in groups F1 and F2. During construction, steep cuts or sidewalls in excavations may be unstable as these soils are essentially loose sands with little binding material. They make a good subbase and low frost-action potential for roads and streets. These soils are a natural source of sand and some gravel for construction of buildings and roads.

Because these soils have a rapid percolation rate, septic tank absorption fields function well in them; but for the same reason there is a potential for groundwater contamination resulting from effluent not being adequately filtered by the sandy substrata. This problem is even more hazardous with "dry wells" for sewage disposal.

A1b - These soils occur as moderately sloping areas. They also have good potential for urban development, but their slopes of 10 to 15 percent require more cutting, filling and grading to establish buildings, roads, and streets. Otherwise, the interpretations of A1a apply.

A1c - The moderately steep to steep slopes severely limit soils of this group for urbanization. Extensive cutting, filling and grading are required to adapt such areas for urban use. However, where these soils are in existing woodlands they have urban value as parks and picnic areas.

RECREATION: A1a - These soils are moderately limited for use for camp areas and paths and trails because of their loose sand and poor trafficability. Otherwise, they are well suited to these uses because they dry out rapidly after rains and, in many places, are wooded. The loamy sand surface layers and low available moisture and severe limitations for athletic fields and other intensive play areas subject to considerable foot traffic. Utilization of these soils for golf fairways generally requires intensive irrigation.

A1b - The effects of increased slopes where these soils occur are the only additional limitations for this group over those of group A1a. The slopes of 10 to 15 percent require more specific design and engineering when installing camp and picnic facilities, especially trailer parking areas. Also, the combination of increased slope and loose sand increases problems of vehicular trafficability.

A1c - These moderately steep to steep, very sandy soils are fairly well suited for paths and trails, but are severely limited for more intensive recreational uses. They serve very well as wooded areas for hinking and other low intensity forms of recreation and have considerable aesthetic value.

WILDLIFE: A1a, A1b, A1c - These soils do not provide a dependable source of food and habitat for open land wildlife. They do, however, generally have good potential for woodland wildlife. They are not suitable as habitat for wetland wildlife.

WOODLAND: A1a, A1b, A1c - These sandy and rapidly permeable soils have generally good productivity for Upland oaks, Virginia pine, Yellow poplar and Loblolly pine (where adapted). Many acres of these soils are presently wooded, especially in Southern Maryland. Quite a few of the wooded areas in Southern Maryland were at one time farmed for tobacco, subsequently severely eroded, and then left to revert to their natural woodland type. These soils have no severe limitations for woodland management. There are moderate problems of seedling mortality and plant competition. Combination of loose sand and steep slopes, in some places in Group A1c, may cause poor trafficability for equipment.

SWEET POTATOES BEING CULTIVATED IN A LOAMY SAND SOIL IN NATURAL SOIL GROUP A1a. USDA-SCS

A2 - This group consists of land types that have very little if any true soil development. These are noncoherent, loose sands that have been worked and reworked by waves, tides, and wind are still subject to such action. Those areas that are regularly washed by waves and tides commonly are smooth and slope gently upward away from the water. Areas above normal high tide consist of dunes and hummocks that have irregular, short slopes that are constantly changed by wind action.

Most of this land borders the Atlantic Ocean and Chesapeake Bay. Little if any vegetation grows below the high tide line. Elsewhere there are sparse stands of American beachgrass, beach goldenrod, and switchgrass. Shrubs and scattered pines grow on some dunes.

Depth to the water table may be as shallow as one foot on the beach sand areas and as deep as ten feet or more in the dunes. Acidity is highly variable, ranging from very strongly acid where there is little salt influence, to strongly alkaline where the sands are washed or otherwise affected by salt water. In either situation, the sands are very rapidly permeable and very low in available moisture capacity. Areas above high tide are extremely susceptible to wind erosion.

UNIQUE VALUE: Unique location as sites for beaches, sunbathing, swimming, fishing; coastal camping; resorts; boating; national and state parks; aesthetic value. Dunes serve as barriers against storms tides and waves that would affect the marshes and uplands behind them.

CROPLAND: These areas are so sandy, droughty, low in fertility, or saline and unstable that they have no value as cropland or pasture.

URBAN: Many of these areas have been developed for resorts, ranging from small frame buildings to large condominiums. In either case, very special design and engineering are required to obtain adequate loadbearing strength and stability and structual strength to withstand wind and water action from hurricanes. Excavations are especially hazardous as the sand is loose, non-coherent, and generally unstable. Excavations are also likely to encounter the water table. There is a high potential for corrosion of uncoated steel and concrete installed in these areas due to saline conditions and fluctuating water tables. Generally, roads and streets must be paved or otherwise stabilized to improve trafficability of the loose sand. It is extremely difficult to establish and maintain laws or other permanent vegetation. Septic tank absorption fields function very well above the water table but are very likely to cause pollution of underground water or nearby open water. Deep, "dry wells" are almost sure to encounter the water table.

RECREATION: These areas are used intensively for recreation, especially sunbathing, swimming, fishing, surfing, boating, etc. However, considerable adaptive work is required to overcome natural limitations of poor trafficability in the loose sand. Ramps or treated surfaces are needed for foot and vehicular traffic. Buildings on the dunes are exposed to damage from wind, waves, and flooding. Jetties, bulkheads, and pilings protect buildings during minor storms but not during major tropical storms or hurricanes.

WILDLIFE: These areas are either unsuited or poorly suited for openland, woodland and wetland wildlife. However, they are, in many places, adjacent to bodies of fresh-water or salt water marshes that provide habitat for wetland wildlife.

WOODLAND: These areas are not suitable for woodland.

A SECTION OF COASTAL BEACH SHOWING THE SAND ACCUMULATION AROUND WOODEN FENCE AFTER WINTER WINDS. USDA-SCS

B1 - This is the largest, most extensive, most adaptable group of soils in the State. These soils are deep, well drained and permeable. Generally, they have a silty or loamy surface soil and sufficient clay in the subsoil to have either a high or moderate available moisture capacity. They are developed from a wide range of parent material, ranging from loamy Coastal Plain deposits to bedrock of limestone, shale, sandstone, schist, and chert among others. As a result, they occur in all parts of the State, ranging from the nearly level plains of the Eastern Shore, through the rolling Piedmont Province and Limestone Valleys of central Maryland, and even in a few areas of the Appalachian region of Western Maryland. Most of the soils occur over a wide range of slopes.

In spite of the fact that these soils are formed from a wide variety of materials, they have in common a few important properties that make them highly desirable for either farm or nonfarm uses. First, and most important, they are well drained. Second, they are easily tilled and excavated for they are at least 5 feet deep to bedrock and they generally do not have a high content of rock fragments. Third, water moves through them at moderate or moderately rapid rates, yet they retain a large amount of moisture that plants can use. They are the soils best equipped to withstand summer drought. They range from neutral to extremely acid in natural reaction, but all respond rather well to additions of lime and fertilizer. Except for areas of excessive slope, these are the soils on which there is the least risk of failure for most any farm or nonfarm enterprise undertaken.

UNIQUE VALUE: B1a - Prime farm land; easy adaptability to either farm or nonfarm use.

CROPLAND: B1a - This is prime farm land. Except for a few severely eroded areas, these soils are consistently the highest corn producing soils in the State that do not require intense soil and water conservation measures. Slopes range from 0 to 10 percent, but most of them are much less than 10 percent. These soils occur as large, farmable units well suited for frequent row cropping and for heavy tillage implements. Except for severely eroded areas, they are easy to work. Plow pans may form but they can be broken up by varying the depth of plowing each year or be seeding hay or pasture plants. A wide variety of crops can be grown, including row crops, small grain, small fruit, sod, shrubs and ornamentals. Irrigation ordinarily is not required, but in some years it may increase yields considerably, especially those of specialized crops. Minimal soils and water conservation measures will maintain these soils in good condition. Contouring alone is sufficient on short slopes, but strip cropping, in addition, may be needed on long slopes. Most of the soils require regular applications of lime and fertilizer. Minimum or zero tillage can be used at maximum efficiency.

Blb - These soils have about the same desirable properties as those in B1a, but their slope ranging of 8 to 15 percent reduce their ability to sustain intensive farming and high yields. Therefore, they do not qualify as prime farm land although there may be inclusions of them in areas of prime farm land (B1a) on the maps. Most of the soils in this group have been moderately eroded, and a few severely eroded. If farmed, they require intensive soil and water conservation measures to reduce runoff and further erosion. These soils, under good management, can produce high yields of the common farm crops, and are very well suited for growing hay and pasture. Some soils in this group, such as Athol, Elliber, Frankstown and Murrill, produce high yields of orchard crops.

B1c - These soils range from strongly sloping to steep (15+ percent) and, in Central and Western Maryland, have numerous inclusions that are stony, rocky or less than five feet over bedrock. However, slope alone severely limits their use for growing row crops. If limed and fertilized adequately, the soils produce excellent haycrops and pasture. Most of the steep areas are wooded and should probably remain so, because a severe erosion hazard would exist if they were cleared and utilized more intensively. Some of the strongly sloping or moderately steep areas produce high yields of orchard crops.

URBAN: B1a - For the same reasons that soils of this group constitute most of the prime farm land in the State, they also provide the best (most problem-free) sites for urban development. Slopes are favorable, thus requiring only minimal cutting, filling and grading. Neither seasonal high water tables nor bedrock are likely to be encountered

within five feet of the surface, so that excavations can be made most months of the year, and foundations or basements subsequently established are not likely to be wet. Side walls of excavations are generally stable. The potential for frost-action and shrink-swell are low to moderate. Unless these soils are severely and extensively graded, they absorb and hold enough moisture for establishing and maintaining lawns, shrubs, ornamentals and gardens.

With very few exceptions, the soils in this group have no more than slight or moderate limitations for shallow, subsurface septic tank absorption fields. Most of the soils have either moderate or moderately rapid permeability, and generally will pass percolation tests. Some will test near the critical minimum rate and a few below it, thus requiring larger lot sizes and larger absorption fields. As a group, these soils have good potential for allowing a properly installed, shallow, subsurface septic tank absorption field to function adequately without a serious risk of contaminating nearby surface or underground sources of water.

SPECIAL NOTE: The Ashton, Birdsboro, Etowah, Elk, Elsinboro, Holston, and Waynesboro soils are on terraces adjacent to floodplains. Their susceptibility to flooding should be thoroughly checked out prior to any urbanizing activity.

B1b - Slopes of 8 to 15 percent moderately limit the soils of this group for most phases of urban development. More cutting, filling, grading, and sediment control measures are required than on B1a. Installation of roads and sewers are commonly more problematical and expensive. Although more expensive to develop, these soils may be a better choice for residential development since in many places they have a greater aesthetic value than nearly level areas and more pressures are being exerted to preserve prime farm land (B1a).

B1c - Slopes of greater than 15 percent along which these soils occur are generally too steep for most phases of urban development. However, some wooded or other areas of aesthetic attraction are in demand as sites for rather expensive residences. Others, especially wooded areas, are being utilized as essential components of Planned Unit Development. Yet others have value as park and picnic areas because of good surface and internal drainage; however, they are too steep for intensive play areas.

RECREATION: B1a - These nearly level or gently sloping, well drained, permeable soils are excellent for most phases of recreation. They provide good foot and vehicular trafficability and they dry soon after rains. They are very well suited for tent and trailer camp areas. Except for the more sloping areas, or those having a gravelly surface, these soils are well suited as sites for athletic fields or other intensive play areas requiring a level surface. They are also excellent for golf fairways, as the high available moisture capacity helps to maintain good turf and other vegetative cover.

B1b - The slopes of 8 to 15 percent moderately limit most types of recreation on these soils and severely limit athletic fields or other intensive play areas. These slopes limit usefulness for paths and trails, little, if at all. If grading and leveling can be feasibly accomplished, there are no other serious limitations for recreational use.

B1c - Slopes greater than 15 percent severely limit soils of this group for practically all types of recreational use except paths and trails. However, many of these areas are wooded and so aesthetically pleasing that considerable effort is made to adapt them for picnic areas and low-cost camp cabin sites.

WILDLIFE: B1a, B1b - These groups produce grain and seed crops in sufficient abundance to provide good habitat for open land and woodland wildlife. They are not suitable for wetland wildlife.

B1c - So few areas are well suited for grain and seed crops that they group rates fair to poor for open land wildlife and good to fair for woodland wildlife. These soils are not suitable for wetland wildlife.

WOODLAND: B1a, B1b, B1c - These deep, well drained soils have excellent to good productivity for wood crops; they are probably easier to manage for woodland production then any other soils in the state. The soils in this group occur throughout the state, and they formed on many different types of material; therefore, they are suited to a wide variety of three species. Woodland harvesting and planting should be according to recommendations for the specific soil on the detailed map. There are no special problems except a moderate competition for conifers.

CULTIVATION OF SOY BEAN CROP ON SASSAFRAS LOAM, 0 TO 2 PERCENT SLOPES. PRIME AGRICULTURAL LAND. USDA-SCS

B2 - This group is rather unique in that the soils are well drained in spite of rather slowly permeable layers below a depth of two to three feet. Water moves moderately slowly through these soils, but internal drainage is thorough and the water table is quite deep. They occupy sloping to steep land forms and benefit from good surface drainage. They occur throughout the State but are most extensive in the Upper Coastal Plain, especially in Anne Arundel and Prince George's Counties.

These soils are dominantly strongly or very strongly acid. They have a somewhat restricted rooting zone due to very gravelly, very firm, clayey or otherwise dense layers below two to three feet. Therefore, their available moisture capacity is only moderate, or even low if the soils have been significantly eroded. The productivity of these soils deteriorates rapidly if they are allowed to erode or if they undergo intensive cutting or grading. Some of the soils in this group have a rather high content of gravel or rock fragments in the surface layers.

UNIQUE VALUE: B2a - Marginal prime farm land. The Aura, Chillum and Croom soils in B2a, B2b, and B2c are generally good sources of gravel, roadfill and some sand.

CROPLAND: B2a - These soils are marginal as prime farm land. Only those soils that have slopes of less than about 6 percent and are not severely eroded are prime farm land. All of the soils require very careful management to conserve moisture, maintain fertility, and reduce damage from erosion. They may be somewhat droughty during long dry periods because of a limited effective rooting depth. Most of the soils in this group are well suited for growing tobacco. Crops grown on these soils benefit highly by irrigation, and during dry periods it may be essential. However, infiltration rates are moderate to slow and irrigation must be well regulated.

B2b - Without good tilth and vegetative cover these soils are subject to rapid runoff. Slopes range up to 15 percent and the soils are commonly moderately or severely eroded. Slopes are generally short and irregular in configuration, making contouring or contour stripcropping difficult to apply. Yields of row crops and small grain are only moderate. Grass-legume hay crops do quite well.

B2c - These soils occur along slopes of greater than 15 percent and they erode rapidly if used for row crops. Most areas are in hay crops, pasture, or woodland.

URBAN: B2a - These soils have slight or no limitations for urbanization where public sewers are available. Although they are moderately slowly permeable and water moves through the soil rather slowly, they generally have good surface drainage. Some of the soils have iron pans or partially cemented gravelly layers that may cause lateral movement of water toward foundations. Interceptor tile may be needed in these places. Grading of residential lots should be held to a minimum as the material below two to three feet is a poor medium for plant growth.

If these soils are proposed for urbanization it should be remembered that the Aura, Croom and Chillum soils are good sources of gravel, roadfill and some sand. If at all possible, they should not be urbanized until after the mineral resource has been extracted.

Shallow subsurface septic tank absorption fields do not function well in these soils for they have either compact, partially cemented, or clayey subsoils that are moderately slowly permeable. Even if these soils pass percolation tests, there is a good possibility that effluent will seep to the surface by moving laterally on top of the compact or cemented layers. This hazard is especially great when there is considerable slope. Some of these soils have substrata that are more permeable than their subsoils. In these, there are good possibilities for deep "dry wells" to function, but also a hazard exists for contaminating underground water.

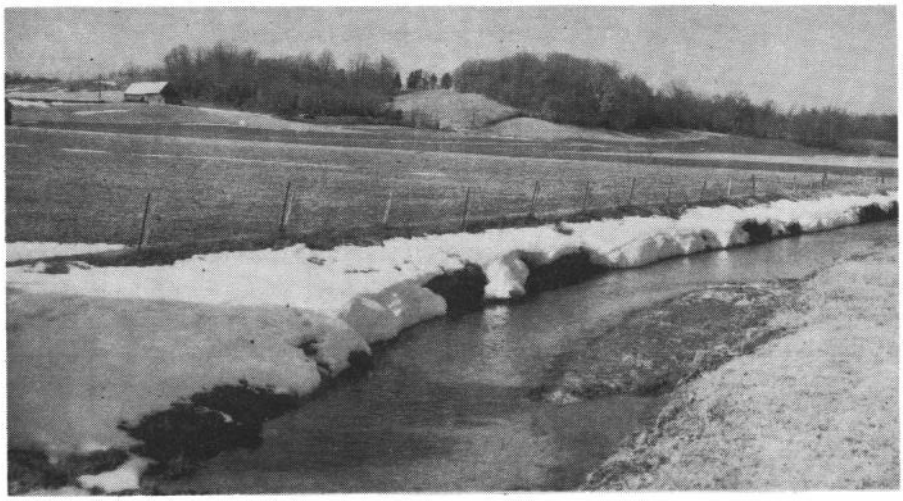
B2b-Slopes of 8 to 15 percent impose moderate limitations on use of soils in this group for homesites and street construction. Their use for commercial, industrial or institutional sites is similarly limited because of the need for extensive cutting, filling and grading to attain large, level areas. Otherwise, the soils have the same adaptabilities and needs as those in Group B2a.

B2c - Slopes of greater than 15 percent severely limit these soils for urbanization. Extensive and intensive cutting and filling would be required for intense development. However, special design and engineering techniques are enabling some areas to be developed for individual homesites.

RECREATION: B2a, B2b - The soils in these groups are moderately limited for most recreational uses. Moderately slow internal drainage delays drying of the areas after substantial rain on slopes of less than 8 or 10 percent. On slopes of 8 to 15 percent, surface drainage is better, but seepage areas are likely to occur and the slopes are troublesome for tent and trailer camping. Slopes greater than about 5 percent are severely limiting for athletic fields and other intensive play areas. There are only slight limitations for paths and trails and golf fairways.

B2c - These soils have slopes greater than 15 percent that severely limit their recreational use except for paths and trails. However, these areas are, in many places, wooded and they provide complimentary aesthetic surroundings.

WOODLAND: The soils in this group that lack a compact, gravelly subsoil have good to very good potential productivity for upland oaks, Virginia pine and yellow poplar. Those with some root impeding layer have fair to good productivity for these species. The hazard of plant competition with conifers is moderate to severe. There is a moderate seedling mortality hazard on the soils with compact, gravelly subsoils.



FARMED FLOODPLAIN SOILS ALONG PORT TOBACCO CREEK IN SOUTHERN MARYLAND. USDA-SCS

B3 - These deep, well drained soils are easily recognized by brilliant red colors and unstable character. They are exposed as slips and slides in many road cuts along the Baltimore-Washington Parkway, Capitol Beltway, U.S. Route 1, and Interstate 95 east of Baltimore. They do not occur throughout the State but are concentrated mainly in a rather narrow belt in northern Prince George's County, northwestern Anne Arundel County, and the east side of the District of Columbia. They formed in thick beds of very old, red clay of Cretaceous age that has been covered in places with a thin mantle of silty, sandy or loamy material. The surface mantle varies from gray through yellow and brown to almost red, and it ranges from less than an inch to several feet in thickness. The underlaying clay, although dominantly red, may be purplish red, gray, yellow, pink, and even white. The land form is dominantly gently sloping to rolling.

These soils have extreme properties that make them hazardous or poorly suited for many uses. The clay is very plastic, sticky, and slowly permeable. Its most important characteristic is poor stability; the clay frequently slides, slumps, or flows down the surface of a cut. The stability is even poorer in areas where the clay has been disturbed in land leveling, filling, or other operations, and the result is a very poor medium for plant growth. Available moisture capacity depends somewhat on the kind and thickness of the mantle (if any) over the clay, but generally it is moderate to high. These soils are very strongly to extremely acid. They contain only a small amount of plant nutrients and are not very productive, even under good management. They are highly subject to gully erosion.

UNIQUE VALUE: A source of clay for manufacture of brick, tile, and other clay products.

CROPLAND: If properly managed, these soils and land types are suited for corn, small grain, hay and pasture. However, the silty, loamy or sandy surface is very thin or missing in some places and the clay exposed to the surface is difficult to work. It is sticky and plastic when wet and very hard when dry, making tillage difficult much of the time. Soil and water conservation practices are needed but, in many places, difficult to apply because the clay lies along short, irregular slopes. Heavy initial liming and regular fertilization are required to maintain even average yields. Tillage should be kept to a minimum.

URBAN: Because of their location and distribution in and around the rapidly urbanizing Baltimore-Washington corridor, many of these soils and land types are already occupied by industrial, commercial, institutional and residential developments. However, they have severe limitations for all of these uses, and special precautions in design and engineering are essential to guard against the poor stability of these soils.

Building foundations have been known to settle and crack; roads to settle, buckle and warp; and entrenchments and embankments to cave in or to collapse without warning. These problems are especially acute when the clays have undergone prolonged wetting or after they have been disturbed by leveling or grading. These clays are moderately expansive when wet and should not be used as backfill around foundations. Any construction activity in late winter or spring is likely to be difficult or even delayed due to local ponding and poor trafficability in the sticky, plastic clays.

The clayey section of these soils and land types are slowly permeable. They do not function well as absorption fields for septic tanks. Even where there is a thick mantle of silty, loamy or sandy material over the clay that might absorb the effluent (as in the Muirkirk soils), there is a probability that raw sewage will eventually seep to the surface downslope from the system. In most places, the beds of clay are thick and the potential for establishing deep "dry wells" for sewage disposal is not good.

RECREATION: The soils in this group are severely limited in their ability to sustain campsites and athletic fields or other intensive play areas because they are slowly permeable and slow to dry out after rain. In addition, some of the soils have unfavorable clayey and sticky surface soils, especially where there has been extensive grading without subsequent revegetation. They have only slight limitations for less intensive recreational uses, such as parks, extensive play areas, picnic areas, and paths and trails unless the clayey subsoil has been exposed. Extensive cutting and filling of the soils should be avoided for lawns, golf fairways, and landscaping to avoid exposing highly variable soil

textures from sand to clay with extremely different air and water relationships and fertilization requirements. Uniform turf is very difficult to establish and maintain under these conditions.

WILDLIFE: These soils are capable of producing sufficient food and cover and other elements of habitat for openland and woodland wildlife. However, many of these soils have been urbanized or lie in the path of future urbanization and presently provide low-grade habitat. These soils are dominantly well drained, do not grow wetland plants, and have no potential for shallow water developments. Therefore, they are unsuited for wetland wildlife.

WOODLAND: These soils and land types have good potential productivity for upland oaks and Virginia pine and fair to good productivity for sweet gum. Existing stands of trees are largely mixed oaks, Virginia pine and sweet gum. Plant competition is moderate for conifers. The use of heavy machinery is moderately limited where red clay is exposed at the surface. It will not bear heavy loads well when wet.

C1 - The soils in this group are located on generally rippable bedrock at depths of only 20 to 40 inches below the surface and occur only in the Piedmont region and Western Maryland. The bedrock is of many kinds. In Western Maryland, it is mainly acid shale and sandstone. In the Piedmont region, it may be schist, gneiss, slate, or serpentine, among others. The soils range from nearly level to steep. They commonly have a shaly surface and localized stony spots.

Most of the soils in this group are strongly or very strongly acid. They are not highly fertile but are productive if liberally fertilized and otherwised carefully managed to conserve moisture. Because of their moderately shallow depth to the bedrock, they are susceptible to drought when rainfall is low or unevenly distributed. The high content of shale and rock fragments in the surface layer interferes with their use for lawns and gardens, and their shallowness to bedrock interferes with excavations.

UNIQUE VALUE: C1a, C1b, C1c - In many places, they occupy elevations and positions that provide good air drainage for orchards.

CROPLAND: C1a, C1b - These soils are only moderately productive when managed for row crops. They are important to agriculture locally as they tend to be the most farmable areas in an otherwise steep, stony or wooded landforms such as in Allegany and Garrett counties. Farmable slopes are generally quite long and require contour strip cropping or other intense soil and water conservation practices to reduce runoff and erosion. Nearly all of these soils have coarse fragments in the plow layer and, in some, these fragments are abrasive to farm tillage implements. If these soils are adequately limed and fertilized, they are well suited to clover, mixed hay, bluegrass or mixed pasture plants.

C1c - These soils exhibit both slopes exceeding 15 percent and a susceptibility to bring droughty during dry seasons due to shallowness to bedrock, thereby making them poorly suited to growing row crops. Safer uses are for hay, carefully managed pasture, and sodded orchards.

URBAN: C1a, C1b, C1c - These soils are moderately to severely limited for most phases of urbanization due to the existence of bedrock at depths of about 20 to 40 inches. The bedrock under most of the soils is rippable; in some places, however, the bedrock is massive and may require some blasting. Houses on slabs or with crawl spaces can be built on these soils with much less difficulty than those with basements. Grading of lawns should be held to a minimum so as to retain as much original soil over bedrock as possible for moisture storage. Shale or other rock fragments may be a nuisance in gardening or mowing lawns. Slope is not a problem in the C1a group, but it is a moderate one in C1b and a severe one in C1c.

All of these soils are severely limited as septic tank absorption fields. Although the soil is likely to be permeable enough for adequate percolation, there is not sufficient depth of soil over bedrock. If septic tanks are installed, there is an extreme hazard of the effluent seeping along the bedrock surface and causing downslope pollution as it rises to the surface. Some of these soils, although well to excessively drained, have a perched water table for brief periods in late winter and early spring which also may cause septic tanks to malfunction. If these soils are to be urbanized, they should have public sewer or some other control sewerage system. Deep, dry wells are not feasible because of bedrock at 20 to 40 inches.

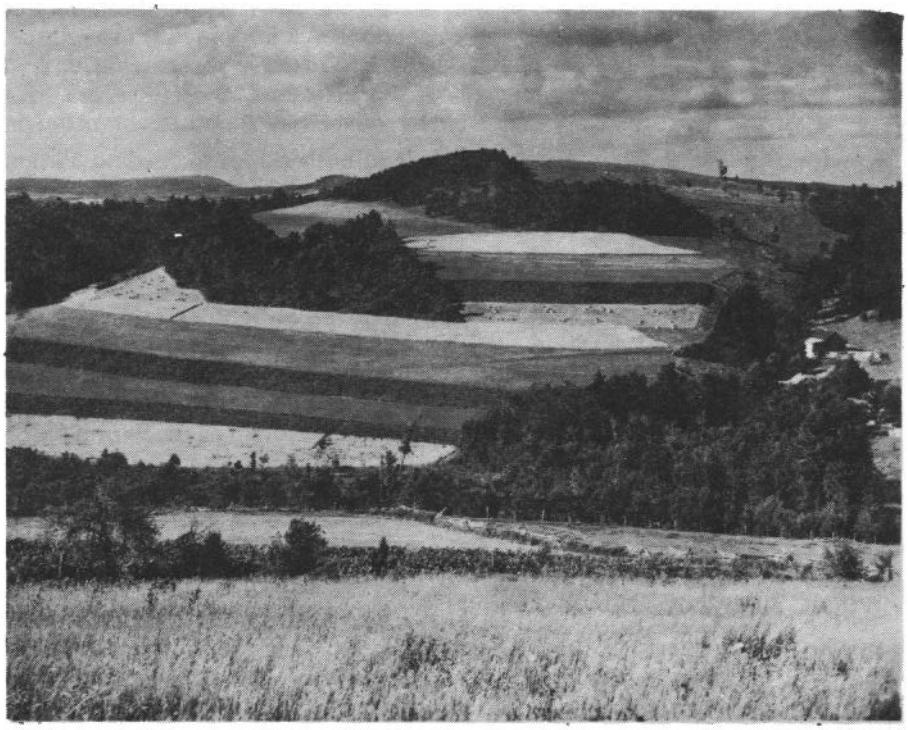
RECREATION: C1a - On these slopes of less than 8 percent, only slight limitations exist for camp areas, picnic areas, parks, paths and trails. However, unless the slope is less than 3 percent, moderate to severe limitations exist for intensive play areas where a level surface is required. Grading to a level surface is almost sure to expose bedrock or at least a high volume of rock fragments, and there will be low available moisture for grass and generally poor conditions for plant growth. Use for golf fairways is moderately limited by inadequate moisture in dry seasons and rock fragments on the surface.

C1b - On these slopes of 8 to 15 percent, most of the recreational uses listed for C1a have moderate limitations due to excessive slope and shallowness to bedrock; playgrounds, however, are severely limited and paths and trails only slightly limited.

C1c - All recreational uses are severely limited either because of slopes steeper than 15 percent or because of the shallowness to bedrock; paths and trails how ever are only moderately limited unless the slope exceeds 25 percent.

WILDLIFE: The gently sloping soils of group C1a are rated only fair for openland and woodland wildlife, as the necessary habitat elements are not always dependable. On the steeper slopes of groups C1b and C1c the soils are rated poor or not suitable. None of the groups are suitable for developing a wetland wildlife habitat.

WOODLAND: C1a, C1b, C1c - The soils in these groups are dominantly good to fair in productivity for upland oaks. Large acreages of these soils are presently wooded. In the Appalachian Region of western Maryland, where there is steep landform, productivity tends to be somewhat higher on the north or east facing slopes than on those facing south or west. A few areas of the Calvin, Gilpin, Lehew, Dekalb, and Relay soils with north aspects are rated very good. The soils in this group also have good productivity for black cherry and yellow poplar, especially toward footslope positions. There are no special management problems except for severe equipment limitations on slopes greater than 35 percent in Group C1c.



CONTOUR STRIP CROPPING ON SOILS IN NATURAL SOIL GROUP C1b AND C1c IN WESTERN MARYLAND. USDA-SCS

C2 - The soils in this group are not extensive, but they are distinctive. They are well drained, essentially non-acid, and have very clayey, tough and intractable subsoils. They developed in materials weathered in place from limey shales, clays and limestones on ridges and hillsides in a few places in Western Maryland. They predominantly occupy slopes steeper than 15 percent and, therefore, have not been separated into slope subgroups.

These soils are generally slightly acid to neutral in reaction. Their subsoils are so clayey, plastic and dense that water moves through them slowly. However, they occupy narrow ridges or sideslopes and thus benefit from good surface drainage. They have a fairly high available moisture capacity. In dry season, crops on them stay green after crops on other nearby soils have wilted. Rock outcrops are rather common. These soils have a natural supply of lime and thus seldom need lime application.

UNIQUE VALUE: Excellent upland pastures.

CROPLAND: Except for a few places, these soils are not intensively cropped. They are too steep, too erodible, and difficult to work to more than just a few inches in depth because conventional plowing penetrates to the clayey subsoil, which is plastic and sticky when wet but very hard when dry. However, these soils are highly productive of grass-legume hay or pasture, or permanent pasture, and can be grazed through dry seasons.

URBAN: These soils are extremely remote from present areas of urban expansion and are not likely to be heavily urbanized. If they were to be, they would be severely limited for construction of roads and buildings because of the sticky, plastic soil material and its poor engineering properties.

These soils are too clayey, plastic and dense for septic tank absorption fields to function adequately. If absorption fields are installed, downslope pollution (seepage to the surface) is likely. Bedrock is rather near the surface and there is little if any potential for using "deep dry wells" for on-site sewerage disposal.

RECREATION: These soils are poorly suited for all the common phases of recreation because of their clayey, sticky surface layers, slowness to dry out, and excessive slope.

WILDLIFE: Because these soils are difficult to till, few grain and seed crops are grown. This makes for a poor habitat for openland wildlife, although adjoining soils may supply this need. they are somewhat better suited for woodland wildlife. They are not suitable for wetland wildlife.

WOODLAND: These generally steep, clayey, non-acidic soils have good to fair productivity for wood crops. The Belmont soils have good productivity for both upland oaks and yellow poplar. The Brooke soils do not occupy positions so favorable to yellow poplar, and they have only fair productivity for upland oaks and Virginia pine. Seedling mortality is severe on the very clayey Brooke soils. Plant competition for conifers is severe on the Belmont soils.

D1 - These soils are characterized by having bedrock within 20 inches of the surface and a very high content of rock fragments in the thin soil above bedrock. Most of these soils have developed in place in materials weathered from acid shales, silt stones, and some fine-grained sandstones. However, the Corydon and Opequon soils in this group have developed from limestone and are non-acid. These soils occupy rolling to hilly landforms in central and western Maryland. They are well to excessively drained.

These soils are severely restricted for farming and many other purposes by low available moisture, shallow or very shallow depth to bedrock, a high content of rock fragments, low natural fertility, and excessive slope in many places. The Corydon and Opequon soils in this group differ from the others in having clayey subsoils, better available moisture capacity, non-acid reaction, limestone bedrock, and limestone ledges or outcrops.

UNIQUE VALUE: D1a, D1b, D1c - The fractured and rippable bedrock, in some places, is suitable for roadfill or road surfacing.

CROPLAND: D1a, D1b, D1c - Even on gentle slopes, these soils are not well suited for growing row crops. Little or no moisture is available to plants in periods when rainfall is poorly distributed. In addition the high content of rock fragments are abrasive to farm implements and, in fact, plows actually scrape bedrock in severely eroded areas. These soils are better suited for pasture use, but even then they require very careful management to prevent overgrazing.

URBAN: D1a, D1b, D1c - Although most of the bedrock under these soils is rippable, it is so near the surface that much work is required to excavate for basements, utilities, pipelines, roads and other elements of urbanization. Buildings without basements can be more easily established. Furthermore, these soils are so thin over bedrock and so shaly that they are a very poor medium for establishing and maintaining lawns, and gardens. The limestone bedrock under the Corydon and Opequon soils may need to be blasted for removal. In Group D1c, there may be a problem of differential settling of foundations due to part of the footings being located on bedrock surface and another part on fill material.

Shallowness to bedrock very severely limits these soils for use of septic tank absorption fields or "deep dry wells". If such systems are attempted, the effluent is almost sure to follow the rock surface and seep out on the slope.

RECREATION: D1a - These soils are severely limited as sites for intensive playgrounds and golf fairways due to the shallowness to bedrock and a high content of rock fragments. Even the slightest grading is likely to expose bedrock. In addition, turf is very hard to establish and maintain because of low natural fertility and low available moisture. They are moderately limited for camp areas, picnic areas, and paths and trails because of the high content of rock fragments in the surface layer. In addition, the Corydon and Opequon soils may have a clayey, sticky surface. Group D1b has all of the above stated limitations, plus a slope of 8 to 15 percent. Group D1c has all of the limitations stated for Group D1a plus a slope of over 15 percent; this severely limits these soils for all recreational uses except paths and trails which are not severely limited until slopes exceed 25 percent.

WILDLIFE: D1a, D1b, D1c - These soils are poorly suited for producing a reliable year to year habitate for openland and woodland wildlife. With very special effort including intense management, some of the habitat elements that do not ordinarily occur naturally in adequate amounts can be provided. These soils are not suitable for wetland wildlife development and there is no potential for developing it.

WOODLAND: D1a, D1b, D1c - Because these soils are shallow to bedrock and generally steep, many acres have remained wooded. These soils range from good to poor in productivity for upland oaks, which are the dominant woodland type. The Corydon and Opequon soils, formed on limestone, have good productivity, the shaly Penn and Klinesville soils are rated fair and the shaly Montevallo and Weikert soils are rated poor. Seedling mortality on the soils in these groups is moderate to severe.

E1 - The soils in this group occur only in the Upper and Lower Coastal Plain. They are level to moderately sloping and moderately well drained. They formed in sandy marine sediments and have substrata of loose sand.

Unless limed, these soils are strongly acid. Because of their sandy nature and their moderate to moderately rapid permeability, applied lime and fertilizer are leached through the soil rather rapidly. They have a fluctuating water table that rises to within 1 ½ feet of the surface in late winter and early spring. In May the water table begins to fall and by the end of June, it has fallen to a depth between 4 to 6 feet where it remains until the wet weather in November or December. These soils have a moderate to high available moisture capacity in the absence of the water table.

UNIQUE VALUE: Prime farm land; the substrata are sources of sand and roadfill in some places.

CROPLAND: Although these soils are somewhat slow to dry out in spring and hence may delay tillage, they qualify as prime farm land. They are dominantly nearly level, have little if any erosion hazard, and produce high yeilds rather consistently. In fact, in dry years they may outproduce the well drained soils in group B1a. Except in small spots, artifical drainage is not needed for field crops. In all areas where vegetable crops are grown, drainage is needed if these soils are to be worked early in spring. These soils occur in complex associations with well drained soils and it is difficult to distinguish between them from surface appearance. These soils are easily drained by either tile or ditches or both.

URBAN: The seasonally high water table moderately limits use of these soils for industrial and residential sites, for late winter and early spring when the water table is high, water is likely to seep into basements. During construction, the sidewalls of excavations tend to slump or cave in as they are often loose, running, wet sand. These soils are highly susceptible to frost action and pavements can be easily damaged unless drainage is provided. Unless these soils are severely disturbed, they are suitable for use as lawns and gardens.

Because the soils are sandy and permeable in the absence of a water table, they generally will pass percolation tests conducted during the drier months. However, the sewerage disposal systems commonly fail as the water table rises in the winter and spring and submerges the septic tank absorption field. Deep ditches or dry wells installed in these soils are likely to have the water table in them all year, with even greater ground water contamination hazards than with the shallow systems.

RECREATION: The seasonally high water table moderately limits use of these soils for camp sites and intensive play areas, but only slightly limits them for parks and picnic areas, golf fairways, and paths and trails. Fairly simple drainage measures can lower the water table enough so that it poses no problem at all during the season of use.

WILDLIFE: These soils commonly produce high yields of grain and seed crops and other elements that make good habitat for both openland and woodland wildlife. In the depressed or nearly level areas, the water table may be near the surface long enough to develop wetland plants and shallow water developments, but generally the prospects for providing a reliable wetland habitat are poor or unsuitable.

WOODLAND: These soils have very good productivity for upland oaks, yellow poplar, loblolly pine (where adapted) and sweet gum. There are no special management problems except for a severe plant competition with conifers.

OPEN SEPTIC DRAINAGE FIELD DITCHES IN WOODSTOWN FINE SANDY LOAM IN MID-MARCH. THIS SOIL IS SUBJECT TO SEASONAL HIGH WATER TABLE. USDA-SCS

E2 - The soils in this group are saturated by a perched water table part of the year. This water table is perched above either a fragipan (commonly called "hardpan") or a slowly permeable, clayey subsoil that begins at a depth of about 2 feet. Below the perched water table there may be many feet of dry or non-saturated soil material over the true water table. These soils are classed as moderately well drained. They occur in all parts of Maryland, but are most extensive in the Upper Coastal Plain where they occupy broad, nearly level or gently sloping plateaus or divides. In the Piedmont, they are generally on broad ridges or in upland depressions. In the Appalachians of western Maryland they commonly occupy footslopes below steeper slopes. On the Eastern Shore these soils occur as small units, generally surrounded by wetter soils, and their subsoils are clayey rather than silty fragipans.

These soils are saturated and mushy in late winter and early spring. During this time, equipment often gets stuck because, on the surface, they do not appear to be so wet. After they dry out they are easily tilled, as the upper 2 feet of soil is silty or loamy and not compact. Roots do not penetrate much below a depth of about 2 feet, thus the available moisture capacity is only moderate, or even low if the soil has been severely eroded. These soils are highly susceptible to frost action. They are strongly acid. The impeded drainage, slow permeability, seasonally perched water table, and high susceptibility to erosion on slopes limits these soils at least moderately for most farm and non-farm uses.

UNIQUE VALUE: E2a, E2b - Good for pond and lake reservoir areas because of slow seepage rates.

CROPLAND: E2a - These soils have favorable slopes of 0 to 8 percent for intensive cropping, but their seasonal wetness, slowness to warm up and dry out in spring, shallow rooting depth, and inadequate supply of moisture in dry seasons all contribute to keeping their longterm average yields at levels that will not qualify the soils as prime farmland. These soils are moderately productive under good management. The more nearly level areas may require some artificial drainage. Surface drainage is more appropriate, as water moves too slowly through the hardpan or clayey subsoil to tile. Plants susceptible to frost-heave should not be used.

E2b - These soils have 8 to 15 percent slopes and generally occur as small units in and around the larger areas of E2a. These soils benefit from somewhat better natural surface drainage and dry out sooner in spring, although not evenly. Water moving out of the upper slope travels laterally on top of the slowly permeable subsoil and causes seepage areas along the lower slope. Many areas of these soils either have been severely eroded already or are extremely susceptible to it. These soils need soil and water conservation measures that will protect them from erosion yet will not aggravate their natural wetness in winter and spring.

Yields on these soils are generally considerably lower than those on E2a because they have all the hazards described for E2a plus the susceptibility to erosion.

URBAN: E2a, E2b - These soils remain damp and mushy at least through April, and trafficability for construction equipment during this time is poor. Freezing temperatures and the perched water table contribute to high frostaction. Buildings without basements can be used with few if any problems, but basements are likely to have a continuing mild wetness problem. Moisture from winter thaw and rains moves laterally on top of the hardpan or clayey subsoils and empties into the backfill around foundations. Interceptor tile and sump pumps are commonly used to overcome the problem. Excavations made in these soils in the spring are likely to fill with water from lateral seepage. Any permanent cuts, such as road cuts, are likely to have continual seepage problems. These soils should not be severely graded as their subsoils are extremely poor mediums in which to try to establish lawns or gardens.

The perched water table and dense subsoils severely limit these soils for septic tank absorption fields. The subsoils are too dense to absorb the effluent and if the tile field is placed above the dense layers the effluent builds up and seeps to the surface, either over the tile field or downslope. These soils ordinarily do not pass shallow percolation tests at any time of year, but percolation tests should be conducted from about February 1 to April 30 to truly evaluate the soils for use of septic tanks. In many areas in the Coastal

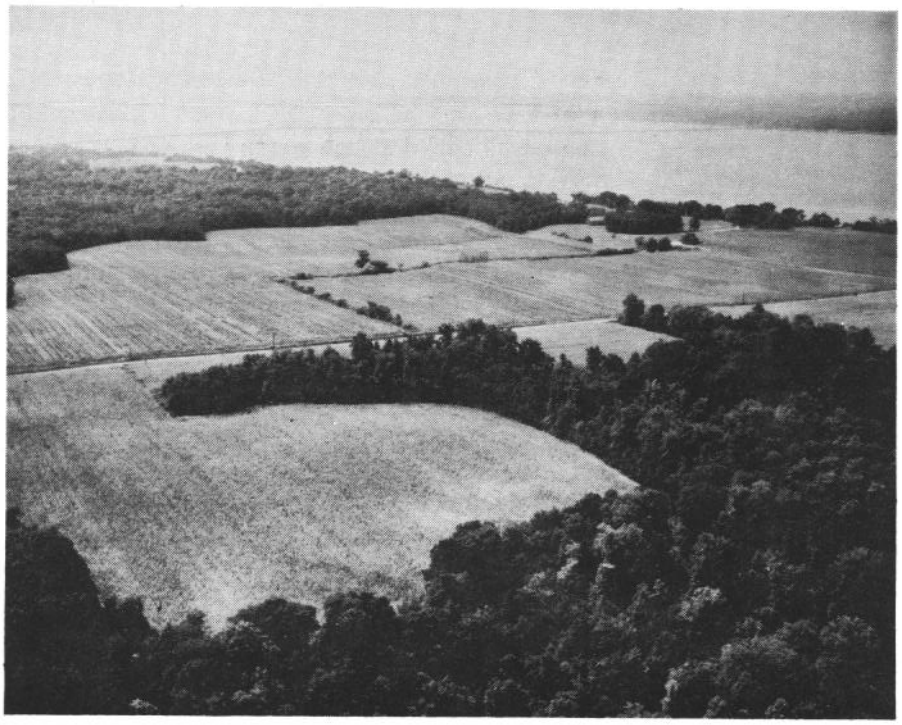
Plain the dense fragipans or clayey subsoils are underlain by much more permeable material at depths of about 10 to 20 feet. These areas have potential for deep "dry wells" if there is no apparent hazard of contaminating underground water. Geological maps should be consulted for feasibility determinations.

RECREATION: E2a - The perched water table in spring and slowness in drying out after prolonged rain moderately limit these soils for use as intensive playgrounds and camp areas. However, they only slightly limit use for park and picnic areas, paths and trails, and golf fairways. Generally, the perched water table is not present over the entire season of use. Drainage to combat the high frost-action potential should be considered when establishing pavements, such as for tennis courts. In group E2b, slopes of 8 to 15 percent severely limit their use for intensive playgrounds; moderately limit parks and picnic areas, and golf fairways; but only slightly limit paths and trails.

WILDLIFE: E2a, E2b - The habitat elements necessary for openland and woodland wildlife can be rather easily created on these soils. However, wetland wildlife habitat elements cannot be easily created because there is no dependable source of year-round water.

WOODLAND: E2a, E2b - These soils have good to very good productivity for upland oaks and Virginia pine, and very good productivity for loblolly pine (where adapted). Some of the soils also have very good productivity for yellow poplar, especially in foot-slope positions. The soils with very good productivity have a severe plant competition hazard for conifers.

Most of these soils have fragipans at depths below 2 feet that inhibit normal root development.



CORN GROWING ON A LARGE AREA OF BELTSVILLE SILT LOAM MODERATELY ERODED. USDA-SCS

E3 - This group consists of soils of the Mattapex and Delanco series. These are deep, moderately well drained, silty soils through which water moves moderately slowly. Mattapex soils are nearly level to gently sloping and occur only in the Coastal Plain. They formed in a mantle of silt and very fine sand over older deposits of loamy and, in places, gravelly material. They commonly occur as large, intensively farmed areas, especially on the Eastern Shore. Delanco soils occupy low terraces adjacent to streams in the Piedmont and Upper Coastal Plain. Much of the sediment from which they formed washed from the Piedmont section. These soils differ from the moderately well drained soils of Groups E2a for they lack fragipans or clay pans and perched water tables and have greater potential for high crop yields.

These soils have a water table that fluctuates to within 1 ½ to 2 ½ feet of the surface in late winter and early spring. Therefore, they are moderately limited for most farm and non-farm uses by seasonal wetness and impeded drainage. They are moderately slowly permeable and have high available moisture capacity. They are highly susceptible to frost-action and to erosion by water on slopes. They are strongly acid.

UNIQUE VALUE: Prime farmland

CROPLAND: These soils have slopes of 0 to 5 percent and are favorable for intensive cropping. Their disadvantages of seasonal, moderate wetness and slow warming in spring are offset by their adaptability for intensive use for row crops and large equipment. These soils are suited to corn, soybeans, small grain and pasture. They are also suited to hay plants that are not subject to damage by frost heaving. The most serious problem on these soils is drainage. Open ditches or diversion terraces can be used. Tile can be used to drain wet spots.

URBAN: The seasonally high water table moderately limits these soils for most urban uses. In late winter and early spring the water table is high and is likely to seep into basements. These soils have high potential frost action and pavements can be easily damaged unless drainage is provided. Unless these soils are severely graded or disturbed, they are suitable for lawns and gardens.

The moderately slow permeability and fluctuating high water table of these soils poorly suits them for on-site disposal of sewage by shallow subsurface septic tank absorption fields. Deep ditches or "dry wells" installed in these soils are likely to have the water table in them all year. Percolation tests should be conducted between about February 1 and April 30 to accurately evaluate the effects of the water table.

RECREATION: The seasonal high water table and moderately slow permeability moderately limit use of these soils for camp sites and intensive play areas. They are only slightly limited for use as park and picnic areas, paths and trails, and golf fairways. The high frost action potential of these soils should be taken into consideration when designing recreational facilities involving pavements, such as tennis courts.

WILDLIFE: Habitat elements that favor openland and woodland wildlife can be easily created on these soils, although there may be large areas without existing woodlands nearby. Wetland wildlife habitat cannot be easily created because there is no dependable source of year-round water. The many large areas of Mattapex soils adjoining the Eastern Shore of the Chesapeake Bay and its tidal tributaries serve as unique areas for developing food and cover for wildlife and also provide a good access to migratory waterfowl.

