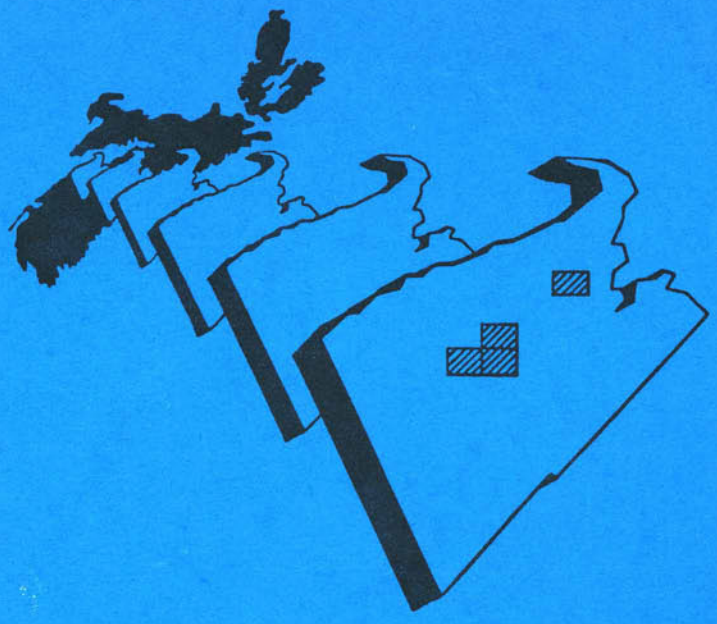
INTERIM REPORT No. 1



# DETAILED SOIL SURVEY OF KINGS CO. NOVA SCOTIA

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A JOINT PROJECT OF THE NOVA SCOTIA DEPARTMENT OF AGRICULTURE AND MARKETING, AND THE GOVERNMENT OF CANADA. (DEPARTMENT OF REGIONAL ECONOMIC EXPANSION)
1982

# INTERIM REPORT NO. 1

# DETAILED SOIL SURVEY OF KINGS COUNTY

# NOVA SCOTIA

Prepared by:

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*NOVEMBER, 1982*

*Report and Maps available from N. S. Department of Government Services*
*P. O. Box 550, Truro, N. S. B2N 5E3*
*(N.S.A.C. Campus)*

Kings County Soil Survey
Soils & Crops Branch
N. S. Dept. of Agr. & Mktg.
Kentville Agricultural Centre
KENTVILLE, Nova Scotia
B4N 1J5

November 16, 1982

The Management Committee
Kings County Soil Survey Project

Gentlemen:

RE: Enclosed Project Report entitled:"Interim Report No. 1, Detailed Soil Survey of Kings County, Nova Scotia"

I submit this report as documentation of the progress of the Kings County Soil Survey Project over the past two years.

Work on this project began in June, 1980 with the start of field work. Field mapping of the soils was completed in November, 1981. Report preparation and the publication of maps was carried out during the winter of 1980-81 at the Harlow Institute, Truro and during the winter-summer of 1982 at the Kentville Agricultural Centre.

Members of the project and their roles are as follows:

*Maurice J. BOWEN, BSc(Agr)* - Pedologist and Project Head, author of the enclosed report. (appointment date; June 12, 1980)

*Barry L. THOMPSON, BSc(Agr)* - Pedologist, responsible for finalizing the Canning Soil Map and Legend. (appointment date: May 1, 1981)

*Kevin A. LITTLE* -Soils Technician and Mapper, responsible for finalizing the South Berwick Soil Map and Legend. (appointment date: September 1, 1980)

*Mark L. AMYOT* - Soils Technician and Draftsman, responsible for drafting the soils maps and report illustrations and assisting with field work on the South Berwick sheet. (appointment date: January 1, 1981)

...#2

Please note that these maps are intended for planning purposes only. Site specific interpretations may require on-site evaluation.

I trust that this report and the included maps meet with the objectives of the project and with your expectations. If you require further or supplemental information please contact me at the Kentville Agricultural Centre. (Phone: 678-7365, Ext. 142).

Sincerely

Maurice J. Bowen
Project Head

MJB/cl
Encl.

# PREFACE

The purpose of this report and the accompanying maps, is to give an account of a 1:20,000 soil survey project of Kings County, Nova Scotia. The survey project, conducted over the past two years, was undertaken to obtain more detailed information about the distribution and properties of the soils of Kings County. This detailed information is required to provide the basis for land use planning and to accurately identify the distribution and characteristics of soils suitable for agricultural crop production.

The report is an interim one for two reasons. Firstly, this report makes available the information from the initial two (2) year survey effort. Secondly, because of the ongoing nature of this survey, a final correlation of the soils will not be possible until all mapping at this scale has been completed. More extensive surveying of the soils of Kings County at this scale will also generate more information about these soils. This additional information will be published in a final summary report which will cover all the detailed mapping. In its present form, this report is not intended to entirely replace the 1965 soil survey report entitled "Soil Survey Report of Kings County". This report should be used as a supplement to that report for those requiring more detailed information about the soils in the areas surveyed.