WOODLAND: The Mattapex soils have good potential productivity for upland oaks and Virginia pine. They have good to very good productivity for Loblolly pine (where adapted). Delanco soils have very good potential productivity for upland oaks and yellow poplar. Delanco soils are generally north of the climatic adaptability of Loblolly pine.

Scotch pine and white pine are cultivated for Christmas trees. Plant competition ranges from moderate to severe for conifers, and from slight to moderate for hardwoods. There is little or no hazard of windthrow or erosion and equipment limitations are slight.

F1 - These are the wettest sandy soils in the state. They are either very poorly, poorly, or somewhat poorly drained. They have a high water table that is at or near the surface much of the year. These soils formed in sandy marine sediments. They occupy level or depressional areas on the Eastern Shore and commonly have intermittent streams or ditches through them. Most of these soils have a very dark gray or black surface layer, and a few have a dark brown, cemented sandy layer in the subsoil, locally called hardpan, Indian hearth, or ironstone. Most areas are used as woodland, unimproved pasture and wildlife habitat.

These soils are strongly to extremely acid and are very low in natural fertility. They are rapidly permeable in the absence of a water table. Unless these soils are drained, they are saturated with water much of the year and may be ponded at times. On the other hand, plants are frequently injured by lack of sufficient moisture in dry periods after the water table drops. These soils are severely limited for practically all farm and nonfarm and uses. The sand is similar to that on ocean beaches and is so loose that it flows back into any hole dug in it.

UNIQUE √ALUE: Good sites for dug-out ponds and wetland wildlife developments; potential for blueberry production; source of sand; possible groundwater recharge areas.

CROPLAND: Because these soils are so naturally wet, acid and low in fertility, they must be drained and receive additions of lime and fertilizer if crops are to be grown. Crops, however, do not grow well even where good management has been followed. Lime and herbicides should be applied with care because crops burn easily on these sandy soils. If outlets are available the soils can be drained by tiling or ditching, but the loose, wet sand tends to cave and flow. Locally, under special management, these soils can be used for blueberries and other acid-tolerant crops.

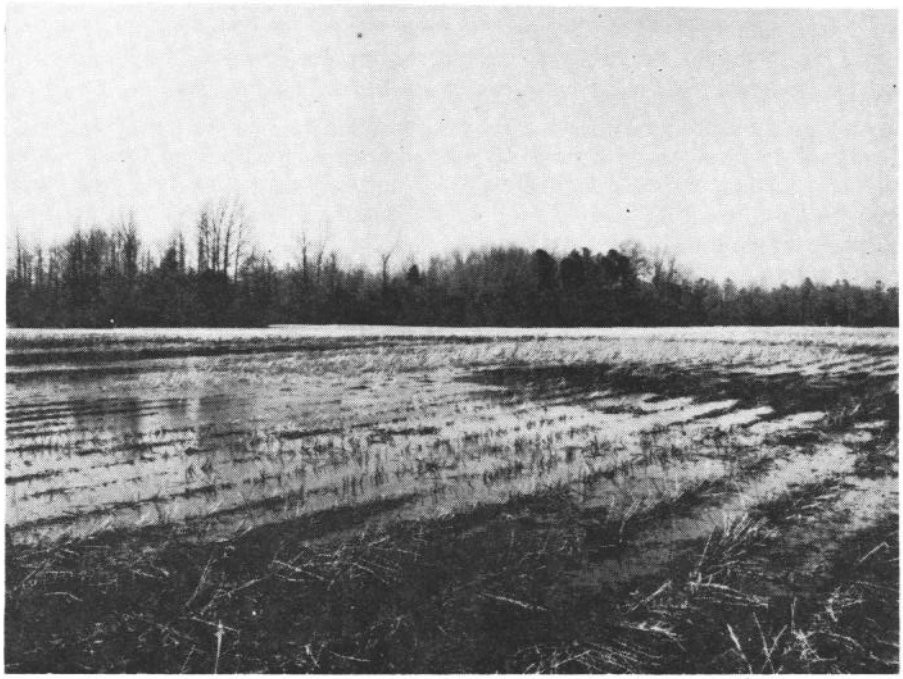
URBAN: These soils have severe limitations for use as sites for commercial, industrial, and residential developments. Excavations fill with water and the sidewalls slump. Equipment is likely to bog down unless special ramps are used. Basements are not suitable because of a persistent high water table, and even houses without basements are severely limited by general wetness, poor road stability, high frost action, poor lawn and landscaping potential, and a probable serious mosquito problem.

Septic systems fail because the water table is near the surface in winter and spring and after heavy rains in summer. Septic tanks have been known to float in these soils. The hazard of groundwater contamination exists even if the water table has been lowered by ditching to permit installation of a septic system.

RECREATION: These soils are severely limited for all recreational uses because the water table is at or near the surface during much of the year. In addition, there may be poor trafficability in the wet sand and a serious mosquito control problem.

WILDLIFE: Extreme wetness makes these soils poor sites for developing necessary food and cover for openland wildlife. However, they are fair to good for woodland wildlife. They have possibly the greatest potential of all soils in the state for wetland wildlife as wetland food and cover plants, shallow water developments and excavated ponds are easily developed.

WOODLAND: These soils are suited to most water-tolerant trees, but seedlings are difficult to establish. Generally, loblolly pine, sweet gum, and water-tolerant oaks are best suited. Scotch pine and white pine generally do well. The use of equipment is severely limited by wetness.



WATER STANDING ON RUTLEGE LOAMY SAND IN AN UNDRAINED AREA. USDA-SCS

F2 - This is one of the most extensive groups of soils on the Eastern Shore. It also occurs in the Upper Coastal Plain west of the Bay. These soils are dominantly poorly and very poorly drained. The Barclay soil is somewhat poorly drained but is closely associated with poorly drained soils. These soils formed in unconsolidated sandy marine sediments that contain enough clay and silt to maintain moderate to high available moisture for plants through dry seasons. The poorly drained, gray Fallsington soils generally occur in a complex pattern with the low-lying, very poorly drained, black Pocomoke soils. The two are so intimately associated in the landscape that they are used and managed together. Large acreages of these soils have been cleared, drained, and intensively farmed. However, additional large acreages are wooded. These soils are among the most suitable in the state for Loblolly pine.

These soils range from strongly to extremely acid. In the absence of a water table, they are moderately permeable and rather easily drained by tile, ditches or both. They have a fluctuating water table that reaches the surface in December or January and remains there until late April or early May. By mid-summer it has dropped to 4 to 6 feet below the surface. Because of this severely limiting seasonal high water table, drainage is needed for most farm and non-farm uses. The loamy sand and sand substrata is loose and running and fresh excavations are generally unstable.

UNIQUE VALUE: Loblolly pine production; fair to good source of sand; dug-out ponds; possible groundwater recharge areas.

CROPLAND: If these soils are drained and otherwise well managed, they are suited to corn and soybeans production and can be used for pasture and hay crops. They are not well suited for growing truck crops. Even after drainage, the wetness of these soils limits farming by delaying the use of machinery in spring and at harvest time. These soils respond well to additions of fertilizer if they are properly limed. Although these soils have wetness problems and do not have the sustained high yield potential characteristic of prime farm land, they are farmed intensively in some areas.

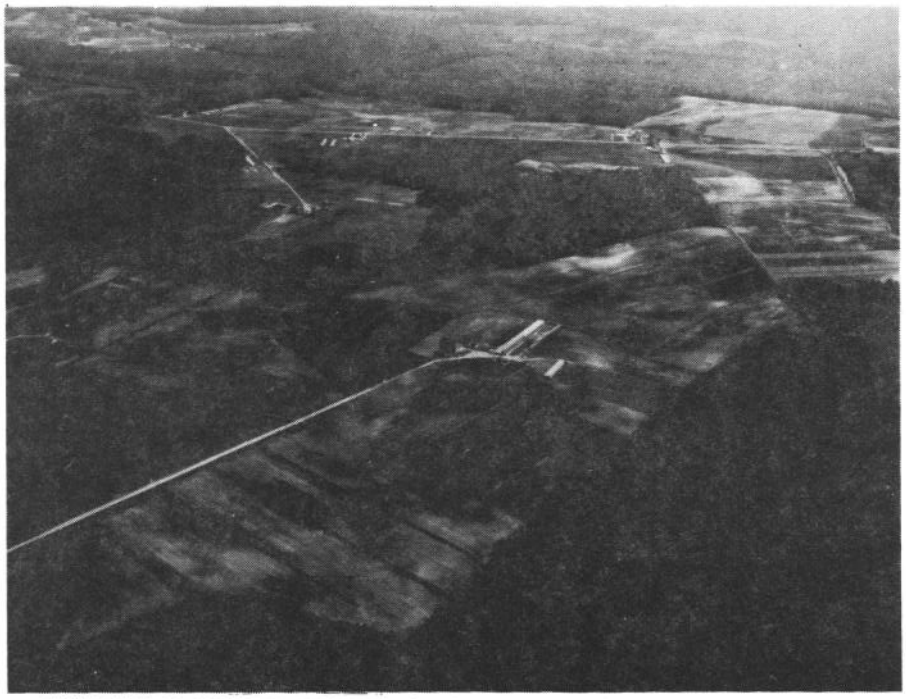
URBAN: The seasonal high water table severely imits most aspects of urbanization. Side-walls of excavations cave in because of loose, running sand, and the excavations fill with water in the spring. Wetness is severe enough to make their use for homes with or without basements undesirable. The soils have a high potential for frost-action that can damage slabs, driveways, etc.

Percolation tests conducted during summer and fall in these soils can be completely misleading. At these times, the soils are sandy and permeable and will pass percolation tests in the absence of the water table. However, once a septic system is installed, it is likely to be inundated by the water table from December to May. Deep "dry wells" are not a reasonable alternative as they would be in the water table all year and present a serious pollution hazard.

RECREATION: The seasonal high water table extends far enough into the season of use to severely limit these soils for all phases of recreation. In addition, on site sewage disposal is a problem. Lowering the water table by artificial drainage will extend the season of use and make the soils suitable for non-intensive recreational uses, such as park and picnic areas and paths and trails.

WILDLIFE: Grain and seed crop production is not always dependable on these soils. For this reason, these soils are rated only fair for openland wildlife. They are rated good for woodland wildlife. The natural wetness of these soils can be rather easily manipulated and controlled to produce good habitat for wetland wildlife.

WOODLAND: Large acreages of these soils are presently wooded. They are highly productive for Loblolly pine (where adapted). Oaks and sweet gum also do well. Yellow poplar should be encouraged where drainage has been improved. Limitations on the use of equipment are severe because the soils are wet for a long period each year. Competition from other plants is severe for conifer seedlings.



AERIAL VIEW OF A COMPLEX ASSOCIATION OF LIGHT COLORED FALLSINGTON SOILS AND DARK POCOMOKE SOILS. USDA-SCS

F3 - This group consists of poorly, very poorly and somewhat poorly drained gently sloping to depressional soils. They have dense subsoils through which water moves slowly. Some of the subsoils are silty and clayey while others are fragipans ("hardpans"). They formed in a wide variety of materials and are located throughout the state.

These soils have a number of undesirable characteristics and features that make them difficult to manage for most uses. Many of them are clayey, sticky and plastic when wet and hard and intractible when dry. They are very slow to warm up and dry out in spring, and after rains any time of year. They are not easily drained because of their slowly permeable subsoils. In most places, surface drainage must be used to remove excess water. The Othello soils in this group are very extensive on the Eastern Shore and have rather sandy substrata under their silty and clayey subsoil. Tile is probably more effective in them than in others in this group, but ditches are generally used to drain them. Other undesirable properties of the soils in this group are their moderate to high shrink-swell potential with alternate drying and wetting; high potential for frost action; and rather high compressibility, poor compaction and poor stability in engineering works. Most of the soils in this group are strongly or very strongly acid, but the Iredell and Kelly soils may be only slightly acid or neutral.

UNIQUE VALUE: Good sites for ponds or reservoirs because of depressed positions in the landscape and slow seepage rates.

CROPLAND: Where drained, these soils are used for corn, soybeans, and less commonly, hay or pasture. For features affecting their use for cropland, see the introductory paragraphs above.

URBAN: Poor natural drainage and soil material of generally poor engineering properties impose severe limitations on these soils for practically all aspects of urbanization. In addition to the high water table, slow permeability, poor workability, and poor stability of all the soils, the Iredell and Kelly soils have a high shrink-swell potential. Foundations should be carefully designed and engineered to withstand the shrink-swell property. It is especially important that the Iredell and Kelly subsoils not be used for backfill around foundations.

RECREATION: The seasonal high water table and slow internal drainage severely limit these soils for all recreational uses. The season of use is severely delayed in spring because of wetness, and the areas are slow to dry after individual rains. Unpaved areas are likely to be sticky and of poor trafficability, especially for vehicles. The wetness limitations of these soils are difficult to overcome in that the intense surface drainage required may reduce the usefulness of the planned recreational facility.

WILDLIFE: These soils are only fair for supplying most of the food and cover requirements for openland wildlife. They are rated good for woodland wildlife. They can be rather easily manipulated to create growth of wetland plants and shallow water developments and thus have good potential for wetland wildlife.

WOODLAND: Large acreages of these soils are presently wooded. Productivity for upland oaks is good; for pin oak, excellent; for sweet gum, good; and for loblolly pine, good (when adapted). In spite of the excellent to good productivity for timber on these soils, wetness is a serious management problem. The soils have severe limitations for use of equipment, severe seedling mortality, and severe plant competition for both conifers and hardwoods.

PONDING OF WATER ON POORLY DRAINED, VERY SLOWLY PERMEABLE LEONARDTOWN SILT LOAM. USDA-SCS

G1 - This group consists of deep, well drained and moderately well drained soils of floodplains along rivers and streams. The soils are made up of dominantly loamy alluvium washed from upland areas. Except for some modification of the surface layer by organic matter, these soils show practically no development of a more clayey subsoil as is common to upland soils. These soils are located throughout the state except for the Eastern Shore Lower Coastal Plain.

The soils in this group range from strongly acid to neutral, depending on the nature of their watersheds. They are moderately permeable or moderately slowly permeable and have a high available moisture capacity. They are easily worked and manipulated by hand or power equipment. Although these soils originated by overflow and overwashing, they are not ordinarily subject to very frequent or very prolonged flooding. The moderately well drained soils in this group may require some random drainage by tile for some crops. Otherwise, they are excellent for farming. The flooding hazard severely limits the soils for most other uses.

Note: Local alluvium phases of these soils not subject to flooding should be interpreted the same as those in Group B1, if well drained, and Group E1, if moderately well drained.

UNIQUE VALUE: Prime farm land; good sources of topsoil; underlain by sand and gravel in a few places; good sites for athletic fields and recreational parks if flooding hazard is not great.

CROPLAND: Because of their high natural fertility, good tillage character, high moisture holding capacity, nearly level relief, and sustained high yield potential, these soils qualify as prime farm land. They can be intensively farmed for row crops with no hazards, except for occasional flooding of short duration that is usually not damaging to crops. These soils are especially desirable for growing corn. Random tile drainage may be required in some of the moderately well drained soils to make them warm up and dry out early along with their neighboring well drained soils on the floodplains. Because of their high natural fertility, from lime and fertilizer washed from uplands, these soils ordinarily do not need heavy applications of lime and fertilizer.

URBAN: These soils are subject to stream flooding and, therefore, are not suitable for urbanization. They are not suitable for sewage disposal because of flooding and downstream pollution.

RECREATION: If these soils are flooded only very slightly or very infrequently during their season of use, they make good level, reasonably well drained sites for playgrounds, athletic fields, picnic areas, paths and trails, and golf fairways. In some places, flooding may impose moderate limitations. For camp areas, the flooding hazard, regardless of frequency, is a severely limiting factor. Each site being proposed for recreational use should be individually evaluated for its flooding hazard.

WILDLIFE: In most places these soils have excellent potential for supplying the necessary habitat elements for both openland and woodland wildlife. These soils are along streams and supply natural watering areas. However, the soils have no dependable water table or natural wet areas to manage for wetland wildlife, although the stream itself may be valuable.

WOODLAND: In most places these soils are very good or excellent sites for yellow poplar and adapted oaks. Other important trees are black walnut, hickory, and beech. Competition from annual weeds, grasses, and other unwanted plants is severe. Limitations on the use of equipment are moderate if the soils are moderately well drained or susceptible to appreciable flooding.

G2 - In this group are deep, poorly and very poorly drained soils and landtypes on floodplains along rivers and streams. These soils are made up of sediments washed from silty to sandy uplands. Like the soils in Group G1, these soils show little if any clayey subsoil development. These soils occur in all parts of the state and, as opposed to those in Group G1, some are extensive on the Eastern Shore. Here they tend to occupy the entire floodplain with relative uniformity. In the Piedmont and Appalachian sections they tend to be intermingled with the well and moderately well drained soils of Group G1, but are slightly depressed and located away from the stream more towards the valley walls.

Where the floodplains are rather narrow and the drainage and textural patterns of the soils are so complex that they cannot be feasibly delineated from each other, a miscellaneous land type called Alluvial land or Mixed Alluvial land is mapped. It is generally dominantly poorly drained and like the other soils in this group, are severely limited for most all uses.

The organic soils in Maryland are included in this group, as most areas of them are subject to either stream flooding or ponding. These soils are formed in decayed or decaying wetland vegetation called peat or muck. They have very little mineral soil in them and have a very low density. They are highly compressible, unstable, and subject to subsidence if drained. The largest areas of these soils have remained in woods.

The Warners soils in this group are mineral soils, but they often have a low density due to extreme aggregation. This is the result of their alkaline reaction caused by being highly charged with calcium carbonate from the limestone uplands.

All of the soils in Group G2 are subject to stream flooding or ponding and seasonal high water tables that are at or near the surface in winter and spring and not much below 3 feet in drier seasons. The soils within this group range from extremely acid to alkaline, depending on the nature of the watersheds supplying the sediments to the floodplains. They range from slowly to moderately permeable and have a high available moisture capacity. Frequency of flooding varies considerably, but most areas flood at least annually. Depending on frequency of flooding, these soils are moderately or severely limited for farming, and limited for most all non-farm uses.

UNIQUE VALUE: Fair adaptability for creation of wetland wildlife habitat. The organic soils may have some potential as a source of organic soil conditioner.

RECREATION: Severe wetness and flooding severely limit these soils for all phases of recreational use.

URBAN: Severe wetness and flooding make these soils unsuitable for urbanization.

CROPLAND: The soils in this group are suited to growing corn, soybeans, hay and pasture if adequate artificial drainage is used and the soils are not flooded too frequently. Where the soils are frequently flooded, their use is limited mainly to grazing, woodland, or wildlife habitat. Even if drained, there are generally continuing problems of wet spots in fields interfering with and delaying tillage. Also, these soils have high potential frost-action that can heave some plants.

WILDLIFE: These soils are rated fair for establishing habitat for openland wildlife and for wetland wildlife. They are rated good for woodland wildlife.

WOODLAND: Although subject to considerable wetness from seasonal high water tables and flooding, these soils have very good potential productivity for loblolly pine (where adapted), pin oak, and sweetgum. Plant competition is severe for conifers. Use of equipment is severely limited by wetness and flooding.

LATE SPRING FLOODING ON AN AREA OF NATURAL SOIL GROUP G2-USDA-SCS

G3 - This soil group consists of Tidal Marshes and Swamps. They are saturated and have standing water on them most or all of the year. Practically all of the swamp areas are wooded, in contrast to the tidal marshes which are not. Swamps are covered by fresh water while Tidal Marshes are covered with dominantly brackish water. Both consist of a wide variety of mineral and organic material, ranging from sand to clay and from peat to muck. Some areas of Tidal Marshes contain large amounts of sulfur compounds that are highly toxic to crops when the areas are drained and the sulfur compounds oxidize with other compounds. Tidal Marshes are extremely extensive along both the Atlantic Ocean and Chesapeake Bay shores of the southern Eastern Shore. Smaller, spotty areas occur along the western shore of the Chesapeake Bay and its tributaries.

Tidal Marshes and Swamps are very severely limited for most all uses except for wetland wildlife.

UNIQUE VALUE: Habitat for wetland wildlife; unique aesthetic value.

CROPLAND: Tidal Marshes and Swamps cannot be cropped because of extreme wetness, flooding, and, in the case of Tidal Marshes, salt influence.

URBAN: These land types are not suitable for urbanization because of extreme wetness from a high water table and almost constant flooding. Tidal Marshes are extremely unstable and have very low bearing strength. Excavated tidal marsh material used for fill can be extremely corrosive to untreated steel and concrete.

WILDLIFE: There is little or no habitat for openland wildlife in either Swamps or Tidal Marshes. Swamps provide rather a poor habitat for woodland wildlife and Tidal Marshes are not at all suited. Swamps and Tidal Marshes are good to fair as habitat for wetland wildlife.

WOODLAND Although some areas of Swamps are wooded, neither Swamps nor Tidal Marshes are generally suitable for woodland management or for replanting of trees.

TIDAL MARSH AT THE MOUTH OF MATTAWOMAN CREEK. USDA-SCS

H1 - This group consists of all the very stony or extremely stony phases of the soils in groups B1, B2, C1, C2, D1, E2 and F3. These land types are in central and western Maryland; they do not exist in the Upper or Lower Coastal Plain. They are largely wooded and range from nearly level to very steep. Stoniness is the overwhelming limitation to use of these soils and land types. In addition, these soils have the same limitations as their non-stony phases. For instance, the Dekalb soils in Group C1 are limited by having only 20 to 40 inches of soil over bedrock in addition to large stones on the surface. The major purpose in establishing Group H1 is to quickly recognize all areas with a stony surface, on the Natural Soil Group maps and to facilitate easy summaries of all of these kinds of areas in the state. For accessory limiting features, one must identify the soil symbol from the detailed soil map and read the interpretations for its non-stony counterparts.

All of the soils and land types in Group H1 contain stones larger than 10 inches in diameter, if rounded, and longer than 15 inches along the longer axis if flat. Very stony soils have stones about 5 to 30 feet apart occupying up to 3 percent of the surface. Extremely stony soils or stony land types have stones generally less than 5 feet apart and they occupy anywhere from about 3 percent to 90 percent of the surface.

The stony phases in this group differ from the very rocky or extremely rocky phases in Group H2 in that they have mostly **loose**, large stones scattered over the surface. The rocky phases in Group H2 have predominantly extrusions of hard bedrock or rock ledges. They commonly extrude in relatively parallel strips and may have rock free soil between the rock ledges, as in some parts of the limestone valleys. Stony phases and rocky phases each have inclusions of the other, in most places, and are named on the basis of the dominant condition.

UNIQUE VALUE: Complimentary aesthetic value in conjunction with camp areas and park and picnic areas; stoniness dictates permanent vegetation which helps to control runoff and sedimentation, thus providing watershed protection.

CROPLAND: H1a, H1b, H1c - The very stony soils have sufficient stones to make tillage of intertilled crops impracticable, but the soil generally can be worked for hay crops or improved pasture if other soil characteristics are favorable and slope is not excessive. There are large acreages of soils in Group H1c in Western Maryland that are suitable only for woodland use because they are both steep and very stony.

The extremely stony soils and stony land types have sufficient stones to make all use of machinery impracticable. While some of this land is used for very limited grazing, most of it remains in woodland cover.

Some land types in H1c called Stony land, steep, or Rough stony land, are so steep, stony, shallow and droughty that hardly any economic return can be expected. Their only really suitable uses are for watershed protection and wildlife.

URBAN: H1a, H1b - Even if other soil features are favorable, the very stony soils moderately limit use of the areas for shallow excavations, dwellings with or without basements, and septic tank absorption fields. The inconvenience and cost of stone removal can be reduced somewhat by thorough on-site investigation and special design and layout of roads, buildings, and septic tank absorption fields to take advantage of the more stone-free areas. The extremely stony soils and stony land types are severely limited for these uses.

H1c - The very stony soils in this group have all of the limitations noted above for similar soils but, in addition, have slopes exceeding 15 percent that severely limit their use. The extremely stony soils or stony land types are severely limited bec ause of stoniness and excessive slope.

RECREATION: H1a, H1b - If all other features are favorable, the very stony soils are only moderately limited by stoniness for use as playgrounds (unless slopes exceed 6 to 8 percent), camp areas, paths and trails, and golf fairways. They are only slightly limited for use as picnic areas, as tables and other elements of picnic areas can generally be situated between the large stones without need to remove them. There need be only slight to moderate limitations present for the placement of cabins or service buildings in recreation areas if excavations are not required. The extremely stony soils and stony land types are severely limited for the above kinds of recreation, except picnic areas, which are only moderately limited.

H1c - The very stony soils in this group have all of the limitations noted above for very stony soils and, in addition, have slopes exceeding 15 percent; these conditions severely limit their recreational use, except for paths and trails, which are only moderately limited. Extremely stony soils and stony land types are severely limited for these uses by stoniness and excessive slope.

It should be noted that many stony areas are naturally wooded, shaded, and aesthetically pleasing for picnicking and camping. These favorable features generally warrant the initial cost of stone removal or special design of facilities to overcome the stoniness limitations.

WILDLIFE: H1a, H1b, H1c - Because of stoniness, the soils and land types in these groups are generally not cropped. Thus, they do not produce grain and seed crops or grasses and legumes in sufficient quantity to be rated better than poor for open land wildlife. They are rated good for woodland wildlife as there is generally an abundance of mixed oaks and other species that provide woodland food and cover. The stony phases of soils whose series names are in Group F3 have good potential for wetland wildlife habitat development. All others are poor or not suited.

WOODLAND: H1a, H1b, H1c - The potential productivity and mangement hazards for the stony soils and land types in these groups are affected more by other soil characteristics, such as wetness, texture, depth and natural fertility, than by surface stoniness. Therefore, the woodland interpretations are about the same as shown for the group to which the non-stony counterparts of these stony soils are assigned, except for the severe limitations their stoniness places on use of equipment.

PASTURELAND ON DEKALB-CALVIN-LEHEW VERY STONY LOAMS. USDA-SCS

H2 - This group consists of all the very rocky and extremely rocky soils and rock land in central and western Maryland. This group does not exist in either the Upper or Lower Coastal Plain of Maryland. The soils in this group are the rocky phases of the soils in groups B1, C2, and D1. By far, most of the acreage of these rocky soils and land types occurs in the limestone valleys, and most of the rock outcrops are limestone. These soils are very extensive in the Hagerstown and Duffield series where sink holes are likely to be encountered.

In contrast to the stony soils in Group H1, which are largely wooded, the soils in Group H2 are not. Although these soils are too rocky on the surface for tillage of row crops, the soil between the outcrops is highly productive, and most of the acreage is utilized as pasture.

Rockiness is the overwhelming limitation to use of these soils. In addition, these rocky soils have the limitations described for their non-rocky counterparts in groups B1, C2 and D1. The major purpose in establishing Group H2 is to quickly recognize on the maps all areas in the state that are rocky and to facilitate summaries of acreages with a primary limitation of rockiness. For features of these soils other than rockiness, identify the soil by symbol on the detailed soil map and read the interpretations for its non-rocky counterpart in either group B1, C2 or D1, as appropriate.

The very rocky soils have rock outcrops or ledges roughly 30 to 100 feet apart and they cover about 10 to 25 percent of the surface, depending on the pattern. The extremely rocky soils also have rock outcrops or ledges roughly 10 to 30 feet apart, but they cover about 25 to 50 percent of the surface, depending on the pattern. Rock land has outcrops or ledges about 10 feet apart or less and they cover some 50 to 90 percent of the area.

The rocky soils in this group differ from the stony ones in group H1 in that they have hard bedrock extruding from the surface, rather than loose movable stones on the surface. Thus, blasting to remove rock is generally necessary in group H2, while it is generally not in group H1. Rocky soils and stony soils each have inclusions of the other in most places and are named on the basis of the dominant condition.

UNIQUE VALUE: Good pasture land; may indicate a possible source of limestone suitable for quarrying.

CROPLAND: All of these soils and land types are too rocky for intertilled crops. However, some of the very rocky soils can be worked for hay crops or improved pasture if the other soil characteristics are favorable. Use of machinery is generally impracticable on the extremely rocky soils and on rock land, but the soils produce above average unimproved pasture.

URBAN: H2a, H2b, H2c - All of the soils and land types in these groups are severely limited for practically all phases of urbanization by rockiness. Excavations for dwellings, utilities, and streets and roads generally require some blasting. Installation of on-site septic tank absorption fields are severely limited by not only rockiness but by insufficient uniform depth to bedrock, probable seepage of effluent to the surface on slopes, and possible seepage of unfiltered effluent into solution channels in limestone, subjecting underground water to contamination.

If these areas are developed for commercial, industrial, institutional or residential use, in spite of the above mentioned limitations, special foundation investigations should be conducted to check for possible sink holes in the limestone. If the surface is cleared of rock, and the soil is not severely graded, these areas are some of the best for lawns, gardens and ornamentals.

RECREATION: H2a, H2b - The very rocky soils have moderate limitations for camp areas, picnic areas, and paths and trails. They have severe limitations for playgrounds and golf fairways. The extremely rocky soils and rock land have severe limitations for these uses.

H2c - The very rocky soils in this group have all of the limitations noted above for the very rocky soils but, in addition, have slopes exceeding 15 percent that severely limit their use, except for paths and trails which are only moderately limited. Extremely rocky soils and rock land are severely limited for these uses.

WILDLIFE: H2a, H2b, H2c - Because of rockiness, these soils and land types are generally not cropped. Thus, they do not, in themselves, produce good food and cover for open land wildlife. However, they are, in many areas, near non-rocky soils that do produce good food and cover. The soils in this group are rated good for woodland wildlife. They are not suitable for wetland wildlife.

WOODLAND: Most of the soils in this group have excellent potential productivity for upland oaks and yellow poplar, especially those soils of the Hagerstown series. Potential products for the other soils in this group ranges from good to fair. The Hagerstown soils have severe plant competition for both hardwoods and conifers.

INTERPRETATIVE USES OF NATURAL SOIL GROUPS

NOW NATURAL SOIL GROUP MAPS WERE PRODUCED FOR EACH COUNTY

(See Appendix C for a more detailed explanation)

Step One -

Initial discussion on suitability of soils input.

Discussions were held between the Earth Satellite Corporation and the Department of State Planning staff to explore the use of some sort of soil groups for planning purposes. The major problem was to determine the type of source map to be used. Despite initial conclusions to the contrary, the decision was finally made to use the natural soil group maps by Earl D. Matthews and R. L. Shields if the costs in time and money for redrafting, final reproduction and photo reduction could be held in line. In light of the long term utility of each input to the land use plan and in light of the need to computerize all the data inputs on flooding, permeability, erosion, fertility and stability, the natural soil groupings seemed to be the best tool to provide this range of information for planning purposes.

Step Two -

Discussion with Soil Conservation Service and Earth Satellite Corporation concerning the costs of reproduction and the technical means to reduce the physical size of the soil maps while still providing a readable product.

After discussion among all parties concerned, the consensus opinion was that State Planning Department would provide the technical expertise to supervise the redrafting and reproduction work if Department of State Planning could supply the funding and Earth Satellite Corporation could locate a contractor. With regard to the technical problem of high quality photo reduction, Soil Conservation Service cartographic staff felt that since the original material was sufficiently uniform, appropriate reductions could be photographically reduced. Most original material was at a scale of 1:15,840 or 1:20,000; on order to be manageable, it was felt that this material would have to be reduced 4 to 8 times to approximately 1:63,360 or 1:26,720.

Step Three -

Testing of the uniformity of source material.

A detailed set of soil map Atlas sheets from the published **Modern Soil Surveys,** were assembled according to the key map and numbering system. Sheets were manually altered for the best fit in an effort to average out distortions due to the differential changes in the size of the paper stock or the print face. As the size of the mosaic increased, the county was split in half, each piece measuring approximately 5' x 7'; this was small enough to permit detailing of any line work needed.

Step Four -

Feasibility of amalgamating soil types into natural soil groups directly on original material.

Using a conversion table supplied by Soil Conservation Service, Department of State Planning staff grouped and labeled soils directly on the assembled county map with black felt tip markers.

Step Five -

Testing of photographic reduction process.

Department of State Planning required an easily reproducible staple product for "in house" use and statewide distribution. Soil Conservation Service suggested a Chronaflex film positive from which blueprints or additional photo reproductions could be made. Such a reduction was produced at a scale of 1:63,360, which was large enough to be read easily with only a minor loss in quality.

Step Six -

Assembly of all existing source material.

A general inventory done previously served as the starting point. The best source materials, available for 15 counties, were the planimetric detailed soil map Atlas sheets from the modern soil surveys; these sheets contained the soil delineations and cultural features, but not the photomosaic backgrounds. For the five counties currently being completed, diazo reproductions of Atlas-sized proof sheets were compiled. The old soil survey maps available for Allegany County were converted to a Natural Soil Group Map by inspecting each of the modern, detailed unpublished soil survey field sheets and delineating natural soil group boundaries by comparing old with modern work; for St. Mary's County the old original soil map was the best source. The only remaining county, Kent County, had available a multicolor map series overprinted on the original soil type classification system; these maps were cartographically converted and natural soil groups delineated as on the modern published Atlas sheets.

Step Seven -

Physical assembly of county sheets and re-drafting into Natural Soil Groups.

American Data Maps contracted to handle this aspect of the project. Three simple work rules were devised to insure the readability of the end product:

- Natural soil groups smaller than ¾" in diameter on the original were not to be delineated.
- Natural soil bands which narrowed to ¾" or less would be closed off.
- All G-1 and G-2 soil bands which were too small to delineate were shaded in, using a medium red colored pencil which would photograph as medium gray or blueprint with similar density.

Those modern soil survey maps available for 15 counties were used directly as a base for the delimitation of natural soil groups by penciling in the new groups on the sheets which had been mosaiced together. The diazo sheets for the five counties currently preparing soil survey maps were also mosaiced in the same sheet size; however, a matte finish mylar was used as the base for the natural soil group interpretations. The overlay was then used in the photocopying process. Allegany and St. Mary's Counties soil maps, available only in the 1923 series, were simply re-drafted in an effort to match the old maps used as a base and natural soil group designations were then assigned to the old soil units in the map legend. Finally, the Kent County map printed in a multicolor form was re-photographed in black and white and the positive print sheets then assembled in a positive fashion.

Step Eight -

Soil Conservation Service review of completed natural soil group maps.

As America Data Maps completed its work of making the natural soil group delimitations, each county map was returned to the Soil Conservation Service for review, adjustment and approval.

Step Nine -

Photographic reduction and reproduction of original map work.

Soil Conservation Service Northeast Region, Cartographic Division, supplied this service at cost. The segmentalized original maps were reduced and separate negatives made for each segment supplied. The negatives were then mosaiced into a complete map of the county and Chronaflex positives produced at the desired scale.

HOW TO USE A NATURAL SOIL GROUP MAP

1. Locate the area of interest on the Natural Soil Group Map.
2. Observe the Natural Soil Group symbol or symbols consisting of a capital letter, a number, and a lower case letter. (See "Natural Soil Group Identification Symbols" for a detailed explanation of the natural soil group symbolization.)
3. Refer to "Description of Natural Soils Groups" in the table of contents. Move to the section on "Discussion of Each Natural Soil Groupings." Locate the appropriate description. They are listed in alphabetical order, from A1 to H2.
4. Read the introductory paragraphs. Specific interpretations are made for each Natural Soil Group under the headings for Unique Value, Cropland, Urban, Recreation, Wildlife and Woodland. These interpretive statements may apply to more than one specific natural soil group if slope does not have an important effect. For example, specific groups B2a and B2b are interpreted together for recreation in broad group B2.

   Note: It is important that users read the two or three introductory paragraphs of each natural soil group description. These paragraphs describe the important soil characteristics and features that would affect most uses. They are important supplements to the specific use interpretations under the various headings.
5. For specific use interpretations not noted in the descriptions, turn to the interpretive tables further in this text. From the information in these tables, color soil interpretation maps can be prepared by coloring any area rated slightly limited or good with green; moderately limited or fair with yellow; and severely limited or poor with red. This system is analogous to the traffic light system where green indicates no special hazards; yellow a caution color; and red a full stop or a serious hazard. Ratings of slight, moderate, and severe indicate the relative degree of problems to be overcome to make an area suitable for a specific use.
6. Keep in mind that Natural Soil Groups were devised for broad land use planning, not for detailed interpretations of specific acres or lots. If a rather specific interpretation for a small area is needed, spot this area on the map and read the detailed soil map symbol with a magnifying glass, if the natural soil group map has a detailed soil map base. Locate this detailed map symbol in the Guide to Mapping Units in the appropriate published soil survey report, determine the soil name, and trace out the detailed descriptions and interpretations. If the natural soil group map is not on a detailed soil map base, specifically identify the area on interim sets of detailed maps available for reference at the county field office of the Soil Conservation Service and refer to manuscript copies of the detailed soil descriptions and interpretations.

   On-site detailed investigations are needed for specific sites.

Note: The primary value of soil surveys is to provide resource information for planning prediction, not absolute land use descriptions for specific acres or lots.

ENGINEERING USES OF SOILS

TABLE 1

Table 1, "Estimated Physical and Chemical Properties," lists soil properties relevant to the engineering uses of soils. The properties are given for each Natural Soil Group; therefore, a wide range of properties is covered. The primary purpose of the table is to provide some properties of soils that will help users select large areas that have potential for the use they have in mind, and to help them quickly eliminate some others that obviously do not have the desired properties and features.

Table 1 does not eliminate the need to use detailed soil maps and soil survey reports for any Natural Soil Group area, nor does it eliminate the need for further investigation at sites selected for specific engineering works, especially works that involve heavy loads or that require excavations to depths greater than those shown in Table 1. Also, inspection of sites, especially small ones, is needed because the Natural Soil Group delineations contain some inclusions of other soil delineations that have properties and features different from the Natural Soil Group in which they occur. Even the detailed soil map delineations may have inclusions of other kinds of soil that have strongly contrasting properties and different suitabilities or limitations for soil engineering.

The following paragraphs explain the meaning and purpose of each individual column in Table 1, "Estimated Physical and Chemical Properties."

Natural Soil Groups - All of the Natural Soil Groups are listed in this column. Slope has little effect on the physical and chemical properties of soils. Therefore, some groups that are alike except for slope are grouped together in this table.

Depth to Bedrock - This is the distance from the surface of the soil downward to the surface of the rock layers. For the Natural Soil Groups that occur in the Coastal Plain (A1 and A2), depth to bedrock is shown as 72+ inches. Actually, over most of the Coastal Plain depth to bedrock is many hundreds of feet, but, in mapping, the soils were observed only to a depth of 6 feet. Therefore, depth greater than 72 inches is assumed but not specified.

Depth to Seasonal High Water Table - This is the distance from the surface of the soil downward to the highest level reached in most years by ground water. It is the highest part of the soil or underlying rock material that is wholly saturated with water. Most of the soils in Natural Soil Groups E2a and E2b have a perched water table above a fragipan or clayey layer which may be separated from a lower water table by a dry zone many feet thick; thus, the water table referred to in this column may or may not be continuous with a water table from which water is drawn for use in the home. If the water table is in bedrock, rather than in the soil, it is so indicated.

Depth from Surface - Unless the soil is located less than 60 inches above bedrock, the depth from surface is expressed as 0-60 inches. This does not imply that the soils are only 60 inches deep, but rather that the estimates in the accompanying columns are for the 0-60 inch depth and not below.

Dominant U.S.D.A. Textures - These are expressed in standard terms used by the U.S. Department of Agriculture. These terms take into account relative percentages of sand, silt and clay in a soil sample that is less than 2 millimeters in diameters. If the soil contains gravel or other particles coarser than sand, an appropriate modifier is added, as for example, "gravelly" loam or "shaly" loam. Percentages of material passing various sieve sizes are not estimated in Table 1 because of the many different soils comprising each Natural Soil Group; however, sieve data for specific soil series are available in published soil survey reports for detailed soil maps.

Textures described are those that may be encountered within the 0-60 inch depth of the soils in a Natural Soil Group. Textures are listed in order of dominance for the group. In general, the heaviest (most clayey) textures ordinarily occur in the subsoil at depths of 1 to 4 feet and are less clayey above and below these depths.

Unified Classification - In the Unified system, soils are classified according to particle-size distribution, plasticity, liquid limit and organic matter. Soils are grouped in 15 classes. There are eight classes of coarse grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as PT. Soils on the borderline between two classes are designated by symbols for both classes, for example SP-SM.

In this column, Unified classifications are grouped for the entire 0-60 inch depth. Where CL and CH classes are shown, they can be expected to occur between depths of 1 and 4 feet, or in what is commonly called the "subsoil". Unified classes are listed in order of dominance within the group.

AASHO Classification - This system is used to classify soils according to those properties that affect use in highway construction and maintenance. A soil is placed in one of seven basic groups based on grain-size distribution, liquid limit and plasticity index. In group A-1 are gravelly soils of high bearing strength, the best soils for subgrade (foundation). At the other extreme, in group A-7, are clay soils that have low strength when wet and that are the poorest mineral soils for subgrade.

In this column in Table 1, where classes A-6 or A-7 occur, they are generally in the subsoil, or at depths between 1 and 4 feet. AASHO classifications are listed in this column in order of dominance for the Natural Soil Group.

Erodibility (K factors) - This is a measure of the susceptibility of bare surface soil to erosion. The K-factor is a component of an established formula for estimating potential erosion from a field or watershed by the "soil loss formula", which also considers vegetation, climate, slope, and other factors.

The **K** factors shown are for surface soil only. They are not suitable for estimating erosion from development sites where the subsoils or substrata have been exposed by grading. The subsoils and substrata have different erodibility (K factors).

Runoff potential (Hydrologic Group) - The qualitative rating is given along with the Hydrologic Group symbol, in parenthesis. When fully saturated, soils in Hydrologic Group **A** have the lowest runoff potential and those in Group **D** the highest. Hydrologic soil group descriptions are used in watershed planning to estimate runoff from rainfall. To determine the groups, soil properties are considered that influence the minimum rate of infiltration obtained for a bare soil **after prolonged wetting**. The influence of vegetative cover, conservation practices, and topography is not treated in hydrologic soil groups. The following are definitions of the four hydrologic groups:

A. (Low runoff potential). Soils having high infiltration rates even **when thoroughly wetted.** These consist chiefly of deep, well to excessively drained sands or gravels. These soils have a high rate of water transmission in that water readily passes through them.

B. (Moderately low runoff potential). Soils having moderate infiltration rates **when thoroughly wetted**. These consist chiefly of deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

C. (Moderately high runoff potential). Soils having slow infiltration rates **when thoroughly wetted**. These consist chiefly of soils with a layer that impedes downward movement of water, soils with moderately fine to fine texture, or soils with moderately high water tables. These soils may be somewhat poorly drained. They have a slow rate of water transmission.

D. (High runoff potential). Soils having very slow infiltration rates **when thoroughly wetted**. These consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

Sprinkler Irrigation Maximum Application Rates - This column shows the maximum rate in inches per hour that irrigation water can be applied to the soils in each group. Although these rates were established for application of ground or stream water by sprinkler on cropland, they can also be used as guides for applying waste water to land.

A rapid application rate, such as 1.0 inch per hour for Group A1a, A1b, and A1c, simply means that the surface soil has the capability to absorb irrigation or waste water applied at that rate. For the overall ratings of Natural Soil Groups as sites for disposal of waste water, see Table 2.

Permeability - This is the quality of a soil that enables it to transmit water or air, expressed in inches per hour. Accepted as a measure of this quality is the rate at which soil transmits water while saturated. That rate is the "saturated hydraulic conductivity" of soil physics. The estimates shown are for downward movement only and not lateral movements, such as along the surfaces of fragipan, plow pans and surface crusts. Permeability rates shown are based on the least permeable section of the soil, which is generally the "subsoil" or that section of soil between depths of 1 and 4 feet.

The permeability classes and corresponding numerical ranges are shown below:

Permeability class	Numerical range (inches per hr.)
Very slow	Less than 0.06
Slow	0.06 - 0.20
Moderately slow	0.20 - 0.60
Moderate	0.60 - 2.0
Moderately rapid	2.0 - 6.0
Rapid or very rapid	greater than 6.0

Percolation - This is the rate, in minutes per inch, at which water can move through a soil with moisture at field capacity. Classes of permeability can be rated to classes of percolation although the correlation is not perfect. Permeability rates shown in Table 1 were measured as a hydraulic conductively rate by the Uhland core method, while the corresponding estimated percolation rates were measured by the Auger hole method. Estimated percolation rates shown in Table 1 are for the depths at which tile lines for shallow sub-surface septic tank absorption fields are generally placed and **not for substrata in which deep, dry wells are placed.**

The following are the permeability-percolation relationships used in Table 1. Each corresponding class is not a mathematical reciprocal of the other because the method of measuring each is different.

Permeability	Percolation
in./hr.	min./in.
More than 1.0	Faster than 45
1.0 - 0.6	45 - 60
Less than 0.6	Slower than 60

Available Water Capacity - This is the ability of soils to hold water for use by most plants. It is commonly defined as the difference between the amount of water in the soil at field capacity and the amount in the soil at the wilting point of most crop plants. The ranges shown in Table 1 for each Natural Soil Group cover the range in texture for each of the groups.

Reaction - This is the degree of acidity or alkalinity of a soil group, expressed in pH values. In Table 1 the values shown are the estimated ranges necessary to cover all of the soils within a group. Since soil reaction was not one of the major soil characteristics used for establishing the Natural Soil Groups, the range in values for some groups in Table 1 is wide.

The following are the numerical ranges for each of the reaction classes:

Class	pH
Extremely acid	4.5
Very strongly acid	4.5 - 5.0
Strongly acid	5.1 - 5.5
Medium acid	5.6 - 6.0
Slightly acid	6.1 - 6.5
Neutral	6.6 - 7.3
Mildly alkaline	7.4 - 7.8
Moderately alkaline	7.9 - 8.4
Strongly alkaline	8.5 - 9.0
Very strongly alkaline	9.0

Shrink-swell potential - This is the quality of the soil that determines its volume change with changes in moisture content. It is influenced by the amount of moisture change and the amount and kind of clay in the soil. Building foundations, roads, and other structures may be severely damaged by shrinking and swelling of soil. The three classes of shrink-swell used in Table 1 can be related to a quantitative method of measuring shrink-swell, known as "the coefficient of linear extensibility" (COLE), as follows:

Classes	COLE
Low	0.03
Moderate	.03-.06
High	0.06

Frost-action Potential - The action pertains to not only the heaving of soil as freezing progresses but also to the excessive wetting and loss of strength during thaw. Both the textures of soils and their potential for forming expansion ice lenses from a sustained source of water were considered in determining the frost-action potential.

TABLE 1. ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES

Natural Soil Groups	Depth to		Depth from surface	Classification			Erodibility (K factor)	Runoff potential (Hydrologic group)	Sprinkler irrigation maximum application rates	Permeability	Percolation	Available water capacity	Reaction	Shrink-swell potential	Frost-action potential
	Bedrock	Seasonal high water table		Dominant USDA textures	Unified	AASHO									
	(inches)	(feet)	(inches)						(in./hr.)	(in./hr.)	(min./in.)	(in./in. of soil)	(pH) value)		
A1a, A1b, A1c	72+	4+	0-60	Loamy sand, sand or sandy loam	SM, SP	A-2, A-3, A-4	Very low (.17)	Low (A)	1.0	>6.0	Faster than 45	.02-.06	4.0-5.0	Low	Low
A2	72+	1-10	0-60	Sand	SP or SP-SM	A-3	Very low (.17)	Low (A)	N/A	>6.0	Faster than 45	<0.06	5.0-8.0	Low	Low
B1a, B1b, B1c	72+	3+	0-60	Silt loam, loam, fine sandy loam, sandy loam, silty clay loam, clay loam, silty clay, clay	ML, CL, SM, SC, CH, MH	A-4, A-6, A-7, A-5	Moderate (.32)	Moderately low (B)	0.4-0.6	0.60-2.0	45-60	.12-.24	4.5-6.5	Low to Moderate	Moderate
B2a, B2b, B2c	72+	4+	0-60	Silt loam, loam, gravelly loam, clay loam, silty clay loam	ML, CL, GM	A-4, A-6, A-7, A-2	Very high (.43)	Moderately high (C)	0.3-0.4	0.20-0.60	Slower than 60	.12-.24	4.5-7.3	Low to Moderate	Moderate
B3	72+	5+	0-60	Clay, silty clay, silt loam, loam, loamy sand	CH, CL, ML, SM	A-7, A-6, A-4, A-2	High (.37)	Moderately high (C)	0.3	<0.60	Slower than 60	.06-.24	4.0-5.0	Low to Moderate	Moderate
C1a, C1b, C1c	20-40	In bedrock	0-40	Silt loam, loam, shaly silt loam, shaly loam, channery loam, channery silt loam, sandy loam	ML, CL GM, SM	A-4, A-6, A-2	Low (.22)	Moderately high (C)	0.3	0.60-6.0	Faster than 60	.12-.24	4.0-7.3	Low	Moderate
C2	20-40	3+	0-40	Silty clay loam, silty clay, clay	CH, CL	A-7, A-6	High (.37)	Moderately high (C)	0.3	<0.60	Slower than 60	.12-.20	5.0-7.5	Moderate to High	Moderate
D1a, D1b, D1c	Less than 20	In bedrock	0-20	Shaly silt loam, shaly loam, clay, silty clay loam, silty clay	GM, GC, ML, CL, CH	A-2, A-4, A-6, A-7	Low (.28)	Moderately high to high (C or D)	0.3	0.60-6.0	Slower than 60 to faster than 45	.18-.24	4.0-7.3	Low to Moderate	Moderate
E1	72+	1½-2½	0-60	Sandy loam, sandy clay loam, loamy sand, sand	SM, SC, SP	A-2, A-4, A-3	Low (.28)	Moderately high (C)	0.4-0.6	0.60-6.0	Faster than 60	.12-.24	4.0-5.0	Low	High
E2a, E2b	72+	1-3	0-60	Silt loam, loam, silty clay loam, fine sandy loam, sandy clay loam	ML, CL, SM, SC	A-4, A-6, A-7, A-2	Very high (.43)	Moderately high (C)	0.3-0.4	<0.60	Slower than 60	.12-.24	4.0-6.5	Low to Moderate	High
E3	72+	1½-2½	0-60	Silt loam, loam, silty clay loam	ML, CL, SM	A-4, A-6, A-2	High (.37)	Moderately high (C)	0.4	0.20-0.60	Slower than 60	.18-.24	4.5-5.5	Low to Moderate	High
F1	72+	0-1	0-60	Loamy sand, sand	SM, SP	A-2, A-3	N/A	High (D)	1.0	>6.0	Faster than 45	<0.06	3.5-5.0	Low	High

TABLE 1. ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES (CONT'D.)

Natural Soil Groups	Depth to		Depth from surface	Classification			Erodibility (K factor)	Runoff potential (Hydrologic group)	Sprinkler irrigation maximum application rates	Permeability	Percolation	Available water capacity	Reaction	Shrink-swell potential	Frost-action potential
	Bedrock	Seasonal high water table		Dominant USDA textures	Unified	AASHO									
	(inches)	(feet)	(inches)						(in./hr.)	(in./hr.)	(min./in.)	(in./in. of soil)	(pH value)		
F2	72+	0-1	0-60	Sandy loam, fine sandy loam, sandy clay loam, loam, loamy sand	SM, ML, SC, SP	A-2, A-4, A-3	Low (.28)	High (D)	0.4-0.6	0.60-2.0	Faster than 60	.12-.24	4.0-5.0	Low	High
F3	72+	0-1	0-60	Silty clay loam, clay loam, silty clay, clay, loam, silt loam	CL, CH, ML, SC, SM, MH	A-6, A-7, A-4, A-2	Very high (.43)	High (D)	0.3	<0.60	Slower than 60	.18-.24	4.0-7.8	Moderate to High	High
G1	72+	3+	0-60	Silt loam, loam, fine sandy loam, sandy loam, silty clay loam	ML, CL, MH, SM, SP	A-4, A-6, A-5, A-2, A-3	N/A	Moderate-ly low to Mod. high (B or C)	0.5-0.7	0.20-2.0	Faster than 45 to Slower than 60	.12-.24	4.0-7.3	Low to Moderate	Mod. to High
G2	72+	0-1	0-60	Silt loam, lilty clay loam, silty clay, fine sandy loam, sandy loam, loam, muck	ML, CL, SM, OL, Pt	A-4, A-6, A-2, A-5	N/A	High (D)	0.5	0.60-6.0	Faster than 45 to Slower than 60	.18-.24	4.0-7.3	Low to High	High
G3	72+	0	0-60	Variable	Variable	Variable	N/A	N/A	N/A	Variable	Variable	Variable	3.5-9.0	Low to High	Variable
H1a, H1b, H1c	Too variable to rate. Determine the specific soil series name from the detailed soil map and use the information for the group that series is in.														
H2a, H2b, H2c	Too variable to rate. Determine the specific soil series name from the detailed soil map and use the information for the group that series is in.														

TABLE 2

Table 2, "Estimated Soil Limitations and Suitabilities for Selected Uses," which is inserted at the end of this manual provides soil interpretations for 15 specific uses for each of the Natural Soil Groups. Estimated limitations or suitabilities for a particular use for each of the groups are presented in terms of green, yellow and red color spots, or combinations of two colors. This system is analogous to the traffic light system in terms of potential hazards or problems associated with each color. In Table 2, green indicates slight limitations or good suitability for the specified use; yellow indicates moderate limitations or fair suitability; and red signifies severe limitations or poor suitability. Open circles (no color) indicate that the Natural Soil Group is evaluated as being unsuitable for the specified use. Where only half of the circle is open, this signifies that some soils in the group are unsuitable.

Below the colored circles are one or more numbers. These numbers represent the kinds of problems or limitations to be recognized or overcome when considering a specific use for the soil; they correspond with the numbers listed in "The Key to Principal Soil Limitations" on the foldout table in the back of the manual. Thus, the color indicates the intensity of the limitations while the numbers identify the kinds of limitations. A few Natural Soil Groups rated green for a specified use are estimated to have no principal soil limitations and thus are not referenced to the Key.

Soils rated yellow are moderately limited for the use being considered, reducing, to some degree, their desirability for the purpose. They require some corrective measures.

Soils rated red are severely limited by unfavorable soil properties or features for the use being considered, thereby severely restricting their desirability for the purpose. A red rating does not mean that the soil cannot be used for that purpose. It does indicate problems during or after application of the use, unless special design, engineering or other corrective measures are used to overcome the limitations. Costs are usually greater on these soils than on soils rated green (slight limitations) or yellow (moderate limitations), and many times costs are prohibitive.

Table 2 can be useful for broad land use planning in the following ways:

(1.) For a specific Natural Soil Group, locate the best potential use or uses by moving horizontally across the table.

(2.) With a specific use in mind, look for green spots in that column and then move horizontally to determine the Natural Soil Group.

(3.) Locate large areas with potential as a source of sand or gravel by looking for whole or partially green spots under those columns.

(4.) Locate areas that may qualify as prime farmland by referring to the "Intensive Cropping" column.

(5.) Determine when Natural Soil Group areas are suited for a wide variety of uses (wide adaptability).

(6.) Determine areas where there is a good potential for use of septic tank absorption fields with dwellings.

(7.) Locate routes for pipelines or utilities by reference to the column entitled "Shallow Excavations."

(8.) Evaluate Natural Soil Group areas for liquid waste disposal by comparing the site character in Table 2 with the sprinkler irrigation maximum application rate in Table 1.

(9.) Use the color spots in Table 2 as a color code for preparing color-interpretive maps on paper copies of Natural Soil Group maps, thus giving geographical expression to soil limitations for specific uses.

Interpretations in addition to those shown in Table 2 can be made from the "Unique Value" sections and other parts of the Natural Soil Group Descriptions. For instance, an interpretive map showing areas with potential for irrigated early truck crops might be prepared by locating and coloring areas of Natural Soil Group A1a. This map could then be laid over a geological or other map that might indicate sources of underground water for irrigation.

Natural Soil Group maps are useful to people who want a general idea of the nature of soils at various locations, who want to compare different parts of an area, or who want to know the location of large tracts that are suitable for a certain kind of farm or non-farm land use. Such a map is not suitable for planning the management of a farm or field, or for selecting the exact location for a road or building.

BRIEF EXPLANATION OF THE INTERPRETIVE COLUMNS IN TABLE 2

Dwellings, for which the soils are given limitation ratings in Table 2, are those not more than three stories high and supported by foundation footings placed in undisturbed soil. The features that affect the rating of a soil for such dwellings are those that relate to the capacity to support load and resist settlement under load. Soil properties considered are wetness, susceptibility to flooding, density, texture, shrink-swell potential, slope, depth to bedrock, and content of stones and rocks. Moderately well drained soils and soils moderately deep to bedrock are less limiting for dwellings without basements than for those with basements.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into natural soil. The soil material from a depth of 18 inches to 6 feet is evaluated. The soil properties considered are those that affect both absorption of effluent and construction and operation of the system. Properties that affect absorption are permeability, depth to water table or rock, and susceptibility to flooding. Slope is a soil property that affects layout and construction and also affects the risk of soil erosion, lateral seepage, and downslope flow of effluent. Large rocks or boulders increase construction costs.

Local roads and streets refers to those which have an all-weather surface expected to carry automobile traffic all year. These roads and streets have a subgrade of underlying soil material; a base consisting of gravel, crushed rock, or soil material stabilized with lime or cement; and a flexible or rigid surface that is commonly asphalt or concrete. They are graded to shed water and have ordinary provisions for drainage. They are built mainly from soil at hand, and most cuts and fills are less than six feet. Soil properties that most affect design and construction of such roads and streets are load-supporting capacity, stability of the subgrade, and the workability and quantity of cut and fill material available. The AASHO and Unified classifications of the soil material, and also the shrink-swell potential, indicate traffic-supporting capacity. Wetness and flooding affect stability of the material. Slope, depth to hard rock, content of stones and rocks, and wetness affect ease of excavation and amount of cut and fill needed to reach an even grade.

Shallow excavations are those that require digging or trenching to a depth of less than six feet, for example, excavations for pipelines, sewer lines, phone and power transmission lines, basements, open ditches, and cemeteries. Desirable soil properties are good workability, moderate resistance to sloughing, gentle slopes, absence of rock outcrops or big stones, and freedom from flooding or a high water table.

Suitability as a source of sand and gravel - Unsuitable areas are designated by a blank circle. Partial red and partial blank circles indicate that some of the soils in the group are unsuitable and some are poor. Partial yellow and red indicate a poor to fair suitability range for the soils in the group. Partial green and yellow indicate a range of good to fair within the group. More specific evaluations of specific areas must be determined by reference to the detailed soil map and the interpretations for the map symbols in the published soil surveys.

Suitability as a source of roadfill - Road fill is soil material used in embarkments for roads. The suitability ratings reflect (1) the predicted performance of soil after it has been placed in an embankment that has been properly compacted and provided with adequate drainage and (2) the relative ease of excavating the material at borrow areas. Factors considered in making the ratings are Unified and AASHO engineering classifications of the soil material; shrink-swell potential, slope, stoniness, rockiness, thickness of the source as related to depth to bedrock, and soil drainage class (wetness) at the source.

Partial green and yellow ratings indicate that the soils within the group range from good to fair. Partial yellow and red indicate a fair to poor range. Partial red and blank circles indicate a range of poor to unsuitable.

Sanitary landfill (trench-type) is a method of disposing refuse in dug trenches. The waste is spread in thin layers, compacted, and covered with soil throughout the disposal period. Landfill areas are subject to heavy vehicular traffic. Some soil properties that affect suitability for landfill are ease of excavation, hazard of polluting ground water, and trafficability. The best soils have moderately slow permeability, withstand heavy traffic, and are friable and easy to excavate. Unless otherwise stated, the ratings in Table 2 apply only to a depth of about six feet, and therefore limitation ratings of **slight** or **moderate** may not be valid if trenches are to be much deeper than six feet. For some soils, reliable predictions can be made to a depth of 10 or 15 feet, but regardless of that, every site should be investigated before it is selected.

Liquid waste disposal - This column provides a very general guide for selection of areas that have potential for liquid waste disposal by sprinkler irrigation. The ratings are based on the potential of the soil for accepting nontoxic biodegradable liquid-waste for nutrient removal by plants. Factors considered are permeability of the most restricting layer between 60 inches and the surface layer, infiltration rate, soil drainage class, runoff characteristics, flooding, and available water capacity. This column can be used in combination with the maximum irrigation application rates in inches per hour shown in Table 1. The interpretations for liquid waste disposal in Table 2 are based only on the known properties of the soils and do not consider their location in regard to other soils, bodies of water, roads, dwellings or other developments that may be influenced by disposal of waste water. Special hazards of ground water pollution are noted where appropriate in Table 2. However, this does not mean that Natural Soil Groups lacking this notation are free of this hazard. Thorough, detailed on-site investigations are necessary to evaluate the pollution hazard.

Pond reservoir areas hold water behind a dam or embankment. Soils suitable for pond reservoir areas have low seepage, which is related to their permeability and depth to fractured or permeable bedrock or other permeable material. In the ratings in Table 2, red generally indicates **probable** excessive seepage losses; yellow **possible** excessive seepage in the substratum that needs to be investigated; and green only a slight possibility of excessive seepage. Where factors other than seepage influence the ratings, they are so indicated. This interpretation does not consider size, shape, or condition of the area draining into the reservoir areas.

Sites for excavated ponds and shallow water developments - Excavated ponds depend on a natural source of water in the soil, such as a high water table much of the time. Shallow water developments need a source of water and low topographical position where the water level can be controlled. In Maryland, the Natural Soil Groups that are good for one are generally good for the other and, therefore, the two are evaluated together.

Tent and trailer camp areas - This column in Table 2 applies to the varying suitability of areas that are to be used intensively for tents and small camp trailers and the accompanying activities of outdoor living. It is assumed that little site preparation will be done other then shaping and leveling for tent and parking areas. The soils should be suitable for heavy foot traffic by humans and for limited vehicular traffic. Soil suitability for growing and maintaining vegetation is not a criterion but is an item to consider in the final evaluation of a site. Soil properties considered in making the ratings were wetness, flooding, permeability, slopes, surface soil texture, presence and amount of coarse fragments on the surface, stoniness and rockiness. This interpretation does not consider location of the area, land values, aesthetic values, and the like.

NOTE: Evaluations of the Natural Soil Groups for camp-cottages or cabins can be made by reference to the column in Table 2 entitled, "Dwellings, without basements," and the column "Septic tank absorption fields" (where individual cottage on-site sewage disposal is proposed).

Golf fairways, lawns and landscaping - Factors considered when determining the suitability of an area for these uses are susceptibility of the soils to wetness during the seasons of use, coarse fragments on and in the surface soil, available water capacity for plants, stoniness, rockiness, slope, and susceptibility to flooding. Natural soil fertility is not considered. It is assumed that areas selected that are otherwise suitable will be adequately treated with soil nutrients. However, the very sandy, rapidly permeable soils in Natural Soil Groups A1a, A1b and A1c require frequent, light applications of lime and fertilizer rather than infrequent heavy applications because applied nutrients tend to leach through the soils rapidly.

Intensive Cropping - The interpretation for this use is based on two major considerations: (1) the Land Capability Classification and (2) the long term average yields to be expected under good management. These two factors are generally related to deferred tax assessment rates for agricultural land; however, before these assessments can be determined detailed studies of the area in question and tax procedures must be made. In general, soils in Land Capability Classes I and II with sustained high yield potentials are rated green (slight limitations for this use); those in Class III are rated yellow (moderate limitations); and Classes IV through VII, red (severe limitations). Soils in Natural Soil Groups A2 (loose beach and dune sands) and G3 (swamp and tidal marshes) are rated unsuitable (Land Capability Classification Class VIII.

These ratings assume that irrigation is not necessary to sustain long-term high average yields of such crops as corn and soybeans. Therefore, soils with low available water capacity (A1a, A1b, A1c) are rated as having moderate or severe limitations for this use, even though they may have high value for early truck crops and irrigation. Likewise, some strongly sloping or steep soils that have very high value as orchard or pasture lands are considered to have moderate or severe limitations for intensive cropping because of steep slopes, susceptibility to erosion, and limitations to the use of equipment. This interpretation in Table 2 can serve as a guide for delineating large units of prime farmland (shown as green). However, there are many other areas (rated yellow) that are valuable farmlands and are being maintained in a productive state through inputs of good management such as drainage, contouring, stripcropping, and the like. One must remember that there are specific areas suitable for certain crops, due to weather, exposure, soil type, the economy of the area and other related factors. The Natural Soil Group survey is **not** specific enough to permit the identification of such areas, for this information one must consult detailed soil maps and their interpretations.

GLOSSARY

Acidity, soil. See Reaction, soil.

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Available water capacity (also termed available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Contour farming. Plowing, cultivating, planting, and harvesting in rows that are at right angles to the natural direction of the slopes or that are parallel to terrace grade.

Drainage. As a farm management operation, the removal of excess water from the soil. As a soil condition, the relative rapidity and extent of the removal of water from the soil under natural conditions.

Field mositure capacity. The mositure content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has been allowed to drain away; the field moisture content 2 or 3 days after a soaking rain; also called **normal field capacity, normal moisture capacity, or capillary capacity.**

Flood plain. Nearly level land, consisting of stream sediments, that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle, subsurface horizon that is very low in organic matter and clay but is rich in silt or very fine sand. The layer is seemingly cemented. When dry, it is hard or very hard and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slowly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur below the B horizon, 15 to 40 inches below the surface.

Internal soil drainage. The downward movement of water through the soil profile. The rate of movement is determined by the texture, structure, and other characteristics of the soil profile and underlying layers, and by the height of the water table, either permanent or perched. Relative terms for expressing internal drainage are **none, very slow, slow, medium rapid,** and **very rapid.**

Leaching. The removal of soluble material from soils or other material by percolating water.

Marine deposit. Material deposited in the waters of oceans and seas and exposed by the elevation of the land or the lowering of the water level.

Natural soil drainage. Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural soil drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low water-holding capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and have mottling in the lower B and C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and in Podzolic soils commonly have mottlings below 6 to 16 inches, in the lower A horizons and in the B and C horizons.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Nutrient, plant. Any element taken in by a plant, essential to its growth and used by it in the production of food and tissue. Nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, zinc, and perhaps other elements obtained from the soil and carbon, hydrogen, and oxygen obtained largely from the air and water are plant nutrients.

Parent material. The weathered rock or partly weathered soil material from which soil has formed; the C horizon.

Permeability. The quality of a soil horizon that enables water or air to move through it. Terms used to describe permeability are as follows: **very slow, slow, moderately slow, moderate, moderately rapid, rapid,** and **very rapid.**

pH value. A numerical means for designating relatively weak acidity and alkinity in soils. A pH value of 7.0 indicates precise neutrality; a higher value, alkalinity; and a lower value, acidity.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

Extremely acid	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid	5.1 to 5.5	Moderately alkaline	7.9 to 8.4
Medium acid	5.6 to 6.0	Strongly alkaline	8.5 to 9.0
Slightly acid	6.1 to 6.5	Very strongly alkaline	9.1 and higher

Sand. Individual rock or mineral fragments in soils having diameters ranging from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

Silt. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Soil. A natural, three-dimensional body on the earth's surface that supports plants and that has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. Technically the part of the soil below the solum.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plowed layer.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are **sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay.** The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Topsoil. A presumed fertile soil or soil material, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

Upland (geologic). Land consisting of material unworked by water in recent geologic time and lying, in general, at a higher elevation than the alluvial plain or stream terrace. Land above the lowlands along rivers.

Water table. The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which plants (specifically sunflowers) wilt so much that they do not recover when placed in a dark, humid atmosphere.

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APPENDIX A
ALPHABETICAL LISTING OF NATURAL SOIL GROUP MAP SYMBOLS BY COUNTY

ALLEGANY COUNTY

NOTE: The map symbols, mapping units, and acreage totals above will apply to the modern Soil Map and Soil Survey, when published.

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AbB	Albrights silt loam, 0 to 8 percent slopes	IIe-13	280	E2a
AbC2	Albrights silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	220	E2b
AgD	Albrights very stony silt loam, 3 to 25 percent slopes	VIs-3	800	H1c
AhA	Allegheny fine sandy loam, 0 to 3 percent slopes	I-5	150	B1a
AhB2	Allegheny fine sandy loam, 3 to 8 percent slopes, moderately eroded	IIe-5	220	B1a
AhC2	Allegheny fine sandy loam, 8 to 15 percent slopes, moderately eroded	IIIe-5	110	B1b
AlA	Allegheny silt loam, 0 to 3 percent slopes	I-4	110	B1a
AlB2	Allegheny silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,310	B1a
AlC2	Allegheny silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	980	B1b
AlD	Allegheny silt loam, 15 to 30 percent slopes	IVe-3	230	B1c
AnB	Allegheny-Urban land complex, 0 to 8 percent slopes	----	290	B1a
AnC	Allegheny-Urban land complex, 8 to 20 percent slopes	----	170	B1b
Au	Alluvial land	VIw-1	3,760	G2
Av	Alluvial land-Urban land complex	----	640	G2
Aw	Atkins silt loam	IIIw-7	1,630	G2
BeE	Belmont very stony silty clay loam, 20 to 50 percent slopes	VIIs-2	170	C2
BkC3	Brooke silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-1	60	C2
BuB2	Buchanan gravelly loam, 0 to 8 percent slopes, moderately eroded	IIe-13	240	E2a
BuC2	Buchanan gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	240	E2b
BvC	Buchanan very stony loam, 0 to 15 percent slopes	VIs-3	6,050	H1b
BvD	Buchanan very stony loam, 15 to 25 percent slopes	VIs-3	2,040	H1c
CaB	Calvin channery silt loam, 0 to 10 percent slopes	IIe-10	980	C1a
CaC	Calvin channery silt loam, 10 to 20 percent slopes	IIIe-10	1,320	C1b
ClB2	Calvin shaly silt loam, 0 to 10 percent slopes, moderately eroded	IIe-10	1,680	C1a
ClC2	Calvin shaly silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	2,780	C1b
ClD2	Calvin shaly silt loam, 20 to 30 percent slopes, moderately eroded	IVe-10	4,310	C1c
ClE	Calvin shaly silt loam, 30 to 45 percent slopes	VIe-3	3,460	C1c
CnB2	Calvin-Weikert shaly silt loams, 0 to 10 percent slopes, moderately eroded	IIIe-10	430	C1a
CnC2	Calvin-Weikert shaly silt loams, 10 to 20 percent slopes, moderately eroded	IVe-10	1,500	C1b
CnD2	Calvin-Weikert shaly silt loams, 20 to 30 percent slopes, moderately eroded	VIe-3	1,890	C1c
CnE	Calvin-Weikert shaly silt loams, 30 to 50 percent slopes	VIIe-3	1,660	C1c
CoB2	Cavode silt loam, 0 to 10 percent slopes, moderately eroded	IIIw-5	930	F3
CoC2	Cavode silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-34	860	F3
CrD	Cavode very stony silt loam, 0 to 30 percent slopes	VIs-3	1,600	H1c
CsA	Chavies loam, 0 to 3 percent slopes	I-6	100	B1a
CsB	Chavies loam, 3 to 8 percent slopes	IIe-6	190	B1a
CtB2	Cookport silt loam, 0 to 10 percent slopes, moderately eroded	IIe-13	1,180	E2a
CtC2	Cookport silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-13	730	E2b
CuB	Cookport very stony silt loam, 0 to 10 percent slopes	VIs-3	1,370	H1a
CuD	Cookport very stony silt loam, 10 to 30 percent slopes	VIs-3	2,630	H1c
Cv	Cut and fill land	----	790	Ma

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
DeB2	Dekalb channery sandy loam, 0 to 12 percent slopes, moderately eroded	IIe-20	920	C1a
DeC2	Dekalb channery sandy loam, 12 to 25 percent slopes, moderately eroded	IIIe-20	1,320	C1c
DeD	Dekalb channery sandy loam, 25 to 45 percent slopes	IVe-20	940	C1c
DkB	Dekalb very stony sandy loam, 0 to 12 percent slopes	VIs-4	2,670	H1a
DkC	Dekalb very stony sandy loam, 12 to 25 percent slopes	VIs-4	4,710	H1b
DlE	Dekalb and Lehew very stony soils, 25 to 45 percent slopes	VIIs-3	8,380	H1c
DlF	Dekalb and Lehew very stony soils, 45 to 75 percent slopes	VIIs-3	9,740	H1c
EdB2	Edam silt loam, 3 to 8 percent slopes, moderately eroded	IIe-11	170	B2a
EdC2	Edam silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-11	640	B2b
EdD2	Edam silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	580	B2c
EdE2	Edam silt loam, 25 to 45 percent slopes, moderately eroded	VIe-3	790	B2c
EeE3	Edam silty clay loam, 25 to 45 percent slopes, severely eroded	VIIe-3	350	B2c
ElA	Elliber cherty silt loam, 0 to 5 percent slopes	IIs-26	270	B1a
ElB2	Elliber cherty silt loam, 5 to 12 percent slopes, moderately eroded	IIe-26	2,020	B1a
ElC2	Elliber cherty silt loam, 12 to 25 percent slopes, moderately eroded	IIIe-26	3,310	B1b
ElD	Elliber cherty silt loam, 25 to 45 percent slopes	IVe-26	2,960	
EmC	Elliber very stony silt loam, 0 to 25 percent slopes	VIs-2	1,370	H1b
EmD	Elliber very stony silt loam, 25 to 45 percent slopes	VIIs-2	2,130	H1c
EmF	Elliber very stony silt loam, 45 to 75 percent slopes	VIIs-2	2,760	H1c
ErA	Ernest silt loam, 0 to 3 percent slopes	IIw-3	180	E2a
ErB2	Ernest silt loam, 3 to 8 percent slopes, moderately eroded	IIe-13	2,280	E2a
ErC2	Ernest silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	2,020	E26
ErD2	Ernest silt loam, 15 to 25 percent slopes, moderately eroded	IVe-9	150	E2c
EuB	Ernest-Landisburg-Urban land complex, 0 to 8 percent slopes	----	690	E2a
EuD	Ernest-Landisburg-Urban land complex, 8 to 25 percent slopes	----	390	E2c
GlB2	Gilpin silt loam, 0 to 10 percent slopes, moderately eroded	IIe-10	1,310	C1a
GlC2	Gilpin silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	1,940	C1b
GlD2	Gilpin silt loam, 20 to 30 percent slopes, moderately eroded	IVe-10	530	C1c
GnB2	Gilpin channery silt loam, 0 to 10 percent slopes, moderately eroded	IIe-10	3,380	C1a
GnC2	Gilpin channery silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	4,690	C1b
GnD2	Gilpin channery silt loam, 20 to 30 percent slopes, moderately eroded	IVe-10	3,150	C1c
GsB	Gilpin very stony silt loam, 0 to 10 percent slopes	VIs-3	1,960	H1a
GsD	Gilpin very stony silt loam, 10 to 30 percent slopes	VIs-3	11,100	H1c
GuB	Gilpin-Urban land complex, 0 to 10 percent slopes	----	190	C1a
GuD	Gilpin-Urban land complex, 10 to 30 percent slopes	----	660	C1c
GwF	Gilpin and Weikert very stony silt loams, 30 to 65 percent slopes	VIIs-3	7,230	H1c
Gx	Gravel pits	VIIIs-4	30	---
HeC2	Hagerstown silt loam, 8 to 20 percent slopes, moderately eroded	IIIe-1	120	B1b
HeE2	Hagerstown silt loam, 20 to 40 percent slopes, moderately eroded	IVe-1	220	B1c
Hn	Huntington silt loam	I-6	290	G1
HxA	Huntington silt loam, local alluvium, 0 to 3 percent slopes	I-6	160	G1
HxB	Huntington silt loam, local alluvium, 3 to 8 percent slopes	IIe-6	340	G1

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
HxC	Huntington silt loam, local alluvium, 8 to 15 percent slopes	IIIe-6	230	G1
LaB2	Laidig gravelly loam, 0 to 8 percent slopes	IIe-4	190	B2a
LaC2	Laidig gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	550	B2b
LaD2	Laidig gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-3	170	B2c
LbC	Laidig very stony loam, 3 to 15 percent slopes	VIs-3	2,170	H1b
LbD	Laidig very stony loam, 15 to 25 percent slopes	VIs-3	1,610	H1c
LdA	Landisburg cherty silt loam, 0 to 3 percent slopes	IIw-2	180	E2a
LdB2	Landisburg cherty silt loam, 3 to 8 percent slopes, moderately eroded	IIe-14	550	E2a
LdC2	Landisburg cherty silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-14	760	E26
LdD2	Landisburg cherty silt loam, 15 to 25 percent slopes, moderately eroded	IVe-9	140	E2c
LgC	Leetonia very stony sandy loam, 0 to 25 percent slopes	VIs-4	370	H1b
LhB2	Lehew channery loam, 3 to 10 percent slopes, moderately eroded	IIe-10	150	C1a
LhC2	Lehew channery loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	260	C1b
LhE	Lehew channery loam, 20 to 45 percent slopes	IVe-10	470	C1c
L1B	Lehew very stony loam, 0 to 10 percent slopes	VIs-4	710	H1a
L1D	Lehew very stony loam, 10 to 30 percent slopes	VIs-4	4,570	H1c
Lm	Lickdale silt loam	IVw-2	150	F3
Ln	Lindside silt loam	IIw-7	430	G1
LsB2	Litz shaly silt loam, 3 to 10 percent slopes, moderately eroded	IIe-11	190	C1a
LsC2	Litz shaly silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-11	570	C1b
LsD2	Litz shaly silt loam, 20 to 30 percent slopes, moderately eroded	IVe-10	750	C1c
LsE	Litz shaly silt loam, 30 to 45 percent slopes	VIe-3	630	C1c
LyB	Loysville cherty silt loam, 0 to 8 percent slopes	IIIw-1	300	F3
McB2	Meckesville silt loam, 0 to 8 percent slopes, moderately eroded	IIe-4	210	B2a
McC2	Meckesville silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	250	B2b
McD2	Meckesville silt loam, 15 to 25 percent slopes, moderately eroded	IVe-3	180	B2c
MdC	Meckesville very stony silt loam, 0 to 15 percent slopes	VIs-3	630	H1b
MdD	Meckesville very stony silt loam, 15 to 25 percent slopes	VIs-3	500	H1c
Me	Melvin silt loam	IIIw-3	150	G2
MhA	Monongahela silt loam, 0 to 3 percent slopes	IIw-3	370	E2a
MhB2	Monongahela silt loam, 3 to 8 percent slopes, moderately eroded	IIe-13	1,060	E2a
MhC2	Monongahela silt loam, 8 to 15 percent slopes, moderately eroded	III3-13	260	E2b
NoA	Nolo silt loam, 0 to 3 percent slopes	IVw-2	200	F3
NoB	Nolo silt loam, 3 to 10 percent slopes	IVw-2	330	F3
NoC2	Nolo silt loam, 10 to 20 percent slopes, moderately eroded	IVw-2	210	F3
NsC	Nolo very stony silt loam, 0 to 20 percent slopes	VIIs-4	330	H1b
OpB2	Opequon flaggy clay loam, 3 to 8 percent slopes, moderately eroded	IIIe-30	220	D1a
OpC2	Opequon flaggy clay loam, 8 to 15 percent slopes, moderately eroded	IVe-1	900	D1b
OpD2	Opequon flaggy clay loam, 15 to 25 percent slopes, moderately eroded	VIe-1	1,330	D1c

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
OpE2	Opequon flaggy clay loam, 25 to 50 percent slopes, moderately eroded	VIIe-1	1,750	D1c
OuD	Opequon very stony clay loam, 3 to 25 percent slopes	VIs-2	530	H1c
OuE	Opequon very stony clay loam, 25 to 50 percent slopes	VIIs-2	1,190	H1c
Ph	Philo silt loam	IIw-7	2,400	G1
Pn	Pope fine sandy loam	I-6	2,320	G1
Ps	Pope silt loam	I-6	920	G1
RbB	Robertsville silt loam, 0 to 8 percent slopes	IVw-2	240	F3
Rc	Rock outcrop	VIIIs-1	3,710	H2c
ShB2	Shelocta shaly silt loam, 0 to 8 percent slopes, moderately eroded	IIe-4	460	B1a
ShC2	Shelocta shaly silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	600	B1b
ShD2	Shelocta shaly silt loam, 15 to 25 percent slopes, moderately eroded	IVe-3	210	B1c
SrC	Stony land, rolling	VIIIs-1	6,360	H1b
SrF	Stony land, steep	VIIIs-1	2,140	H1c
St	Strip mines and dumps	VIIs-5	2,600	---
TyA	Tyler silt loam, 0 to 3 percent slopes	IIIw-9	130	F3
TyB	Tyler silt loam, 3 to 8 percent slopes	IIIw-9	170	F3
WeB2	Weikert shaly silt loam, 0 to 10 percent slopes, moderately eroded	IIIs-10	5,640	D1a
WeC2	Weikert shaly silt loam, 10 to 20 percent slopes, moderately eroded	IVe-10	19,040	D1b
WeE	Weikert shaly silt loam, 20 to 45 percent slopes	VIIe-3	46,280	D1c
WkD	Weikert very stony silt loam, 0 to 30 percent slopes	VIIs-3	4,560	H1c
W1B	Weikert-Urban land complex, 0 to 10 percent slopes	----	170	D1a
W1C	Weikert-Urban land complex, 10 to 20 percent slopes	----	460	D1b
W1E	Weikert-Urban land complex, 20 to 45 percent slopes	----	300	D1c
WnF	Weikert and Gilpin channery silt loams, 45 to 65 percent slopes	VIIe-3	4,670	D1c
WsB2	Westmoreland silt loam, 3 to 10 percent slopes, moderately eroded	IIe-11	180	B1a
WsC2	Westmoreland silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-11	310	B1b
WsD2	Westmoreland silt loam, 20 to 30 percent slopes, moderately eroded	IVe-10	250	B1c
WsE	Westmoreland silt loam, 30 to 45 percent slopes	VIe-3	210	B1c
		Total		

MAP SYMBOL	MAPPING UNIT	ACRES	NATURAL SOIL GROUP
At	Atkins silt loam	896	G2
D	Dekalb very stony loam	29,568	H1c
De	Dekalb stony silt loam	34,240	H1c
Dl	Dekalb gravelly loam	22,336	H1c
Dm	Dekalb sandy loam	3,712	B1c
Do	Dekalb-steep phase (Weikert shaly silt loam)	10,176	D1b
Do	Dekalb shale loam	60,800	D1c
Ds	Dekalb silt loam	19,072	C1
Ds	(Colluvial) Dekalb silt loam	1,088	C1
Fs	Frankstown gravelly silt loam	15,808	B1b
Fs	(Colluvial) Frankstown gravelly silt loam	2,368	B1b
H	Holston silt loam	5,376	B1a
Hc	Hagerstown silt loam (clay loam)	5,888	B1
Hl	Huntington loam	4,928	C1
Pl	Pope silt loam	5,888	G1
Pm	Pope loam	3,392	G1
Ps	Pope fine sandy loam	2,496	G1
R	Rough stony land	7,424	H1
Ul	Upshur gravelly loam	23,296	C1c
Um	Upshur shale loam	2,560	C1c
Ws	Westmoreland silt loam	3,648	B1b

NOTE: The original soil survey map for this county was reviewed by a soil scientist who considered topographic and other considerations, when developing the Natural Soil Group Map. This was done so as to make it as comparable as possible to the Modern Soil Survey Atlas Maps.

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AdA	Adelphia sandy loam, 0 to 2 percent slopes	IIw-5	580	E1
AdB	Adelphia sandy loam, 2 to 5 percent slopes	IIe-36	1670	E1
AsA	Adelphia silt loam, 0 to 2 percent slopes	IIw-1	220	E1
AsB	Adelphia silt loam, 2 to 5 percent slopes	IIe-16	250	E1
BeB2	Beltsville silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	430	E2a
BlB	Beltsville-Urban land complex, 0 to 5 percent slopes	------	430	E2a
Bm	Bibb silt loam	IIIw-7	11,000	G2
BuA	Butlertown silt loam, 0 to 2 percent slopes	IIw-1	490	B2a
BuB2	Butlertown silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	2,200	B2a
BuC2	Butlertown silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-16	260	B2a
BuC3	Butlertown silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	350	B2a
BuD3	Butlertown silt loam, 10 to 15 percent slopes, severely eroded	VIe-2	200	B2b
CaB2	Chillum silt loam, 2 to 6 percent slopes, moderately eroded	IIs-7	320	B2a
CaC2	Chillum silt loam, 6 to 12 percent slopes, moderately eroded	IIIe-7	330	B2a
CbB	Chillum-Urban land complex, 0 to 6 percent slopes	------	370	B2a
CcB2	Christiana silt loam, 2 to 5 percent slopes, moderately eroded	IIe-42	1,350	B3
CcC2	Christiana silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-42	430	B3
CdC3	Christiana clay, 5 to 10 percent slopes, severely eroded	IVe-3	440	B3
Ce	Coastal beaches	VIIIs-2	280	A2
Ch	Codorus silt loam	IIw-7	150	G1
Ck	Colemantown sandy loam	IIIw-6	1,390	F3
Cm	Colemantown silt loam	IIIw-7	730	F3
CnB2	Collington loamy sand, 2 to 5 percent slopes, moderately eroded	IIs-4	750	B1a
CnC2	Collington loamy sand, 5 to 10 percent slopes, moderately eroded	IIIe-33	650	B1a
CoA	Collington fine sandy loam, 0 to 2 percent slopes	I-5	390	B1a
CoB2	Collington fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	4,250	B1a
CoC2	Collington fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	1,630	B1a
CoC3	Collington fine sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	2,700	B1a
CoD2	Collington fine sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	960	B1b
CoD3	Collington fine sandy loam, 10 to 15 percent slopes, severely eroded	VIe-2	1,600	B1b
CoE	Collington fine sandy loam, 15 to 40 percent slopes	VIe-2	5,400	B1c
CpA	Collington silt loam, 0 to 2 percent	I-4	180	B1a
CpB2	Collington silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	460	B1a
CpuB	Collington-Urban land complex, 0 to 5 percent slopes	-----	640	B1a
CpuD	Collington-Urban land complex, 5 to 15 percent slopes	-----	470	B1b
Cr	Comus silt loam	I-6	110	G1
CsC2	Croom gravelly sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-9	700	B2a
CsD2	Croom gravelly sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-7	430	B2b

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
CsE	Croom gravelly sandy loam, 15 to 40 percent slopes	VIIe-2	340	B2c
CtD	Croom-Urban land complex, 5 to 15 percent slopes	------	360	B2b
CuB	Cut and fill land, 0 to 5 percent slopes	------	4,500	Ma
CuD	Cut and fill land, 5 to 15 percent slopes	------	910	Ma
CuE	Cut and fill land, 15 to 30 percent slopes	------	250	Ma
DnA	Donlonton fine sandy loam, 0 to 2 percent slopes	IIw-9	1,170	E2a
DnB2	Donlonton fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	1,390	E2a
DuB	Donlonton-Urban land complex, 0 to 5 percent slopes	------	340	E2a
Ek	Elkton sandy loam	IIIw-11	530	F3
En	Elkton silt loam	IIIw-9	7,330	F3
EoB	Evesboro loamy sand, 0 to 6 percent slopes	IVs-1	21,045	A1a
ErB	Evesboro loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	4,280	A1a
ErC	Evesboro loamy sand, clayey substratum, 5 to 10 percent slopes	IVs-1	560	A1a
EsC	Evesboro and Galestown loamy sands, 6 to 12 percent slopes	VIIs-1	6,600	A1b
EsE	Evesboro and Galestown loamy sands, 12 to 40 percent slopes	VIIs-1	4,710	A1c
EuC	Evesboro-Urban land complex, 0 to 15 percent slopes	------	5,180	A1b
Fa	Fallsington sandy loam	IIIw-6	1,870	F2
GaB	Galestown loamy sand, 0 to 5 percent slopes	IVs-1	4,530	A1a
Gp	Gravel and borrow pits	VIIIs-4	1,760	Bp
Ha	Hatboro silt loam	IIIw-7	1,100	G2
HfB2	Howell fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-28	480	B2a
HgB2	Howell fine sandy loam, shaly subsoil, 2 to 6 percent slopes, moderately eroded	IIe-28	120	B2a
HsB2	Howell silt loam, 2 to 6 percent slopes, moderately eroded	IIe-29	290	B2a
HtB2	Howell silt loam, shaly subsoil, 2 to 6 percent slopes, moderately eroded	IIe-29	280	B2a
HyC3	Howell clay loam, 6 to 12 percent slopes, severely eroded	IVe-3	1,020	B2b
HyD3	Howell clay loam, 12 to 20 percent slopes, severely eroded	VIe-2	800	B2c
HyE3	Howell clay loam, 20 to 40 percent slopes, severely eroded	VIIe-2	470	B2c
HzC3	Howell clay loam, shaly subsoil, 6 to 12 percent slopes, severely eroded	IVe-3	270	B2b
KeA	Keyport sandy loam, 0 to 2 percent slopes	IIw-9	420	E2a
KeB	Keyport sandy loam, 2 to 5 percent slopes	IIe-36	1,370	E2a
KpA	Keyport sandy loam,0 to 2 percent slopes	IIw-8	980	E2a
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	1,390	E2a
KrB	Keyport-Urban land complex, 0 to 5 percent slopes	------	350	E2a
Ks	Klej loamy sand	IIIw-10	650	E1
LoB	Loamy and clayey land, 0 to 5 percent slopes	IIIe-42	5,830	B3
LoC	Loamy and clayey land, 5 to 10 percent slopes	IVe-3	4,300	B3
LoD	Loamy and clayey land, 10 to 40 percent slopes	VIe-2	2,270	B3
Ma	Made land	------	100	Ma
MfB2	Marr fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-5	7,750	B1a
MfC2	Marr fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-5	1,120	B1b
MfC3	Marr fine sandy loam, 6 to 12 percent slopes, severely eroded	IVe-5	7,800	B1b
MfD2	Marr fine sandy loam, 12 to 20 percent slopes, moderately eroded	IVe-5	840	B1c
MfD3	Marr fine sandy loam, 12 to 20 percent slopes, severely eroded	VIe-2	4,250	B1c
MfE3	Marr fine sandy loam, 20 to 35 percent slopes, severely eroded	VIIe-2	1,090	B1c
MkA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	100	B1a
MkB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	200	B1a
MmA	Matapeake silt loam, 0 to 2 percent slopes	I-4	390	B1a
MmB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	830	B1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MmC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded--	IIIe-4	400	B1a
MmC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded----	IVe-3	230	B1a
MmD3	Matapeake silt loam, 10 to 15 percent slopes, severely eroded---	VIe-2	230	B1b
MnA	Matawan loamy fine sand, 0 to 2 percent slopes-----------	IIw-10	290	E2a
MnB	Matawan loamy fine sand, 2 to 5 percent slopes-----------	IIe-36	420	E2a
MpA	Mattapex fine sandy loam, 0 to 2 percent slopes-----------	IIw-5	130	E3a
MpB2	Mattapex fine sandy loam, 2 to 5 percent slopes, moderately eroded-----------	IIe-36	220	E3a
MrA	Mattapex silt loam, 0 to 2 percent slopes-----------	IIw-1	2,230	E3a
MrB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded----	IIe-16	1,740	E3a
MrC2	Mattapex silt loam, 5 to 10 percent slopes, moderately eroded---	IIIe-16	420	E3a
Mt	Mixed alluvial land-----------	VIw-1	4,350	G2
MuA	Monmouth loamy sand, 0 to 2 percent slopes-----------	IIs-5	340	B2a
MuB2	Monmouth loamy sand, 2 to 5 percent slopes, moderately eroded---	IIs-5	4,520	B2a
MuC2	Monmouth loamy sand, 5 to 10 percent slopes, moderately eroded--	IIIe-5	990	B2a
MuC3	Monmouth loamy sand, 5 to 10 percent slopes, severely eroded----	IVe-5	950	B2a
MuD2	Monmouth loamy sand, 10 to 15 percent slopes, moderately eroded-----------	IVe-5	450	B2b
MuD3	Monmouth loamy sand, 10 to 15 percent slopes, severely eroded---	VIe-2	570	B2b
MvA	Monmouth fine sandy loam, 0 to 2 percent slopes-----------	I-28	460	B2a
MvB2	Monmouth fine sandy loam, 2 to 5 percent slopes, moderately eroded-----------	IIe-28	3,780	B2a
MvC2	Monmouth fine sandy loam, 5 to 10 percent slopes, moderately eroded-----------	IIIe-28	870	B2a
MvD2	Monmouth fine sandy loam, 10 to 15 percent slopes, moderately eroded-----------	IVe-5	750	B2b
MvE	Monmouth fine sandy loam, 15 to 40 percent slopes----------	VIe-2	7,790	B2c
MwC3	Monmouth clay loam, 5 to 10 percent slopes, severely eroded-----	IVe-3	2,340	B2a
MwD3	Monmouth clay loam, 10 to 15 percent slopes, severely eroded----	VIe-2	1,040	B2b
MxB	Monmouth-Urban land complex, 0 to 5 percent slopes----------	-----	2,020	B2a
MxD	Monmouth-Urban land complex, 5 to 15 percent slopes----------	-----	930	B2b
MyB	Muirkirk loamy sand, 0 to 5 percent slopes-----------	IIs-5	2,490	B3
MyC	Muirkirk loamy sand, 5 to 10 percent slopes-----------	IIIe-5	380	B3
MyD	Muirkirk loamy sand, 10 to 15 percent slopes-----------	IVe-5	410	B3
MyE	Muirkirk loamy sand, 15 to 30 percent slopes-----------	VIIe-2	260	B3
MzB	Muirkirk-Urban land complex, 0 to 5 percent slopes----------	-----	870	B3
MzD	Muirkirk-Urban land complex, 5 to 15 percent slopes----------	-----	280	B3
Os	Osier loamy sand-----------	IVw-6	390	F1
Ot	Othello silt loam-----------	IIIw-7	4,040	F3
RuA	Rumford loamy sand, 0 to 2 percent slopes-----------	IIs-4	1,050	A1a
RuB2	Rumford loamy sand, 2 to 5 percent slopes, moderately eroded----	IIs-4	8,500	A1a
RuC2	Rumford loamy sand, 5 to 10 percent slopes, moderately eroded---	IIIe-33	1,540	A1a
RuC3	Rumford loamy sand, 5 to 10 percent slopes, severely eroded-----	IVe-5	1,420	A1a
RuD2	Rumford loamy sand, 10 to 15 percent slopes, moderately eroded--	IVe-5	490	A1b
RyB	Rumford-Urban land complex, 0 to 5 percent slopes----------	-----	1,350	A1a
RyD	Rumford-Urban land complex, 5 to 15 percent slopes----------	-----	330	A1b
SaA	Sassafras fine sandy loam, 0 to 2 percent slopes----------	I-5	1,220	B1a
SaB2	Sassafras fine sandy loam, 2 to 5 percent slopes, moderately eroded-----------	IIe-5	7,170	B1a
SaC2	Sassafras fine sandy loam, 5 to 10 percent slopes, moderately eroded-----------	IIIe-5	920	B1a
SaC3	Sassafras fine sandy loam, 5 to 10 percent slopes, severely eroded-----------	IVe-5	1,990	B1a
SaD2	Sassafras fine sandy loam, 10 to 15 percent slopes, moderately eroded-----------	IVe-5	460	B1b
SaD3	Sassafras fine sandy loam, 10 to 15 percent slopes, severely eroded-----------	VIe-2	1,590	B1b