There are a number of differences between this report and earlier soil survey reports. The large scale (1:20,000) of map presentation and the photographic background are the major differences. The large scale means that the information is more detailed and that smaller areas are represented on the maps. The photographic background allows for ease of identification and location of common landscape features such as apple orchards, fields and roads. The addition of soil suitability ratings in the map legend makes it easier to compare the suitability of different areas for the production of apples, barley or corn. Another feature of these maps is, that inexpensive ozalid or "Blueprint" copies may be made available locally depending upon user demand.

That this report is interim and that it makes use of innovative means of presentation does not imply any difference in the standard or the quality

of the soil survey information. The greater detail reflects a more intensive field effort. As with previous soil surveys, this survey was conducted according to national guidelines. Where different or modified techniques were employed, these are explained in the text of this report.

The author recognizes and wishes to thank the following for their participation and support; but accepts responsibility for any errors or omissions.

The project was jointly funded by the Department of Regional and Economic Expansion and the Nova Scotia Department of Agriculture and Marketing. Headquarters for the project were provided by the Nova Scotia Agricultural College and the Kentville Agricultural Centre.

Mr. J. D. Johnson, Director of the Soils and Crops Branch, N.S.D.A.M., provided initial project administration.

Dr. Gerry Beke*, Head, Atlantic Soil Survey Unit, initiated the project, prepared the project outline, and was involved with the initial correlation.

Mr. Anton Schori, Provincial Land Use Advisor, provided project administration and technical advice for the final stages of map and report preparation.

Mr. John Nowland, Eastern Regional Correlator**, made valuable suggestions regarding the form of the soil legend and provided correlation in the initial stages of the survey.

Messrs. Ken Webb and Delmar Holmstrom, pedologists, C.D.A., Truro assisted with some of the correlation and made valuable criticisms and suggestions.

Messrs. Robert Thompson and Jan van der Leest assisted with some of the field work.

Mr. Rob McCarron assisted with field work in the 1980 field season, and Mr. David Langille assisted with some of the laboratory analyses.

* *Presently with Research Branch, Agriculture Canada, Lethbridge, Alberta*

** *Presently seconded to Program Coordinator, LRRI, Agr. Can., Ottawa, Ontario*

A special thanks to Miss Cathy Lennox for her patience for typing the map legend and soils report.

The excellent co-operation of the landowners in Kings County is greatly appreciated.

## SUMMARY

This interim report deals with a 1:20,000 scale soil survey project in Kings County, Nova Scotia. The project began in 1980 and was completed in 1982.

The survey area covers approximately 12,000 ha, corresponding to four (4) 1:20,000 orthophoto map sheets: Prospect, Cambridge Station and South Berwick, in the western, and Canning in the eastern part of the county. The report includes a soils map with agricultural interpretations for each of these areas.

The soil report is organized to discuss the soil survey project in four (4) sections. Each section deals with a particular aspect of the project.

*Section 1.0* provides a step by step procedure to follow in order to gain increasingly detailed information about the areas mapped.

*Section 2.0* discusses the methods used in this soil survey project. A 200 meter grid system and a 150 meter fixed interval transect system were employed as field mapping techniques. Soils were rated according to the Canada Land Inventory Soil Capability for Agriculture classification. Additionally, a soil suitability rating for apples, barley and corn was developed and soils were rated accordingly. Physical laboratory determinations made include: partical size analysis, % gravel content, hydraulic conductivity and moisture retention. Chemical data provided are pH, % organic matter, exchangeable cations, pyrophosphate and oxalate extractable iron and aluminum.

*Section 3.0* explains how the soil survey information presented in the map legend and in the report relates to the map unit delineations. The relationship of the map symbol, which indicates the soil name and slope phase, to the established soil series of Kings County is described. A discussion of map accuracy and precision is presented to aid in the appreciation of the soil survey information.

*Section 4.0* describes the soils in more detail according to eight categories of information. The soils are discussed according to their occurance,

drainage, stoniness, topography, general description, range in characteristics, associated soils and map unit inclusions.

The appendix to the report contains a detailed account of a soil suitability rating system, and a listing of laboratory data for a number of representative soils.

The bibliography lists references cited in the report as well as those used in the soil suitability rating system.

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# 1.0 GUIDE TO USING THE SOIL MAPS AND REPORT

## 1.1 What this Soil Report is About

This soil report presents detailed information about the soils in four (4) map sheet areas in Kings County, Nova Scotia. The names of the map sheets are: Cambridge Station, Canning, Prospect and South Berwick. These soil maps are included at the back of the report.

On the soil maps, the names and the location of the major soils are shown. The map legend provides a brief description of some of the major properties of each soil. A listing of the interpretations for the agricultural use of these soils is also provided in the map legend.

The soil report tells how the mapping was carried out and it explains how the agricultural interpretations were made. More detailed information about each soil is provided in the soil descriptions. Laboratory data on physical and chemical soil properties are listed in the appendix to the report. An overview of the report contents can be gained by reading the report summary.

## 1.2 The Use of the Soil Maps and Report

The soil maps and report are intended for all individuals and professionals involved with the development, management and conservation of land. The information provided can be helpful to farmers, engineers, land use planners, developers, or others interested in the use of land for wildlife and recreation.