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SaE	Sassafras fine sandy loam, 15 to 40 percent slopes	VIe-2	1,910	B1c
SfA	Sassafras loam, 0 to 2 percent slopes	I-4	240	B1a
SfB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded	IIe-4	1,010	B1a
SnB	Sassafras-Urban land complex, 0 to 5 percent slopes	-----	850	B1a
SnD	Sassafras-Urban land complex, 5 to 15 percent slopes	-----	310	B1b
Sr	Shrewsbury fine sandy loam	IIIw-6	1,310	F2
Ss	Shrewsbury silt loam	IIIw-7	520	F2
Sw	Swamp	VIIw-1	65	G3
Tm	Tidal marsh	VIIIw-1	3,400	G3
Ur	Urban land	-----	690	Ma
WaB2	Westphalia fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-5	1,820	B1a
WaC2	Westphalia fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-5	510	B1b
WaC3	Westphalia fine sandy loam, 6 to 12 percent slopes, severely eroded	IVe-5	3,210	B1b
WaD3	Westphalia fine sandy loam, 12 to 20 percent slopes, severely eroded	VIe-2	4,470	B1c
WaE3	Westphalia fine sandy loam, 20 to 50 percent slopes, severely eroded	VIIe-2	5,130	B1c
WdA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	830	E1
WdB	Woodstown sandy loam, 2 to 5 percent slopes	IIe-36	1,260	E1
WoA	Woodstown loam, 0 to 2 percent slopes	IIw-1	250	E1
WoB	Woodstown loam, 2 to 5 percent slopes	IIe-16	250	E1
		-----	2,640	Ma
		Total -	266,880	

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AdA	Aldino silt loam, 0 to 3 percent slopes	IIw-2	380	E2a
AdB2	Aldino silt loam, 3 to 8 percent slopes, moderately eroded	IIe-14	2,170	E2a
AdC2	Aldino silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-14	370	E2b
AsC	Aldino very stony silt loam, 0 to 15 percent slopes	VIs-3	190	H1b
AuB	Aldino-Urban land complex, 0 to 8 percent slopes	----	1,020	E2a
Av	Alluvial land	VIw-1	5,170	G2
BaA	Baile silt loam, 0 to 3 percent slopes	Vw-1	2,030	F3
BaB	Baile silt loam, 3 to 8 percent slopes	VIw-2	1,820	F3
BmA	Baltimore silt loam, 0 to 3 percent slopes	I-1	560	B1a
BmB2	Baltimore silt loam, 3 to 8 percent slopes, moderately eroded	IIe-1	6,590	B1a
BmC2	Baltimore silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	1,480	B1b
Bnd	Baltimore-Urban land complex, 0 to 8 percent slopes	----	330	B1a
Br	Barclay silt loam	IIIw-1	1,680	F2
BtA	Beltsville silt loam, 0 to 2 percent slopes	IIw-8	390	E2a
BtB	Beltsville silt loam, 2 to 5 percent slopes	IIe-13	3,350	E2a
BtC2	Beltsville silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-13	1,150	E2a
BuB	Beltsville-Urban land complex, 0 to 5 percent slopes	----	1,670	E2a
BuC	Beltsville-Urban land complex, 5 to 10 percent slopes	----	450	E2a
BwB2	Brandywine loam, 3 to 8 percent slopes, moderately eroded	IIe-10	790	C1a
BwC2	Brandywine loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	1,700	C1b
ByD2	Brandywine gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-10	1,000	C1c
ByD3	Brandywine gravelly loam, 15 to 25 percent slopes, severely eroded	VIe-3	690	C1c
ByE	Brandywine gravelly loam, 25 to 45 percent slopes	VIe-3	890	C1c
CaA	Captina silt loam, 0 to 3 percent slopes	IIw-1	420	E2a
CaB2	Captina silt loam, 3 to 8 percent slopes, moderately eroded	IIe-16	620	E2a
CcA	Chester silt loam, 0 to 3 percent slopes	I-4	330	B1a
CcB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	18,020	B1a
CcC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	3,490	B1b
CgB2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	3,160	B1a
CgC2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	2,720	B1b
ChB2	Chillum silt loam, 2 to 5 percent slopes, moderately eroded	IIs-7	1,340	B2a
ChC2	Chillum silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-7	610	B2a
ChC3	Chillum silt loam, 5 to 10 percent slopes, severely eroded	IVe-7	190	B2a
CkB2	Chillum-Neshaminy silt loams, 2 to 5 percent slopes, moderately eroded	IIs-7	690	B2a
CkC2	Chillum-Neshaminy silt loams, 5 to 10 percent slopes, moderately eroded	IIIe-7	570	B2a
CkD2	Chillum-Neshaminy silt loams, 10 to 15 percent slopes, moderately eroded	IVe-7	250	B2b
ClB	Chillum-Urban land complex, 0 to 5 percent slopes	----	1,450	B2a
ClD	Chillum-Urban land complex, 5 to 15 percent slopes	----	1,030	B2b

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
CmB	Christiana loam, 2 to 5 percent slopes	IIe-42	740	B3
CmC2	Christiana loam, 5 to 10 percent slopes, moderately eroded	IIIe-42	480	B3
CnB2	Chrome silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	280	C1a
CoC3	Chrome channery silty clay loam, 3 to 15 percent slopes, severely eroded	VIs-32	1,010	C1b
CoE3	Chrome channery silty clay loam, 15 to 45 percent slopes, severely eroded	VIIs-32	610	C1c
Cp	Clay pits	VIIIs-4	110	---
Ct	Coastal beaches	VIIIs-2	60	A2
Cu	Codorus silt loam	IIw-7	9,200	G1
Cv	Comus silt loam	I-6	810	G1
CwB2	Conestoga loam, 3 to 8 percent slopes, moderately eroded	IIIe-24	4,700	B1a
CwC2	Conestoga loam, 8 to 15 percent slopes, moderately eroded	IIIe-24	2,140	B1b
DcB	Delanco silt loam, 3 to 8 percent slopes	IIe-16	940	E2a
Du	Dunning silt loam	IVw-3	630	G2
EdB2	Edgemont gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-4	200	B1a
EdC2	Edgemont gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	280	B1b
EgD	Edgemont very stony loam, 8 to 25 percent slopes	VIs-3	360	H1c
EgE	Edgemont very stony loam, 25 to 45 percent slopes	VIIs-3	440	H1c
EhB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	4,180	B1a
EhC2	Elioak silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	510	B1b
EkE2	Elioak gravelly silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	450	B1a
EkC2	Elioak gravelly silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	250	B1b
ElC3	Elioak silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-3	190	B1b
Em	Elkton loam	IIIw-9	290	F3
En	Elkton silt loam	IIIw-9	640	F3
Eo	Elkton-Urban land complex	---	220	F3
EsB	Elsinboro loam, 3 to 8 percent slopes	IIe-4	1,270	B1a
EsC2	Elsinboro loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	450	B1b
Fa	Fallsington sandy loam	IIIw-6	600	F2
Fs	Fallsington loam	IIIw-7	920	F2
FtB	Fort Mott loamy sand, 0 to 5 percent slopes	IIs-4	570	A1a
GaB	Galestown loamy sand, 0 to 5 percent slopes	IIIs-1	230	A1a
GaC	Galestown loamy sand, 5 to 10 percent slopes	IVs-1	160	A1a
GcB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	IIe-4	24,400	B1a
GcC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	17,850	B1b
GcC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	IVe-3	2,030	B1b
GcD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	IVe-3	1,440	B1c
GcD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	VIe-3	740	B1c
GgB2	Glenelg channery loam, 3 to 8 percent slopes, moderately eroded	IIe-4	2,070	B1a
GgC2	Glenelg channery loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	5,180	B1b
GgD2	Glenelg channery loam, 15 to 25 percent slopes, moderately eroded	IVe-3	1,740	B1c

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GgD3	Glenelg channery loam, 15 to 25 percent slopes, severely eroded	VIe-3	1,120	B1c
G1B	Gleneig-Urban land complex, 0 to 8 percent slopes	----	3,210	B1a
G1C	Gleneig-Urban land complex, 8 to 15 percent slopes	----	1,370	B1b
GnA	Glenville silt loam, 0 to 3 percent slopes	IIw-1	1,900	E2a
GnB	Glenville silt loam, 3 to 8 percent slopes	IIe-16	12,030	E2a
GuB	Glenville-Urban land complex, 0 to 8 percent slopes	---	390	E2a
HaA	Hagerstown silt loam, 0 to 3 percent slopes	I-1	280	B1a
HaB2	Hagerstown silt loam, 3 to 8 percent slopes, moderately eroded	IIe-1	1,410	B1a
HaC2	Hagerstown silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	430	B1b
Hb	Hatboro silt loam	IIIw-7	4,160	G2
HoB2	Hollinger loam, 3 to 8 percent slopes, moderately eroded	IIe-25	360	B1a
HoC2	Hollinger loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	500	B1b
HrD3	Hollinger and Conestoga loams, 15 to 25 percent slopes, severely eroded	VIe-3	360	B1c
HsC	Hollinger and Conestoga very rocky loams, 3 to 15 percent slopes	VIs-2	550	H2b
lu	luka silt loam	IIw-7	530	G1
JpB	Joppa gravelly sandy loam, 2 to 5 percent slopes	IIs-4	960	A1a
JpC2	Joppa gravelly sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-33	1,370	A1a
JpD2	Joppa gravelly sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	490	A1b
JuD	Joppa-Urban land complex, 5 to 15 percent slopes	----	1,510	A1b
KeB2	Kelly silt loam, 3 to 8 percent slopes, moderately eroded	IVw-3	890	F3
KeC2	Kelly silt loam, 8 to 15 percent slopes, moderately eroded	IVw-3	240	F3
KsC	Kelly very stony silt loam, 0 to 15 percent slopes	VIIs-4	240	H1b
KuB	Kelly-Urban land complex, 0 to 8 percent slopes	---	300	F3
LeB2	Legore silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	1,170	B1a
LeC2	Legore silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	1,310	B1b
LeD2	Legore silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	770	B1c
LeE	Legore silt loam, 25 to 45 percent slopes	VIe-3	430	B1c
LfC	Legore very stony silt loam, 3 to 15 percent slopes	VIs-3	1,650	H1b
LfD	Legore very stony silt loam, 15 to 25 percent slopes	VIs-33	1,140	H1c
LfE	Legore very stony silt loam, 25 to 45 percent slopes	VIIs-3	1,290	H1c
LgC3	Legore silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-10	750	B1b
LgD3	Legore silty clay loam, 15 to 25 percent slopes, severely eroded	VIe-3	690	B1c
LhB	Legore-Urban land complex, 0 to 8 percent slopes	----	3,260	B1a
LhC	Legore-Urban land complex, 8 to 15 percent slopes	----	1,800	B1b
L1B	Lenoir loam, 0 to 5 percent slopes	IIIw-5	940	F3
LmB	Lenoir silt loam, 0 to 5 percent slopes	IIIw-5	2,140	F3
LmC2	Lenoir silt loam, 5 to 12 percent slopes, moderately eroded	IIIe-34	270	F3
LnC3	Lenoir silty clay loam, 5 to 12 percent slopes, severely eroded	IVe-9	280	F3
LoB	Lenoir-Urban land complex, 0 to 5 percent	----	740	F3
Lr	Leonardtown silt loam	IVw-3	560	F3
Ls	Lindside silt loam	IIw-7	510	G1
LyB	Loamy and clayey land, 0 to 5 percent slopes	IIIe-42	3,460	B3

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LyD	Loamy and clayey land, 5 to 15 percent slopes	VIe-2	6,570	B3
LyE	Loamy and clayey land, 15 to 40 percent slopes	VIIe-2	590	B3
Ma	Made land	----	3,600	Ma
MbB2	Manor loam, 3 to 8 percent slopes, moderately eroded	IIe-25	8,810	B1a
MbC2	Manor loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	20,090	B1b
MbC3	Manor loam, 8 to 15 percent slopes, severely eroded	IVe-25	3,360	B1b
MbD2	Manor loam, 15 to 25 percent slopes, moderately eroded	IVe-3	6,830	B1c
MbD3	Manor loam, 15 to 25 percent slopes, severely eroded	VIe-3	6,830	B1c
McB2	Manor channery loam, 3 to 8 percent slopes, moderately eroded	IIe-25	3,140	B1a
McC2	Manor channery loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	12,270	B1b
McC3	Manor channery loam, 8 to 15 percent slopes, severely eroded	IVe-25	2,010	B1b
McD2	Manor channery loam, 15 to 25 percent slopes, moderately eroded	IVe-25	11,700	B1c
McD3	Manor channery loam, 15 to 25 percent slopes, severely eroded	VIe-3	8,300	B1c
MdE	Manor soils, 25 to 50 percent slopes	VIe-3	16,310	B1c
MeD	Manor-Urban land complex, 15 to 25 percent slopes	----	350	B1c
MgC	Manor and Glenelg very stony loams, 3 to 15 percent slopes	VIs-3	570	H1b
MhD	Manor and Brandywine very stony loams, 15 to 25 percent slopes	VIs-3	1,000	H1c
MhE	Manor and Brandywine very stony loams, 25 to 65 percent slopes	VIIs-3	8,000	H1c
MkA	Matapeake silt loam, 0 to 2 percent slopes	I-4	240	B1a
MkB	Matapeake silt loam, 2 to 5 percent slopes	IIe-4	670	B1a
MkC2	Matapeake silt loam, 5 to 12 percent slopes, moderately eroded	IIIe-4	260	B1a
MlA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	1,940	E3a
MlB	Mattapex silt loam, 2 to 5 percent slopes	IIe-16	3,170	E3a
MmB	Mattapex-Urban land complex, 0 to 5 percent slopes	----	3,740	E3a
Mh	Melvin silt loam	IIIw-3	330	G2
Mo	Melvin silt loam, local alluvium	IIIw-3	1,210	G2
Mr	Mine dumps and quarries	VIIIs-4	120	--
MsB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,690	B2a
MsC2	Montalto silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	390	B2b
MtB2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded	IIIe-10	380	C1a
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	IVe-10	1,690	C1b
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	VIe-3	1,440	C1c
MtD3	Mt. Airy channery loam, 15 to 25 percent slopes, severely eroded	VIIe-3	1,250	C1c
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	2,730	B1a
NeC2	Neshaminy silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	950	B1b
Ot	Othello silt loam	IIIw-7	820	F3
Po	Pocomoke sandy loam	IIIw-6	110	F2
ReC2	Relay silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	330	C1b
ReD2	Relay silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	150	C1c
RsD	Relay very stony silt loam, 3 to 25 percent slopes	VIs-3	230	H1c

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
RsE	Relay very stony silt loam, 25 to 65 percent slopes	VIIs-3	640	H1c
RyD3	Relay clay loam, 15 to 25 percent slopes, severely eroded	VIe-3	310	C1c
Sg	Sand and gravel pits	VIIIs-4	1,240	---
ShA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	1,060	B1a
ShB	Sassafras sandy loam, 2 to 5 percent slopes	IIe-5	2,970	B1a
ShC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	610	B1a
ShC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	210	B1a
ShD2	Sassafras sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	310	B1a
SIA	Sassafras loam, 0 to 2 percent slopes	I-4	490	B1a
SIB	Sassafras loam, 2 to 5 percent slopes	IIe-4	1,020	B1a
SIC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	350	B1a
SnB	Sassafras-Urban land complex, 0 to 5 percent slopes	----	5,170	B1a
SsD3	Sassafras and Joppa soils, 5 to 15 percent slopes, severely eroded	VIe-2	640	B1b
SsE	Sassafras and Joppa soils, 15 to 30 percent slopes	VIe-2	420	B1c
St	Stony land, steep	VIIIs-1	1,670	H1c
SuB2	Sunnyside fine sandy loam, 0 to 5 percent slopes, moderately eroded	IIe-5	250	B1a
Sw	Swamp	VIIw-1	180	G3
Tm	Tidal marsh	VIIIw-1	2,320	G3
WaA	Watchung silt loam, 0 to 3 percent slopes	V-1	750	F3
WaB	Watchung silt loam, 3 to 8 percent slopes	VIw-2	700	F3
WcB	Watchung very stony silt loam, 0 to 8 percent slopes	VIIs-4	530	H1a
WdA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	1,810	E1
WdB	Woodstown sandy loam, 2 to 5 percent slopes	IIe-36	1,090	E1
WoA	Woodstown loam, 0 to 2 percent slopes	IIw-1	910	E1
WoB	Woodstown loam, 2 to 5 percent slopes	IIe-16	650	E1
	Paved Areas	----	540	---
	Total			

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
BlB2	Beltsville silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	454	E2a
BlC3	Beltsville silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	156	E2a
BtA	Butlertown silt loam, 0 to 2 percent slopes	IIw-1	137	B2a
BtB2	Butlertown silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	701	B2a
BtC3	Butlertown silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	168	B2a
Co	Coastal beaches	VIIIs-2	2`8	A2
Ek	Elkton silt loam	IIIw-9	537	F3
ErE	Eroded land, steep	VIIe-2	27,760	Blc
Es	Escarpments	VIIIs-1	60	Blc
EvB	Evesboro loamy sand, 0 to 6 percent slopes	IVs-1	1,153	Ala
EvC	Evesboro loamy sand, 6 to 12 percent slopes	VIIs-1	667	Ala
EvE	Evesboro loamy sand, 12 to 35 percent slopes	VIIs-1	913	Alc
FsA	Fallsington sandy loam, 0 to 2 percent slopes	IIIw-6	200	F2
FsB	Fallsington sandy loam, 2 to 5 percent slopes	IIIw-6	186	F2
Gp	Gravel and borrow pits	VIIIs-4	138	Bp
HoB2	Howell fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-28	1,200	B2a
HoC2	Howell fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-28	730	B2a
HoD2	Howell fine sandy loam, 12 to 20 percent slopes, moderately eroded	IVe-3	1,149	B2b
HwB2	Howell silt loam, 2 to 6 percent slopes, moderately eroded	IIe-29	315	B2a
HyC3	Howell clay loam, 6 to 12 percent slopes, severely eroded	IVe-3	130	B2a
HyD3	Howell clay loam, 12 to 20 percent slopes, severely eroded	VIe-2	236	B2b
ImB	Iuka fine sandy loam, local alluvium, 2 to 5 percent slopes	IIw-7	193	G1
KpA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	334	E2a
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	488	E2a
Ma	Made land	-----	111	Ma
MlA	Marr fine sandy loam, 0 to 2 percent slopes	I-5	270	Bla
MlB2	Marr fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-5	2,533	Bla
MlC2	Marr fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-5	321	Bla
MlC3	Marr fine sandy loam, 6 to 12 percent slopes, severely eroded	IVe-5	2,951	Bla
MlD3	Marr fine sandy loam, 12 to 20 percent slopes, severely eroded	VIe-2	1,895	Blb
MmA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	125	Bla
MmB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	172	Bla
MnA	Matapeake silt loam, 0 to 2 percent slopes	I-4	989	Bla
MnB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	3,762	Bla
MnC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	277	Bla
MnC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	IVe-3	1,051	Bla
MnD3	Matapeake silt loam, 10 to 15 percent slopes, severely eroded	VIe-2	462	Blb
MtA	Mattapex fine sandy loam, 0 to 2 percent slopes	IIw-5	616	E3
MtB2	Mattapex fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	499	E3
MuA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	2,317	E3
MuB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	1,106	E3
MuD3	Mattapex silt loam, 5 to 15 percent slopes, severely eroded	VIe-2	533	E3b
My	Mixed alluvial land	VIw-1	8,152	G2

CALVERT COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
OcB	Ochlockonee fine sandy loam, local alluvium, 2 to 5 percent slopes	IIe-6	387	G1
OtA	Othello silt loam, 0 to 2 percent slopes	IIIw-7	1,551	F3
OtB	Othello silt loam, 2 to 5 percent slopes	IIIw-7	336	F3
RdB	Rumford loamy sand, 2 to 5 percent slopes	IIs-4	274	A1a
RdC2	Rumford loamy sand, 5 to 10 percent slopes, moderately eroded	IIIe-33	241	A1a
RdD2	Rumford loamy sand, 10 to 15 percent slopes, moderately eroded	IVe-5	154	A1b
ReB	Rumford-Evesboro gravelly loamy sands, 2 to 6 percent slopes	IIs-4	1,295	A1a
ReC	Rumford-Evesboro gravelly loamy sands, 6 to 12 percent slopes	IIIe-33	3,547	A1a
ReD	Rumford-Evesboro gravelly loamy sands, 12 to 20 percent slopes	IVe-5	4,022	A1b
SaA	Sassafras loamy fine sand, 0 to 2 percent slopes	I-5	949	B1a
SaB2	Sassafras loamy fine sand, 2 to 5 percent slopes, moderately eroded	IIe-5	4,428	B1a
SaC2	Sassafras loamy fine sand, 5 to 10 percent slopes, moderately eroded	IIIe-5	1,421	B1a
ShA	Sassafras fine sandy loam, 0 to 2 percent slopes	I-5	6,678	B1a
ShB2	Sassafras fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	660	B1a
ShC2	Sassafras fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	3,873	B1a
ShC3	Sassafras fine sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	281	B1a
ShD2	Sassafras fine sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	489	B1b
ShD3	Sassafras fine sandy loam, 10 to 15 percent slopes, severely eroded	VIe-2	304	B1b
SlA	Sassafras loam, 0 to 2 percent slopes	I-4	249	B1a
SlB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded	IIe-4	2,355	B1a
SlC3	Sassafras loam, 5 to 10 percent slopes, severely eroded	IVe-3	746	B1a
SpB2	Sassafras-Westphalia gravelly fine sandy loams, 2 to 6 percent slopes, moderately eroded	IIe-5	272	B1a
SpC3	Sassafras-Westphalia gravelly fine sandy loams, 6 to 12 percent slopes, severely eroded	IVe-5	357	B1a
SrE	Sassafras and Westphalia soils, steep	VIe-2	25,965	B1c
Sx	Swamp	VIIw-1	130	G3
Tm	Tidal marsh	VIIIw-1	2,894	G3
WaB2	Westphalia fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-5	1,006	B1a
WaC2	Westphalia fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-5	323	B1a
WaC3	Westphalia fine sandy loam, 6 to 12 percent slopes, severely eroded	IVe-5	2,225	B1a
WaD2	Westphalia fine sandy loam, 12 to 20 percent slopes, moderately eroded	IVe-5	258	B1b
WaD3	Westphalia fine sandy loam, 12 to 20 percent slopes, severely eroded	VIe-2	3,843	B1b
WoA	Woodstown fine sandy loam, 0 to 2 percent slopes	IIw-5	578	E1
WoB	Woodstown fine sandy loam, 2 to 5 percent slopes	IIe-36	1,084	E1
		Total -	140,160	

CAROLINE COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
Ba	Bayboro silt loam	IIIw-9	786	F3
Bm	Bibb silt loam	IIIw-7	240	G2
Ek	Elkton loam	IIIw-9	948	F3
Em	Elkton silt loam	IIIw-9	831	F3
Fa	Fallsington loam	IIIw-7	9,457	F2
Fs	Fallsington sandy loam	IIIw-6	31,539	F2
GaA	Galestown loamy sand, 0 to 2 percent slopes.	IIIs-1	8,934	Ala
GaB	Galestown loamy sand, 2 to 5 percent slopes.	IIIs-1	2,479	Ala
GaC	Galestown loamy sand, 5 to 10 percent slopes.	IVs-1	215	Ala
GaD	Galestown loamy sand, 10 to 15 percent slopes.	VIs-1	236	Alb
GaE	Galestown loamy sand, 15 to 30 percent slopes.	VIIs-1	449	Alc
GaF	Galestown loamy sand, 30 to 60 percent slopes.	VIIs-1	229	Alc
GsA	Galestown sand, 0 to 2 percent slopes.	IVs-1	1,833	Ala
GsB	Galestown sand, 2 to 5 percent slopes.	IVs-1	1,735	Ala
GsC	Galestown sand, 5 to 10 percent slopes.	VIs-1	154	Ala
GsD	Galestown sand, 10 to 15 percent slopes.	VIIs-1	105	Alb
GsE	Galestown sand, 15 to 30 percent slopes.	VIIs-1	280	Alc
Jo	Johnston loam	IIIw-7	3,396	G2
KsA	Klej loamy sand, 0 to 2 percent slopes.	IIIw-10	1,236	E1
KsB	Klej loamy sand, 2 to 5 percent slopes.	IIIw-10	317	E1
LaA	Lakeland loamy sand, clayey substratum, 0 to 2 percent slopes.	IIIs-1	184	Ala
LaB	Lakeland loamy sand, clayey substratum, 2 to 5 percent slopes.	IIIs-1	1,064	Ala
LaC	Lakeland loamy sand, clayey substratum, 5 to 10 percent slopes.	IVs-1	243	Ala
LcC	Lakeland sand, clayey substratum, 2 to 10 percent slopes.	IVs-1	79	Ala
Ma	Made land	------	31	Ma
MkA	Matapeake silt loam, 0 to 2 percent slopes.	I-4	110	B1a
MkB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded.	IIe-4	246	B1a
MkE	Matapeake silt loam, 15 to 30 percent slopes.	VIe-2	62	B1c
MsA	Mattapex silt loam, 0 to 2 percent slopes.	IIw-1	378	E3
MsB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded.	IIe-16	78	E3
MsE	Mattapex silt loam, 15 to 30 percent slopes.	VIe-2	59	E3c
Mt	Mixed alluvial land	VIw-1	2,595	G2
Mu	Muck	VIIw-1	168	
Oh	Othello silt loam	IIIw-7	435	F3
Pm	Plummer loamy sand	IVw-6	492	F1
Po	Pocomoke loam	IIIw-7	10,566	F2
Ps	Pocomoke sandy loam	IIIw-6	2,828	F2
Pt	Portsmouth silt loam	IIIw-7	96	F3
SaA	Sassafras loam, 0 to 2 percent slopes.	I-4	4,738	B1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
SaB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded.	IIe-4	932	B1a
ShA	Sassafras loam, heavy substratum, 0 to 2 percent slopes.	I-4	327	B1a
SmA	Sassafras loamy sand, 0 to 2 percent slopes.	IIs-4	8,665	B1a
SmB	Sassafras loamy sand, 2 to 5 percent slopes.	IIs-4	8,211	B1a
SmB2	Sassafras loamy sand, 2 to 5 percent slopes, moderately eroded.	IIs-4	2,348	B1a
SmC	Sassafras loamy sand, 5 to 10 percent slopes.	IIIe-33	523	B1a
SmC2	Sassafras loamy sand, 5 to 10 percent slopes, moderately eroded.	IIIe-33	285	B1a
SmC3	Sassafras loamy sand, 5 to 10 percent slopes, severely eroded.	IVe-5	139	B1a
SmD	Sassafras loamy sand, 10 to 15 percent slopes.	IVe-5	273	B1b
SmE	Sassafras loamy sand, 15 to 30 percent slopes.	VIe-2	368	B1c
SnA	Sassafras sandy loam, 0 to 2 percent slopes.	I-5	29,095	B1a
SnB	Sassafras sandy loam, 2 to 5 percent slopes.	IIe-5	4,366	B1a
SnB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded.	IIe-5	28,386	B1a
SnB3	Sassafras sandy loam, 2 to 5 percent slopes, severely eroded.	IIIe-5	62	B1a
SnC	Sassafras sandy loam, 5 to 10 percent slopes.	IIIe-5	258	B1a
SnC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded.	IIIe-5	472	B1a
SnC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded.	IVe-5	400	B1a
SnD	Sassafras sandy loam, 10 to 15 percent slopes.	IVe-5	187	B1b
SnD2	Sassafras sandy loam, 10 to 15 percent slopes, moderately eroded.	IVe-5	102	B1b
SnE	Sassafras sandy loam, 15 to 30 percent slopes.	VIe-2	901	B1c
SnF	Sassafras sandy loam, 30 to 60 percent slopes.	VIIe-2	162	B1c
SsA	Sassafras sandy loam, heavy substratum, 0 to 2 percent slopes.	I-5	858	B1a
SsB	Sassafras sandy loam, heavy substratum, 2 to 5 percent slopes.	IIe-5	212	B1a
Sw	Swamp	VIIw-1	1,906	G3
Tm	Tidal marsh	VIIIw-1	2,775	G3
WdA	Woodstown loam, 0 to 2 percent slopes.	IIw-1	3,144	E1a
WdB2	Woodstown loam, 2 to 5 percent slopes, moderately eroded.	IIe-16	220	E1a
WoA	Woodstown sandy loam, 0 to 2 percent slopes.	IIw-5	17,025	E1a
WoB	Woodstown sandy loam, 2 to 5 percent slopes.	IIe-36	496	E1a
WoB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded.	IIe-36	1,731	E1a
WoC	Woodstown sandy loam, 5 to 10 percent slopes.	IIIe-36	71	E1a
			99	
		Total -	204,800	

CARROLL COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
ArA	Abbottstown and Readington silt loams, 0 to 3 percent slopes	IIIw-1	3,302	F3
ArB2	Abbottstown and Readington silt loams, 3 to 8 percent slopes, moderately eroded	IIIw-1	1,812	F3
BaA	Baile silt loam, 0 to 3 percent slopes	Vw-1	3,435	F3
BaB	Baile silt loam, 3 to 8 percent slopes	VIw-2	2,657	F3
Be	Bermudian silt loam	I-6	602	G1
BrA	Birdsboro silt loam, 0 to 3 percent slopes	I-4	325	B1a
BrB2	Birdsboro silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	424	B1a
Bs	Bowmansville silt loam	IIIw-7	544	G2
BuA	Bucks silt loam, 0 to 3 percent slopes	I-4	515	B2a
BuB2	Bucks silt loam, 0 to 8 percent slopes, moderately eroded	IIe-4	2,508	B2a
CaC2	Cardiff channery silt loam, 3 to 15 percent slopes, moderately eroded	IIIe-10	245	C1b
CeA	Chester silt loam, 0 to 3 percent slopes	I-4	500	B1a
CeB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	6,357	B1a
CeC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	759	B1b
CeC3	Chester silt loam, 8 to 15 percent slopes, severely eroded	IVe-3	165	B1b
Ch	Codorus silt loam	IIw-7	4,823	G1
Cm	Comus silt loam	I-6	256	G1
CnA	Comus silt loam, local alluvium, 0 to 3 percent slopes	I-6	231	G1
CnB	Comus silt loam, local alluvium, 3 to 8 percent slopes	IIe-6	1,232	G1
CoA	Conestoga silt loam, 0 to 3 percent slopes	I-1	232	B1a
CoB2	Conestoga silt loam, 3 to 8 percent slopes, moderately eroded	IIe-24	1,630	B1a
CoC2	Conestoga silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-24	793	B1b
CoC3	Conestoga silt loam, 8 to 15 percent slopes, severely eroded	IVe-1	145	B1b
CoD3	Conestoga silt loam, 15 to 25 percent slopes, severely eroded	VIe-1	191	B1c
DeA	Delanco silt loam, 0 to 3 percent slopes	IIw-1	332	E3a
DeB2	Delanco silt loam, 3 to 8 percent slopes, moderately eroded	IIe-16	386	E3a
ElB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,179	B1a
ElC2	Elioak silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	335	B1b
EmD3	Elioak silty clay loam, 15 to 25 percent slopes, severely eroded	VIe-2	95	B1c
EnB2	Elsinboro gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,156	B1a
EnC2	Elsinboro gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	691	B1b
EsA	Elsinboro silt loam, 0 to 3 percent slopes	I-4	91	B1a
EsB2	Elsinboro silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,006	B1a
EsC2	Elsinboro silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	365	B1b

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
GcB2	Glenelg channery loam, 3 to 8 percent slopes, moderately eroded	IIe-4	11,405	B1a
GcC2	Glenelg channery loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	6,754	B1b
GcC3	Glenelg channery loam, 8 to 15 percent slopes, severely eroded	IVe-3	1,891	B1b
GcD2	Glenelg channery loam, 15 to 25 percent slopes, moderately eroded	IVe-3	1,093	B1c
GcD3	Glenelg channery loam, 15 to 25 percent slopes, severely eroded	VIe-2	1,330	B1c
GlA	Glenelg loam, 0 to 3 percent slopes	I-4	631	B1a
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	IIe-4	12,991	B1a
GlB3	Glenelg loam, 3 to 8 percent slopes, severely eroded	IIIe-4	706	B1a
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	5,299	B1b
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	IVe-3	2,062	B1b
GvA	Glenville silt loam, 0 to 3 percent slopes	IIw-2	2,477	E2a
GvB	Glenville silt loam, 3 to 8 percent slopes	IIe-13	8,015	E2a
HaA	Hagerstown silt loam, 0 to 3 percent slopes	I-1	98	B1a
HaB2	Hagerstown silt loam, 3 to 8 percent slopes, moderately eroded	IIe-1	999	B1a
HaC2	Hagerstown silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	131	B1b
Ht	Hatboro silt loam	IIIw-7	6,258	G2
KlB2	Klinesville gravelly loam, 3 to 8 percent slopes, moderately eroded	IVs-32	268	D1a
KsD4	Klinesville soils, 8 to 25 percent slopes, very severely eroded	VIIs-32	698	D1c
KsF3	Klinesville soils, 15 to 65 percent slopes, severely eroded	VIIs-32	2,165	D1c
LbB2	Lewisberry gravelly fine sandy loam, 3 to 8 percent slopes, moderately eroded	IIs-2	453	B1a
LbC2	Lewisberry gravelly fine sandy loam, 8 to 15 percent slopes, moderately eroded	IIIe-5	765	B1b
LbD	Lewisberry gravelly fine sandy loam, 15 to 25 percent slopes	IVe-5	161	B1c
Le	Lindside silt loam	IIw-7	842	G1
LnB2	Linganore channery silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-10	1,439	C1a
LnC2	Linganore channery silt loam, 8 to 15 percent slopes, moderately eroded	IVe-10	2,138	C1b
LnC3	Linganore channery silt loam, 8 to 15 percent slopes, severely eroded	VIe-3	427	C1b
LnD2	Linganore channery silt loam, 15 to 25 percent slopes, moderately eroded	VIe-3	1,168	C1c
LnE	Linganore channery silt loam, 25 to 45 percent slopes	VIIe-3	1,628	C1c
Md	Made land	-----	324	Ma
MgB2	Manor gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-25	2,473	B1a
MgC2	Manor gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	3,204	B1b
MgC3	Manor gravelly loam, 8 to 15 percent slopes, severely eroded	IVe-25	1,508	B1b
MgD2	Manor gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-25	983	B1c

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MgD3	Manor gravelly loam, 15 to 25 percent slopes, severely eroded	VIe-3	1,641	B1c
M1B2	Manor loam, 0 to 8 percent slopes, moderately eroded	IIe-25	8,883	B1a
M1B3	Manor loam, 3 to 8 percent slopes, severely eroded	IIIe-25	2,381	B1a
M1C2	Manor loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	5,583	B1b
M1C3	Manor loam, 8 to 15 percent slopes, severely eroded	IVe-25	4,853	B1b
M1D2	Manor loam, 15 to 25 percent slopes, moderately eroded	IVe-25	1,817	B1c
M1D3	Manor loam, 15 to 25 percent slopes, severely eroded	VIe-3	3,874	B1c
M1E	Manor loam, 25 to 45 percent slopes	VIIe-3	3,791	B1c
MnC	Manor very stony loam, 3 to 15 percent slopes	VIs-3	1,418	H1b
MnD	Manor very stony loam, 15 to 25 percent slopes	VIs-3	1,306	H1c
MnE	Manor very stony loam, 25 to 45 percent slopes	VIIs-3	2,942	H1c
MnF	Manor very stony loam, 45 to 75 percent slopes	VIIs-3	933	H1c
Mo	Melvin silt loam	IIIw-3	270	G2
MtA	Mt. Airy channery loam, 0 to 3 percent slopes	IIIs-1	209	C1a
MtB2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded	IIIe-10	19,291	C1a
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	IVe-10	34,489	C1b
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	VIe-3	5,836	C1b
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	VIe-3	13,635	C1c
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	VIIe-3	22,182	C1c
PeB2	Penn loam, 0 to 8 percent slopes, moderately eroded	IIe-10	4,720	C1a
PhB2	Penn shaly silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-10	5,051	D1a
PhC2	Penn shaly silt loam, 8 to 15 percent slopes, moderately eroded	IVe-10	1,770	D1b
PhC3	Penn shaly silt loam, 8 to 15 percent slopes, severely eroded	VIe-3	1,288	D1b
PnA2	Penn silt loam, 0 to 3 percent slopes, moderately eroded	IIs-11	1,174	C1a
PnB2	Penn silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	10,209	C1a
PnC2	Penn silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	2,576	C1b
PnC3	Penn silt loam, 8 to 15 percent slopes, severely eroded	IVe-10	443	C1b
PoD	Penn soils, 15 to 25 percent slopes	VIe-3	860	C1c
PsB2	Penn-Steinsburg loams, 3 to 8 percent slopes, moderately eroded	IIe-10	612	C1a
PsC3	Penn-Steinsburg loams, 8 to 15 percent slopes, severely eroded	IVe-10	220	C1b
RaA	Raritan silt loam, 0 to 3 percent slopes	IIIw-1	417	E2a
RaB	Raritan silt loam, 3 to 8 percent slopes	IIIw-1	302	E2a
Ro	Rowland silt loam	IIw-7	1,359	C1
StB2	Steinsburg channery loam, 3 to 8 percent slopes, moderately eroded	IIe-10	587	C1a
StD3	Steinsburg channery loam, 8 to 25 percent slopes, severely eroded	VIe-3	411	C1c
UrA	Urbana silt loam, 0 to 3 percent slopes	IIw-2	87	E2a
UrB2	Urbana silt loam, 3 to 8 percent slopes, moderately eroded	IIe-13	215	E2a
Ws	Wiltshire silt loam	IIw-2	122	E2a
			299,920	

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AdA	Aldino silt loam, 0 to 3 percent slopes	IIw-8	235	E2a
AdB2	Aldino silt loam, 3 to 8 percent slopes, moderately eroded	IIe-13	2,030	E2a
AuB2	Aura gravelly sandy loam, 2 to 5 percent slopes, moderately eroded	IIs-9	1,376	B2a
AuC2	Aura gravelly sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-9	1,276	B2a
AuD2	Aura gravelly sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-7	1,543	B2b
BaA	Baile silt loam, 0 to 3 percent slopes	Vw-1	2,754	F3
BaB	Baile silt loam, 3 to 8 percent slopes	Vw-1	1,772	F3
BcA	Barclay silt loam, 0 to 2 percent slopes	IIIw-1	538	F2
BcB	Barclay silt loam, 2 to 5 percent slopes	IIIw-1	1,063	F2
BeA	Beltsville silt loam, 0 to 2 percent slopes	IIw-8	1,017	E2a
BeB2	Beltsville silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	4,541	E2a
BeC2	Beltsville silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-13	2,271	E2a
BeC3	Beltsville silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	332	E2a
BuA	Butlertown silt loam, 0 to 2 percent slopes	IIw-1	2,880	B2a
BuB2	Butlertown silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	3,367	B2a
BuC2	Butlertown silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-16	1,320	B2a
BuC3	Butlertown silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	1,104	B2a
BuD2	Butlertown silt loam, 10 to 15 percent slopes, moderately eroded	IVe-9	725	B2b
CeA	Chester silt loam, 0 to 3 percent slopes	I-4	671	B1a
CeB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	5,881	B1a
ChB2	Chillum silt loam, 2 to 5 percent slopes, moderately eroded	IIs-7	1,675	B2a
ChC2	Chillum silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-7	1,228	B2a
ChC3	Chillum silt loam, 5 to 10 percent slopes, severely eroded	IVe-7	347	B2a
ChD2	Chillum silt loam, 10 to 15 percent slopes, moderately eroded	IVe-7	597	B2b
ChD3	Chillum silt loam, 10 to 15 percent slopes, severely eroded	VIIe-2	251	B2b
ClB2	Christiana fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-41	151	B3
CmB2	Chrome silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	924	C1a
CmC2	Chrome silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	448	C1b
CmD2	Chrome silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	261	C1c
CnD3	Chrome clay loam, 8 to 25 percent slopes, severely eroded	VIe-3	167	C1c
CnE3	Chrome clay loam, 25 to 45 percent slopes, severely eroded	VIIe-3	241	C1c
Co	Coastal beaches	VIIIs-2	65	A2
Cp	Clay pits	VIIIs-4	33	---Bp
Cr	Codorus silt loam	IIw-7	2,154	G1
CsB2	Collington sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	218	B1a

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CsC2	Collington sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	329	B1a
CtB2	Collington loam, 2 to 5 percent slopes, moderately eroded	IIe-4	601	B1a
CtC2	Collington loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	702	B1a
CtC3	Collington loam, 5 to 10 percent slopes, severely eroded	IVe-3	1,300	B1a
CtD2	Collington loam, 10 to 15 percent slopes, moderately eroded	IVe-3	556	B1b
CtD3	Collington loam, 10 to 15 percent slopes, severely eroded	VIe-2	1,409	B1b
Cu	Comus silt loam	I-6	671	G1
CwC	Conowingo silt loam, 3 to 15 percent slopes	IIIe-13	171	E2b
ElA	Elkton loam, 0 to 2 percent slopes	IIIw-9	443	F3
ElB	Elkton loam, 2 to 5 percent slopes	IIIw-9	592	F3
EmA	Elkton silt loam, 0 to 2 percent slopes	IIIw-9	1,981	F3
EmB	Elkton silt loam, 2 to 5 percent slopes	IIIw-9	924	F3
EoA	Elsinboro silt loam, 0 to 2 percent slopes	I-4	542	B1a
EoB2	Elsinboro silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	965	B1a
EoC2	Elsinboro silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	215	B1a
EvB	Evesboro loamy sand, 0 to 5 percent slopes	IVs-1	241	A1a
EvD	Evesboro loamy sand, 5 to 15 percent slopes	VIIs-1	425	A1b
EvE	Evesboro loamy sand, 15 to 40 percent slopes	VIIs-1	296	A1c
FaA	Fallsington sandy loam, 0 to 2 percent slopes	IIIw-6	485	F2
FaB	Fallsington sandy loam, 2 to 5 percent slopes	IIIw-6	540	F2
FaC	Fallsington sandy loam, 5 to 10 percent slopes	IIIe-36	372	F2
FmA	Fallsington loam, 0 to 2 percent slopes	IIIw-7	942	F2
FmB	Fallsington loam, 2 to 5 percent slopes	IIIw-7	803	F2
GeA	Glenelg silt loam, 0 to 3 percent slopes	I-4	520	B1a
GeB2	Glenelg silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	14,294	B1a
GeC2	Glenelg silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	6,314	B1b
GeC3	Glenelg silt loam, 8 to 15 percent slopes, severely eroded	IVe-3	2,470	B1b
GeD2	Glenelg silt loam, 15 to 25 percent slopes, moderately eroded	IVe-3	1,126	B1c
GeD3	Glenelg silt loam, 15 to 25 percent slopes, severely eroded	VIe-2	820	B1c
GeE	Glenelg silt loam, 25 to 45 percent slopes	VIe-2	393	B1c
GnA	Glenville silt loam, 0 to 3 percent slopes	IIw-3	1,075	E2a
GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	IIe-13	7,621	E2a
GnC2	Glenville silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	344	E2b
Gv	Gravel and borrow pits	VIIIs-4	486	---Bp
Ha	Hatboro silt loam	IIIw-7	3,724	G2
KeA	Keyport loam, 0 to 2 percent slopes	IIw-8	177	E2a
KeB2	Keyport loam, 2 to 5 percent slopes, moderately eroded	IIe-13	2,477	E2a
KeC2	Keyport loam, 5 to 10 percent slopes, moderately eroded	IIIe-13	1,482	E2a
KpA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	708	E2a
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	3,645	E2a

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KpC2	Keyport silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-13	2,128	E2a
KpD2	Keyport silt loam, 10 to 15 percent slopes, moderately eroded	VIe-2	981	E2b
KsB3	Keyport silty clay loam, 2 to 5 percent slopes, severely eroded	IVe-9	249	E2a
KsC3	Keyport silty clay loam, 5 to 10 percent slopes, severely eroded	VIe-2	450	E2a
LeB2	Legore silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	516	B1a
LeC2	Legore silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	637	B1b
LeD2	Legore silt loam, 15 to 25 percent slopes, moderately eroded	IV-10	380	B1c
LgC3	Legore silty clay loam, 8 to 15 percent slopes, severely eroded	IV3-10	284	B1b
LgE3	Legore silty clay loam, 15 to 45 percent slopes, severely eroded	VIIe-3	684	B1c
LoA	Leonardtown silt loam, 0 to 2 percent slopes	IVw-3	713	F3
LoB	Leonardtown silt loam, 2 to 5 percent slopes	IVe-3	557	F3
LyC	Loamy and clayey land, sloping	IVe-3	5,848	B3
LyD	Loamy and clayey land, moderately steep	VIe-2	1,909	B3
LyE	Loamy and clayey land, steep	VIIe-2	915	B3
MaB	Made land, gently sloping	----	1,448	Ma
MaD	Made land, moderately steep	----	702	Ma
M1B2	Manor loam, 3 to 8 percent slopes, moderately eroded	IIe-25	1,655	B1a
M1C2	Manor loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	1,821	B1b
M1C3	Manor loam, 8 to 15 percent slopes, severely eroded	IVe-25	1,415	B1b
M1D2	Manor loam, 15 to 25 percent slopes, moderately eroded	IV3-25	1,839	B1c
M1D3	Manor loam, 15 to 25 percent slopes, severely eroded	VIe-3	1,199	B1c
M1E	Manor loam, 25 to 45 percent slopes	VIIe-3	786	B1c
MmD	Manor very stony loam, 3 to 25 percent slopes	VIs-3	251	H1c
MnA	Matapeake silt loam, 0 to 2 percent slopes	I-4	1,681	B1a
MnB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	17,742	B1a
MnC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	4,081	B1a
MnC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	IV3-3	2,712	B1a
MnD2	Matapeake silt loam, 10 to 25 percent slopes, moderately eroded	IVe-3	1,726	B1b
MnD3	Matapeake silt loam, 10 to 15 percent slopes, severely eroded	VIe-2	1,235	B1b
MoA	Matapeake silt loam, silty substratum, 0 to 2 percent slopes	I-4	1,282	B1a
MoB2	Matapeake silt loam, silty substratum, 2 to 5 percent slopes, moderately eroded	IIe-4	3,108	B1a
MpA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	736	E3a
MpB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	1,000	E3a
MpC2	Mattapex silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-16	215	E3a
Mr	Mixed alluvial land	VIw-1	4,336	G2
MtA	Montalto silt loam, 0 to 3 percent slopes	I-4	252	B2a
MtB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,730	B2a
MtC2	Montalto silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	369	B2b

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MvD	Montalto very stony silt loam, 3 to 25 percent slopes	VIs-3	446	H1c
MyC3	Montalto silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-3	1,136	B2b
MyD3	Montalto silty clay loam, 15 to 25 percent slopes, severely eroded	VIe-2	477	B2c
NeA	Neshaminy silt loam, 0 to 3 percent slopes	I-4	320	B1a
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	4,465	B1a
NeC2	Neshaminy silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	1,208	B1b
NeD2	Neshaminy silt loam, 15 to 25 percent slopes, moderately eroded	IVe-3	357	B1c
OhA	Othello silt loam, 0 to 2 percent slopes	IIIw-7	1,290	F3
ChB	Othello silt loam, 2 to 5 percent slopes	IIIw-7	841	F3
RuB	Rumford loamy sand, 2 to 5 percent slopes	IIs-4	303	A1a
RuC	Rumford loamy sand, 5 to 10 percent slopes	IIIe-33	332	A1a
RuD	Rumford loamy sand, 10 to 15 percent slopes	IVe-5	343	A1b
SaA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	252	B1a
SaB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	3,411	B1a
SaC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	1,895	B1a
SaC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	975	B1a
SaD2	Sassafras sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	658	B1b
SaD3	Sassafras sandy loam, 10 to 15 percent slopes, moderately eroded	VIe-2	554	B1b
SfB2	Sassafras fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	561	B1a
SgB2	Sassafras gravelly loam, 2 to 5 percent slopes, moderately eroded	IIe-4	467	B1a
SgC2	Sassafras gravelly loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	618	B1a
SgC3	Sassafras gravelly loam, 5 to 10 percent slopes, severely eroded	IVe-3	658	B1a
SgD3	Sassafras gravelly loam, 10 to 15 percent slopes, severely eroded	VIe-2	1,081	B1b
SrE	Sassafras and Aura soils, 15 to 40 percent slopes	VIIe-2	7,353	B1c
St	Stony land	VIII-s-1	1,303	H1c
Tm	Tidal marsh	VIIIw-1	1,688	G3
Wa	Watchung very stony silt loam	VIIs-4	693	H1a
WoA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	180	E1
WoB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	2,012	E1
WoC2	Woodstown sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	1,169	E1
WoC3	Woodstown sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	595	E1
WoD	Woodstown sandy loam, 10 to 15 percent slopes	IVe-5	283	E1
WsA	Woodstown loam, 0 to 2 percent slopes	IIw-1	663	E1
WsB2	Woodstown loam, 2 to 5 percent slopes, moderately eroded	IIe-16	2,874	E1
	Total		225,280	

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Ad	Alluvial land	VIw-1	1,740	G2
AuC2	Auragravelly sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-9	1,150	B2a
AuD2	Aura gravelly sandy loan, 10 to 15 percent slopes, moderately eroded	IVe-7	4,390	B2b
AuD3	Aura gravelly sandy loam, 5 to 15 percent slopes, severely eroded	VIIe-2	8,560	B2b
BlA	Beltsville silt loam, 0 to 2 percent slopes	IIw-8	4,500	E2a
BlB2	Beltsville silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	54,370	E2a
BlC2	Beltsville silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-13	5,650	E2a
BlC3	Beltsville silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	7,660	E2a
Bo	Bibb silt loam	IIIw-7	22,040	G2
BrB2	Bourne sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	6,200	E2a
BrC2	Bourne sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	1,250	E2a
BuC3	Bourne sandy clay loam, 5 to 10 percent slopes, severely eroded	IVe-7	2,180	E2a
ChB2	Chillum silt loam, 2 to 6 percent slopes, moderately eroded	IIs-7	450	B2a
ChC2	Chillum silt loam, 6 to 12 percent slopes, moderately eroded	IIIe-7	210	B2a
Co	Coastal beaches	VIIIs-2	60	A2
CrB2	Croom gravelly loam, 3 to 8 percent slopes, moderately eroded	IIs-7	1,490	B2a
CrC2	Croom gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-7	1,910	B2b
CrC3	Croom gravelly loam, 8 to 15 percent slopes, severely eroded	IVe-7	960	B2b
Cu	Cut and fill land		270	Ma
Ek	Elkton silt loam	IIIw-9	12,810	F3
ErE	Eroded land, steep	VIIe-2	5,460	B1c
EvB	Evesboro loamy sand, 0 to 8 percent slopes	IVs-1	7,700	A1a
EvC	Evesboro loamy sand, 8 to 15 percent slopes	VIIs-1	460	A1b
EwB	Evesboro gravelly loamy sand, 0 to 8 percent slopes	IVs-1	1,960	A1a
EwC	Evesboro gravelly loamy sand, 8 to 15 percent slopes	VIIs-1	2,710	A1b
ExC2	Exum silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-16	4,540	E2a
ExD2	Exum silt loam, 10 to 15 percent slopes, moderately eroded	IVe-9	1,050	E2b
EyC3	Exum clay loam, 5 to 10 percent slopes, severely eroded	VIe-9	7,080	E2a
EyD3	Exum clay loam, 10 to 15 percent slopes, severely eroded	VIe-2	1,880	E2b
EzB2	Exum-Beltsville silt loams, 2 to 5 percent slopes, moderately eroded	IIe-16	2,250	E2a
Fs	Fallsington sandy loam	IIIw-6	2,200	F2
GaB	Galestown loamy sand, 0 to 8 percent slopes	IVs-1	2,130	A1a
Gp	Gravel and borrow pits	VIIIs-4	320	Bp
GvE	Gravelly land, steep	VIIe-2	23,340	A1c
Ik	Iuka fine sandy loam	IIw-7	850	G1
Im	Iuka sandy loam, local alluvium	IIw-7	850	G1
In	Iuka silt loam, local alluvium	IIw-7	1,800	G1
KeA	Keyport fine sandly loam, 0 to 2 percent slopes	IIw-9	420	E2a
KeB2	Keyport fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	590	E2a
KpA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	5,470	E2a
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	1,500	E2a
KpC2	Keyport silt loam, 5 to 12 percent slopes, moderately eroded	IIIe-13	610	E2a
KrC3	Keyport silty clay loam, 5 to 12 percent slopes, severely eroded	VIe-2	300	E2a
Le	Leonardtown silt loam	IVw-3	5,350	F3
MgA	Magnolia silt loam, 0 to 2 percent slopes	I-4	670	B1a
MgB2	Magnolia silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	1,350	B1a
MgC2	Magnolia silt loam, 5 to 12 percent slopes, moderately eroded	IIIe-4	410	B1a
MkC3	Magnolia clay loam, 5 to 12 percent slopes, moderately eroded	IVe-3	420	B1a
MlB2	Marr fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	130	B1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MmA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	350	B1a
MmB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	490	B1a
MnA	Matapeake silt loam, 0 to 2 percent slopes	I-4	510	B1a
MnB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	1,500	B1a
MnC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	300	B1a
MnC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	IVe-3	230	B1a
Ms	Matawan loamy sand	IIw-10	430	E2a
MtA	Mattapex fine sandy loam, 0 to 2 percent slopes	IIw-5	2,640	E3a
MtB2	Mattapex fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	2,070	E3a
MuA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	1,160	E3a
MuB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	700	E3a
MxC	Mattapex soils, 5 to 12 percent slopes	IIIe-16	840	E3a
OcB	Ochlockonee fine sandy loam, local alluvium, 0 to 5 percent slopes	IIe-6	1,190	G1
Or	Osier loamy sand	IVw-6	370	F1
Os	Othello fine sandy loam	IIIw-6	3,790	F3
Ot	Othello silt loam	IIIw-7	7,660	F3
RdB2	Rumford loamy sand, 0 to 5 percent slopes, moderately eroded	IIs-4	1,830	A1a
RdC2	Rumford loamy sand, 5 to 10 percent slopes, moderately eroded	IIIe-3	740	A1a
RgB2	Rumford gravelly sandy loam, 0 to 5 percent slopes, moderately eroded	IIs-4	1,370	A1a
RgC2	Rumford gravelly sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-3	470	A1a
SaE	Sandy land, steep	VIIs-1	2,610	A1c
ShA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	2,400	B1a
ShB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	6,610	B1a
ShC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	2,480	B1a
ShC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	920	B1a
ShD2	Sassafras sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	780	B1b
ShD3	Sassafras sandy loam, 10 to 15 percent slopes, severely eroded	VIe-2	800	B1b
Sx	Swamp	VIIw-1	3,810	G3
Tm	Tidal marsh	VIIIw-1	6,380	G3
WaB2	Westphalia fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-5	750	B1a
WaC2	Westphalia fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-5	1,630	B1a
WaC3	Westphalia fine sandy loam, 6 to 12 percent slopes, severely eroded	IVe-5	180	B1a
WaD2	Westphalia fine sandy loam, 12 to 20 percent slopes, moderately eroded	IVe-5	690	B1b
WaD3	Westphalia fine sandy loam, 12 to 20 percent slopes, severely eroded	VIe-2	960	B1b
WeB2	Westphalia-Evesboro complex, 2 to 6 percent slopes, moderately eroded	IIe-5	260	B1a
WeC2	Westphalia-Evesboro complex, 6 to 12 percent slopes, moderately eroded	IIIe-5	600	B1a
WeC3	Westphalia-Evesboro complex, 6 to 12 percent slopes, severely eroded	IVe-5	190	B1a
WkB2	Wickham fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	1,100	B1a
WkC2	Wickham fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	1,590	B1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
WkD2	Wickham fine sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	580	B1b
WmC3	Wickham sandy clay loam, 5 to 10 percent slopes, severely eroded	IVe-5	2,960	B1a
WmD3	Wickham sandy clay loam, 10 to 15 percent slopes, severely eroded	VIe-2	890	B1b
WoA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	2,280	E1
WoB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	1,640	E1
WoC2	Woodstown sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	240	E1
		Total	293,120	

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
Ba	Bayboro silt loam	IIIw-5	3,608	F3
Bb	Bayboro silty clay loam	VIw-2	1,859	F3
Bm	Bibb silt loam	IIIw-7	196	G2
Co	Coastal beaches	VIIIs-2	212	A2
Ek	Elkton loam	IIIw-9	1,273	F3
Em	Elkton silt loam	IIIw-9	25,452	F3
En	Elkton silt loam, low	Vw-1	18,074	F3
Eo	Elkton silty clay loam	VIw-2	13,144	F3
Et	Elkton silty clay loam, low	VIw-2	15,931	F3
Fa	Fallsington sandy loam	IIIw-6	22,600	F2
GaA	Galestown loamy sand, 0 to 2 percent slopes.	IIIs-1	4,340	A1a
GaB	Galestown loamy sand, 2 to 5 percent slopes.	IIIs-1	4,547	A1a
GaC	Galestown loamy sand, 5 to 10 percent slopes.	IVs-1	437	A1a
GaD	Galestown loamy sand, 10 to 15 percent slopes.	VIs-1	215	A1b
GeF	Galestown sand and loamy sand, 15 to 40 percent slopes.	VIIs-1	402	A1c
GsA	Galestown sand, 0 to 2 percent slopes.	IVs-1	523	A1a
GsB	Galestown sand, 2 to 5 percent slopes.	IVs-1	1,944	A1a
GsC	Galestown sand, 5 to 10 percent slopes.	VIs-1	769	A1a
GsD	Galestown sand, 10 to 15 percent slopes.	VIIs-1	371	A1b
Jo	Johnston loam	IIIw-7	962	G2
KeA	Keyport loam, 0 to 2 percent slopes.	IIw-8	383	E2a
KpA	Keyport silt loam, 0 to 2 percent slopes.	IIw-8	5,661	E2a
KpB	Keyport silt loam, 2 to 5 percent slopes.	IIe-13	830	E2a
KsA	Klej loamy sand, 0 to 2 percent slopes.	IIIw-8	5,282	E1
KsB	Klej loamy sand, 2 to 5 percent slopes.	IIIw-8	298	E1
LaA	Lakeland loamy sand, clayey substratum, 0 to 2 percent slopes.	IIIs-1	755	A1a
LaB	Lakeland loamy sand, clayey substratum, 2 to 5 percent slopes.	IIIs-1	673	A1a
LaD	Lakeland loamy sand, clayey substratum, 5 to 15 percent slopes.	IVs-1	92	A1b
LcB	Lakeland sand, clayey substratum, 0 to 5 percent slopes.	IVs-1	235	A1a
LcD	Lakeland sand, clayey substratum, 5 to 15 percent slopes.	VIs-1	87	A1b
Ma	Made land	I-4	85	Ma
MfA	Matapeake fine sandy loam, 0 to 2 percent slopes.		301	B1a
MfB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded.	IIe-4	499	B1a
MkA	Matapeake silt loam, 0 to 2 percent slopes.	I-4	5,936	B1a
MkB	Matapeake silt loam, 2 to 5 percent slopes.	IIe-4	985	B1a
MkB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded.	IIe-4	1,377	B1a
MkC	Matapeake silt loam, 5 to 10 percent slopes.	IIIe-4	181	B1a
MkC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded.	IIIe-4	103	B1a
MkD	Matapeake silt loam, 10 to 15 percent slopes.	IVe-3	71	B1b
MpA	Mattapex fine sandy loam, 0 to 2 percent slopes.	IIw-1	299	E3a
MsA	Mattapex silt loam, 0 to 2 percent slopes.	IIw-1	11,333	E3a
MsB	Mattapex silt loam, 2 to 5 percent slopes.	IIe-13	656	E3a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MsB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded.	IIe-13	850	E3a
Mx	Mixed alluvial land	VIw-1	2,019	G2
Oh	Othello silt loam	IIIw-7	26,168	F3
Ot	Othello silt loam, low	VIw-1	12,433	F3
Pm	Plummer loamy sand	IVw-8	665	F1
Po	Pocomoke loam	IIIw-7	3,898	F2
Ps	Pocomoke sandy loam	IIIw-6	2,611	F2
Pt	Portsmouth silt loam	IIIw-7	1,641	F3
Ru	Rutlege loamy sand	IVw-8	1,778	F1
SaA	Sassafras loam, 0 to 2 percent slopes	I-4	2,392	B1a
SaB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded.	IIe-4	336	B1a
ShA	Sassafras loam, heavy substratum, 0 to 2 percent slopes.	I-4	116	B1a
SmA	Sassafras loamy sand, 0 to 2 percent slopes.	IIs-4	8,928	B1a
SmB	Sassafras loamy sand, 2 to 5 percent slopes.	IIs-4	5,212	B1a
SmB2	Sassafras loamy sand, 2 to 5 percent slopes, moderately eroded.	IIs-4	4,140	B1a
SmC	Sassafras loamy sand, 5 to 10 percent slopes.	IIIe-33	517	B1a
SmC2	Sassafras loamy sand, 5 to 10 percent slopes, moderately eroded.	IIIe-33	138	B1a
SmC3	Sassafras loamy sand, 5 to 10 percent slopes, severely eroded.	IVe-5	170	B1a
SmD	Sassafras loamy sand, 10 to 15 percent slopes.	IVe-5	242	B1b
SmF	Sassafras loamy sand, 15 to 40 percent slopes.	VIe-2	130	B1c
SnA	Sassafras sandy loam, 0 to 2 percent slopes.	I-5	19,041	B1a
SnB	Sassafras sandy loam, 2 to 5 percent slopes.	IIe-5	1,474	B1a
SnB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded.	IIe-5	3,931	B1a
SnC	Sassafras sandy loam, 5 to 10 percent slopes.	IIIe-5	251	B1a
SnC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded.	IIIe-5	181	B1a
SnD	Sassafras sandy loam, 10 to 15 percent slopes.	IVe-5	148	B1b
SnE	Sassafras sandy loam, 15 to 30 percent slopes.	VIe-2	169	B1c
SsA	Sassafras sandy loam, heavy substratum, 0 to 2 percent slopes.	I-5	569	B1a
SsB2	Sassafras sandy loam, heavy substratum, 2 to 5 percent slopes, moderately eroded.	IIe-5	178	B1a
StA	Sassafras sandy loam, thick solum, 0 to 2 percent slopes.	I-5	1,296	B1a
StB	Sassafras sandy loam, thick solum, 2 to 5 percent slopes.	IIe-5	359	B1a
StB2	Sassafras sandy loam, thick solum, 2 to 5 percent slopes, moderately eroded.	IIe-5	632	B1a
Sw	Swamp	VIIw-1	17,413	G3
Tm	Tidal marsh	VIIIw-1	81,692	G3
WdA	Woodstown loam, 0 to 2 percent slopes.	IIw-1	1,240	EEa
WoA	Woodstown sandy loam, 0 to 2 percent slopes.	IIw-5	14,247	E1a
WoB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded.	IIe-13	502	E1a
	Gravel pits, borrow, etc.		462	----
			371,200	

FREDERICK COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
Aa	Alluvial land	VW-1	1,104	G2
AbA	Athol gravelly loam, 0 to 3 percent slopes	I-1	1,055	B1a
AbB2	Athol gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-1	4,656	B1a
AbC2	Athol gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	643	B1b
AbD2	Athol gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-1	119	B1c
AcB2	Athol rocky loam, 0 to 15 percent slopes, moderately eroded	VIs-1	366	H26
AdA	Augusta gravelly loam, 0 to 3 percent slopes	IIw-1	1,674	F3
AdB2	Augusta gravelly loam, 3 to 15 percent slopes, moderately eroded	IIIe-13	887	F3
AeB	Augusta silt loam, 0 to 8 percent slopes	IIw-1	151	F3
AgB	Augusta very stony loam, 0 to 8 percent slopes	VIs-2	315	H1a
BaA	Bermudian fine sandy loam, 0 to 3 percent slopes	I-6	195	G1
BbA	Bermudian silt loam, 0 to 3 percent slopes	I-6	1,310	G1
BcA	Birdsboro silt loam, 0 to 3 percent slopes	I-4	752	B1a
BcB2	Birdsboro silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	436	B1a
BdB	Bowmansville silt loam, 0 to 8 percent slopes	VIw-1	530	G2
BeB	Braddock cobbly loam, 3 to 8 percent slopes	IIe-4	457	B1a
BgB2	Braddock gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,781	B1a
BhC2	Braddock gravelly and cobbly loams, 8 to 15 percent slopes, moderately eroded	IIIe-4	677	B1b
BkB	Braddock very stony loam, 3 to 15 percent slopes	VIs-2	137	H1b
BmD2	Braddock soils, 15 to 25 percent slopes, moderately eroded	VIIs-3	88	B1c
BnB2	Brandywine gravelly loam, 0 to 15 percent slopes, moderately eroded	IIIe-40	875	C1b
BnD2	Brandywine gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-10	239	C1c
BnE3	Brandywine gravelly loam, 15 to 55 percent slopes, severely eroded	VIIe-3	390	C1c
BoA	Bucks silt loam, 0 to 3 percent slopes	I-4	147	B2a
BoB2	Bucks silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	62	B2a
CaB2	Captina silt loam, 0 to 8 percent slopes, moderately eroded	IIe-14	124	E2a
CbB2	Cardiff channery loam, 0 to 8 percent slopes, moderately eroded	IIe-10	3,410	C1a
CbC2	Cardiff channery loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	1,730	C1b
CbC3	Cardiff channery loam, 8 to 15 percent slopes, severely eroded	IVe-10	776	C1b
CbD2	Cardiff channery loam, 15 to 25 percent slopes, moderately eroded	IVe-10	355	C1c
CbD3	Cardiff channery loam, 15 to 25 percent slopes, severely eroded	VIe-3	681	C1c
CbE2	Cardiff channery loam, 25 to 45 percent slopes, moderately eroded	VIe-3	466	C1c
CbE4	Cardiff channery loam, 15 to 55 percent slopes, very severely eroded	VIIe-3	294	C1c
CbF2	Cardiff channery loam, 45 to 55 percent slopes, moderately eroded	VIIe-3	723	C1c
CcB2	Catoctin channery silt loam, 0 to 10 percent slopes, moderately eroded	IIe-10	12[illegible]	C1a
CcC2	Catoctin channery silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	165	C1b
CcC3	Catoctin channery silt loam, 10 to 20 percent slopes, severely eroded	IVe-10	188	C1b
CcD2	Catoctin channery silt loam, 20 to 35 percent slopes, moderately eroded	VIe-3	227	C1c
CcD3	Catoctin channery silt loam, 20 to 35 percent slopes, severely eroded	VIe-3	863	C1c
CcE4	Catoctin channery silt loam, 20 to 55 percent slopes, very severely eroded	VIIe-3	1,179	C1c
CcF2	Catoctin channery silt loam, 35 to 55 percent slopes, moderately eroded	VIe-3	424	C1c
CdA	Chalfont silt loam, 0 to 3 percent slopes	IIIw-11	61	F3
CdB	Chalfont silt loam, 3 to 15 percent slopes	IIIe-13	322	F3
CeB2	Chandler and Talladega channery loams, 0 to 10 percent slopes, moderately eroded	IIe-25	644	C1a
CeC2	Chandler and Talladega channery loams, 10 to 20 percent slopes, moderately eroded	IIIe-25	950	C1b
CeD2	Chandler and Talladega channery loams, 20 to 35 percent slopes, moderately eroded	VIe-3	337	C1c
CeD3	Chandler and Talladega channery loams, 20 to 35 percent slopes, severely eroded	VIe-3	286	C1c
CeE2	Chandler and Talladega channery loams, 35 to 45 percent slopes, moderately eroded	VIIe-3	101	C1c
CgB2	Chandler and Talladega silt loams, 0 to 10 percent slopes, moderately eroded	IIe-25	1,402	C1a
CgC2	Chandler and Talladega silt loams, 10 to 20 percent slopes, moderately eroded	IIIe-25	1,198	C1b
CgD2	Chandler and Talladega silt loams, 20 to 35 percent slopes, moderately eroded	VIe-3	139	C1c
CgD3	Chandler and Talladega silt loams, 20 to 35 percent slopes, severely eroded	VIe-3	338	C1c
ChC2	Chandler and Talladega very stony loams, 0 to 20 percent slopes, moderately eroded	VIs-2	1,689	H1b
ChD2	Chandler and Talladega very stony loams, 20 to 45 percent slopes, moderately eroded	VIIs-3	1,522	H1c
CkA2	Chester loam, 0 to 3 percent slopes, moderately eroded	I-4	104	B1a
CkB2	Chester loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,415	B1a
CkC2	Chester loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	240	B1b
CmA	Chewacla silt loam, 0 to 3 percent slopes	Vw-1	7,984	G1
CnB	Clymer very stony loam, 0 to 20 percent slopes	VIs-2	1,446	H1b
CoA	Colbert silt loam, deep variant, 0 to 3 percent slopes	IIw-2	842	F3
CpB2	Conestoga silt loam, 0 to 8 percent slopes, moderately eroded	IIe-24	1,842	B1a
CpC2	Conestoga silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-2	773	B1b
CpD2	Conestoga silt loam, 15 to 25 percent slopes, moderately eroded	IVe-1	191	B1c
CrA	Congaree silt loam, 0 to 3 percent slopes	I-6	1,374	G1
CsA	Congaree silt loam, local alluvium, 0 to 3 percent slopes	I-4	400	G1
CsB	Congaree silt loam, local alluvium, 3 to 8 percent slopes	IIe-4	314	G1

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
CtB	Croton silt loam, overwashed, 0 to 8 percent slopes	Vw-2	4,132	F3
DaB2	Dekalb loam, 0 to 10 percent slopes, moderately eroded	IIe-10	101	C1a
DaC2	Dekalb loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	81	C1b
DbC	Dekalb very stony loam, 0 to 35 percent slopes	VIIs-2	3,199	H1c
DcA	Duffield silt loam, 0 to 3 percent slopes	I-1	3,091	B1a
DdA2	Duffield and Frankstown shaly silt loams, 0 to 3 percent slopes, moderately eroded	IIe-1	135	B1a
DdB2	Duffield and Frankstown shaly silt loams, 3 to 8 percent slopes, moderately eroded	IIe-1	908	B1a
DdC2	Duffield and Frankstown shaly silt loams, 8 to 15 percent slopes, moderately eroded	IIIe-1	325	B1b
DeA	Duffield and Frankstown silt loams, 0 to 3 percent slopes	IIe-1	659	B1a
DeB2	Duffield and Frankstown silt loams, 3 to 8 percent slopes, moderately eroded	IIe-1	13,132	B1a
DeC2	Duffield and Frankstown silt loams, 8 to 15 percent slopes, moderately eroded	IIIe-1	1,091	B1b
DeD2	Duffield and Frankstown silt loams, 15 to 25 percent slopes, moderately eroded	IVe-1	238	B1c
EaB2	Edgemont gravelly loam, 0 to 8 percent slopes, moderately eroded	IIe-25	286	B1a
EaC2	Edgemont gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	594	B1b
EaD2	Edgemont gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-25	263	B1c
EaE	Edgemont gravelly loam, 25 to 45 percent slopes	VIe-3	49	B1c
EbC	Edgemont very stony loam, 0 to 20 percent slopes	VIs-2	640	H1b
EbE	Edgemont very stony loam, 20 to 60 percent slopes	VIIs-3	348	H1c
EcB2	Edgemont-Chandler channery loams, 0 to 10 percent slopes, moderately eroded	IIe-10	854	B1a
EcC2	Edgemont-Chandler channery loams, 10 to 20 percent slopes, moderately eroded	IIIe-10	632	B1b
EcC3	Edgemont-Chandler channery loams, 10 to 20 percent slopes, severely eroded	IVe-10	105	B1b
EcD2	Edgemont-Chandler channery loams, 20 to 35 percent slopes, moderately eroded	VIe-3	199	B1c
EcD3	Edgemont-Chandler channery loams, 20 to 35 percent slopes, severely eroded	VIe-3	130	B1c
EdC	Edgemont-Chandler very stony loams, 0 to 20 percent slopes	VIs-2	8,525	H1b
EdE	Edgemont-Chandler very stony loams, 20 to 60 percent slopes	VIIs-3	9,642	H1c
EeB2	Elioak gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-4	79	B1a
EeC2	Elioak gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	38	B1b
EgA2	Elioak silt loam, 0 to 3 percent slopes, moderately eroded	I-4	137	B1a
EgB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	213	B1a
EhB2	Elk gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-1	349	B1a
EkA	Elk loam, 0 to 3 percent slopes	I-1	311	B1a
EkB2	Elk loam, 3 to 8 percent slopes, moderately eroded	IIe-1	522	B1a
EkC2	Elk loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	73	B1b
FaA	Fauquier gravelly loam, 0 to 3 percent slopes	I-4	215	B1a
FaB2	Fauquier gravelly loam, 3 to 10 percent slopes, moderately eroded	IIe-4	3,543	B1a
FaC2	Fauquier gravelly loam, 10 to 20 percent slopes, moderately eroded	IIIe-4	1,728	B1b
FaD2	Fauquier gravelly loam, 20 to 35 percent slopes, moderately eroded	VIe-2	489	B1c
FaE3	Fauquier gravelly loam, 20 to 45 percent slopes, severely eroded	VIe-3	246	B1c
FbA	Fauquier loam, 0 to 3 percent slopes	I-4	231	B1a
FbB2	Fauquier loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,158	B1a
FbC2	Fauquier loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	772	B1b
FcC2	Fauquier loam, shallow, 8 to 15 percent slopes, moderately eroded	IVe-10	73	B1b
FcE2	Fauquier loam, shallow, 15 to 45 percent slopes, moderately eroded	VIIe-3	215	B1c
FdA	Fauquier silt loam, 0 to 3 percent slopes	I-4	429	B1a
FdB2	Fauquier silt loam, 0 to 10 percent slopes, moderately eroded	IIe-4	4,494	B1a
FdC2	Fauquier silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-4	4,373	B1b
FdD2	Fauquier silt loam, 20 to 35 percent slopes, moderately eroded	VIe-2	851	B1c
FeC4	Fauquier silty clay loam, 10 to 20 percent slopes, very severely eroded	VIe-3	94	B1b
FeD3	Fauquier silty clay loam, 20 to 35 percent slopes, severely eroded	VIe-3	574	B1c
FeD4	Fauquier silty clay loam, 20 to 45 percent slopes, very severely eroded	VIIe-3	65	B1c
FgC2	Fauquier very stony loam, 0 to 20 percent slopes, moderately eroded	VIs-2	2,371	H1b
FgE2	Fauquier very stony loam, 20 to 50 percent slopes, moderately eroded	VIIs-3	1,939	H1c
GaB2	Glenelg gravelly loam, 0 to 8 percent slopes, moderately eroded	IIe-4	3,329	B1a
GaC2	Glenelg gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	3,775	B1b
GaD2	Glenelg gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-25	764	B1c
GaD3	Glenelg gravelly loam, 15 to 25 percent slopes, severely eroded	VIe-3	747	B1c
GaE4	Glenelg gravelly loam, 15 to 45 percent slopes, very severely eroded	VIIe-3	237	B1c
GbB2	Glenelg and Chester loams, 3 to 8 percent slopes, moderately eroded	IIe-4	1,323	B1a
GbC2	Glenelg and Chester loams, 8 to 15 percent slopes, moderately eroded	IIIe-4	576	B1b
GbD2	Glenelg and Chester loams, 15 to 25 percent slopes, moderately eroded	IVe-25	139	B1c
GcA2	Glenelg and Chester silt loams, 0 to 3 percent slopes, moderately eroded	I-4	242	B1a
GcB2	Glenelg and Chester silt loams, 3 to 8 percent slopes, moderately eroded	IIe-4	3,553	B1a
GcC2	Glenelg and Chester silt loams, 8 to 15 percent slopes, moderately eroded	IIIe-4	1,073	B1b
GcD2	Glenelg and Chester silt loams, 15 to 45 percent slopes, moderately eroded	IVe-3	276	B1c
GdB	Glenville silt loam, 0 to 8 percent slopes	IIw-1	3,153	E2a
GdB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-13	467	E2a
GeB	Glenville very stony silt loam, 0 to 8 percent slopes	VIs-2	295	H1a
GgA	Guthrie silt loam, 0 to 3 percent slopes	Vw-2	131	F3
HaA	Hagerstown gravelly loam, 0 to 3 percent slopes	I-1	385	B1a
HaB2	Hagerstown gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-1	2,564	B1a
HaC2	Hagerstown gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	640	B1b
HbA	Hagerstown loam, 0 to 3 percent slopes	I-1	1,533	B1a
HbB2	Hagerstown loam, 0 to 8 percent slopes, moderately eroded	IIe-1	6,217	B1a
HbC2	Hagerstown loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	1,088	B1b

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
HbD2	Hagerstown loam, 15 to 25 percent slopes, moderately eroded	IVe-1	187	B1c
HcC3	Hagerstown rocky clay, 8 to 15 percent slopes, severely eroded	VIs-1	192	H2b
HcD3	Hagerstown rocky clay, 15 to 25 percent slopes, severely eroded	VIIe-1	29	H2c
HdB2	Hagerstown rocky loam, 3 to 15 percent slopes, moderately eroded	VIs-1	1,226	H2b
HeA	Hagerstown silt loam, 0 to 3 percent slopes	I-1	186	B1a
HeB2	Hagerstown silt loam, 3 to 8 percent slopes, moderately eroded	IIe-1	1,371	B1a
HeC2	Hagerstown silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-1	304	B1b
HgB2	Highfield channery loam, 0 to 10 percent slopes, moderately eroded	IIe-25	4,234	B1a
HgC2	Highfield channery loam, 10 to 20 percent slopes, moderately eroded	IIIe-25	4,755	B1b
HgD2	Highfield channery loam, 20 to 35 percent slopes, moderately eroded	VIe-3	1,683	B1c
HgD3	Highfield channery loam, 20 to 35 percent slopes, severely eroded	VIe-3	747	B1c
HgD4	Highfield channery loam, 20 to 35 percent slopes, very severely eroded	VIIe-3	190	B1c
HgE2	Highfield channery loam, 35 to 45 percent slopes, moderately and severely eroded	VIIe-3	183	B1c
HhB2	Highfield silt loam, 0 to 10 percent slopes, moderately eroded	IIe-25	312	B1a
HhC2	Highfield silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-25	335	B1b
HhD3	Highfield silt loam, 20 to 35 percent slopes, severely eroded	VIe-3	244	B1c
HkC	Highfield very stony loam, 0 to 20 percent slopes	VIs-2	7,109	H1b
HkE	Highfield very stony loam, 20 to 45 percent slopes	VIIs-3	10,912	H1c
HmA	Huntington fine sandy loam, 0 to 3 percent slopes	I-6	736	G1
HnA	Huntington silt loam, 0 to 3 percent slopes	I-6	2,714	G1
HoA	Huntington silt loam, local alluvium, 0 to 3 percent slopes	I-1	527	G1
LaB	Lantz silt loam, 0 to 8 percent slopes	Vw-2	909	F3
LbC	Lantz very stony loam, 0 to 15 percent slopes	VIIs-4	688	H1b
LcB2	Legore gravelly silty clay loam, 0 to 15 percent slopes, moderately eroded	IIIe-30	504	B1b
LcD2	Legore gravelly silty clay loam, 15 to 25 percent slopes, moderately eroded	VIe-3	73	B1c
LdB2	Legore silty clay loam, 0 to 15 percent slopes, moderately eroded	IIIe-30	161	B1b
LeB	Legore very stony clay loam, 0 to 15 percent slopes	VIs-2	303	H1b
LeE	Legore very stony clay loam, 15 to 50 percent slopes	VIIs-3	121	H1c
LgC2	Lehigh slaty loam, 3 to 15 percent slopes, moderately eroded	IIIe-13	933	E2 b
LhC4	Lehigh slaty silty clay loam, 3 to 15 percent slopes, very severely eroded	VIIs-3	142	E2b
LkA	Lindside silt loam, 0 to 3 percent slopes	Vw-1	2,278	G1
LmA	Lindside silt loam, local alluvium, 0 to 3 percent slopes	IIw-2	2,616	G1
LmB	Lindside silt loam, local alluvium, 3 to 8 percent slopes	IIe-14	114	G1
LnB2	Linganore channery and gravelly loams, 0 to 15 percent slopes, moderately eroded	IIIe-40	8,069	C1b
LnD2	Linganore channery and gravelly loams, 15 to 25 percent slopes, moderately eroded	IVe-10	1,870	C1c
LoB3	Linganore channery and gravelly silt loams, 3 to 15 percent slopes, severely eroded	IVe-10	762	C1b
LoD3	Linganore channery and gravelly silt loams, 15 to 25 percent slopes, severely and very severely eroded	VIIe-3	1,929	C1c
LoE3	Linganore channery and gravelly silt loams, 25 to 55 percent slopes, severely eroded	VIIe-3	1,800	C1c
LpC	Linganore very stony loam, 3 to 55 percent slopes	VIIs-2	328	H1b
MaB2	Manor channery and gravelly loams, 0 to 8 percent slopes, moderately eroded	IVe-10	17,796	B1a
MaC2	Manor channery and gravelly loams, 8 to 15 percent slopes, moderately eroded	IIIe-10	24,543	B1b
MaC3	Manor channery and gravelly loams, 8 to 15 percent slopes, severely eroded	IVe-10	2,618	B1b
MaD2	Manor channery and gravelly loams, 15 to 25 percent slopes, moderately eroded	IVe-10	9,181	B1c
MaD3	Manor channery and gravelly loams, 15 to 25 percent slopes, severely eroded	VIe-3	6,424	B1c
MaD4	Manor channery and gravelly loams, 15 to 25 percent slopes, very severely eroded	VIIe-3	338	B1c
MaE2	Manor channery and gravelly loams, 25 to 45 percent slopes, moderately eroded	VIe-3	2,335	B1c
MaE3	Manor channery and gravelly loams, 25 to 55 percent slopes, severely and very severely eroded	VIIe-3	1,729	B1c
MbC	Manor very stony loam, 3 to 15 percent slopes	VIs-2	390	H1b
MbE	Manor very stony loam, 15 to 55 percent slopes	VIIs-3	475	H1c
McA	Melvin silt loam, 0 to 3 percent slopes	IIIw-1	933	G2
MdB2	Montalto silty clay loam, 0 to 8 percent slopes, moderately eroded	IIe-4	209	B2a
MdC2	Montalto silty clay loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	227	B2b
MdD2	Montalto silty clay loam, 15 to 25 percent slopes, moderately eroded	IVe-3	43	B2c
MeB2	Montalto very stony clay loam, 0 to 15 percent slopes, moderately eroded	VIs-2	786	H1b
MeD	Montalto very stony clay loam, 15 to 45 percent slopes	VIIs-3	191	H1c
MgD4	Myersville and Fauquier clay loams, 15 to 25 percent slopes, very severely eroded	VIIs-3	1,165	B1c
MhA	Myersville and Fauquier gravelly loams, 0 to 3 percent slopes	I-4	97	B1a
MhB2	Myersville and Fauquier gravelly loams, 3 to 8 percent slopes, moderately eroded	IIe-4	267	B1a
MhC2	Myersville and Fauquier gravelly loams, 8 to 15 percent slopes, moderately eroded	IIIe-4	233	B1b
MkA	Myersville and Fauquier loams, 0 to 3 percent slopes	I-4	1,590	B1a
MkB2	Myersville and Fauquier loams, 3 to 8 percent slopes, moderately eroded	IIe-4	8,001	B1a
MkC2	Myersville and Fauquier loams, 8 to 15 percent slopes, moderately eroded	IIIe-4	6,385	B1b
MkD2	Myersville and Fauquier loams, 15 to 25 percent slopes, moderately eroded	IVe-3	2,093	B1c
MkE2	Myersville and Fauquier loams, 25 to 45 percent slopes, moderately eroded	VIe-2	877	B1c
MkE3	Myersville and Fauquier loams, 25 to 50 percent slopes, severely eroded	VIIs-3	244	B1c
MmA	Myersville and Fauquier silt loams, 0 to 3 percent slopes	I-4	281	B1a

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MmB2	Myersville and Fauquier silt loams, 3 to 8 percent slopes, moderately eroded	IIe-4	2,602	B1a
MmC2	Myersville and Fauquier silt loams, 8 to 15 percent slopes, moderately eroded	IIIe-4	3,222	B1a
MmD2	Myersville and Fauquier silt loams, 15 to 25 percent slopes, moderately eroded	IVe-3	1,245	B1c
MnC3	Myersville and Fauquier silty clay loams, 8 to 15 percent slopes, severely eroded	VIe-2	273	B1b
MoC	Myersville and Fauquier very stony loams, 3 to 35 percent slopes	VIIs-3	151	H1c
MoE	Myersville and Fauquier very stony loams, 35 to 50 percent slopes	VIIs-3	328	H1c
NaA	Norton gravelly silt loam, 0 to 3 percent slopes	I-4	557	B1a
NaB2	Norton gravelly silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,345	B1a
NaC2	Norton gravelly silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	282	B1b
NaD2	Norton gravelly silt loam, 15 to 25 percent slopes, moderately eroded	IVe-3	51	B1c
NaE2	Norton gravelly silt loam, 25 to 45 percent slopes, moderately eroded	VIe-2	97	B1c
NbB	Norton very stony loam, 3 to 8 percent slopes	VIs-2	116	H1a
PaB2	Penn gravelly loam, 0 to 8 percent slopes, moderately eroded	IIe-10	2,494	C1a
PaB3	Penn gravelly loam, 0 to 8 percent slopes, severely eroded	IIIe-10	59	C1a
PaC2	Penn gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	823	C1b
PaC3	Penn gravelly loam, 8 to 15 percent slopes, severely eroded	IVe-10	755	C1b
PaD2	Penn gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-10	142	C1c
PbB2	Penn loam, 0 to 8 percent slopes, moderately eroded	IIe-10	3,721	C1a
PbC2	Penn loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	1,049	C1b
PbC3	Penn loam, 8 to 15 percent slopes, severely eroded	IVe-10	488	C1b
PbD2	Penn loam, 15 to 25 percent slopes, moderately eroded	IVe-10	154	C1c
PcD3	Penn loam and gravelly loam, 15 to 25 percent slopes, severely eroded	VIe-3	1,004	C1c
PdB2	Penn shaly loam, 0 to 15 percent slopes, moderately eroded	IIIe-40	10,381	D1b
PdC3	Penn shaly loam, 3 to 15 percent slopes, severely eroded	VIe-3	2,542	D1b
PdD2	Penn shaly loam, 15 to 25 percent slopes, moderately eroded	VIe-3	309	D1c
PdD3	Penn shaly loam, 15 to 25 percent slopes, severely eroded	VIe-3	1,119	D1c
PeB2	Penn silt loam, 0 to 8 percent slopes, moderately eroded	IIe-10	18,107	C1a
PeB3	Penn silt loam, 3 to 8 percent slopes, severely eroded	IIIe-10	250	C1a
PeC2	Penn silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	871	C1b
PeC3	Penn silt loam, 8 to 15 percent slopes, severely eroded	IVe-10	810	C1b
PgB4	Penn soils, 3 to 8 percent slopes, very severely eroded	VIIe-3	88	C1a
PgC4	Penn soils, 8 to 15 percent slopes, very severely eroded	VIIe-3	804	C1b
PgD4	Penn soils, 15 to 25 percent slopes, very severely eroded	VIIe-3	353	B1c
PgE2	Penn soils, 25 to 50 percent slopes, moderately eroded	VIe-3	447	C1c
PgE3	Penn soils, 25 to 50 percent slopes, severely eroded	VIIe-3	308	C1c
PhB2	Penn-Lansdale loams, 0 to 8 percent slopes, moderately eroded	IIe-10	1,464	C1a
PhC2	Penn-Lansdale loams, 8 to 15 percent slopes, moderately eroded	IIIe-10	133	C1b
PhC3	Penn-Lansdale loams, 8 to 15 percent slopes, severely eroded	IVe-10	246	C1b
PhD2	Penn-Lansdale loams, 15 to 25 percent slopes, moderately eroded	IVe-10	152	C1c
PhD3	Penn-Lansdale loams, 15 to 25 percent slopes, severely eroded	VIe-3	124	C1c
RaA	Raritan silt loam, 0 to 3 percent slopes	IIw-1	352	E2a
RaB2	Raritan silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-13	113	E2a
RbA	Readington silt loam, 0 to 3 percent slopes	IIIw-11	3,476	E2a
RbB2	Readington silt loam, 0 to 8 percent slopes, moderately eroded	IIIe-13	2,133	E2a
RcA	Roanoke silt loam, moderately deep over cobbles, 0 to 3 percent slopes	Vw-2	980	F3
RdB	Rohrersville silt loam, 0 to 8 percent slopes	IIw-1	1,044	F3
RdC2	Rohrersville silt loam, 3 to 15 percent slopes, moderately eroded	IIIe-13	271	F3
Re	Rough stony land	VIIs-2	15,622	H1c
RgA	Rowland silt loam, 0 to 3 percent slopes	Vw-1	2,062	G1
SaB2	Sequatchie sandy loam, neutral variant, 3 to 8 percent slopes, moderately eroded	IIe-5	415	B1a
SaC2	Sequatchie sandy loam, neutral variant, 8 to 15 percent slopes, moderately eroded	IIIe-5	164	B1b
TaB	Thurmont cobbly loam, 0 to 8 percent slopes	IIe-25	541	B1a
TbA	Thurmont gravelly and cobbly loams, 0 to 3 percent slopes	IIe-25	2,649	B1a
TcB2	Thurmont gravelly loam, 0 to 8 percent slopes, moderately eroded	IIe-25	407	B1a
TcC2	Thurmont gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	90	B1b
TcD2	Thurmont gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-25	308	B1c
TdA	Thurmont silt loam, 0 to 3 percent slopes	I-4	187	B1a
TeC	Thurmont very stony loam, 0 to 15 percent slopes	VIs-2	1,150	H1b
UaA	Urbana silt loam, 0 to 3 percent slopes	IIIw-11	355	E2a
UaC2	Urbana silt loam, 3 to 15 percent slopes, moderately eroded	IIIe-13	3,145	E2a
UaC3	Urbana silt loam, 8 to 15 percent slopes, severely eroded	IVe-11	119	E2a
UaD2	Urbana silt loam, 15 to 25 percent slopes, moderately eroded	VIe-2	64	E2c
WaB	Watchung silt loam, 0 to 8 percent slopes	Vw-2	359	F3
WbB2	Waynesboro gravelly loam, 0 to 8 percent slopes, moderately eroded	IIe-4	314	B1a
WbC2	Waynesboro gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	204	B1b
WcA	Wehadkee silt loam, 0 to 3 percent slopes	VIw-1	6,643	G2
WdB	Worsham silt loam, 0 to 8 percent slopes	Vw-2	2,009	F3
WeB	Worsham very stony silt loam, 0 to 8 percent slopes	VIIs-4	549	H1a
		-----	161	Ma
		-----	5	Bp
		-----	120	Bp
		Total Land	424,960	
		Water	3,840	
		Total	428,800	

GARRETT COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AbB	Albrights silt loam, 0 to 8 percent slopes	IIe-13	4,360	E2a
AbC2	Albrights silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	980	E2b
AgC	Albrights very stony silt loam, 0 to 15 percent slopes	VIe-3	4,200	H1b
AhB	Allegheny fine sandy loam, 0 to 8 percent slopes	IIe-5	120	B1a
An	Alluvial land	VIw-1	1,720	G2
Ao	Alluvial land, very stony	VIIs-4	2,610	H1a
Ar	Armagh silt loam	IVw-2	880	F3
At	Atkins silt loam	IIIw-7	4,970	G2
BrA	Brinkerton and Andover silt loams, 0 to 3 percent slopes	IVw-2	6,350	F3
BrB	Brinkerton and Andover silt loams, 3 to 8 percent slopes	IVw-2	2,770	F3
BsC	Brinkerton and Andover very stony silt loams, 0 to 15 percent slopes	VIIs-4	9,290	H1b
CaC2	Calvin-Gilpin-Ungers channery loams, 10 to 20 percent slopes, moderately eroded	III3-10	7,830	C1b
CaD2	Calvin-Gilpin-Ungers channery loams, 20 to 35 percent slopes, moderately eroded	IVe-10	2,720	C1c
CaD3	Calvin-Gilpin-Ungers channery loams, 20 to 35 percent slopes, severely eroded	VIe-3	850	C1c
CIE	Calvin and Lehew channery loams, 35 to 50 percent slopes	VIIe-3	5,200	C1c
CnC2	Calvin, Ungers, and Lehew channery loams, 10 to 25 percent slopes, moderately eroded	IIIe-10	16,570	C1b
CnD2	Calvin, Ungers, and Lehew channery loams, 20 to 35 percent slopes, moderately eroded	IVe-10	5,860	C1c
CnD3	Calvin, Ungers, and Lehew channery loams, 20 to 35 percent slopes, severely eroded	VIe-3	1,640	C1c
CoB	Cavode silt loam, 0 to 8 percent slopes	IIIw-5	4,100	F3
CoC2	Cavode silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-3	800	F3
CrB	Clymer channery loam, 0 to 10 percent slopes	IIe-4	1,470	B1a
CtB	Cookport channery loam, 0 to 8 percent slopes	IIe-13	10,650	E2a
CtC2	Cookport channery loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	1,640	E2b
CuB	Cookport and Ernest very stony silt loams, 0 to 8 percent slopes	VIs-3	20,670	H1a
CuD	Cookport and Ernest very stony silt loams, 8 to 25 percent slopes	VIs-3	22,590	H1c
Cv	Cut and fill land	Unassigned	30	Ma
DbB	Dekalb channery loam, 0 to 10 percent slopes	IIe-10	6,110	C1a
DbC2	Dekalb channery loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	3,820	C1b
DbD2	Dekalb channery loam, 20 to 35 percent slopes, moderately eroded	IVe-10	550	C1c
DcC	Dekalb-Calvin-Lehew very stony loams, 0 to 15 percent slopes	VIs-4	2,880	H1b
DcD	Dekalb-Calvin-Lehew very stony loams, 15 to 25 percent slopes	VIs-4	10,300	H1c
DgC	Dekalb and Gilpin very stony loams, 0 to 15 percent slopes	VIs-4	23,010	H1b
DgD	Dekalb and Gilpin very stony loams, 15 to 25 percent slopes	VIs-4	41,780	H1c
DIC	Dekalb and Leetonia very stony sandy loams, 0 to 15 percent slopes	VIs-4	15,010	H1b
DID	Dekalb and Leetonia very stony sandy loams, 15 to 25 percent slopes	VIs-4	9,310	H1c
Ek	Elkins silt loam	IIIw-7	350	G2
ErA	Ernest silt loam, 0 to 3 percent slopes	IIw-3	540	E2a
ErB	Ernest silt loam, 3 to 8 percent slopes	IIe-13	5,040	E2a

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ErC2	Ernest silt loam, 8 to 15 percent slopes, moderately eroded	IIe-13	2,000	E2b
ErD2	Ernest silt loam, 15 to 30 percent slopes, moderately eroded	IVe-9	240	E2c
GnB2	Gilpin channery silt loam, 0 to 10 percent slopes, moderately eroded	IIe-10	18,780	C1a
GnC2	Gilpin channery silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-10	22,150	C1b
GnD2	Gilpin channery silt loam, 20 to 35 percent slopes, moderately eroded	IVe-10	5,060	C1c
GnD3	Gilpin channery silt loam, 20 to 35 percent slopes, severely eroded	VIe-3	1,140	C1c
LaB	Laidig very stony loam, 0 to 8 percent slopes	VIs-3	260	H1a
LaD	Laidig very stony loam, 8 to 25 percent slopes	VIs-3	1,130	H1c
Lc	Lickdale silt loam	IVw-2	2,450	F3
Ls	Lickdale very stony silt loam	VIIs-4	400	H1
McB	Meckesville silt loam, 0 to 8 percent slopes	IIe-4	1,090	B2a
McC2	Meckesville silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	800	B2b
MdB	Meckesville very stony loam, 0 to 3 percent slopes	VIs-3	780	H1a
MdD	Meckesville very stony silt loam, 8 to 25 percent slopes	VIs-3	2,680	H1c
NoB	Nolo silt loam, 0 to 8 percent slopes	IVw-2	1,480	F3
Pe	Peat	VIIw-1	400	G2
Ph	Philo silt loam	IIw-7	720	G1
Ps	Pope silt loam	I-6	450	G1
PuC2	Purdy silt loam, 0 to 15 percent slopes, moderately eroded	IVw-2	300	F3
SrF	Stony land, steep	VIIs-3	69,450	H1c
St	Strip mines and dumps	VIIs-5	3,090	---
Sw	Swamp	VIIw-1	930	G3
UcB	Ungers, Calvin, and Lehew channery loams, 0 to 10 percent slopes	IIe-10	10,500	B1a
UnB	Ungers-Gilpin-Calvin channery loams, 0 to 10 percent slopes	IIe-10	5,630	B1a
VsD	Very stony land, rolling	VIIIs-1	7,920	H1c
VsF	Very stony land, steep	VIIIs-1	1,480	H1c
WhB2	Wharton silt loam, 0 to 10 percent slopes, moderately eroded	IIe-13	1,860	E2a
WhC2	Wharton silt loam, 10 to 20 percent slopes, moderately eroded	IIIe-13	940	E2b
		Total		

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AdA	Aldino silt loam, 0 to 3 percent slopes	IIw-2	440	E2a
AdB	Aldino silt loam, 3 to 8 percent slopes	IIe-14	5,260	E2a
AdC	Aldino silt loam, 8 to 15 percent slopes	IIIe-14	360	E2b
AsB	Aldino very stony silt loam, 0 to 8 percent slopes	VIs-3	1,170	H1a
Av	Alluvial land	VIw-1	2,520	G2
BaA	Baile silt loam, 0 to 3 percent slopes	Vw-1	1,110	F3
BaB	Baile silt loam, 3 to 8 percent slopes	VIw-2	1,080	F3
BeA	Beltsville silt loam, 0 to 2 percent slopes	IIw-8	840	E2a
BeB	Beltsville silt loam, 2 to 5 percent slopes	IIe-13	2,060	E2a
BeC	Beltsville silt loam, 5 to 10 percent slopes	IIIe-13	610	E2a
BrC2	Brandywine gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	500	C1b
BrD3	Brandywine gravelly loam, 15 to 25 percent slopes, severely eroded	VIe-3	570	C1c
BrB3	Brandywine gravelly loam, 25 to 45 percent slopes, severely eroded	VIIe-3	180	C1c
CcA	Chester silt loam, 0 to 3 percent slopes	I-4	320	B1a
CcB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	23,765	B1a
CcC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	5,920	B1b
CgB2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	4,330	B1a
CgC2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	3,220	B1b
CgD2	Chester gravelly silt loam, 15 to 25 percent slopes, moderately eroded	IVe-3	610	B1c
ChB2	Chillum silt loam, 2 to 5 percent slopes, moderately eroded	IIs-7	1,670	B2a
CkC2	Chillum-Neshaminy silt loams, 5 to 10 percent slopes, moderately eroded	IIIe-7	630	B2a
CrE	Chrome shannery silty clay loam, 15 to 45 percent slopes	VIIs-32	340	C1c
Cu	Codorus silt loam	IIw-7	7,170	G1
Cv	Comus silt loam	I-6	890	G1
Cx	Cut and fill land	----	680	Ma
DcA	Delanco silt loam, 0 to 3 percent slopes	IIw-1	480	E3a
DcB	Delanco silt loam, 3 to 8 percent slopes	IIe-16	2,140	E3a
EhB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,840	B1a
EhC2	Elioak silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	570	B1b
En	Elkton silt loam	IIIw-9	740	F3
EsA	Elsinboro loam, 0 to 2 percent slopes	I-4	400	B1a
EsB2	Elsinboro loam, 2 to 5 percent slopes, moderately eroded	IIe-4	1,420	B1a
EsC2	Elsinboro loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	950	B1a
EvC	Evesboro loamy sand, 5 to 15 percent slopes	VIIs-1	100	B1a
Fs	Fallsington loam	IIIw-7	190	F2
GcB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	IIe-4	13,610	B1a
GcC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	14,490	B1b
GcC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	IVe-3	1,220	B1b
GcD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	IVe-3	2,850	B1c
GcD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	VIe-2	950	B1c
GgB2	Glenelg gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-4	2,200	B1a
GgC2	Glenelg gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	5,880	B1b
GgC3	Glenelg gravelly loam, 8 to 15 percent slopes, severely eroded	IVe-3	590	B1b

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
GgD2	Glenelg gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-3	2,960	B1c
GgD3	Glenelg gravelly loam, 15 to 25 percent slopes, severely eroded	VIe-2	1,290	B1c
GnA	Glenville silt loam, 0 to 3 percent slopes	IIw-1	2,200	E2a
GnB	Glenville silt loam, 3 to 8 percent slopes	IIe-16	8,170	E2a
Hb	Hatboro silt loam	IIIw-7	4,000	G2
JpB	Joppa gravelly sandy loam, 2 to 5 percent slopes	IIs-4	450	A1a
JpC	Joppa gravelly sandy loam, 5 to 10 percent slopes	IIIe-33	630	A1a
KeB	Kelly silt loam, 3 to 8 percent slopes	IVw-3	1,110	F3
KeC2	Kelly silt loam, 8 to 15 percent slopes, moderately eroded	IVw-3	350	F3
KfD	Kelly very stony silt loam, 3 to 25 percent slopes	VIIs-4	320	H1c
KpA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	280	E2a
KpB	Keyport silt loam, 2 to 5 percent slopes	IIe-13	1,380	E2a
KrA	Kinkora silt loam, 0 to 3 percent slopes	Vw-1	210	F3
KrB	Kinkora silt loam, 3 to 8 percent slopes	VIw-2	170	F3
LeB2	Legore silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	1,010	B1a
LeC2	Legore silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	1,110	B1b
LeD2	Legore silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	1,690	B1c
LeE	Legore silt loam, 25 to 45 percent slopes	VIe-3	690	B1c
LfC	Legore very stony silt loam, 0 to 15 percent slopes	VIs-3	310	H1b
LfD	Legore very stony silt loam, 15 to 25 percent slopes	VIs-3	650	H1c
LfE	Legore very stony silt loam, 25 to 45 percent slopes	VIIs-3	680	H1c
LgC3	Legore silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-10	990	B1b
LgD3	Legore silty clay loam, 15 to 25 percent slopes, severely eroded	VIe-3	1,110	B1c
Lr	Leonardtown silt loam	IVw-3	440	F3
LyB	Loamy and clayey land, 0 to 5 percent slopes	IIIe-42	870	B3
LyD	Loamy and clayey land, 5 to 15 percent slopes	VIe-2	1,660	B3
LyE	Loamy and clayey land, 15 to 30 percent slopes	VIIe-2	220	B3
MbB2	Manor loam, 3 to 8 percent slopes, moderately eroded	IIe-25	4,190	B1a
MbC2	Manor loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	4,820	B1b
MbC3	Manor loam, 8 to 15 percent slopes, severely eroded	IVe-25	1,340	B1b
MbD2	Manor loam, 15 to 25 percent slopes, moderately eroded	IVe-25	5,320	B1c
MbD3	Manor loam, 15 to 25 percent slopes, severely eroded	VIe-3	3,230	B1c
McB2	Manor channery loam, 3 to 8 percent slopes, moderately eroded	IIe-25	1,330	B1a
McC2	Manor channery loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	5,090	B1b
McC3	Manor channery loam, 8 to 15 percent slopes, severely eroded	IVe-25	710	B1b
McD2	Manor channery loam, 15 to 25 percent slopes, moderately eroded	IVe-25	5,310	B1c
McD3	Manor channery loam, 15 to 25 percent slopes, severely eroded	VIe-3	3,550	B1c
MdE	Manor very stony loam, 25 to 45 percent slopes	VIIs-3	750	H1c
MfE	Manor soils, 25 to 45 percent slopes	VIe-3	7,530	B1c
MgC	Manor and Glenelg very stony loams, 3 to 15 percent slopes	VIs-3	1,500	H1b
MgD	Manor and Glenelg very stony loams, 15 to 25 percent slopes	VIs-3	1,600	H1c
MkA	Matapeake silt loam, 0 to 2 percent slopes	I-4	280	B1a
MkB	Matapeake silt loam, 2 to 5 percent slopes	IIe-4	730	B1a
MlA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	870	E3a
MlB	Mattapex silt loam, 2 to 5 percent slopes	IIe-16	1,250	E3a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MsA	Montalto silt loam, 0 to 3 percent slopes	I-4	300	B2a
MsB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	6,960	B2a
MsC2	Montalto silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	1,690	B2b
NeA	Neshaminy silt loam, 0 to 3 percent slopes	I-4	370	B1a
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	7,940	B1a
NeC2	Neshaminy silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	3,430	B1b
NsC	Neshaminy and Montalto very stony silt loams, 0 to 15 percent slopes	VIs-3	5,190	H1b
NsD	Neshaminy and Montalto very stony silt loams, 15 to 25 percent slopes	VIs-3	1,280	H1c
NsE	Neshaminy and Montalto very stony silt loams, 25 to 45 percent slopes	VIIs-3	630	H1c
Ot	Othello silt loam	IIIw-7	410	F3
Sa	Sand and gravel pits	VIIIs-4	570	---
ShB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	360	B1a
ShC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	350	B1a
SlB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded	IIe-4	440	B1a
SlC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	410	B1a
SsD	Sassafras and Joppa soils, 10 to 15 percent slopes	IVe-5	330	B1b
SsE	Sassafras and Joppa soils, 15 to 30 percent slopes	VIe-2	410	B1c
St	Stony land, steep	VIIIs-1	1,020	H1c
Sw	Swamp	VIIw-1	140	G3
Tm	Tidal marsh	VIIIw-1	1,030	G3
WaA	Watchung silt loam, 0 to 3 percent slopes	Vw-1	1,190	F3
WaB	Watchung silt loam, 3 to 8 percent slopes	VIw-2	2,200	F3
WcB	Watchung very stony silt loam, 0 to 8 percent slopes	VIIs-4	2,870	H1a
WhB	Whiteford silt loam, 3 to 8 percent slopes	IIe-4	710	B1a
WhC2	Whiteford silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	500	B1b
WoB	Woodstown loam, 0 to 5 percent slopes	IIe-16	240	E1a
	Total Area Mapped		242,175	

Note: Unmapped area (U. S. Military Res.) 44,545

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AdB2	Aldino silt loam, 3 to 8 percent slopes, moderately eroded-----	IIe-13	213	E2a
AdC2	Aldino silt loam, 8 to 15 percent slopes, moderately eroded----	IIIe-13	98	E2b
AgB2	Aura gravelly loam, 1 to 5 percent slopes, moderately eroded---	IIs-7	170	B2a
AgC2	Aura gravelly loam, 5 to 10 percent slopes, moderately eroded--	IIIe-7	241	B2a
AgE3	Aura gravelly loam, 10 to 30 percent slopes, severely eroded---	VIIe-2	196	B2c
Ba	Baile silt loam----------	Vw-1	3,318	F3
BeA	Beltsville silt loam, 0 to 1 percent slopes----------	IIw-8	108	E2a
BeB2	Beltsville silt loam, 1 to 5 percent slopes, moderately eroded----------	IIe-13	1,383	E2a
BeC2	Beltsville silt loam, 5 to 10 percent slopes, moderately eroded----------	IIIe-13	557	E2a
BeC3	Beltsville silt loam, 5 to 10 percent slopes, severely eroded--	IVe-9	465	E2a
BeD2	Beltsville silt loam, 10 to 15 percent slopes, moderately eroded----------	IVe-9	327	E2b
BrB2	Brandywine loam, 3 to 8 percent slopes, moderately eroded------	IIe-10	883	C1a
BrC2	Brandywine loam, 8 to 15 percent slopes, moderately eroded-----	IIIe-10	898	C1b
BrC3	Brandywine loam, 8 to 15 percent slopes, severely eroded-------	IVe-10	712	C1b
BrD2	Brandywine loam, 15 to 25 percent slopes, moderately eroded----	IVe-10	420	C1c
BrD3	Brandywine loam, 15 to 25 percent slopes, severely eroded------	VIe-3	799	C1c
BrF	Brandywine loam, 25 to 60 percent slopes----------	---	1,052	C1c
	North aspect----------	VIIe-3		
	South aspect----------	VIIe-3		
BwD	Brandywine very stony loam, 3 to 25 percent slopes----------	VIs-3	142	H1c
CgB2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded----------	IIe-4	3,536	B1a
CgC2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded----------	IIIe-4	2,530	B1b
ChA	Chester silt loam, 0 to 3 percent slopes----------	I-4	2,409	B1a
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded----	IIe-4	14,577	B1a
ChC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded---	IIIe-4	2,875	B1b
ChC3	Chester silt loam, 8 to 15 percent slopes, severely eroded-----	IVe-3	719	B1b
ChD2	Chester silt loam, 15 to 25 percent slopes, moderately eroded--	IVe-3	802	B1c
ClC3	Chillum gravelly loam, 5 to 10 percent slopes, severely eroded----------	IVe-7	447	B2a
ClD2	Chillum gravelly loam, 10 to 15 percent slopes, moderately eroded----------	IVe-7	304	B2b
ClE2	Chillum gravelly loam, 15 to 30 percent slopes, moderately eroded----------	VIe-2	140	B2c
CmB2	Chillum silt loam, 1 to 5 percent slopes, moderately eroded----	IIs-7	882	B2a
CmC2	Chillum silt loam, 5 to 10 percent slopes, moderately eroded---	IIIe-7	265	B2a
CnB2	Chillum-Fairfax loams, 1 to 5 percent slopes, moderately eroded----------	IIs-7	323	B2a
CnD3	Chillum-Fairfax loams, 5 to 15 percent slopes, severely eroded----------	VIe-2	401	B2b
Co	Codorus silt loam----------	IIw-7	3,873	G1
Cs	Comus silt loam----------	I-6	697	G1
CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes---------	IIe-6	1,199	G1
DeA	Delanco silt loam, 0 to 3 percent slopes----------	IIw-1	138	E3a
DeB2	Delanco silt loam, 3 to 8 percent slopes, moderately eroded----	IIe-16	241	E3a
EkA	Elioak silt loam, 0 to 3 percent slopes----------	I-4	401	B1a
EkB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded-----	IIe-4	2,779	B1a
EkC2	Elioak silt loam, 8 to 15 percent slopes, moderately eroded----	IIIe-4	987	B1b
EkD2	Elioak silt loam, 15 to 25 percent slopes, moderately eroded---	IVe-3	134	B1c

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
ElC3	Elioak silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-3	411	Blb
ElD3	Elioak silty clay loam, 15 to 25 percent slopes, severely eroded	VIe-2	126	Blc
Em	Elkton silt loam	IIIw-9	94	F3
EnA	Elsinboro loam, 0 to 3 percent slopes	I-4	136	Bla
EnB2	Elsinboro loam, 3 to 8 percent slopes, moderately eroded	IIe-4	356	Bla
EnC2	Elsinboro loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	156	Blb
EvB	Evesboro loamy sand, 1 to 5 percent slopes	IVs-1	146	Ala
EvC	Evesboro loamy sand, 5 to 15 percent slopes	VIIs-1	258	Alb
Fa	Fallsington loam	IIIw-7	356	F2
GlA	Glenelg loam, 0 to 3 percent slopes	I-4	508	Bla
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	IIe-4	15,616	Bla
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	7,835	Blb
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	IVe-3	2,777	Blb
GlD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	IVe-3	1,290	Blc
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	VIe-2	928	Blc
GnA	Glenville silt loam, 0 to 3 percent slopes	IIw-8	1,724	E2a
GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	IIe-13	5,266	E2a
GnC2	Glenville silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	146	E2b
Gp	Gravel pits and quarries	VIIIs-4	229	Bp
Ha	Hatboro silt loam	IIIw-7	3,381	G2
IuB	Iuka loam, local alluvium, 1 to 5 percent slopes	IIe-16	692	Gl
KcE3	Kelly clay loam, 15 to 30 percent slopes, severely eroded	VIIe-2	131	F3
KeB2	Kelly silt loam, 3 to 8 percent slopes, moderately eroded	IVw-3	386	F3
KeC2	Kelly silt loam, 8 to 15 percent slopes, moderately eroded	IVw-3	145	F3
KhC2	Keyport silt loam, 3 to 10 percent slopes, moderately eroded	IIIe-13	124	E2a
Kn	Kinkora silt loam	Vw-1	144	F3
LeB2	Legore silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	380	Bla
LeC2	Legore silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	143	Blb
LgC3	Legore silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-10	150	Blb
Ll	Leonardtown silt loam	IVw-3	480	F3
LnB2	Linganore channery loam, 3 to 8 percent slopes, moderately eroded	IIIe-10	212	Cla
LnC2	Linganore channery loam, 8 to 15 percent slopes, moderately eroded	IVe-10	391	Clb
LnD2	Linganore channery loam, 15 to 25 percent slopes, moderately eroded	VIe-3	148	Clc
LoE	Linganore channery silt loam, 25 to 45 percent slopes	---	142	Clc
	North aspect	VIIe-3		
	South aspect	VIIe-3		
Md	Made land	---	497	Ma
MgB2	Manor gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-25	1,863	Bla
MgC2	Manor gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	3,137	Blb
MgC3	Manor gravelly loam, 8 to 15 percent slopes, severely eroded	IVe-25	913	Blb
MlA	Manor loam, 0 to 3 percent slopes	IIs-25	284	Bla
MlB2	Manor loam, 3 to 8 percent slopes, moderately eroded	IIe-25	4,902	Bla
MlC2	Manor loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	4,967	Blb
MlC3	Manor loam, 8 to 15 percent slopes, severely eroded	IVe-25	4,019	Blb
MlD2	Manor loam, 15 to 25 percent slopes, moderately eroded	IVe-25	3,927	Blc
MlD3	Manor loam, 15 to 25 percent slopes, severely eroded	VIe-3	5,005	Blc
MlE	Manor loam, 25 to 45 percent slopes	VIIe-3	3,105	Blc
MnD	Manor very stony loam, 3 to 25 percent slopes	VIs-3	1,239	Hlc
MnF	Manor very stony loam, 25 to 60 percent slopes	VIIs-3	1,759	Hlc
Mo	Mixed alluvial land	VIw-1	416	G2
MpB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	628	B2a
MpC2	Montalto silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	193	B2a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MqC3	Montalto silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-3	123	B2b
MrE	Montalto and Relay soils, 15 to 45 percent slopes	VIe-2	630	B2c
MsD	Montalto and Relay very stony silt loams, 3 to 25 percent slopes	VIs-3	721	Hlc
MsF	Montalto and Relay very stony silt loams, 25 to 60 percent slopes	VIIs-3	590	Hlc
MtB2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded	IIIe-10	3,084	Cla
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	IVe-10	4,590	Clb
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	VIe-3	1,706	Clb
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	VIe-3	3,831	Clc
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	---	1,747	Clc
	North aspect	VIIe-3		
	South aspect	VIIe-3		
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	957	Bla
NeC2	Neshaminy silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	595	Blb
NsD3	Neshaminy silty clay loam, 15 to 25 percent slopes, severely eroded	VIe-2	224	Blc
ReC2	Relay silt loam, 3 to 15 percent slopes, moderately eroded	IIIe-10	209	Clb
RuB2	Rumford loamy sand, 1 to 5 percent slopes, moderately eroded	IIs-4	82	Ala
RuC2	Rumford loamy sand, 5 to 10 percent slopes, moderately eroded	IIIe-33	127	Ala
RuD2	Rumford loamy sand, 10 to 15 percent slopes, moderately eroded	IVe-5	90	Alb
ScB	Sandy and clayey land, gently sloping	IIIe-41	360	B3
ScD	Sandy and clayey land, moderately sloping	VIe-2	795	B3
ScE	Sandy and clayey land, moderately steep	VIIe-2	338	B3
SfB2	Sassafras gravelly sandy loam, 1 to 5 percent slopes, moderately eroded	IIe-5	482	Bla
SfC2	Sassafras gravelly sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	723	Bla
SfD2	Sassafras gravelly sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	295	Blb
SlB2	Sassafras loam, 1 to 5 percent slopes, moderately eroded	IIe-4	532	Bla
SlC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	432	Bla
SlD2	Sassafras loam, 10 to 15 percent slopes, moderately eroded	IVe-3	222	Blb
SsE	Sassafras soils, 15 to 40 percent slopes	VIe-2	348	Blc
St	Stony land	VIIIs-1	347	Hl
SuB2	Sunnyside fine sandy loam, 1 to 5 percent slopes, moderately eroded	IIe-5	62	Bla
SuD2	Sunnyside fine sandy loam, 5 to 15 percent slopes, moderately eroded	IVe-5	111	Blb
WaA	Watchung silt loam, 0 to 3 percent slopes	Vw-1	341	F3
WaB	Watchung silt loam, 3 to 8 percent slopes	VIw-2	214	F3
WoB2	Woodstown sandy loam, 1 to 5 percent slopes, moderately eroded	IIe-36	190	El

KENT COUNTY

MAP SYMBOL	MAPPING UNIT	ACRES	CAPABILITY UNIT SYMBOL	NATURAL SOIL GROUP
1	Butlertown silt loam	24,850	IIw,I	B2
2	Colts Neck gravelly loam	3,500	VIe	B1
3	Colts Neck silt loam	1,403	IVe	B1
4	Greenwich fine sandy loam	2,797	IIe,IIIe	B1
5	Greenwich sandy loam	95	IIe,IIIe	B1
6	Sassafras gravelly loam	4,549	IIIe, VIe	B1
7	Sassafras gravelly sandy loam	4,391	VIe	B1
8	Sassafras loam	14,057	IIe,I	B1
9	Sassafras sandy loam	8,224	IIe	B1
10	Sassafras silt loam	27,108	I,IIe	B1
11	Choptank loamy sand	2,255	IIs,IIIs	A1
12	Evesboro loamy sand	151	IIIs	A1
13	Beltsville silt loam	5,983	IIe	E2
14	Keyport fine sandy loam	9,251	IIw,IIIe	E2
15	Keyport loam	6,471	IIw, IIIe	E2
16	Keyport silt loam	24,566	IIw,IIIe	E2
17	Morgnec fine sandy loam	4,384	IIIe	E2
18	Ridgely sandy loam	1,105	IIIe,IIe	E1
19	Woodstown loam	1,394	IIw	E1
20	Woodstown sandy loam	1,048	IIw	E1
21	Alloway silt loam	829	IIIw	F3
22	Elkton fine sandy loam	3,577	IIIw	F3
23	Elkton loam	1,507	IIIw	F3
24	Elkton silt loam	13,403	IIIw	F3
25	Fallsington loam	175	IIIw	F2
26	Fallsington sandy loam	258	IIIw	F2
27	Pamlico Muck, shallow phase	97	IIIw	G2
28	Portsmouth loam	485	IIIw	F3
29	Coastal beach	201	VIIIs	A2
30	Meadow	7,700	VIw	G2
31	Tidal marsh	5,857	VIIIw	G3

1/ The capability class or classes listed are for the dominant soil phase mapped in the County.

Slope Symbol	Slope Range	Natural Soil Group Subphase
A	0-1%	a (0-10% slopes)
B	1-5%	a
BB	5-10%	a
C	10-15%	b (10-15% slopes)
D	15-30%	c (over 15% slopes)
E	Over 30%	c

MONTGOMERY COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AdA	Aldino silt loam, 0 to 3 percent slopes	IIw-11	125	E2a
AdB2	Aldino silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-13	1,212	E2a
AdC2	Aldino silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	31	E2b
AdC3	Aldino silt loam, 8 to 15 percent slopes, severely eroded	IVe-41	32	E2b
AsA	Ashton silt loam, 0 to 3 percent slopes	I-6	92	B1a
AsB2	Ashton silt loam, 3 to 8 percent slopes, moderately eroded	IIe-6	73	B1a
BaA2	Beltsville silt loam, 0 to 3 percent slopes, moderately eroded	IIw-8	463	E2a
BaB2	Beltsville silt loam, 3 to 8 percent slopes, moderately eroded	IIw-8	1,211	E2a
BaC2	Beltsville silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	109	E2b
BeA	Bermudian silt loam, 0 to 3 percent slopes	I-6	28	G1
BeB	Bermudian silt loam, 3 to 8 percent slopes	IIe-6	42	G1
BoA	Bowmansville silt loam, 0 to 3 percent slopes	VIw-1	2,343	G2
BrC2	Brandywine loam, 3 to 15 percent slopes, moderately eroded	IIIs-7	298	C1b
BrC3	Brandywine loam, 3 to 15 percent slopes, severely eroded	IVe-10	187	C1b
BrD2	Brandywine loam, 15 to 25 percent slopes, moderately eroded	IVe-10	143	C1c
BrD3	Brandywine loam, 15 to 25 percent slopes, severely eroded	VIIe-3	173	C1c
BuA	Bucks silt loam, 0 to 3 percent slopes	I-4	63	B2a
BuA2	Bucks silt loam, 0 to 3 percent slopes, moderately eroded	IIe-4	136	B2a
BuB2	Bucks silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,662	B2a
BuB3	Bucks silt loam, 3 to 8 percent slopes, severely eroded	IIIe-4	111	B2a
BuC3	Bucks silt loam, 8 to 15 percent slopes, moderately and severely eroded	IIIe-4	38	B2b
CaB	Calvert silt loam, 0 to 8 percent slopes	Vw-2	460	F3
CbA	Captina silt loam, 0 to 3 percent slopes	IIw-2	609	E2a
CbB2	Captina silt loam, 3 to 8 percent slopes, moderately eroded	IIe-14	181	E2a
ChA	Chester silt loam, 0 to 3 percent slopes	I-4	742	B1a
ChA2	Chester silt loam, 0 to 3 percent slopes, moderately eroded	IIe-4	193	B1a
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	10,063	B1a
ChB3	Chester silt loam, 3 to 8 percent slopes, severely eroded	IIIe-4	836	B1a
ChC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	446	B1b
ChC3	Chester silt loam, 8 to 15 percent slopes, severely eroded	IVe-3	339	B1b
CkA	Chewacla silt loam, 0 to 3 percent slopes	IIw-7	3,095	G1
ClB2	Chillum gravelly silt loam, 3 to 8 percent slopes, moderately eroded	IIe-7	232	B2a
ClB3	Chillum gravelly silt loam, 3 to 8 percent slopes, severely eroded	IIIe-7	101	B2a
ClC2	Chillum gravelly silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-7	256	B2b
ClC3	Chillum gravelly silt loam, 8 to 15 percent slopes, severely eroded	IVe-7	140	B2b
ClD2	Chillum gravelly silt loam, 15 to 25 percent slopes, moderately eroded	IVe-7	174	B2c
ClE2	Chillum gravelly silt loam, 25 to 45 percent slopes, moderately eroded	VIe-2	85	B2c
CmB2	Chillum silt loam, 3 to 8 percent slopes, moderately eroded	IIe-7	1,104	B2a
CmC2	Chillum silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-7	453	B2b
CmD2	Chillum silt loam, 15 to 25 percent slopes, moderately eroded	IVe-7	111	B2c
CnB2	Chillum and Penn gravelly silt loams, 3 to 8 percent slopes, moderately eroded	IIe-7	994	B2a
CnB3	Chillum and Penn gravelly silt loams, 3 to 8 percent slopes, severely eroded	IIIe-7	248	B2a
CnC2	Chillum and Penn gravelly silt loams, 8 to 15 percent slopes, moderately eroded	IIIe-7	161	B2b
CnD3	Chillum and Penn gravelly silt loams, 8 to 25 percent slopes, severely eroded	VIe-2	299	B2c
CoC2	Chrome silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	140	C1b
CpD2	Chrome very stony silt loam, 3 to 25 percent slopes, moderately eroded	VIIs-2	144	H1c
CrB2	Chrome and Conowingo silt loams, 3 to 8 percent slopes, moderately eroded	IIIe-13	2,229	C1a
CrB3	Chrome and Conowingo silt loams, 3 to 8 percent slopes, severely eroded	IIIe-13	71	C1a
Cs	Colluvial land	IIw-8	219	G1
CtA	Congaree silt loam, 0 to 3 percent slopes	I-6	117	G1
CvA2	Conowingo silt loam, 0 to 3 percent slopes, moderately eroded	IIw-11	82	E2a
CvA3	Conowingo silt loam, 0 to 3 percent slopes, severely eroded	IIIe-13	359	E2a
CwB2	Croom gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-7	697	B2a
CwC2	Croom gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-7	413	B2b
CwC3	Croom gravelly loam, 8 to 15 percent slopes, severely eroded	IVe-7	129	B2b
CwD2	Croom gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-7	126	B2c
CwD3	Croom gravelly loam, 15 to 25 percent slopes, severely eroded	VIe-2	101	B2c
CwE2	Croom gravelly loam, 25 to 45 percent slopes, moderately eroded	VIe-2	148	B2c
CwE3	Croom gravelly loam, 25 to 45 percent slopes, severely eroded	VIIe-3	116	B2c
CxA	Croton silt loam, 0 to 8 percent slopes	Vw-2	2,009	F3
EdB2	Edgemont gravelly sandy loam, 3 to 8 percent slopes, moderately eroded	IIe-25	42	B1a
EdC3	Edgemont gravelly sandy loam, 8 to 15 percent slopes, severely eroded	IVe-25	63	B1b
EeA	Elioak silt loam, 0 to 3 percent slopes	I-4	24	B1a
EeB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,562	B1a
EeC2	Elioak silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	159	B1b
EkB3	Elioak silty clay loam, 3 to 8 percent slopes, severely eroded	IIIe-4	246	B1a
EkC3	Elioak silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-3	93	B1b
ElA2	Elk silt loam, 0 to 3 percent slopes, moderately eroded	IIe-1	38	B1a
ElB2	Elk silt loam, 3 to 8 percent slopes, moderately eroded	IIe-1	318	B1a
EmC3	Elk silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-3	34	B1b
Ep	Eroded land, Penn materials	IVe-10	290	C1c
GcB2	Glenelg channery silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	4,905	B1a

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GcB3	Glenelg channery silt loam, 3 to 8 percent slopes, severely eroded	IIIe-10	1,412	B1a
GcC2	Glenelg channery silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	784	B1b
GcC3	Glenelg channery silt loam, 8 to 15 percent slopes, severely eroded	IVe-10	947	B1b
GcD2	Glenelg channery silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	107	B1c
GcD3	Glenelg channery silt loam, 15 to 25 percent slopes, severely eroded	VIe-3	165	B1c
GgB2	Glenelg gravelly loam, 3 to 8 percent slopes, moderately eroded	IIe-25	101	B1a
GgB3	Glenelg gravelly loam, 3 to 8 percent slopes, severely eroded	IIIe-25	78	B1a
GgC2	Glenelg gravelly loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	80	B1b
GgC3	Glenelg gravelly loam, 8 to 15 percent slopes, severely eroded	IVe-25	62	B1b
GgD2	Glenelg gravelly loam, 15 to 25 percent slopes, moderately eroded	IVe-25	59	B1c
GhA	Glenelg silt loam, 0 to 3 percent slopes	IIe-25	410	B1a
GhB2	Glenelg silt loam, 3 to 8 percent slopes, moderately eroded	IIe-25	37,629	B1a
GhB3	Glenelg silt loam, 3 to 8 percent slopes, severely eroded	IIIe-25	8,438	B1a
GhC2	Glenelg silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	5,169	B1b
GhC3	Glenelg silt loam, 8 to 15 percent slopes, severely eroded	IVe-25	4,264	B1b
GhD2	Glenelg silt loam, 15 to 25 percent slopes, moderately eroded	IVe-25	944	B1c
GhD3	Glenelg silt loam, 15 to 25 percent slopes, severely eroded	VIe-3	672	B1c
GlE2	Glenelg soils, 25 to 45 percent slopes, moderately eroded	VIe-3	167	B1c
GlE3	Glenelg soils, 25 to 45 percent slopes, severely eroded	VIIe-3	49	B1c
GmA	Glenville silt loam, 0 to 3 percent slopes	IIw-1	2,141	E2a
GmB	Glenville silt loam, 3 to 8 percent slopes	IIw-1	4,772	E2a
GmB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-13	685	E2a
Gp	Gravel pit	VIIIs-3	221	Bp
Gr	Gullied land, Penn materials	VIIe-3	608	B1c
HaA	Huntington silt loam, 0 to 3 percent slopes	I-6	1,927	G1
HaB2	Huntington silt loam, 3 to 8 percent slopes, moderately eroded	IIe-6	248	G1
IdA	Iredell silt loam, 0 to 3 percent slopes	IVw-3	46	F3
IdB2	Iredell silt loam, 3 to 8 percent slopes, moderately eroded	IVw-3	788	F3
IeC3	Iredell silty clay loam, 3 to 15 percent slopes, severely eroded	IVe-41	50	F3
LaC2	Lakeland loamy sand, 3 to 15 percent slopes, moderately eroded	IIIs-1	68	A1a
LaD3	Lakeland loamy sand, 15 to 25 percent slopes, severely eroded	VIIs-1	19	A1c
LeB2	Legore silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	411	B1a
LeB3	Legore silt loam, 3 to 8 percent slopes, severely eroded	IIIe-10	324	B1a
LeC2	Legore silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	269	B1b
LeC3	Legore silt loam, 8 to 15 percent slopes, severely eroded	IVe-10	446	B1b
LeD3	Legore silt loam, 15 to 25 percent slopes, severely eroded	VIe-3	73	B1c
LgA2	Leonardtown silt loam, 0 to 3 percent slopes, moderately eroded	IVw-3	79	F3
LgB2	Leonardtown silt loam, 3 to 8 percent slopes, moderately eroded	IVw-3	72	F3
LhA2	Lewisberry sandy loam, shallow, 0 to 3 percent slopes, moderately eroded	IIe-10	411	B1a
LhB2	Lewisberry sandy loam, shallow, 3 to 8 percent slopes, moderately eroded	IIe-10	2,996	B1a
LhB3	Lewisberry sandy loam, shallow, 3 to 8 percent slopes, severely eroded	IIIe-10	1,241	B1a
LhC2	Lewisberry sandy loam, shallow, 8 to 15 percent slopes, moderately eroded	IIIe-10	426	B1b
LhC3	Lewisberry sandy loam, shallow, 8 to 15 percent slopes, severely eroded	IVe-10	858	B1b
LhD2	Lewisberry sandy loam, shallow, 15 to 25 percent slopes, moderately eroded	IVe-10	53	B1c
LhD3	Lewisberry sandy loam, shallow, 15 to 25 percent slopes, severely eroded	IVe-3	361	B1c
LhE3	Lewisberry sandy loam, shallow, 25 to 45 percent slopes, moderately and severely eroded.	VIIe-3	150	B1c
LnA	Lindside silt loam, 0 to 3 percent slopes	IIw-7	2,180	G1
LoB2	Linganore channery silt loam, 3 to 8 percent slopes, moderately eroded	IIIs-7	2,048	C1a
LoC2	Linganore channery silt loam, 8 to 15 percent slopes, moderately eroded	IIIs-7	2,466	C1b
LoD2	Linganore channery silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	1,482	C1c
LrB3	Linganore channery silty clay loam, 3 to 8 percent slopes, severely eroded	IVe-10	706	C1a
LrC3	Linganore channery silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-10	1,811	B1b
LrD3	Linganore channery silty clay loam, 15 to 25 percent slopes, severely eroded	VIIe-3	1,550	C1c
LrE3	Linganore channery silty clay loam, 25 to 45 percent slopes, moderately and severely eroded.	VIIe-3	294	C1c
Ma	Made land	-----	753	Ma
McB2	Manor channery silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	6,284	B1a
McB3	Manor channery silt loam, 3 to 8 percent slopes, severely eroded	IIIe-10	6,919	B1a
McC2	Manor channery silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-10	5,667	B1b
McC3	Manor channery silt loam, 8 to 15 percent slopes, severely eroded	IVe-10	10,300	B1b
McD2	Manor channery silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	3,309	B1c
McD3	Manor channery silt loam, 15 to 25 percent slopes, severely eroded	VIe-3	5,384	B1c
McE2	Manor channery silt loam, 25 to 45 percent slopes, moderately eroded	VIe-3	1,227	B1c
McE3	Manor channery silt loam, 25 to 45 percent slopes, severely eroded	VIIe-3	857	B1c
MdB2	Manor silt loam, 3 to 8 percent slopes, moderately eroded	IIe-25	11,086	B1a
MdB3	Manor silt loam, 3 to 8 percent slopes, severely eroded	IIIe-25	11,191	B1a
MdC2	Manor silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	16,011	B1b
MdC3	Manor silt loam, 8 to 15 percent slopes, severely eroded	IVe-25	18,551	B1b
MdD2	Manor silt loam, 15 to 25 percent slopes, moderately eroded	IVe-25	8,257	B1c
MdD3	Manor silt loam, 15 to 25 percent slopes, severely eroded	VIe-3	8,491	B1c
MdE2	Manor silt loam, 25 to 45 percent slopes, moderately eroded	VIe-3	3,047	B1c
MeC4	Manor soils, 8 to 15 percent slopes, very severely eroded	VIe-3	529	B1b
MeD4	Manor soils, 15 to 25 percent slopes, very severely eroded	VIIe-3	352	B1c
MeE3	Manor soils, 25 to 45 percent slopes, severely eroded	VIIe-3	655	B1c

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MeF	Manor soils, 45 to 65 percent slopes	VIIe-3	511	B1c
MgA	Melvin silt loam, 0 to 3 percent slopes	IIIw-1	1,226	G2
Mh	Mixed alluvial land	VIw-1	149	G2
MmB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	150	B2a
MmC2	Montalto silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	75	B2b
MnD2	Montalto silty clay loam, 15 to 25 percent slopes, moderately and severely eroded	VIe-3	36	B2c
MoC2	Montalto very stony silt loam, 3 to 15 percent slopes, moderately eroded	VIs-2	465	H1b
MoE2	Montalto very stony silt loam, 15 to 45 percent slopes, moderately eroded	VIIs-2	176	H1c
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	1,914	B1a
NeC2	Neshaminy silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	221	B1b
NsB3	Neshaminy silty clay loam, 3 to 8 percent slopes, severely eroded	IIIe-4	51	B1a
NsC3	Neshaminy silty clay loam, 8 to 15 percent slopes, severely eroded	IVe-3	136	B1b
NsD3	Neshaminy silty clay loam, 15 to 25 percent slopes, severely eroded	VIe-3	40	B1c
PeA2	Penn silt loam, 0 to 3 percent slopes, moderately eroded	IIe-10	496	C1a
PeB2	Penn silt loam, 3 to 8 percent slopes, moderately eroded	IIe-10	5,748	C1a
PeB3	Penn silt loam, 3 to 8 percent slopes, severely eroded	IIIe-10	6,982	C1a
PeC2	Penn silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-16	1,131	C1b
PeC3	Penn silt loam, 8 to 15 percent slopes, severely eroded	IVe-10	3,002	C1b
PeC4	Penn silt loam, 8 to 15 percent slopes, very severely eroded	VIe-3	395	C1b
PeD2	Penn silt loam, 15 to 25 percent slopes, moderately eroded	IVe-10	646	C1c
PeD3	Penn silt loam, 15 to 25 percent slopes, severely eroded	VIe-3	679	C1c
PeE2	Penn silt loam, 25 to 45 percent slopes, moderately eroded	VIe-3	406	C1c
PsF	Penn soils, 45 to 65 percent slopes	VIIe-3	419	C1c
PvC2	Penn very stony silt loam, 3 to 15 percent slopes, moderately eroded	VIs-2	55	H1b
PvE2	Penn very stony silt loam, 15 to 45 percent slopes, moderately eroded	VIIs-2	129	H1c
ReA	Readington silt loam, 0 to 3 percent slopes	IIw-11	1,641	E2a
ReA2	Readington silt loam, 0 to 3 percent slopes, moderately eroded	IIw-11	541	E2a
ReB2	Readington silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-13	2,943	E2a
RkA	Roanoke silt loam, 0 to 8 percent slopes	Vw-2	260	F3
Rn	Rock land	VIIIs-3	967	H2c
RoA	Rowland silt loam, 0 to 8 percent slopes	IIw-7	692	G1
RsB2	Rumford loamy sand, 3 to 8 percent slopes, moderately eroded	IIIs-1	43	A1a
SaB2	Sassafras loam, 3 to 8 percent slopes, moderately eroded	IIe-4	38	B1a
SaC2	Sassafras loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	28	B1b
SfB2	Sassafras loam, clayey substratum, 3 to 8 percent slopes, moderately eroded	IIe-4	32	B1a
SsB2	Sassafras sandy loam, 3 to 8 percent slopes, moderately eroded	IIe-5	155	B1a
SsC2	Sassafras sandy loam, 8 to 15 percent slopes, moderately eroded	IIIe-5	105	B1b
SsE2	Sassafras sandy loam, 15 to 30 percent slopes, moderately eroded	IVe-3	26	B1c
StC	Stony land, Manor materials, 3 to 15 percent slopes	VIs-2	209	H1b
StE	Stony land, Manor materials, 15 to 45 percent slopes	VIIs-2	679	H1c
UbA	Urbana silt loam, 0 to 3 percent slopes	IIw-11	53	E2a
UbB2	Urbana silt loam, 3 to 8 percent slopes, moderately eroded	IIIe-13	1,480	E2a
UbC2	Urbana silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-13	145	E2b
UbC3	Urbana silt loam, 8 to 15 percent slopes, severely eroded	IVe-11	66	E2b
WcB	Watchung silt loam, 0 to 8 percent slopes	Vw-2	690	F3
WhA	Wehadkee silt loam, 0 to 3 percent slopes	VIw-1	10,984	G2
WkA	Wickham silt loam, 0 to 3 percent slopes	I-4	160	B1a
WkB2	Wickham silt loam, 3 to 8 percent slopes, moderately eroded	IIe-4	312	B1a
WkC2	Wickham silt loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	56	B1b
WoA	Worsham silt loam, 0 to 8 percent slopes	Vw-2	10,772	F3

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AdA	Adelphia fine sandy loam, 0 to 2 percent slopes	IIw-5	1,942	E1
AdB2	Adelphia fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	2,110	E1
AdC2	Adelphia fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	167	E1
AhA	Adelphia silt loam, 0 to 2 percent slopes	IIw-1	616	E1
AhB2	Adelphia silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	271	E1
AuB2	Aura gravelly loam, 2 to 6 percent slopes, moderately eroded	IIs-7	219	B2a
AuC2	Aura gravelly loam, 6 to 12 percent slopes, moderately eroded	IIIe-7	696	B2b
AuC3	Aura gravelly loam, 6 to 12 percent slopes, severely eroded	IVe-7	525	B2b
AuD	Aura gravelly loam, 12 to 20 percent slopes	IVe-7	1,796	B2c
AvE	Aura and Croom gravelly loams, 20 to 50 percent slopes	VIIe-2	9,279	B2c
BeA	Beltsville fine sandy loam, 0 to 2 percent slopes	IIw-9	321	E2a
BeB2	Beltsville fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	1,832	E2a
BeC2	Beltsville fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	691	E2a
BlA	Beltsville silt loam, 0 to 2 percent slopes	IIw-8	5,178	E2a
BlB2	Beltsville silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	17,463	E2a
BlC2	Beltsville silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-13	1,811	E2a
BlC3	Beltsville silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	975	E2a
BlD3	Beltsville silt loam, 10 to 15 percent slopes, severely eroded	VIe-2	440	E2b
BmB	Beltsville-Urban land complex, 0 to 5 percent slopes	---	3,867	E2a
BmC	Beltsville-Urban land complex, 5 to 15 percent slopes	---	366	E2a
Bn	Bibb sandy loam	IIIw-6	1,910	G2
Bo	Bibb silt loam	IIIw-7	17,300	G2
Br	Bibb-Urban land complex	---	739	G2
BtB2	Butlertown silt loam, 0 to 5 percent slopes, moderately eroded	IIe-16	263	B2a
CaB2	Chillum silt loam, 0 to 6 percent slopes, moderately eroded	IIs-7	1,785	B2a
CaC2	Chillum silt loam, 6 to 12 percent slopes, moderately eroded	IIIe-7	911	B2b
CaC3	Chillum silt loam, 6 to 12 percent slopes, severely eroded	IVe-7	495	B2b

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CaD2	Chillum silt loam, 12 to 20 percent slopes, moderately eroded	IVe-7	456	B2c
CbB	Chillum-Urban land complex, 0 to 6 percent slopes	---	360	B2a
CbC	Chillum-Urban land complex, 6 to 12 percent slopes	---	198	B2b
CbE	Chillum-Urban land complex, 12 to 35 percent slopes	---	180	B2c
CcC3	Christiana clay, 5 to 10 percent slopes, severely eroded	IVe-3	604	B3
CcD3	Christiana clay, 10 to 15 percent slopes, severely eroded	VIe-2	263	B3
CcE3	Christiana clay, 15 to 35 percent slopes, severely eroded	VIIe-2	246	B3
CdA	Christiana fine sandy loam, 0 to 2 percent slopes	IIs-28	133	B3
CdB2	Christiana fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-41	911	B3
CdC2	Christiana fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-41	1,255	B3
CdD2	Christiana fine sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	546	B3
CeA	Christiana silt loam, 0 to 2 percent slopes	IIs-29	224	B3
CeB2	Christiana silt loam, 2 to 5 percent slopes, moderately eroded	IIe-42	2,047	B3
CeC2	Christiana silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-42	1,458	B3
CeD2	Christiana silt loam, 10 to 25 percent slopes, moderately eroded	IVe-3	459	B3
CfB	Christiana-Urban land complex, 0 to 5 percent slopes	---	1,316	B3
CfC	Christiana-Urban land complex, 5 to 15 percent slopes	---	2,318	B3
CfE	Christiana-Urban land complex, 15 to 40 percent slopes	---	300	B3
Cg	Clay pits	VIIIs-4	178	BP
Ch	Codorus silt loam	IIw-7	1,528	G1
Ck	Codorus-Urban land complex	---	526	G1
Cl	Colemantown loam	IIIw-7	235	G3
CmA	Collington fine sandy loam, 0 to 2 percent slopes	I-5	2,935	B1a
CmB2	Collington fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	10,088	B1a
CmC2	Collington fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	4,406	B1a
CmC3	Collington fine sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	3,245	B1a
CmD2	Collington fine sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	1,965	B1b
CmD3	Collington fine sandy loam, 10 to 15 percent slopes, severely eroded	VIe-2	2,400	B1b
CmE2	Collington fine sandy loam, 15 to 40 percent slopes, moderately eroded	VIe-2	2,656	B1c
CmE3	Collington fine sandy loam, 15 to 30 percent slopes, severely eroded	VIIe-2	1,621	B1c
CnB2	Collington loamy fine sand, 0 to 5 percent slopes, moderately eroded	IIs-4	511	B1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
CnC2	Collington loamy fine sand, 5 to 10 percent slopes, moderately eroded---	IIIe-3	283	B1a
CnD2	Collington loamy fine sand, 10 to 15 percent slopes, moderately eroded---	IVe-5	157	B1b
CoA	Collington silt loam, 0 to 2 percent slopes----------	I-4	126	B1a
CoB2	Collington silt loam, 2 to 5 percent slopes, moderately eroded----------	IIe-4	316	B1a
CoC3	Collington silt loam, 5 to 10 percent slopes, severely eroded----------	IVe-3	178	B1a
CpB	Collington-Urban land complex, 0 to 5 percent slopes----------	---	893	B1a
CpC	Collington-Urban land complex, 5 to 15 percent slopes----------	---	809	B1b
Cr	Comus silt loam----------	I-6	230	G1
CsB2	Croom gravelly loam, 3 to 8 percent slopes, moderately eroded----------	IIs-7	627	B2a
CsC2	Croom gravelly loam, 8 to 15 percent slopes, moderately eroded----------	IIIe-7	646	B2b
CsC3	Croom gravelly loam, 8 to 15 percent slopes, severely eroded----------	IVe-7	828	B2b
CtB2	Croom gravelly sandy loam, 3 to 8 percent slopes, moderately eroded---	IIs-9	916	B2a
CtC2	Croom gravelly sandy loam, 8 to 15 percent slopes, moderately eroded---	IIIe-9	935	B2b
CtC3	Croom gravelly sandy loam, 8 to 15 percent slopes, severely eroded-----	IVe-7	1,065	B2b
CtD2	Croom gravelly sandy loam, 15 to 25 percent slopes, moderately eroded---	IVe-7	1,655	B2c
CuB	Croom-Urban land complex, 0 to 8 percent slopes----------	---	396	B2a
CuC	Croom-Urban land complex, 8 to 15 percent slopes----------	---	615	B2b
CuE	Croom-Urban land complex, 15 to 35 percent slopes----------	---	975	B2c
DoA	Donlonton fine sandy loam, 0 to 2 percent slopes----------	IIw-9	239	E2a
DoB2	Donlonton fine sandy loam, 2 to 5 percent slopes, moderately eroded---	IIe-36	370	E2a
Ek	Elkton silt loam----------	IIIw-9	336	F3
ElB	Elkton fine sandy loam, thick surface, 0 to 5 percent slopes----------	IIIw-11	139	F3
EmA	Elsinboro loam, 0 to 2 percent slopes----------	I-4	141	B1a
EmB2	Elsinboro loam, 2 to 5 percent slopes, moderately eroded----------	IIe-4	155	B1a
EnA	Elsinboro sandy loam, 0 to 2 percent slopes----------	I-5	414	B1a
EnB2	Elsinboro sandy loam, 2 to 5 percent slopes, moderately eroded----------	IIe-5	226	B1a
EnC2	Elsinboro sandy loam, 5 to 10 percent slopes, moderately eroded----------	IIIe-5	174	B1a
EuB	Elsinboro-Urban land complex, 0 to 5 percent slopes----------	---	538	B1a
Fl	Fallsington loam----------	IIIw-7	339	F2
Fs	Fallsington sandy loam----------	IIIw-6	1,613	F2
Fu	Fallsington-Urban land complex--------	---	151	F2
GaB	Galestown gravelly loamy sand, 0 to 8 percent slopes----------	IVs-1	2,015	A1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
GaC	Galestown gravelly loamy sand, 8 to 15 percent slopes	VIIs-1	1,060	A1b
GdB	Galestown loamy sand, 0 to 8 percent slopes	IVs-1	1,879	A1a
GdC	Galestown loamy sand, 8 to 15 percent slopes	VIIs-1	306	A1b
GeB	Galestown-Evesboro loamy sands, 0 to 8 percent slopes	IVs-1	2,182	A1a
GeC	Galestown-Evesboro loamy sands, 8 to 15 percent slopes	VIIs-1	849	A1b
GmB	Galestown-Urban land complex, 0 to 8 percent slopes	---	316	A1a
GmC	Galestown-Urban land complex, 8 to 15 percent slopes	---	186	A1b
GnC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	IIIe-4	157	B1b
GoB	Glenelg-Urban land complex, 0 to 8 percent slopes	---	220	B1a
Gp	Gravel and borrow pits	VIIIs-4	2,790	Bp
Ha	Hatboro silt loam	IIIw-7	1,239	G2
HcC3	Howell clay loam, 6 to 12 percent slopes, severely eroded	IVe-3	367	B2b
HcD3	Howell clay loam, 12 to 20 percent slopes, severely eroded	VIe-2	245	B2c
HoB2	Howell fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-28	131	B2a
HoC2	Howell fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-28	145	B2b
HwB2	Howell silt loam, 0 to 6 percent slopes, moderately eroded	IIe-29	263	B2a
HwC2	Howell silt loam, 6 to 12 percent slopes, moderately eroded	IIIe-29	190	B2b
HwD2	Howell silt loam, 12 to 20 percent slopes, moderately eroded	IVe-3	200	B2c
HwE2	Howell silt loam, 20 to 35 percent slopes, moderately eroded	VIe-2	213	B2c
Hy	Hyde silt loam	IIIw-9	180	F3
Ik	Iuka fine sandy loam	IIw-7	424	G1
ImA	Iuka sandy loam, local alluvium, 0 to 2 percent slopes	IIw-7	414	G1
ImB	Iuka sandy loam, local alluvium, 2 to 5 percent slopes	IIw-7	735	G1
In	Iuka silt loam	IIw-7	210	G1
IoA	Iuka silt loam, local alluvium, 0 to 2 percent slopes	IIw-7	818	G1
IoB	Iuka silt loam, local alluvium, 2 to 5 percent slopes	IIw-7	744	G1
Iu	Iuka-Urban land complex	---	106	G1
Ix	Iuka, local alluvium-Urban land complex	---	492	G1
Jo	Johnston silt loam	IIIw-7	574	G2
Ju	Johnston-Urban land complex	---	120	G2
KeA	Keyport fine sandy loam, 0 to 2 percent slopes	IIw-9	340	E2a
KeB2	Keyport fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	731	E2a
KeC2	Keyport fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	340	E2a
KpA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	1,434	E2a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	2,340	E2a
KpC2	Keyport silt loam, 5 to 15 percent slopes, moderately eroded	IIIe-13	286	E2b
KrC3	Keyport silty clay loam, 5 to 10 percent slopes, severely eroded	VIe-2	118	E2a
KuB	Keyport-Urban land complex, 0 to 10 percent slopes	---	419	E2a
Ky	Klej loamy sand	IIIw-10	111	E1
LeA	Leonardtown silt loam, 0 to 2 percent slopes	IVw-3	4,466	F3
LeB	Leonardtown silt loam, 2 to 5 percent slopes	IVw-3	1,495	F3
Ma	Made land	---	1,104	Ma
MfB2	Magnolia fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	108	B1a
MgB2	Magnolia silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	170	B1a
MgC2	Magnolia silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	71	B1a
MhB2	Manor loam, 3 to 8 percent slopes, moderately eroded	IIe-25	62	B1a
MhC2	Manor loam, 8 to 15 percent slopes, moderately eroded	IIIe-25	116	B1b
MhD2	Manor loam, 15 to 25 percent slopes, moderately eroded	IVe-25	216	B1c
MhF2	Manor loam, 25 to 60 percent slopes, moderately eroded	VIIe-3	442	B1c
MkC	Manor-Urban land complex, 8 to 15 percent slopes	---	479	B1b
M1A	Marr fine sandy loam, 0 to 2 percent slopes	1-5	209	B1a
M1B2	Marr fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-5	2,108	B1a
M1B3	Marr fine sandy loam, 2 to 6 percent slopes, severely eroded	IIIe-5	109	B1a
M1C2	Marr fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-5	422	B1b
M1C3	Marr fine sandy loam, 6 to 12 percent slopes, severely eroded	IVe-5	1,659	B1c
M1D3	Marr fine sandy loam, 12 to 20 percent slopes, severely eroded	VIe-2	892	B1c
M1E	Marr fine sandy loam, 20 to 35 percent slopes	VIe-2	228	B1c
MmA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	414	B1a
MmB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	299	B1a
MnA	Matapeake silt loam, 0 to 2 percent slopes	I-4	775	B1a
MnB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	1,548	B1a
MnC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	909	B1a
MnC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	IVe-3	465	B1a
MnD2	Matapeake silt loam, 10 to 15 percent slopes, moderately eroded	IVe-3	518	B1b

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MoB2	Matapeake silt loam, silty substratum, 2 to 5 percent slopes, moderately eroded	IIe-4	354	B1a
MpB	Matapeake-Urban land complex, 0 to 5 percent slopes	---	152	B1a
MpC	Matapeake-Urban land complex, 5 to 15 percent slopes	---	155	B1b
MrA	Matawan fine sandy loam, 0 to 2 percent slopes	IIw-10	194	E2a
MrB2	Matawan fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	198	E2a
MrC2	Matawan fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	128	E2a
MsA	Matawan loamy sand, 0 to 2 percent slopes	IIw-10	438	E2a
MsB	Matawan loamy sand, 2 to 5 percent slopes	IIe-36	187	E2a
MtA	Mattapex fine sandy loam, 0 to 2 percent slopes	IIw-5	476	E3
MtB2	Mattapex fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	660	E3
MuA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	644	E3
MuB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	858	E3
MvB	Mattapex-Urban land complex, 0 to 5 percent slopes	---	218	E3
Mw	Mixed alluvial land	VIw-1	3,129	G2
MxC3	Monmouth clay loam, 5 to 10 percent slopes, severely eroded	IVe-3	470	B2a
MxD3	Monmouth clay loam, 10 to 30 percent slopes, severely eroded	VIe-2	355	B2c
MyA	Monmouth fine sandy loam, 0 to 2 percent slopes	I-28	321	B2a
MyB2	Monmouth fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-28	1,919	B2a
MyC2	Monmouth fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-28	578	B2a
MyD2	Monmouth fine sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	94	B2b
MzB2	Muirkirk loamy sand, 0 to 5 percent slopes, moderately eroded	IIs-5	338	B3
MzC2	Muirkirk loamy sand, 5 to 10 percent slopes, moderately eroded	IIIe-5	240	B3
OcA	Ochlockonee sandy loam, local alluvium, 0 to 2 percent slopes	I-6	772	G1
OcB	Ochlockonee sandy loam, local alluvium, 2 to 5 percent slopes	IIe-6	1,477	G1
OcC	Ochlockonee sandy loam, local alluvium, 5 to 10 percent slopes	IIIe-6	360	G1
OhA	Ochlockonee silt loam, local alluvium, 0 to 2 percent slopes	I-6	118	G1
OhB	Ochlockonee silt loam, local alluvium, 2 to 5 percent slopes	IIe-6	270	G1
Ok	Ochlockonee, local alluvium-Urban land complex	---	110	G1
Ol	Othello fine sandy loam	IIIw-6	451	F3
Ot	Othello silt loam	IIIw-7	990	F3
Pr	Plummer and Rutlege loamy sands	IVw-6	128	F1

MA SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
RdA	Rumford loamy sand, 0 to 2 percent slopes	IIs-4	620	Ala
RdB2	Rumford loamy sand, 2 to 5 percent slopes, moderately eroded	IIs-4	1,775	Ala
RdC2	Rumford loamy sand, 5 to 10 percent slopes, moderately eroded	IIIe-33	731	Ala
RdC3	Rumford loamy sand, 5 to 10 percent slopes, severely eroded	IVe-5	175	Ala
RdD2	Rumford loamy sand, 10 to 15 percent slopes, moderately eroded	IVe-5	207	Alb
ReB	Rumford-Evesboro loamy sands, 2 to 6 percent slopes	IIs-4	117	Ala
ReC	Rumford-Evesboro loamy sands, 6 to 12 percent slopes	IIIe-33	567	Ala
ReD	Rumford-Evesboro loamy sands, 12 to 20 percent slopes	IVe-5	333	Alb
SaE	Sandy land, steep	VIIs-1	12,670	Alc
ScB	Sandy and clayey land, gently sloping-	IIIe-41	825	B3
ScC	Sandy and clayey land, sloping	IVe-5	1,235	B3
ScD	Sandy and clayey land, moderately steep	VIe-2	1,016	B3
SfB2	Sassafras gravelly loam, 2 to 5 percent slopes, moderately eroded	IIe-4	321	Bla
SfC2	Sassafras gravelly loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	560	Bla
SfD2	Sassafras gravelly loam, 10 to 15 percent slopes, moderately eroded	IVe-3	565	Blb
SgB2	Sassafras gravelly sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	1,380	Bla
SgC2	Sassafras gravelly sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	1,270	Bla
SgC3	Sassafras gravelly sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	1,568	Bla
SgD2	Sassafras gravelly sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	2,432	Blb
SgD3	Sassafras gravelly sandy loam, 10 to 15 percent slopes, severely eroded	VIe-2	3,065	Blb
SgE	Sassafras gravelly sandy loam, 15 to 30 percent slopes	VIe-2	5,657	Blc
ShA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	1,886	Bla
ShB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	5,963	Bla
ShC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	2,217	Bla
ShC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	1,618	Bla
SkB	Sassafras-Urban land complex, 0 to 5 percent slopes	---	1,329	Bla
SkC	Sassafras-Urban land complex, 5 to 15 percent slopes	---	1,256	Bla
SkE	Sassafras-Urban land complex, 15 to 30 percent slopes	---	276	Blc
SlD	Sassafras-Collington-Aura gravelly sandy loams, 12 to 20 percent slopes-	IVe-5	182	Blb
SlE	Sassafras-Collington-Aura gravelly sandy loams, 20 to 35 percent slopes-	VIe-2	903	Blc
SmA	Shrewsbury fine sandy loam, 0 to 2 percent slopes	IIIw-6	2,060	F2

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
SmB	Shrewsbury fine sandy loam, 2 to 5 percent slopes	IIIw-6	641	F2
SnA	Shrewsbury silt loam, 0 to 2 percent slopes	IIIw-7	487	F2
So	Shrewsbury-Urban land complex	---	163	F2
SpB	Silty and clayey land, gently sloping-	IIIe-42	931	B3
SpC	Silty and clayey land, sloping	IVe-3	1,495	B3
SpE	Silty and clayey land, steep	VIIe-2	820	B3
StB2	Sunnyside fine sandy loam, 0 to 5 percent slopes, moderately eroded	IIe-5	1,821	B1a
StC2	Sunnyside fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	1,930	B1a
StD2	Sunnyside fine sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	807	B1b
StE	Sunnyside fine sandy loam, 15 to 30 percent slopes	VIe-2	283	B1c
SuB2	Sunnyside loam, 0 to 5 percent slopes, moderately eroded	IIe-4	362	B1a
SuC2	Sunnyside loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	307	B1a
SuD2	Sunnyside loam, 10 to 15 percent slopes, moderately eroded	IVe-3	66	B1b
SvC3	Sunnyside sandy clay loam, 5 to 10 percent slopes, severely eroded	IVe-3	595	B1a
SvD3	Sunnyside sandy clay loam, 10 to 15 percent slopes, severely eroded	VIe-2	295	B1b
SwB	Sunnyside-Urban land complex, 0 to 5 percent slopes	---	1,054	B1a
SwC	Sunnyside-Urban land complex, 5 to 15 percent slopes	---	2,232	B1a
Sx	Swamp	VIIw-1	1,204	G3
Tm	Tidal marsh	VIIIw-1	2,790	G3
WaA	Westphalia fine sandy loam, 0 to 2 percent slopes	I-5	142	B1a
WaB2	Westphalia fine sandy loam, 2 to 6 percent slopes, moderately eroded	IIe-5	4,309	B1a
WaB3	Westphalia fine sandy loam, 2 to 6 percent slopes, severely eroded	IIIe-5	186	B1a
WaC2	Westphalia fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-5	3,820	B1a
WaC3	Westphalia fine sandy loam, 6 to 12 percent slopes, severely eroded	IVe-5	4,233	B1a
WaD2	Westphalia fine sandy loam, 12 to 20 percent slopes, moderately eroded	IVe-5	1,861	B1b
WaD3	Westphalia fine sandy loam, 12 to 20 percent slopes, severely eroded	VIe-2	6,196	B1b
WbB2	Westphalia very fine sandy loam, 0 to 6 percent slopes, moderately eroded	IIe-4	658	B1b
WbC2	Westphalia very fine sandy loam, 6 to 12 percent slopes, moderately eroded	IIIe-4	601	B1a
WbD2	Westphalia very fine sandy loam, 12 to 20 percent slopes, moderately eroded	IVe-3	421	B1c
WeB2	Westphalia-Evesboro complex, 2 to 6 percent slopes, moderately eroded	IIe-5	1,156	B1a
WeC2	Westphalia-Evesboro complex, 6 to 12 percent slopes, moderately eroded	IIIe-5	940	B1a
WeC3	Westphalia-Evesboro complex, 6 to 12 percent slopes, severely eroded	IVe-5	2,522	B1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
WeD3	Westphalia-Evesboro complex, 12 to 20 percent slopes, severely eroded----	VIe-2	4,393	B1b
WoA	Woodstown sandy loam, 0 to 2 percent slopes----------	IIw-5	961	E1
WoB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded----------	IIe-36	958	E1
WoC2	Woodstown sandy loam, 5 to 10 percent slopes, moderately eroded----------	IIIe-36	100	E1
Wu	Woodstown-Urban land complex---------	---	413	E1
			989	Ma
			4,503	
			310,400	

QUEEN ANNES COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
Ba	Bayboro silt loam	IIIw-9	1,274	F3
BoA	Bertie and Othello silt loams, 0 to 2 percent slopes	IIIw-1	706	F3
BoB2	Bertie and Othello silt loams, 2 to 5 percent slopes, moderately eroded	IIIw-1	75	F3
Bp	Bibb silt loam	IIIw-7	337	G2
Bt	Bladen silty clay loam	VIw-2	381	F3
BuA	Butlertown silt loam, 0 to 2 percent slopes	IIw-1	4,263	B2a
BuB2	Butlertown silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	6,868	B2a
BuC2	Butlertown silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-16	103	B2a
BuC3	Butlertown silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	100	B2a
Cb	Coastal beaches	VIIIs-2	242	A2
DoA	Downer loamy sand, 0 to 2 percent slopes	IIs-4	388	Ala
DoB	Downer loamy sand, 2 to 5 percent slopes	IIs-4	3,666	Ala
DoC	Downer loamy sand, 5 to 10 percent slopes	IIIe-33	363	Ala
DoC3	Downer loamy sand, 5 to 10 percent slopes, severely eroded	IVe-5	334	Ala
DoD	Downer loamy sand, 10 to 15 percent slopes	IVe-5	110	Alb
DoD3	Downer loamy sand, 10 to 15 percent slopes, severely eroded	VIe-?	84	Alb
DoE	Downer loamy sand, 15 to 30 percent slopes	VIe-2	83	Alc
Ek	Elkton loam	IIIw-9	1,228	F3
EnA	Elkton silt loam, 0 to 2 percent slopes	IIIw-9	17,498	F3
EnB2	Elkton silt loam, 2 to 5 percent slopes, moderately eroded	IIIw-9	276	F3
FaA	Fallsington loam, 0 to 2 percent slopes	IIIw-7	16,145	F2
FaB	Fallsington loam, 2 to 5 percent slopes	IIIw-7	242	F2
FdA	Fallsington sandy loam, 0 to 2 percent slopes	IIIw-6	15,876	F2
FdB	Fallsington sandy loam, 2 to 5 percent slopes	IIIw-6	344	F2
GaB	Galestown loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	1,937	Ala
GaC	Galestown loamy sand, clayey substratum, 5 to 10 percent slopes	IVs-1	204	Ala
GcB	Galestown sand, clayey substratum, 0 to 5 percent slopes	IVs-1	289	Ala
GkD	Galestown and Lakeland loamy sands, 10 to 15 percent slopes	VIIs-1	201	Alb
GkE	Galestown and Lakeland loamy sands, 15 to 30 percent slopes	VIIs-1	106	Alc
GlC	Galestown and Lakeland sands, 5 to 10 percent slopes	VIIs-1	85	Ala
Gr	Gravel and borrow pits	VIIIs-4	144	Bp
Jo	Johnston loam	IIIw-7	3,421	G2
KeA	Keyport loam, 0 to 2 percent slopes	IIw-8	669	E2a
KeB2	Keyport loam, 2 to 5 percent slopes, moderately eroded	IIe-13	307	E2a
KpA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	7,087	E2a
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	1,585	E2a
KrC3	Keyport silty clay loam, 5 to 10 percent slopes, severely eroded	VIe-2	192	E2a
KrD3	Keyport silty clay loam, 10 to 15 percent slopes, severely eroded	VIIe-2	81	E2b
KsA	Klej loamy sand, 0 to 2 percent slopes	IIIw-10	92	El
KsB	Klej loamy sand, 2 to 5 percent slopes	IIIw-10	118	El
LaB	Lakeland loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	997	Ala
LaC	Lakeland loamy sand, clayey substratum, 5 to 10 percent slopes	IVs-1	143	Ala
Ma	Made land	---	80	Ma
MbA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	86	Bla
MbB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	717	Bla
MbC2	Matapeake fine sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	76	Bla
MbC3	Matapeake fine sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	112	Bla
McA	Matapeake loam, 0 to 2 percent slopes	I-4	493	Bla
McB2	Matapeake loam, 2 to 5 percent slopes, moderately eroded	IIe-4	2,588	Bla
McC2	Matapeake loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	119	Bla
McC3	Matapeake loam, 5 to 10 percent slopes, severely eroded	IVe-3	239	Bla
MkA	Matapeake silt loam, 0 to 2 percent slopes	I-4	1,199	Bla
MkB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	2,198	Bla
MkC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	141	Bla
MkC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	IVe-3	147	Bla
MmD	Matapeake soils, 10 to 15 percent slopes	IVe-3	205	Blb

QUEEN ANNES COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MmD3	Matapeake soils, 10 to 15 percent slopes, severely eroded	VIe-2	117	B1b
MmE	Matapeake soils, 15 to 30 percent slopes	VIe-2	144	B1c
MoA	Matapeake silt loam, silty substratum, 0 to 2 percent slopes	I-4	568	B1a
MoB2	Matapeake silt loam, silty substratum, 2 to 5 percent slopes, moderately eroded	IIe-4	2,972	B1a
MoC2	Matapeake silt loam, silty substratum, 5 to 10 percent slopes, moderately eroded	IIIe-4	279	B1a
MoC3	Matapeake silt loam, silty substratum, 5 to 10 percent slopes, severely eroded	IVe-3	87	B1a
MpA	Mattapex fine sandy loam, 0 to 2 percent slopes	IIw-5	224	E3a
MpB2	Mattapex fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	173	E3a
MsA	Mattapex loam, 0 to 2 percent slopes	IIw-1	1,395	E3a
MsB2	Mattapex loam, 2 to 5 percent slopes, moderately eroded	IIe-16	2,596	E3a
MsC2	Mattapex loam, 5 to 10 percent slopes, moderately eroded	IIIe-16	201	E3a
MsC3	Mattapex loam, 5 to 10 percent slopes, severely eroded	IVe-9	247	E3a
MtA	Mattapex silt loam, 0 to 2 percent slopes	IVe-9	4,785	E3a
MtB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	3,479	E3a
MtC2	Mattapex silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-16	422	E3a
MtC3	Mattapex silt loam, 5 to 10 percent slopes, severely eroded	IVe-9	135	E3a
MxD	Mattapex soils, 10 to 15 percent slopes	IVe-9	355	E3b
MxD3	Mattapex soils, 10 to 15 percent slopes, severely eroded	VIe-2	102	E3b
MxE	Mattapex soils, 15 to 30 percent slopes	VIe-2	114	E3c
My	Mixed alluvial land	VIw-1	6,857	G2
ObA	Othello silt loam, 0 to 2 percent slopes	IIIw-7	9,009	F3
ObB2	Othello silt loam, 2 to 5 percent slopes, moderately eroded	IIIw-7	697	F3
OeC2	Othello and Elkton soils, 5 to 10 percent slopes, moderately eroded	IIIe-13	122	F3
Pd	Plummer loamy sand	IVw-6	90	F1
Pk	Pocomoke loam	IIIw-7	5,406	F2
Pm	Pocomoke sandy loam	IIIw-6	1,220	F2
Po	Portsmouth silt loam	IIIw-7	434	F3
SaA	Sassafras loam, 0 to 2 percent slopes	I-4	3,842	B1a
SaB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded	IIe-4	9,864	B1a
SaC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	2,904	B1a
SaC3	Sassafras loam, 5 to 10 percent slopes, severely eroded	IVe-3	497	B1a
SaD2	Sassafras loam, 10 to 15 percent slopes, moderately eroded	IVe-3	578	B1b
SaD3	Sassafras loam, 10 to 15 percent slopes, severely eroded	VIe-2	161	B1b
SaE	Sassafras loam, 15 to 30 percent slopes	VIe-2	973	B1c
SfA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	2,830	B1a
SfB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	37,736	B1a
SfC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	4,769	B1a
SfC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	2,527	B1a
SfD2	Sassafras sandy loam, 10 to 15 percent slopes, moderately eroded	IVe-5	789	B1b
SfD3	Sassafras sandy loam, 10 to 15 percent slopes, severely eroded	VIe-2	465	B1b
SfE	Sassafras sandy loam, 15 to 30 percent slopes	VIe-2	1,917	B1c
SfE3	Sassafras sandy loam, 15 to 30 percent slopes, severely eroded	VIIe-2	145	B1c
SfF	Sassafras sandy loam, 30 to 60 percent slopes	VIIe-2	140	B1c
Sw	Swamp	Vw-1	275	G3
Tm	Tidal marsh	VIIIw-1	5,797	G3
WdA	Woodstown loam, 0 to 2 percent slopes	IIw-1	7,886	E1
WdB2	Woodstown loam, 2 to 5 percent slopes, moderately eroded	IIe-16	4,458	E1
WoA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	5,743	E1
WoB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	4,684	E1
WoC2	Woodstown sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-36	183	E1
WoD	Woodstown sandy loam, 10 to 15 percent slopes	IVe-5	134	E1
WoE	Woodstown sandy loam, 15 to 30 percent slopes	VIe-2	149	E1
			238,720	

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
Cb	Coastal beaches	VIIIs-2	583	A2
DoA	Downer loamy sand, 0 to 2 percent slopes	IIs-4	105	A1a
DoB	Downer loamy sand, 2 to 5 percent slopes	IIs-4	1,079	A1a
DoC	Downer loamy sand, 5 to 10 percent slopes	IIIe-33	113	A1a
DoC3	Downer loamy sand, 5 to 10 percent slopes, severely eroded	IVe-5	63	A1a
Fa	Fallsington loam	IIIw-7	5,772	F2
Fb	Fallsington sandy loam	IIIw-6	8,961	F2
FdA	Fallsington and Dragston fine sandy loams, 0 to 2 percent slopes			
	Fallsington soil	IIIw-6	3,664	F2
	Dragston soil	IIw-5		
FdB	Fallsington and Dragston fine sandy loams, 2 to 5 percent slopes			
	Fallsington soil	IIIw-6	572	F2
	Dragston soil	IIe-36		
FgA	Fallsington and Dragston loams, 0 to 2 percent slopes			
	Fallsington soil	IIIw-7	2,349	F2
	Dragston soil	IIw-1		
FgB	Fallsington and Dragston loams, 2 to 5 percent slopes			
	Fallsington soil	IIIw-7	366	F2
	Dragston soil	IIe-16		
GcB	Galestown loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	525	A1a
GlB	Galestown-Lakeland sands, 0 to 5 percent slopes	VIIs-1	322	A1a
GlC	Galestown-Lakeland sands, 5 to 10 percent slopes	VIIs-1	156	A1a
Gp	Gravel and borrow pits	VIIIs-4	99	Bp
Jo	Johnston loam	IIIw-7	1,851	G2
KfA	Keyport fine sandy loam, 0 to 2 percent slopes	IIw-9	190	E2a
KmA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	303	E2a
KnA	Klej loamy sand, 0 to 2 percent slopes	IIIs-10	1,707	E1
KnB	Klej loamy sand, 2 to 5 percent slopes	IIIw-10	523	E1
LaB	Lakeland loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	129	A1a
LgB	Lakeland-Galestown loamy sands, clayey substratum, 2 to 5 percent slopes	IIIs-1	320	A1a
LmC	Lakeland-Galestown loamy sands, 5 to 10 percent slopes	VIIs-1	126	A1a
Lo	Leon loamy sand	Vw-5	113	F1
Ma	Made land	-----	370	Ma
MfA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	848	B1a
MfB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	2,498	B1a
MfC	Matapeake fine sandy loam, 5 to 10 percent slopes	IIIe-5	78	B1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MkA	Matapeake silt loam, 0 to 2 percent slopes	I-4	4,629	B1a
MkB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	3,174	B1a
MkC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	106	B1a
MkC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	IVe-3	89	B1a
MkD	Matapeake silt loam, 10 to 15 percent slopes	IVe-3	54	B1b
MpA	Mattapex fine sandy loam, 0 to 2 percent slopes	IIw-5	1,339	E3
MpB2	Mattapex fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	677	E3
MsA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	8,047	E3
MsB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	1,892	E3
Mx	Mixed alluvial land	VIw-1	416	G2
My	Muck and peat	VIIw-1	1,598	G2
OhA	Othello silt loam, 0 to 2 percent slopes	IIIw-7	48,260	F3
OhB2	Othello silt loam, 2 to 5 percent slopes, moderately eroded	III-7	222	F3
Om	Othello silt loam, low	Vw-1	1,644	F3
Oo	Othello silt loam, silty substratum	IIIw-7	3,008	F3
Os	Othello silty clay loam	VIw-2	12,488	F3
Ot	Othello silty clay loam, silty substratum	VIw-2	142	F3
Pd	Plummer loamy sand	IVw-6	310	F1
Pk	Pocomoke loam	IIIw-7	6,047	F2
Pm	Pocomoke sandy loam	IIIw-6	2,621	F2
Po	Portsmouth loam	IIIw-7	1,135	F3
Pr	Portsmouth silt loam	IIIw-7	13,891	F3
Sa	St. Johns loamy sand	Vw-5	100	F1
SfA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	599	B1a
SfB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	2,664	B1a
SfC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	215	B1a
SfC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	168	B1a
SfD	Sassafras sandy loam, 10 to 15 percent slopes	IVe-5	111	B1b
St	Steep sandy land	VIe-2	204	A1c
Sw	Swamp	VIIw-1	3,421	G3
Tm	Tidal marsh	VIIIw-1	54,986	G3
WdA	Woodstown loam, 0 to 2 percent slopes	IIw-1	472	E1
WdB2	Woodstown loam, 2 to 5 percent slopes, moderately eroded	IIe-16	205	E1
WoA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	2,419	E1
WoB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	1,341	E1
			212,480	

ST. MARY'S COUNTY

NOTE: The map symbols, mapping units, and acreage totals above are those found in the 1923 edition of the St. Mary's County Soil Map and Soil Survey.

MAP SYMBOL	MAPPING UNIT	ACRES	NATURAL SOIL GROUP
C	Coastal beach	448	A2
E	Elkton loam	1,152	F3
Es	Elkton silt loam	19,776	F3
Kf	Keyport fine sandy loam	3,456	E2a
Ks	Keyport silt loam	25,344	E2a
Ls	Leonardtown silt loam	41,920	E2a
M	Meadow	12,032	G2
N	Norfolk sand	2,816	Ala
Sf	Sassafras loam	25,216	Bla
Sg	Sassafras gravelly sand	8,768	Blc
Sl	Sassafras gravelly loam	29,056	B2c
Sm	Sassafras sandy loam	14,464	Bla
Ss	Sassafras silt loam	1,408	Bla
Ss	Sassafras silt loam - rolling phase	39,104	Blb
Sy	Sassafras fine sandy loam	1,984	Bla
Sy	Sassafras fine sandy loam - rolling phase	4,608	Blb
T	Tidal Marsh	2,944	G3

NOTE: The original Soil Survey Map for this county was reviewed by a soil scientist who considered topographic and other considerations, when developing the Natural Soil Group Map. This was done so as to make it as comparable as possible to the Modern Soil Survey Atlas Maps.

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
BaA	Barclay silt loam, 0 to 2 percent slopes	IIIw-1	8,885	F2
BaB2	Barclay silt loam, 2 to 5 percent slopes, moderately eroded	IIIw-1	987	F2
Bp	Borrow pits	-----	388	Bp
Cb	Coastal beaches	VIIIs-2	116	A2
DoA	Downer loamy sand, 0 to 2 percent slopes	IIs-4	441	A1a
DoB2	Downer loamy sand, 2 to 5 percent slopes, moderately eroded	IIs-4	1,923	A1a
DoC2	Downer loamy sand, 5 to 10 percent slopes, moderately eroded	IIIe-33	326	A1a
Ek	Elkton loam	IIIw-9	1,928	F3
Es	Elkton silt loam	IIIw-9	23,281	F3
Fa	Fallsington sandy loam	IIIw-6	3,919	F2
Ff	Fallsington fine sandy loam	IIIw-6	503	F2
Fg	Fallsington loam	IIIw-7	5,026	F2
GaB	Galestown loamy sand, 0 to 5 percent slopes	IVs-1	578	A1a
GaC	Galestown loamy sand, 5 to 15 percent slopes	VIIs-1	578	A1a
KmA	Keyport loam, 0 to 2 percent slopes	IIw-8	930	E2a
KmB2	Keyport loam, 2 to 5 percent slopes, moderately eroded	IIe-13	1,005	E2a
KmC2	Keyport loam, 5 to 10 percent slopes, moderately eroded	IIIe-13	199	E2a
KmD	Keyport loam, 10 to 15 percent slopes	VIe-2	99	E2b
KpA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	7,090	E2a
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	IIe-13	3,505	E2a
KsC3	Keyport silty clay loam, 5 to 10 percent slopes, severely eroded	VIe-2	532	E2a
KsD3	Keyport silty clay loam, 10 to 15 percent slopes, severely eroded	VIIe-2	118	E3b
Ky	Klej loamy sand	IIIw-10	321	E1
Ma	Made land	-----	696	Ma
MkA	Matapeake loam, 0 to 2 percent slopes	I-4	2,023	B1a
MkB2	Matapeake loam, 2 to 5 percent slopes, moderately eroded	IIe-4	5,140	B1a
MkC2	Matapeake loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	468	B1a
MkD	Matapeake loam, 10 to 15 percent slopes	IVe-3	138	B1b
MlA	Matapeake silt loam, 0 to 2 percent slopes	I-4	1,406	B1a
MlB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	2,158	B1a
MlC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	229	B1a
MlC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	IVe-3	1,082	B1a

TALBOT COUNTY

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MlD3	Matapeake silt loam, 10 to 15 percent slopes, severely eroded	VIe-2	149	B1b
MpA	Mattapex loam, 0 to 2 percent slopes	IIw-1	4,178	E3
MpB2	Mattapex loam, 2 to 5 percent slopes, moderately eroded	IIe-16	4,051	E3
MxA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	6,043	E3
MxB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded	IIe-16	3,761	E3
My	Mixed alluvial land	VIw-1	4,893	G2
Oh	Othello silt loam	IIIw-7	16,307	F3
Ot	Othello silt loam, low	Vw-1	1,470	F3
Pe	Plummer loamy sand	IVw-6	99	F1
Pk	Pocomoke sandy loam	IIIw-6	187	F2
Pm	Pocomoke loam	IIIw-7	232	F2
Pt	Portsmouth silt loam	IIIw-7	358	F3
SaA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	6,725	B1a
SaB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	15,927	B1a
SaC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	1,469	B1a
SaC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	3,005	B1a
SaD	Sassafras sandy loam, 10 to 15 percent slopes	IVe-5	1,063	B1b
SaD3	Sassafras sandy loam, 10 to 15 percent slopes, severely eroded	VIe-2	1,026	B1b
SfA	Sassafras fine sandy loam, 0 to 2 percent slopes	I-5	303	B1a
SfB2	Sassafras fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	4,812	B1a
SmA	Sassafras loam, 0 to 2 percent slopes	I-4	2,577	B1a
SmB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded	IIe-4	4,888	B1a
SmC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	IIIe-4	469	B1a
SmC3	Sassafras loam, 5 to 10 percent slopes, severely eroded	IVe-3	872	B1a
St	Steep land	VIe-2	2,235	G2*
Tm	Tidal marsh	VIIIw-1	6,122	G3
WdA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	6,365	E1
WdB2	Woodstown sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-36	2,635	E1
WfA	Woodstown fine sandy loam, 0 to 2 percent slopes	IIw-5	688	E1
WoA	Woodstown loam, 0 to 2 percent slopes	IIw-1	3,435	E1
WoB2	Woodstown loam, 2 to 5 percent slopes, moderately eroded	IIe-16	651	E1
		Total	178,560	E1

*Steep land is included in group G2 since it is located on steep valley walls adjacent to mixed alluvial land.

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
AsB	Ashton fine sandy loam, 0 to 5 percent slopes	I-6	78	B1a
At	Atkins silt loam	IIIw-1	1,164	G2
BaA	Benevola clay loam, 0 to 3 percent slopes	IIs-1	159	B1a
BaB2	Benevola clay loam, 3 to 8 percent slopes, moderately eroded.	IIe-10	412	B1a
BaC2	Benevola clay loam, 8 to 15 percent slopes, moderately eroded.	IIIe-30	176	B1b
BaC3	Benevola clay loam, 8 to 15 percent slopes, severely eroded.	IVe-1	65	B1b
BcB2	Berks channery loam, ridges, 0 to 10 percent slopes, moderately eroded.	IIs-7	815	C1a
BcC2	Berks channery loam, ridges, 10 to 20 percent slopes, moderately eroded.	IIIe-32	879	C1b
BcC3	Berks channery loam, ridges, 10 to 20 percent slopes, severely eroded.	IVe-32	194	C1b
BcD2	Berks channery loam, ridges, 20 to 30 percent slopes, moderately eroded.	IVe-32	632	C1c
BeB	Berks shaly silt loam, 0 to 8 percent slopes	IIIs-2	1,002	C1a
BeB2	Berks shaly silt loam, 3 to 8 percent slopes, moderately eroded.	IIIs-2	2,606	C1a
BeC2	Berks shaly silt loam, 8 to 15 percent slopes, moderately eroded.	IVe-32	2,381	C1b
BeD2	Berks shaly silt loam, 15 to 25 percent slopes, moderately eroded.	VIe-3	352	C1c
BkB2	Berks silt loam, ridges, 0 to 10 percent slopes, moderately eroded.	IIs-7	695	C1a
BkC2	Berks silt loam, ridges, 10 to 20 percent slopes, moderately eroded.	IIIe-32	391	C1b
BkC3	Berks silt loam, ridges, 10 to 20 percent slopes, severely eroded.	IVe-32	304	C1b
BkD2	Berks silt loam, ridges, 20 to 30 percent slopes, moderately eroded.	IVe-32	273	C1c
BoE3	Berks soils, ridges, 20 to 45 percent slopes, severely eroded.	VIIe-3	823	C1c
BoF	Berks soils, ridges, 30 to 60 percent slopes	VIIe-3	3,987	C1c
BrB2	Braddock and Thurmont gravelly loams, 3 to 8 percent slopes, moderately eroded.	IIe-4	575	B1a
BrC2	Braddock and Thurmont gravelly loams, 8 to 15 percent slopes, moderately eroded.	IIIe-4	567	B1b
BrD	Braddock and Thurmont gravelly loams, 15 to 25 percent slopes.	IVe-3	74	B1c
BtB	Brinkerton silt loam, 0 to 8 percent slopes	IIIw-1	236	F3
BuA	Buchanan gravelly loam, 0 to 3 percent slopes	IIw-1	77	E2a
BuB2	Buchanan gravelly loam, 3 to 8 percent slopes, moderately eroded.	IIe-13	866	E2a
BuC2	Buchanan gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-13	562	E2b
BuD2	Buchanan gravelly loam, 15 to 25 percent slopes, moderately eroded.	IVe-9	86	E2c
CaB2	Calvin channery fine sandy loam, 3 to 10 percent slopes, moderately eroded.	IIe-10	276	C1a
CcB2	Calvin channery loam, 3 to 10 percent slopes, moderately eroded.	IIe-10	390	C1a
CcC2	Calvin channery loam, 10 to 20 percent slopes, moderately eroded.	IIIe-10	1,978	C1b
CcD	Calvin channery loam, 20 to 30 percent slopes	IVe-10	651	C1c
CcD2	Calvin channery loam, 20 to 30 percent slopes, moderately eroded.	IVe-10	224	C1c
CcE	Calvin channery loam, 30 to 45 percent slopes	VIe-3	859	C1c
CcF	Calvin channery loam, 45 to 60 percent slopes	VIIe-3	156	C1c
CmB2	Calvin shaly loam, 0 to 10 percent slopes, moderately eroded.	IIIs-2	189	C1a
CmC2	Calvin shaly loam, 10 to 20 percent slopes, moderately eroded.	IVe-32	126	C1b
CmC3	Calvin shaly loam, 10 to 20 percent slopes, severely eroded.	VIe-3	118	C1b
CmD	Calvin shaly loam, 20 to 30 percent slopes	VIe-3	112	C1c
CmE	Calvin shaly loam, 30 to 45 percent slopes	VIIe-3	204	C1c
CnB2	Calvin-Berks channery loams, 0 to 10 percent slopes, moderately eroded.	IIs-7	1,565	C1a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
CnC2	Calvin-Berks channery loams, 10 to 20 percent slopes, moderately eroded.	IIIe-32	2,798	C1b
CnC3	Calvin-Berks channery loams, 3 to 20 percent slopes, severely eroded.	IVe-32	320	C1b
CnD2	Calvin-Berks channery loams, 20 to 30 percent slopes, moderately eroded.	IVe-32	1,289	C1c
CnF2	Calvin-Berks channery loams, 30 to 60 percent slopes, moderately eroded.	VIIe-3	1,315	C1c
CoB2	Calvin-Montevallo shaly loams, 0 to 10 percent slopes, moderately eroded.	IIIs-2	103	C1a
CoC2	Calvin-Montevallo shaly loams, 10 to 20 percent slopes, moderately eroded.	IVe-32	178	C1b
CoD2	Calvin-Montevallo shaly loams, 20 to 30 percent slopes, moderately eroded.	VIe-3	163	C1c
CoE3	Calvin-Montevallo shaly loams, 20 to 45 percent slopes, severely eroded.	VIIe-3	134	C1c
CoF	Calvin-Montevallo shaly loams, 30 to 60 percent slopes.	VIIe-3	255	C1c
CrB	Chandler silt loam and channery silt loam, 0 to 10 percent slopes.	IIe-10	143	C1a
CrB2	Chandler silt loam and channery silt loam, 3 to 10 percent slopes, moderately eroded.	IIe-10	360	C1a
CrC2	Chandler silt loam and channery silt loam, 10 to 20 percent slopes, moderately eroded.	IVe-10	342	C1b
CrD	Chandler silt loam and channery silt loam, 20 to 30 percent slopes.	VIe-3	97	C1c
Cs	Chewacla gravelly sandy loam	IIw-7	206	G1
Ct	Chewacla silt loam	IIw-7	311	G1
Cu	Chewacla stony silt loam	Vs-2	157	H1a
Cv	Congaree silt loam and gravelly loam	I-6	86	G1
CwA	Corydon clay loam, 0 to 3 percent slopes	IIIs-2	309	D1a
CwB2	Corydon clay loam, 3 to 8 percent slopes, moderately eroded.	IIIe-30	1,006	D1a
CwC2	Corydon clay loam, 8 to 15 percent slopes, moderately eroded.	IVe-1	200	D1b
CxC	Corydon extremely rocky clay loam, 0 to 15 percent slopes.	VIIs-1	405	H2b
CyE2	Corydon very rocky clay loam, 3 to 45 percent slopes, moderately eroded.	VIs-1	857	H2c
DeD	Dekalb and Leetonia very stony sandy loams, 0 to 25 percent slopes.	VIIs-2	1,762	H1c
DeE	Dekalb and Leetonia very stony sandy loams, 25 to 45 percent slopes.	VIIs-2	1,056	H1c
DeF	Dekalb and Leetonia very stony sandy loams, 45 to 60 percent slopes.	VIIs-2	201	H1c
DkD	Dekalb and Lehew very stony loams, 0 to 25 percent slopes.	VIIs-2	281	H1c
DkE	Dekalb and Lehew very stony loams, 25 to 45 percent slopes.	VIIs-2	493	H1c
DmA	Duffield silt loam, 0 to 3 percent slopes	I-1	1,279	B1a
DmB2	Duffield silt loam, 3 to 8 percent slopes, moderately eroded.	IIe-1	3,352	B1a
DmC2	Duffield silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-1	16,338	B1b
DmD2	Duffield silt loam, 15 to 25 percent slopes, moderately eroded.	IVe-1	4,739	B1c
DmD3	Duffield silt loam, 8 to 25 percent slopes, severely eroded.	IVe-1	99	B1c
DuC	Duffield extremely rocky silt loam, 0 to 15 percent slopes.	VIIs-1	669	H2b
DvC	Duffield very rocky silt loam, 3 to 15 percent slopes.	VIs-1	1,895	H2b
DvE2	Duffield very rocky silt loam, 8 to 45 percent slopes, moderately eroded.	VIs-1	178	H2c
DyB2	Dunmore cherty silt loam, 3 to 8 percent slopes, moderately eroded.	IIe-1	44	B1a
DyC2	Dunmore cherty silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-1	50	B1b
Dz	Dunning and Melvin silty clay loams	VIw-1	1,896	G2
EdC	Edgemont and Laidig channery loams, 0 to 12 percent slopes.	IIe-4	1,493	B1b
EdD2	Edgemont and Laidig channery loams, 5 to 20 percent slopes, moderately eroded.	IIIe-4	4,613	B1c
EdE2	Edgemont and Laidig channery loams, 20 to 35 percent slopes, moderately eroded.	IVe-3	2,870	B1c
EdF2	Edgemont and Laidig channery loams, 35 to 60 percent slopes, moderately eroded.	VIe-2	291	B1c

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
EgA	Edgemont and Laidig very stony loams, 0 to 5 percent slopes.	Vs-2	127	H1a
EgD	Edgemont and Laidig very stony loams, 5 to 35 percent slopes.	VIs-2	12,524	H1c
EgF	Edgemont and Laidig very stony loams, 35 to 60 percent slopes.	VIIs-2	771	H1c
EhB2	Elliber cherty loam, 5 to 12 percent slopes, moderately eroded.	IIe-26	520	B1a
EhD2	Elliber cherty loam, 12 to 25 percent slopes, moderately eroded.	IIIe-26	719	B1c
EhE2	Elliber cherty loam, 25 to 45 percent slopes, moderately eroded.	VIe-1	529	B1c
EhF	Elliber cherty loam, 45 to 55 percent slopes	VIIe-1	81	B1c
Em	Eroded land, greenstone materials	VIIe-2	101	B1c
En	Eroded land, limestone materials	VIIe-1	617	B1c
Er	Eroded land, sandstone and quartzite materials	VIIe-2	221	B1c
Es	Eroded land, shale and schist materials	VIIe-3	3,890	C1c
EtA	Etowah gravelly loam, 0 to 3 percent slopes	I-1	97	B1a
EtB2	Etowah gravelly loam, 3 to 8 percent slopes, moderately eroded.	IIe-1	363	B1a
EtC2	Etowah gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-1	182	B1b
EtD2	Etowah gravelly loam, 15 to 25 percent slopes, moderately eroded.	IVe-1	40	B1c
EwA	Etowah silt loam, 0 to 3 percent slopes	I-1	154	B1a
EwB2	Etowah silt loam, 3 to 8 percent slopes, moderately eroded.	IIe-1	339	B1a
EwC2	Etowah silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-1	188	B1b
FaB	Fauquier channery loam, 0 to 5 percent slopes	I-4	244	B1a
FaB2	Fauquier channery loam, 5 to 10 percent slopes, moderately eroded.	IIe-4	1,735	B1a
FaC2	Fauquier channery loam, 10 to 20 percent slopes, moderately eroded.	IIIe-4	1,144	B1b
FaE2	Fauquier channery loam, 20 to 35 percent slopes, moderately eroded.	IVe-3	271	B1c
FrE	Fauquier very stony loam, 5 to 35 percent slopes	VIs-2	41	H1c
FsA	Fauquier silt loam, 0 to 3 percent slopes	I-4	239	B1a
FsB2	Fauquier silt loam, 3 to 10 percent slopes, moderately eroded.	IIe-4	93	B1a
FsC2	Fauquier silt loam, 10 to 20 percent slopes, moderately eroded.	IIIe-4	42	B1b
FtC2	Fauquier silt loam, shallow, 3 to 20 percent slopes, moderately eroded.	IVe-3	435	B1b
FuD	Frankstown extremely rocky silt loam, 0 to 25 percent slopes.	VIIs-1	983	H2c
FuE	Frankstown extremely rocky silt loam, 25 to 45 percent slopes.	VIIs-1	140	H2c
FvC2	Frankstown very rocky silt loam, 3 to 15 percent slopes, moderately eroded.	VIs-1	2,413	H2b
FvC3	Frankstown very rocky silt loam, 8 to 15 percent slopes, severely eroded.	VIIs-1	586	H2b
FvE2	Frankstown very rocky silt loam, 15 to 45 percent slopes, moderately eroded.	VIs-1	519	H2c
FwA	Frankstown and Duffield channery silt loams, 0 to 3 percent slopes.	I-1	244	B1a
FwB2	Frankstown and Duffield channery silt loams, 3 to 8 percent slopes, moderately eroded.	IIe-1	6,909	B1a
FwB3	Frankstown and Duffield channery silt loams, 0 to 8 percent slopes, severely eroded.	IIIe-30	60	B1a
FwC2	Frankstown and Duffield channery silt loams, 8 to 15 percent slopes, moderately eroded.	IIIe-1	3,111	B1b
FwC3	Frankstown and Duffield channery silt loams, 8 to 15 percent slopes, severely eroded.	IVe-1	1,366	B1b
FwD2	Frankstown and Duffield channery silt loams, 15 to 25 percent slopes, moderately eroded.	IVe-1	542	B1c
FwD3	Frankstown and Duffield channery silt loams, 15 to 25 percent slopes, severely eroded.	VIe-1	864	B1c
FwE2	Frankstown and Duffield channery silt loams, 25 to 45 percent slopes, moderately eroded.	VIe-1	162	B1c
FwE3	Frankstown and Duffield channery silt loams, 25 to 45 percent slopes, severely eroded.	VIIe-1	89	B1c
FyB2	Frederick cherty silt loam, 0 to 8 percent slopes, moderately eroded.	IIe-26	711	B1a
FyC2	Frederick cherty silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-26	672	B1b

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FyC3	Frederick cherty silt loam, 8 to 15 percent slopes, severely eroded.	IVe-26	63	B1b
FyD2	Frederick cherty silt loam, 15 to 25 percent slopes, moderately eroded.	IVe-26	517	B1c
FyD3	Frederick cherty silt loam, 15 to 25 percent slopes, severely eroded.	VIe-1	57	B1c
FyE2	Frederick cherty silt loam, 25 to 45 percent slopes, moderately eroded.	VIe-1	465	B1c
HaA	Hagerstown clay loam, 0 to 3 percent slopes	IIs-1	117	B1a
HaB2	Hagerstown clay loam, 0 to 8 percent slopes, moderately eroded.	IIe-19	775	B1a
HaB3	Hagerstown clay loam, 3 to 8 percent slopes, severely eroded.	IIIe-30	52	B1a
HaC2	Hagerstown clay loam, 8 to 15 percent slopes, moderately eroded.	IIIe-30	144	B1b
HaC3	Hagerstown clay loam, 8 to 15 percent slopes, severely eroded.	IVe-1	153	B1b
HaD2	Hagerstown clay loam, 15 to 25 percent slopes, moderately eroded.	IVe-1	123	B1c
HaD3	Hagerstown clay loam, 15 to 25 percent slopes, severely eroded.	VIe-1	190	B1c
HbD2	Hagerstown extremely rocky silt loam, 0 to 25 percent slopes, moderately eroded.	VIIs-1	6,696	H2c
HcD2	Hagerstown extremely rocky silty clay loam, 0 to 25 percent slopes, moderately eroded.	VIIs-1	4,156	H2c
HdE	Hagerstown extremely rocky soils, 25 to 45 percent slopes.	VIIs-1	111	H2c
HeA	Hagerstown silt loam, 0 to 3 percent slopes	I-1	1,146	B1a
HeB2	Hagerstown silt loam, 0 to 8 percent slopes, moderately eroded.	IIe-1	22,661	B1a
HeC2	Hagerstown silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-1	3,690	B1b
HeD2	Hagerstown silt loam, 15 to 25 percent slopes, moderately eroded.	IVe-1	252	B1c
HfA	Hagerstown silty clay loam, 0 to 3 percent slopes.	I-1	437	B1a
HfB2	Hagerstown silty clay loam, 0 to 8 percent slopes, moderately eroded.	IIe-1	4,038	B1a
HfC2	Hagerstown silty clay loam, 8 to 15 percent slopes, moderately eroded.	IIIe-1	1,458	B1b
HfD2	Hagerstown silty clay loam, 15 to 25 percent slopes, moderately eroded.	IVe-1	153	B1c
HgC2	Hagerstown very rocky silt loam, 3 to 15 percent slopes, moderately eroded.	VIs-1	10,613	H2b
HgE2	Hagerstown very rocky silt loam, 15 to 45 percent slopes, moderately eroded.	VIs-1	1,087	H2c
HhC2	Hagerstown very rocky silty clay loam, 3 to 15 percent slopes, moderately eroded.	VIs-1	8,371	H2b
HhC3	Hagerstown very rocky silty clay loam, 8 to 15 percent slopes, severely eroded.	VIIs-1	2,836	H2b
HhE2	Hagerstown very rocky silty clay loam, 15 to 45 percent slopes, moderately eroded.	VIs-1	621	H2c
HkF	Hagerstown very rocky soils, 45 to 55 percent slopes.	VIIs-1	107	H2c
HlA	Hagerstown, Corydon, and Duffield very rocky silt loams, 0 to 3 percent slopes.	Vs-1	424	H2a
HmE2	Hagerstown and Duffield silt loams, 25 to 45 percent slopes, moderately eroded.	VIe-1	149	B1c
HnB2	Hazel channery silt loam, 0 to 10 percent slopes, moderately eroded.	IIIs-2	1,438	C1a
HnC2	Hazel channery silt loam, 10 to 20 percent slopes, moderately eroded.	IVe-32	1,856	C1b
HnC3	Hazel channery silt loam, 10 to 20 percent slopes, severely eroded.	VIe-3	202	C1b
HnD2	Hazel channery silt loam, 20 to 30 percent slopes, moderately eroded.	VIe-3	1,095	C1c
HnD3	Hazel channery silt loam, 20 to 30 percent slopes, severely eroded.	VIIe-3	124	C1c
HnE	Hazel channery silt loam, 30 to 45 percent slopes	VIIe-3	210	C1c
HoB	Highfield gravelly loam, 0 to 5 percent slopes	I-4	67	B1a
HoB2	Highfield gravelly loam, 5 to 10 percent slopes, moderately eroded.	IIe-4	315	B1a
HoC2	Highfield gravelly loam, 10 to 20 percent slopes, moderately eroded.	IIIe-4	212	B1b
HoE2	Highfield gravelly loam, 20 to 35 percent slopes, moderately eroded.	IVe-3	78	B1c

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HpB	Highfield very stony loam, 0 to 5 percent slopes	Vs-2	44	H1a
HpD	Highfield very stony loam, 5 to 30 percent slopes.	VIs-2	2,123	H1c
HpE	Highfield very stony loam, 30 to 45 percent slopes.	VIIs-2	470	H1c
HrA	Holston gravelly loam, 0 to 3 percent slopes	I-4	439	B1a
HrB2	Holston gravelly loam, 0 to 8 percent slopes, moderately eroded.	IIe-4	1,395	B1a
HrC2	Holston gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-4	583	B1b
HrD2	Holston gravelly loam, 15 to 25 percent slopes, moderately eroded.	IVe-3	49	B1c
HrD3	Holston gravelly loam, 8 to 25 percent slopes, severely eroded.	VIe-2	118	B1c
HrE2	Holston gravelly loam 25 to 45 percent slopes, moderately eroded.	VIe-2	70	B1c
HsB	Holston gravelly sandy loam, 3 to 8 percent slopes.	IIs-2	115	B1a
HsC2	Holston gravelly sandy loam, 3 to 15 percent slopes, moderately eroded.	IIIe-5	153	B1b
HsC3	Holston gravelly sandy loam, 8 to 15 percent slopes, severely eroded.	IVe-5	50	B1b
HtA	Holston silt loam, 0 to 3 percent slopes	I-1	224	B1a
HtB2	Holston silt loam, 3 to 8 percent slopes, moderately eroded.	IIe-4	666	B1a
HtC2	Holston silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-4	208	B1b
Hu	Huntington fine sandy loam	I-6	1,507	G1
Hv	Huntington gravelly loam	I-6	671	G1
Hw	Huntington silt loam	I-6	1,439	G1
Hx	Huntington silt loam, local alluvium	I-6	4,811	G1
LaA	Laidig gravelly loam, 0 to 3 percent slopes	I-4	110	B2a
LaB2	Laidig gravelly loam, 3 to 8 percent slopes, moderately eroded.	IIe-4	1,278	B2a
LaC2	Laidig gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-4	1,574	B2b
LaD2	Laidig gravelly loam, 15 to 25 percent slopes, moderately eroded.	IVe-3	479	B2c
LbD	Laidig very stony loam, 8 to 25 percent slopes	VIs-2	722	H1c
LbE2	Laidig very stony loam, 15 to 45 percent slopes, moderately eroded.	VIIs-2	110	H1c
LcB2	Landisburg cherty silt loam, 3 to 8 percent slopes, moderately eroded.	IIe-13	65	E2a
LcD2	Landisburg cherty silt loam, 8 to 25 percent slopes, moderately eroded.	IIIe-13	143	E2c
Le	Largent silt loam	IIw-7	157	G1
LgA	Leadvale gravelly silt loam, 0 to 3 percent slopes	IIw-1	49	E2a
LgB2	Leadvale gravelly silt loam, 3 to 8 percent slopes, moderately eroded.	IIe-13	475	E2a
Lm	Lindside silt loam	IIw-7	2,435	G1
Ln	Lindside silt loam, local alluvium	IIw-7	488	G1
LoB2	Litz channery loam, 3 to 10 percent slopes, moderately eroded.	IIe-11	232	C1a
LoC2	Litz channery loam, 10 to 20 percent slopes, moderately eroded.	IIIe-31	97	C1b
LoC3	Litz channery loam, 10 to 20 percent slopes, severely eroded.	IVe-31	109	C1b
LsB	Litz shaly loam, 0 to 10 percent slopes	IIIe-31	366	C1a
LsB2	Litz shaly loam, 3 to 10 percent slopes, moderately eroded.	IIIe-31	632	C1a
LsC2	Litz shaly loam, 10 to 20 percent slopes, moderately eroded.	IVe-31	1,493	C1b
LsC3	Litz shaly loam, 10 to 20 percent slopes, severely eroded.	VIe-3	604	C1b
LsD2	Litz shaly loam, 20 to 30 percent slopes, moderately eroded.	VIe-3	791	C1c
LsD3	Litz shaly loam, 20 to 30 percent slopes, severely eroded.	VIIe-3	579	C1c
LsE2	Litz shaly loam, 30 to 45 percent slopes, moderately eroded.	VIIe-3	379	C1c
LsE3	Litz shaly loam, 30 to 45 percent slopes, severely eroded.	VIIe-3	136	C1c
LsF	Litz shaly loam, 45 to 60 percent slopes	VIIe-3	102	C1c
LtB	Litz-Teas channery silt loams, 0 to 8 percent slopes.	IIe-11	193	C1a
LtC2	Litz-Teas channery silt loams, 3 to 15 percent slopes, moderately eroded.	IIIe-31	625	C1b

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LtC3	Litz-Teas channery silt loams, 8 to 15 percent slopes, severely eroded.	IVe-31	126	C1b
LtD2	Litz-Teas channery silt loams, 15 to 25 percent slopes, moderately eroded.	IVe-31	164	C1c
LtD3	Litz-Teas channery silt loams, 15 to 25 percent slopes, severely eroded.	VIe-3	167	C1c
LtE2	Litz-Teas channery silt loams, 25 to 45 percent slopes, moderately eroded.	VIe-3	56	C1c
Me	Melvin silt loam	IIIw-2	146	G2
MgB2	Monongahela gravelly loam, 3 to 8 percent slopes, moderately eroded.	IIe-13	301	E2a
MgC2	Monongahela gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-13	110	E2b
MhA	Monongahela silt loam, 0 to 3 percent slopes	IIw-1	443	E2a
MhB2	Monongahela silt loam, 3 to 8 percent slopes, moderately eroded.	IIe-13	861	E2a
MhC2	Monongahela silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-13	223	E2b
MhD2	Monongahela silt loam, 15 to 25 percent slopes, moderately eroded.	IVe-9	57	E2c
MmB2	Montevallo shaly loam, 0 to 10 percent slopes, moderately eroded.	IIIs-2	1,857	D1a
MmC2	Montevallo shaly loam, 10 to 20 percent slopes, moderately eroded.	IVe-32	2,972	D1b
MmC3	Montevallo shaly loam, 10 to 20 percent slopes, severely eroded.	VIe-3	1,628	D1b
MmD2	Montevallo shaly loam, 20 to 30 percent slopes, moderately eroded.	VIe-3	1,812	D1c
MmD3	Montevallo shaly loam, 20 to 30 percent slopes, severely eroded.	VIIe-3	623	D1c
MoA	Murrill gravelly loam, 0 to 3 percent slopes	I-4	1,479	B1a
MoB2	Murrill gravelly loam, 0 to 8 percent slopes, moderately eroded.	IIe-4	9,485	B1a
MoC2	Murrill gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-4	4,122	B1b
MoD2	Murrill gravelly loam, 15 to 25 percent slopes, moderately eroded.	Ive-3	84	B1c
MoD3	Murrill gravelly loam, 8 to 25 percent slopes, severely eroded.	VIe-2	596	B1c
MoE2	Murrill gravelly loam, 25 to 45 percent slopes, moderately eroded.	VIe-2	51	B1c
MrB	Murrill gravelly sandy loam, 0 to 8 percent slopes	IIs-2	368	B1a
MrC2	Murrill gravelly sandy loam, 3 to 15 percent slopes, moderately eroded.	IIIe-5	678	B1b
MrC3	Murrill gravelly sandy loam, 8 to 15 percent slopes, severely eroded.	IVe-5	84	B1b
MrD2	Murrill gravelly sandy loam, 15 to 25 percent slopes, moderately eroded.	IVe-5	88	B1c
MrD3	Murrill gravelly sandy loam, 15 to 25 percent slopes, severely eroded.	VIe-2	46	B1c
MsA	Murrill silt loam, 0 to 3 percent slopes	I-4	269	B1a
MsB2	Murrill silt loam, 0 to 8 percent slopes, moderately eroded.	IIe-4	872	B1a
MsC2	Murrill silt loam, 8 to 15 percent slopes, moderately eroded.	IIIe-4	214	B1b
MvA	Myersville channery loam, 0 to 3 percent slopes	I-4	47	B1a
MvB2	Myersville channery loam, 3 to 10 percent slopes, moderately eroded.	IIe-4	1,331	B1a
MvC2	Myersville channery loam, 10 to 20 percent slopes, moderately eroded.	IIIe-4	1,676	B1a
MvD2	Myersville channery loam, 20 to 30 percent slopes, moderately eroded.	IVe-3	418	B1c
MvE2	Myersville channery loam, 30 to 45 percent slopes, moderately eroded.	VIe-2	175	B1c
MwB3	Myersville channery silt loam, 3 to 10 percent slopes, severely eroded.	IIIe-44	52	B1a
MwD3	Myersville channery silt loam, 10 to 30 percent slopes, severely eroded.	VIe-2	57	B1c
MxA	Myersville silt loam, 0 to 3 percent slopes	I-4	131	B1a
MxB2	Myersville silt loam, 3 to 10 percent slopes, moderately eroded.	IIe-4	532	B1a
MxC2	Myersville silt loam, 10 to 20 percent slopes, moderately eroded.	IIe-4	153	B1b
MyE2	Myersville very stony loam, 3 to 30 percent slopes, moderately eroded.	VIs-2	1,428	H1c
MyF2	Myersville very stony loam, 30 to 55 percent slopes, eroded.	VIIs-2	147	H1c

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Pg	Philo gravelly sandy loam	IIw-7	430	G1
Ph	Philo silt loam	IIw-7	1,254	G1
Pn	Pope fine sandy loam	I-6	1,793	G1
Po	Pope gravelly loam	I-6	436	G1
Pp	Pope gravelly sandy loam	IIs-2	446	G1
Ps	Pope silt loam	I-6	442	G1
Pt	Pope stony gravelly loam	Vs-2	87	H1a
Rk	Rocky eroded land	VIIs-1	823	H2c
RoB2	Rohrersville silty clay loam, 0 to 8 percent slopes, moderately eroded.	IIIw-1	216	F3
Sr	Stony rolling land	VIIs-2	4,643	H1c
Ss	Stony steep land	VIIIs-1	2,857	H1c
TaC2	Talladega gravelly silt loam, thick solum variant, 0 to 20 percent slopes, moderately eroded.	IIIe-10	794	C1b
TaC3	Talladega gravelly silt loam, thick solum variant, 10 to 20 percent slopes, severely eroded.	IVe-10	53	C1b
TaD	Talladega gravelly silt loam, thick solum variant, 20 to 30 percent slopes.	IVe-10	160	C1c
TaE2	Talladega gravelly silt loam, thick solum variant, 20 to 45 percent slopes, moderately eroded.	VIe-3	111	C1c
Te	Terrace escarpments	IIIe-6	341	G1
ThB2	Thurmont gravelly loam, 3 to 8 percent slopes, moderately eroded.	IIe-4	460	B1a
ThC2	Thurmont gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-4	245	B1b
TrA	Trego gravelly silt loam, 0 to 3 percent slopes	IIw-1	89	E2a
TrC2	Trego gravelly silt loam, 3 to 15 percent slopes, moderately eroded.	IIIe-13	252	E2b
TyB	Tyler silt loam, 0 to 8 percent slopes	IIIw-1	127	F3
Wa	Warners loam, 0 to 8 percent slopes	IIw-7	1,646	G2
WbA	Waynesboro gravelly loam, 0 to 3 percent slopes	I-4	166	B1a
WbB2	Waynesboro gravelly loam, 0 to 8 percent slopes, moderately eroded.	IIe-4	2,387	B1a
WbC2	Waynesboro gravelly loam, 8 to 15 percent slopes, moderately eroded.	IIIe-4	1,490	B1b
WbC3	Waynesboro gravelly loam, 3 to 15 percent slopes, severely eroded.	IIIe-44	475	B1b
WbD2	Waynesboro gravelly loam, 15 to 25 percent slopes, moderately eroded.	IVe-3	236	B1c
WbD3	Waynesboro gravelly loam, 15 to 25 percent slopes, severely eroded.	VIe-2	322	B1c
WbE2	Waynesboro gravelly loam, 25 to 45 percent slopes, moderately eroded.	VIe-2	98	B1c
WgB	Waynesboro gravelly sandy loam, 0 to 8 percent slopes.	IIs-2	125	B1a
WgC2	Waynesboro gravelly sandy loam, 3 to 15 percent slopes, moderately eroded.	IIIe-5	628	B1b
WgC3	Waynesboro gravelly sandy loam, 8 to 15 percent slopes, severely eroded.	IVe-5	103	B1b
WgD2	Waynesboro gravelly sandy loam, 15 to 25 percent slopes, moderately eroded.	IVe-5	137	B1c
Wh	Wehadkee silt loam	IIIw-1	183	G2
WmB2	Westmoreland channery silt loam, 3 to 10 percent slopes, moderately eroded.	IIe-1	311	B1a
WmC2	Westmoreland channery silt loam, 10 to 20 percent slopes, moderately eroded.	IIIe-1	263	B1b
WmC3	Westmoreland channery silt loam, 3 to 20 percent slopes, severely eroded.	IVe-1	278	B1b
WmD2	Westmoreland channery silt loam, 20 to 30 percent slopes, moderately eroded.	IVe-1	82	B1c
WmD3	Westmoreland channery silt loam, 20 to 30 percent slopes, severely eroded.	VIe-1	100	B1c
		TOTAL	295,680	

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
Ba	Bayboro loam	IIIw-9	2,295	F3
Bb	Bayboro silt loam	IIIw-9	320	F3
Be	Beaches	VIIIs-2	199	A2
Bo	Borrow pits	VIIIs-4	130	Bp
DoA	Downer loamy sand, 0 to 2 percent slopes	IIs-4	2,151	Ala
DoB2	Downer loamy sand, 2 to 5 percent slopes, moderately eroded	IIs-4	3,134	Ala
DoC	Downer loamy sand, 5 to 10 percent slopes	IIIe-33	237	Ala
Ea	Elkton loam	IIIw-9	3,585	F3
Ek	Elkton sandy loam	IIIw-11	10,581	F3
Em	Elkton silt loam	IIIw-9	697	F3
En	Elkton silty clay loam	VIw-2	52	F3
EoD	Evesboro loamy sand, 5 to 15 percent slopes	VIIs-1	2,069	Alb
EpB	Evesboro loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	8,880	Ala
ErD	Evesboro sand, 5 to 15 percent slopes	VIIs-1	1,824	Alb
EsB	Evesboro sand, clayey substratum, 0 to 5 percent slopes	IVs-1	4,629	Ala
EtF	Evesboro soils, 15 to 40 percent slopes	VIIs-1	238	Alc
EvD	Evesboro-Galestown sands, 5 to 15 percent slopes	VIIs-1	2,392	Alb
EwB	Evesboro-Galestown sands, clayey substratum, 0 to 5 percent slopes	IVs-1	1,882	Ala
EyC	Evesboro-Galestown-Downer loamy sands, 0 to 10 percent slopes	IIIs-1	933	Ala
Fa	Fallsington fine sandy loam	IIIw-6	4,447	F2
Fg	Fallsington loam	IIIw-7	2,339	F2
Fs	Fallsington sandy loam	IIIw-6	20,886	F2
GaD	Galestown loamy sand, 5 to 15 percent slopes	VIIs-1	592	Alb
GcB	Galestown loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	6,401	Ala
KeA	Keyport silt loam, 0 to 2 percent slopes	IIw-8	269	E2a
KeB	Keyport silt loam, 2 to 5 percent slopes	IIe-13	93	E2a
KsA	Klej loamy sand, 0 to 2 percent slopes	IIIw-10	11,424	El
KsB	Klej loamy sand, 2 to 5 percent slopes	IIIw-10	2,856	El
Le	Leon loamy sand	Vw-5	1,080	Fl
Ma	Made land	---	687	Ma
MdA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	244	Bla
MdB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	240	Bla
MeA	Matapeake silt loam, 0 to 2 percent slopes	I-4	1,153	Bla
MeB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	IIe-4	874	Bla
MeC	Matapeake silt loam, 5 to 10 percent slopes	IIIe-4	219	Bla
MfA	Matawan fine sandy loam, 0 to 2 percent slopes	IIw-10	2,209	E2a
MfB	Matawan fine sandy loam, 2 to 5 percent slopes	IIe-36	233	E2a
MmA	Matawan loamy sand, 0 to 2 percent slopes	IIw-10	10,297	E2a

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
MmB	Matawan loamy sand, 2 to 5 percent slopes	IIe-36	2,335	E2a
MmC	Matawan loamy sand, 5 to 10 percent slopes	IIIe-36	315	E2a
MmE	Matawan loamy sand, 10 to 30 percent slopes	VIIe-2	173	E2c
MnA	Matawan sandy loam, 0 to 2 percent slopes	IIw-10	9,491	E2a
MnB	Matawan sandy loam, 2 to 5 percent slopes	IIe-36	1,256	E2a
MpA	Mattapex loam, 0 to 2 percent slopes	IIw-1	428	E3a
MpB	Mattapex loam, 2 to 5 percent slopes	IIe-16	140	E3a
MtA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	2,045	E3a
MtB	Mattapex silt loam, 2 to 5 percent slopes	IIe-16	386	E3a
Mu	Muck	IVw-7	5,476	G2
Mv	Mixed alluvial land	VIw-1	4,483	G2
NoA	Norfolk loamy sand, 0 to 2 percent slopes	IIs-4	11,033	B1a
NoB	Norfolk loamy sand, 2 to 5 percent slopes	IIs-4	3,101	B1a
NoC	Norfolk loamy sand, 5 to 10 percent slopes	IIIe-3	503	B1a
NsD	Norfolk and Sassafras soils, 10 to 15 percent slopes	IVe-5	463	B1b
NsE	Norfolk and Sassafras soils, 15 to 30 percent slopes	VIe-2	345	B1c
Ot	Othello silt loam	IIIw-7	17,232	F3
Ow	Othello silt loam, low	Vw-1	551	F3
Pe	Plummer loamy sand	IVw-6	6,004	F1
Pk	Pocomoke loam	IIIw-7	12,275	F2
Po	Pocomoke sandy loam	IIIw-6	14,939	F2
Pr	Portsmouth sandy loam	IIIw-6	1,622	F3
Pt	Portsmouth silt loam	IIIw-7	941	F3
Ru	Rutlege loamy sand	IVw-6	2,580	F1
SaA	Sassafras fine sandy loam, 0 to 2 percent slopes	I-5	614	B1a
SaB	Sassafras fine sandy loam, 2 to 5 percent slopes	IIe-5	512	B1a
SsA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	2,741	B1a
SsB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	1,919	B1a
SsC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	181	B1a
St	St. Johns loamy sand	Vw-5	1,971	F1
Su	St. Johns mucky loamy sand	Vw-5	336	F1
Sw	Swamp	VIIw-1	90	G3
Tm	Tidal marsh	VIIIw	14,184	G3
WfA	Woodstown fine sandy loam, 0 to 2 percent slopes	IIw 5	1,619	E1
WfB	Woodstown fine sandy loam, 2 to 5 percent slopes	IIe-36	498	E1
WoA	Woodstown loam, 0 to 2 percent slopes	IIw-1	262	E1
WsA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	6,290	E1
WsB	Woodstown sandy loam, 2 to 5 percent slopes	IIe-36	1,095	E1
			243,200	

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
CbB	Coastal beaches, 0 to 5 percent slopes	VIIIs-2	4,275	A2
CbC	Coastal beaches, 5 to 10 percent slopes	VIIIs-2	920	A2
Ek	Elkton sandy loam	IIIw-11	565	F3
El	Elkton loam	IIIw-9	405	F3
Em	Elkton silt loam	IIIw-9	665	F3
Fa	Fallsington sandy loam	IIIw-6	31,135	F2
Fg	Fallsington loam	IIIw-7	9,655	F2
FmA	Fort Mott loamy sand, 0 to 2 percent slopes	IIs-4	1,285	Ala
Fm3	Fort Mott loamy sand, 2 to 5 percent slopes	IIs-4	7,085	Ala
FmC	Fort Mott loamy sand, 5 to 10 percent slopes	IIIe-33	1,175	Ala
FmC3	Fort Mott loamy sand, 5 to 10 percent slopes, severely eroded	IVe-5	200	Ala
FmD	Fort Mott loamy sand, 10 to 15 percent slopes	IVe-5	310	Alb
Gb	Gravel and borrow pits	VIIIs-4	535	Bp
KsA	Klej loamy sand, 0 to 2 percent slopes	IIIw-10	6,815	El
KsB	Klej loamy sand, 2 to 5 percent slopes	IIIw-10	1,920	El
LaD	Lakeland sand, 5 to 15 percent slopes	VIIs-1	3,600	Alb
LkD	Lakeland loamy sand, 5 to 15 percent slopes	VIIs-1	2,395	Alb
LkE	Lakeland loamy sand, 15 to 30 percent slopes	VIIs-1	200	Alc
LlB	Lakeland sand, clayey substratum, 0 to 5 percent slopes	IVs-1	4,790	Ala
LmB	Lakeland loamy sand, clayey substratum, 0 to 5 percent slopes	IIIs-1	7,760	Ala
LoB	Lakeland-Fort Mott loamy sands, 0 to 5 percent slopes	IIIs-1	1,735	Ala
LoC	Lakeland-Fort Mott loamy sands, 5 to 10 percent slopes	IVs-1	395	Ala
Ls	Leon loamy sand	Vw-5	2,820	Fl
Ma	Made land	--	1,195	Ma
MdA	Matapeake fine sandy loam, 0 to 2 percent slopes	I-5	3,645	Bla
MdB	Matapeake fine sandy loam, 2 to 5 percent slopes	IIe-5	5,505	Bla
MdC	Matapeake fine sandy loam, 5 to 10 percent slopes	IIIe-5	505	Bla
MeA	Matapeake silt loam, 0 to 2 percent slopes	I-4	3,275	Bla
MeB	Matapeake silt loam, 2 to 5 percent slopes	IIe-4	2,010	Bla
MeC	Matapeake silt loam, 5 to 10 percent slopes	IIIe-4	275	Bla
MkC3	Matapeake soils, 5 to 10 percent slopes, severely eroded	IVe-3	350	Bla
MkD	Matapeake soils, 10 to 15 percent slopes	IVe-3	355	Blb
MkE	Matapeake soils, 15 to 30 percent slopes	VIe-2	210	Blc
MoA	Mattapex fine sandy loam, 0 to 2 percent slopes	IIw-5	1,630	E3a
MoB	Mattapex fine sandy loam, 2 to 5 percent slopes	IIe-36	615	E3a
MpA	Mattapex loam, 0 to 2 percent slopes	IIw-1	3,855	E3a
MpB	Mattapex loam, 2 to 5 percent slopes	IIe-16	865	E3a
MtA	Mattapex silt loam, 0 to 2 percent slopes	IIw-1	4,560	E3a
MtB	Mattapex silt loam, 2 to 5 percent slopes	IIe-16	995	E3a
My	Mixed alluvial land	VIw-1	6,655	G2
Mz	Muck	IVw-7	13,905	G2
Ot	Othello silt loam	IIIw-7	50,135	F3
Pe	Plummer loamy sand	IVw-6	8,980	Fl
Pk	Pocomoke sandy loam	IIIw-6	10,185	F2
Pm	Pocomoke loam	IIIw-7	16,260	F2
Pr	Portsmouth sandy loam	IIIw-6	905	F3
Pt	Portsmouth silt loam	IIIw-7	6,825	F3
Ru	Rutlege loamy sand	IVw-6	5,235	Fl
SaA	Sassafras sandy loam, 0 to 2 percent slopes	I-5	7,435	Bla
SaB2	Sassafras sandy loam, 2 to 5 percent slopes, moderately eroded	IIe-5	13,560	Bla
SaC2	Sassafras sandy loam, 5 to 10 percent slopes, moderately eroded	IIIe-5	950	Bla
SaC3	Sassafras sandy loam, 5 to 10 percent slopes, severely eroded	IVe-5	360	Bla
SaD	Sassafras sandy loam, 10 to 15 percent slopes	IVe-5	440	Blb
SaE	Sassafras sandy loam, 15 to 30 percent slopes	VIe-2	275	Blc

MAP SYMBOL	MAPPING UNIT	CAPABILITY UNIT SYMBOL	ACRES	NATURAL SOIL GROUP
SmA	Sassafras loam, 0 to 2 percent slopes	I-4	505	B1a
SmB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded	IIe-4	385	B1a
St	St. Johns loamy sand	Vw-5	2,620	F1
Su	St. Johns mucky loamy sand	Vw-5	530	F1
Tm	Tidal marsh	VIIIw-1	19,270	G3
WdA	Woodstown sandy loam, 0 to 2 percent slopes	IIw-5	16,385	E1
WdB	Woodstown sandy loam, 2 to 5 percent slopes	IIe-36	4,010	E1
WoA	Woodstown loam, 0 to 2 percent slopes	IIw-1	2,310	E1
WoB	Woodstown loam, 2 to 5 percent slopes	IIe-16	515	E1
	Total			

APPENDIX B: LISTING OF SOIL SERIES IN MARYLAND AND COINCIDING NATURAL SOIL GROUP

SOIL SERIES	NATURAL SOIL GROUP	SOIL SERIES	NATURAL SOIL GROUP
Abbottstown	F3	Bermudian	G1
Adelphia	E1	Berryland	F1
Albrights	E2	Bertie	F3
Aldino	E2	Bibb	G2
Allegheny	B1	Birdsboro	B1
Alloway	F3	Bladen	F3
Alluvial land	G2	Bourne	E2
Andover	F3	Bowmansville	G2
Armagh	F3	Braddock	B1
Ashton	B1	Brandywine	C1
Athol	B1	Brinkerton	F3
Atkins	G2	Brooke	C2
Augusta	F3	Buchanan	E2
Aura	B2	Bucks	B2
Baile	F3	Butlertown	B2
Baltimore	B1	Calvert	F3
Barclay	F2	Calvin	C1
Bayboro	F3	Captina	E2
Beach land	A2	Cardiff	C1
Belmont	C2	Catoctin	C1
Beltsville	E2	Cavode	F3
Benevola	B1	Chalfont	F3
Berks	C1	Chandler	C1

SOIL SERIES	NATURAL SOIL GROUP	SOIL SERIES	NATURAL SOIL GROUP
Chavies	B1	Downer	A1
Chester	B1	Dragston	F2
Chewacla	G1	Duffield	B1
Chillum	B2	Dune land	A2
Christiana	B3	Dunmore	B1
Chrome	C1	Dunning	G2
Clayey land	B3	Edgemont	B1
Clymer	B1	Edom	B2
Coastal beach	A2	Elioak	B1
Codorus	G1	Elk	B1
Colbert	F3	Elkins	G2
Colemantown	F3	Elkton	F3
Collington	B1	Elliber	B1
Colts Neck	B1	Elsinboro	B1
Comus	G1	Ernest	E2
Conestoga	B1	Etowah	B1
Congaree	G1	Evesboro	A1
Conowingo	E2	Exum	E2
Cookport	E2	Fairfax	B1
Corydon	D1	Fallsington	F1
Croom	B2	Fauquier	B1
Croton	F3	Fort Mott	A1
DeKalb	C1	Frankstown	B1
Delanco	E3	Frederick	B1
Donlonton	E2	Galestown	A1

SOIL SERIES	NATURAL SOIL GROUP	SOIL SERIES	NATURAL SOIL GROUP
Gilpin	C1	Klinesville	D1
Glenelg	B1	Laidig	B2
Glenville	E2	Lakeland	A1
Greenwich	B1	Landisburg	E2
Guthrie	F3	Lansdale	C1
Hagerstown	B1	Lantz	F3
Hatboro	G2	Largent	G1
Hazel	C1	Leadvale	E2
Highfield	B1	Leetonia	C1
Hollinger	B1	Legore	B1
Holston	B1	Lehew	C1
Howell	B2	Lehigh	E2
Huntington	G1	Lenoir	F3
Hyde	F3	Leon	F1
Iredell	F3	Leonardtown	F3
Iuka	G1	Lewisberry	B1
Johnston	G2	Lickdale	F3
Joppa	A1	Lindside	G1
Kalmia	B1	Linganore	C1
Kelly	F3	Litz	C1
Keyport	E2	Loamy-Clayey land	B3
Kenansville	A1	Loysville	F3
KinKova	F3	Magnolia	B1
Klej	E1	Manor	B1

SOIL SERIES	NATURAL SOIL GROUP	SOIL SERIES	NATURAL SOIL GROUP
Marr	B1	Osier	F1
Matapeake	B1	Othello	F3
Metawan	E2	Pamlico	G2
Mattapex	E3	Peat	G2
Meadow	G2	Penn	C1
Meckesville	B2	Philo	G1
Melvin	G2	Plummer	F1
Mixed Alluvial land	G2	Pocomoke	F2
Monmouth	B2	Pope	G1
Monongahela	E2	Portsmouth	F3
Montalto	B2	Purdy	F3
Montevallo	D1	Raritan	E2
Morgnec	E2	Readington	E2
Mt. Airy	C1	Relay	C1
Muck	G2	Ridgely	E1
Muirkirk	B3	Roanoke	F3
Murrill	B1	Robertsville	F3
Myersville	B1	Rohrersville	F3
Neshaminy	B1	Rowland	G1
Nolo	F3	Rumford	A1
Norfolk	B1	Rutledge	F1
Norton	B1	Sandy and Clayey	B3
Ochlockonee	G1	Sassafras	B1
Opequon	D1	Sequatchie	B1

SOIL SERIES	NATURAL SOIL GROUP
Shelocta	B1
Shrewsbury	F2
Silty and Clayey land	B3
St. Johns	F1
Steinsburg	C1
Sunnyside	B1
Swamp	G3
Talladega	C1
Talleyville	B1
Teas	C1
Thurmont	B1
Tidal Marsh	G3
Trego	E2
Tyler	F3
Ungers	B1
Urbana	E2
Warners	G2
Watchung	F3
Waynesboro	B1
Wehadkee	G2
Weikert	D1
Westmoreland	B1
Westphalia	B1
Wharton	E2
Whiteford	B1
Wickham	B1
Wiltshire	E2
Woodstown	E1
Worsham	F3

APPENDIX C: HOW NATURAL SOIL GROUP MAPS WERE PRODUCED FOR EACH COUNTY

Step One -

Initial discussion on suitability of soils input

The first discussion held between the Earth Satellite Corporation and the Department of State Planning staff to explore the use of some sort of soil groups for planning purposes were optimistic. The major problem encountered was the type of source map to be utilized. Bill Brooner, under the direction of David Simonett, investigated the use of three different types of maps:

1. Old Soil Surveys - U.S. Department of Aguiculture 1917-1925, scale 1:62,500; soil units at series level
2. Engineering Soil Surveys-Maryland State Highway Administration, scale 1:63,360, 1960's; soil groups and sub-groups
3. Natural Soil Groups by Earl D. Matthews and R.L. Shields - U.S. Department of Agriculture from Modern Soil Surveys 1960's +, scale 1:15,840 and 1:20,000.

Several counties were investigated by taking areas one mile square and generating a new soil map to determine which of the above was most similar and therefore appropriate. His conclusion was that No. 2 and No. 1 above correlated the best, but the legends would have to be expanded. It was felt that the use of natural soil group maps produced superior information but would require considerable time and effort and therefore were initially unacceptable.

Subsequently, in viewing the long-term utility of each input to the land use plan and the need to computerize all data inputs, the decision was made to use the natural soil group maps if the costs in time and money for redrafting, final reproduction and photo-reduction could be held in line. Since it was necessary to have access to data on flooding, permeability, erosion, fertility and stability for planning purposes, the natural soil grouping appeared to be the best tool to provide this range of information.

Step Two -

Discussion with Soil Conservation Service and Earth Satellite Corporation concerning the costs of reproduction and technical means to reduce the physical size of the soil maps and still provide a readable product.

All parties concerned pooled their knowledge in an effort to get a feel for the costs of redrafting and reproduction. In addition to those noted above, Dr. John Foss, of the University of Maryland Agricultural Experiment Station, participated in the problem analysis phase of the project. The consensus opinion was that the Soil Conservation Service could provide sufficient technical expertise to supervise the work if the Department of State Planning could supply funding and Earth Satellite Corporation could locate a contractor.

Next, the technical problem of high quality photo reduction was approached. The Soil Conservation Service cartographic staff felt that if the original material was sufficiently uniform, appropriate reductions could be photographically produced. Most original material was at a scale of 1:15,840 or 1:20,000. It was felt that this material would have to be reduced to approximately 1:63,360 or 1:26,720 before it would be manageable. This was a four to eight times reduction in size.

Step Three -

Testing of the uniformity of source material.

The Department of State Planning obtained a set of Atlas sheets for one county. Using relatively basic methods, these sheets were assembled according to index map and numbering system. Some difficulties were encountered due to the differential changes in the size of either the paper stock or the print face itself. Sheets were manually altered for the best fit in an effort to average out these distortions. As the physical size of the mosaic began to increase, the county was split into two halves so that each piece was approximately five feet by seven feet. This was small enough to permit detailing of any line work needed.

Step Four -

Feasibility of amalgamating soil types into natural soil groups directly on original material.

The Department of State Planning staff, using a conversion table supplied by the Soil Conservation Service, grouped soils directly on the assembled county map. Once the conversions were routinized by the staff the work moved along well. Felt tip markers were used to darken the new soil group lines, after doing the initial grouping in pencil. The new groupings were block lettered, approximately ½'' high, with black felt tip pen.

Step Five -

Testing of Photographic reduction process.

The Department of State Planning required an easily reproducible staple product for "in house" use and statewide distribution. The Soil Conservation Service suggested a Chronaflex film positive from which blueprints or additional photo reproductions could be made. Due to the size of the paper mosaic supplied to the Soil Conservation Service cartographic laboratory, it was necessary to alter the reduction camera and the vacuum frame. A contact print from the negative was produced on Chronaflex at a scale of 1:126,720. This proved to be of high quality; however, the line work was too small to permit relatively easy use. It was subsequently enlarged to 1:63,360 so that it could be more easily read, but with a minor loss in quality.

Step Six -

Assembly of all existing source material.

This process was conceptually simple, but tended to occupy a great deal of time. A general soil inventory of the State had been done which previously served as the starting point. The best source materials available for 15 counties were the planimetric detailed soil map Atlas sheets from the modern published soil surveys. These sheets contained the soil delineations and cultural features but not the photomosaic backgrounds. Depending on the date of publication, they were either in the form of black line or red line work on white paper sheets. Some of these were available at the State Soil Conservation Service office, while others which were in short supply were obtained directly from the county (district) Soil Conservation Service office. Some county maps were at 1:15,840 while others were at 1:20,000. The soil surveys for five additional counties were currently being completed. In an effort to get a uniform type of source material, a diazo reproduction of Atlas-sited proof sheets were utilized. These sheets contained both line work and aerial photography and therefore exhibited a great deal less visual contrast. Here too, map scales varies from 1:15,840 to 1:20,000 as well as exhibiting a lack of dimensional stability. Two counties, Allegany and St. Mary's, had only the old soil survey series booklets and maps available as completed documents. The Allegany soil map is a color-line map at scale of 1:65,500 on a county topographical base. This map was converted to a Natural Soil Group Map by inspecting each of the modern, detailed unpublished soil survey field sheets and delineating natural soil group boundaries by comparing the old with the modern work. This involved both splitting and grouping of the soil delineations on the old published map. The St. Mary's County modern soil survey was in the process of being completed. Some surface areas had not been field checked or updated and, therefore, the data could not be used. On the whole, the old original soil map appeared to be a better source. This map was at a scale of 1'' to 1 mile. Finally, the only remaining county (Kent) had a multicolor map series over printed on the original soil type classification system. Here, the original scale was again 1:15,840. These maps were cartographically converted and natural soil groups delineated as on the modern published Atlas sheets.

Step Seven -

Physical assembly of county sheets and re-drafting into Natural Soil Groups.

America Data Maps contracted to handle this aspect of the project. Materials were collected by the Department of State Planning staff and conveyed to the contractor approximately six counties at a time. Source materials were not separated by format before shipment to the contractor. Each county map was accompanied by a conversion chart which indexed the existing soil types against the new natural soil groups. Several simple work rules, based upon the experience gained from the first test run, were developed to insure the readability of the end product.

1. Natural soil group areas smaller than ¾'' in diameter on the original were not to be delineated.

2. Natural soil group delineations which narrowed to ¾" or less would be closed off.
3. All G-1 and G-2 soil bands which were too small to delineate (see 1 and 2 above) were shaded in, using a medium red colored pencil which would photograph as medium grey or blueprint with similar density.

Those maps which were black or red line on white paper were utilized directly as a base for the delineation of natural soil groups. The first step was to "pencil in" the new groups on the sheets which had been mosaiced together. The best method seemed to be to start by delineating the largest natural soil group in an area approximately one foot square. Then small areas were added to it or set off as separate natural soil groups as was appropriate. After the center of the sector was completed and the boundaries approached, focus shifted to the next area approximately one foot square. Zones between these imaginary squares were grouped after the centers had been completed. Most counties were split into at least four parts or to an average mosaic sheet size of approximately 4' x 4'. Press-type lettering (36 pt. Gothic) and black felt tip pens were used to denote areas and increase the contrast of the new work. The diazo sheets were also mosaiced in the same sheet size; however, a matte finish mylar overlay was used as the base for the natural soil group delineations. Again, press-type lettering and marking pens were used on the final copy. The overlay was then used in the photocopying process. Those two counties which were available only in the 1923 series were simply re-drafted, one at 1:62,500 and the other at 1:63,360. This was done in an effort to match the old maps used as a base. Robert Shields, State Soil Scientist, Soil Conservation Service, assigned Natural Soil Group designations to the old soil units in the map legend. Finally, the one county printed in a multicolor form was re-photographed in black and white to retain as much contrast as possible. The positive print sheets were then assembled in a normal fashion. Natural soil group delineations and lettering was done directly on the print paper.

Step Eight -

Soil Conservation Service review of completed natural soil group maps.

As America Data Maps completed its work of making the natural soil group delineations, each county map was returned to Soil Conservation Service for review and approval. Intensive and extensive technical reviews of the full scale natural soil group maps were conducted by soil scientists in the State office of the Soil Conservation Service. After necessary adjustments were made, the sheets were delivered to the Soil Conservation Service Cartographic Division for reduction and reproduction.

Step Nine -

Photographic reduction and reproduction of original map work.

The Soil Conservation Service's Northeast Region Cartographic Division supplied this service at cost. After the initial changes were made in the size of the segmentalized original map, no alteration of the copy camera was necessary. Separate negatives were made for each segment supplied, then the negatives were mosaiced into a complete map of the county. Chronaflex positiv es were then produced at the desired scale. Two positives of each county were purchased by the Department of State Planning, one to be held in reserve and one for working purposes. Original material was returned to the Department of State Planning with each group of completed reductions. The negatives were retained by the Soil Conservation Service Cartographic Division until the entire project was complete.

APPENDIX D: SUGGESTED IMPROVEMENTS FOR PREPARING NATURAL SOIL GROUP MAPS BY COUNTIES

The following suggestions are made in an effort to reduce the loss of time as well as diminish error and confusion. First organizational, then methodological improvements will be discussed.

Organizational Improvements

A great deal of confusion was created among Department of State Planning staff, the Contractor, and the Soil Conservation Service staff because the different types of original materials were not segregated into homogeneous groups. Changes in handling techniques, procedures, and photography were necessary due to this mixing.

If several different types of base maps are to be used, one of each should be run through the complete process including the finished product. Once each type of material has been tested, full scale processing can begin. Provided there are only two or three variations to be considered, they can be handled simultaneously. However, if more than this number are involved each variation should be completed before the next one is initiated. Though more time will be used to get the project underway, time should be saved in the long run. Each sub-process will be "de-bugged," thus eliminating costly surprises and adjustments. Cost figures (both dollar and time) for the total project should be easy to compute by multiplying the cost per map by the number of each type of map. This estimate would probably be higher than the final figures due to the economies realized by processing several similar items.

Methodological Improvements

The next major problem encountered was the differences in scale among the published modern soil survey sheets. The Soil Conservation Service utilized two scales in Maryland related to the detail of the soil mapping. Thus, some counties in Maryland were at 1:15,840 while others were at 1:20,000. The end products must all be at the same scale if amalgamation into multi-county regions is desired. Perhaps the best solution would be to place a special tag on those counties which do not "fit" an even fractional reduction (i.e., 1:15,840 reduced four times or to ¼ original size = 1:63,360 or 1" = 1 mile exactly; while 1:20,000 must be reduced 3.1680 times to yield 1:63,360.

The best product control will be achieved when fewer individuals work out the natural soil group delineations. A suggested approach would be to have a team of two people work on each map. The number of teams could be increased or decreased as needed, but as much as possible the team members would not be changed. This should increase standardization and decrease total time spent on the project. Each county should be checked periodically to see if the selected natural soil groups match at those points where the county had been sectioned for working convenience. Further, if each section (usually four) is assembled for work purposes so that all sheets face in one direction, joining errors and number of interpretative areas will also be reduced. Working difficulties, however, are increased by this procedure because the reach from the top to the bottom of each section usually exceeds four feet.

A Soil Scientist should work directly with the mapping teams as they begin each county, to prevent systematic errors from developing. In addition, systematic detailed spot checking of the work completed by a qualified Soil Scientist would be advisable. In spite of efforts to standardize soil types, natural soil groups, and production methods, someone with broad experience in soil interpretation should check the material before it is photographed. If quality is satisfactory and only small problems are encountered, corrections can be made to the reduced chronoflex copies. Here one can take advantage of the reduced size to spot errors more quickly. Problems of materials handling are also obviously reduced.

A soil scientist should prepare a memo of orientation for the map teams for each county. This memo would alert the map teams to any special problems of interpreting soil symbols for Natural Soil Groups, such as miscellaneous land types peculiar to a specific county and not adequately accounted for in the standard Natural Soil Group Classification Scheme.