Different sections of the report and different areas on the maps will be of more interest to some groups than to others. Hence, for some purposes, it may not be necessary to consult all sections of the report to obtain the required information.

Many soil properties can be quickly referenced in the map legends from the map symbol. Landowners or home buyers, for example, can readily determine the soil drainage or the slope of an area simply by using the soil maps. Others, requiring a more thorough knowledge of the soils, are urged to

refer to the soil descriptions and, for more technical detail, to the laboratory data. The sections in the report dealing with map accuracy, methods, and the range in soil characteristics should be consulted as a guide in applying the information.

The suggested procedure to follow in using the soil maps and report is as follows:

1. Select an area of interest on the soils map and note the corresponding map symbol(s). (The photographic background can be helpful in locating roads, orchards and other familiar landmarks).
2. Locate the map symbol(s) in the map legend. To learn about the soil properties of the area, read across the legend to the category of information you require.
3. To determine the agricultural capability, or soil suitability for apples, barley or corn, read across the legend opposite the appropriate slope class.
4. Slope classes and other explanatory notes are supplied on the map to the right of the map legend.
5. Additional information for each soil is found in the soil report. Refer to the Soil Descriptions, Section 4.0, for an overall discussion of the soil features. Technical details are provided in the laboratory data listing which is found in the Appendix to the report.

# 2.0 METHODS

## 2.1 Introduction

Both office and field work were involved in preparing the soil maps and in interpreting the soil data. Field work was conducted during the summer months (July - November 1980; June - November 1981). The use of both a grid and a transect system was employed to locate soil inspection sites in the field. Office work was carried out during the fall-winter of 1980-81, fall-winter of 1981-82 and was completed in the fall of 1982. These periods were used to prepare the soil maps and report.

The soil survey project involved basically five steps: (1) preparatory work; (2) field investigations; (3) naming and describing map units; (4) interpreting the soil data; and (5) preparation of the soil maps and report. These steps are discussed under the following sections; Mapping Methods and Interpretation Methods.

## 2.2 Mapping Methods

Soil Boundaries were first pretyped on 1:10,000 black and white airphotos by using airphoto interpretation techniques. Previous soil reports (3), (7), were consulted and the soil series of each of the four map areas were reviewed.

Field procedures involved detailed descriptions of the soils at preselected sites. On the Prospect and Cambridge Station sheets, the location of sites was determined by using a grid system. A 200-meter grid was first superimposed on the map sheet. Soil inspection sites corresponded to grid intersection points. This system gave an unbiased selection of sample points. (for example it allowed for an equal coverage of cleared and forested areas)

On the South Berwick and Canning sheets, location of sites was determined by using a transect system (16). First, twenty-five (25) transects were superimposed on each map sheet. These were 150 meter fixed interval transects which, like the grid system, gave an unbiased selection of sample points along the transects. Unlike the grid system however, the location and direction of the transect lines were biased according to the following

criteria: (1) transects ran perpendicular to contours so that different drainages would be encountered along the transect. (2) transects were positioned in the landscape so as to cross as many different types of soil as possible. Previous soil maps were used to make this decision. (3) transects were located along the most accessible routes provided that the above conditions were satisfied.

Field sites were accessed by foot using a compass and by pacing the distance between the sites. At each site, the surface features of the soil were recorded first. Features noted included slope, stoniness, dominant vegetation and present land use.

The second part of the site study involved a soil profile description. The soil was excavated to a depth of one meter (1 m) and the type, depth and sequence of soil horizons were recorded*. For each horizon, observations of soil texture, gravel content, structure and consistence were recorded. These and other, more specific observations were recorded on CANsis** Atlantic Daily computer forms for keypunching into the CANsis computer system. This system is a national inventory of Canadian Soils which stores data on a wide range of soils. Data in CANsis can be retrieved and manipulated for future land use, soil management or other soil research requirements. Procedures followed in recording observations on these computer forms were according to guidelines outlined in the Manual for Describing Soils in the Field (6).

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* *For example, the common horizon sequence in a Berwick soil under cultivation is as follows:*

- Ap - *the cultivated or "plow layer", usually dark brown and enriched with organic matter*
- Bf - *the horizon below the plow layer that is enriched with iron and aluminium oxides and is usally reddish brown.*
- BC - *the transition horizon below the Bf that is of intermediate development between the Bf and the C.*
- C - *the unaltered parent material or "subsoil" from which the soil developed.*

** *CANADA SOIL INFORMATION SYSTEM*

permanent pasture. Soil areas in all classes may be suited for forestry, wildlife and recreation.

Each capability class is further characterized by listing the limiting factor(s) associated with a particular soil. The limitations are designated by letters as follows: C - adverse climate; D - undesirable soil structure; E - erosion damage; F - low fertility; I - inundation (flooding); M - droughtiness; N - salinity; P - surface stoniness; R - shallowness to bedrock; S - cumulative adverse characteristics; T - topography; W - excessive water. The limiting factors listed for the soils are major limitations and are not necessarily the only limiting factors present.

The soil suitability rating system rates soils for the sustained production of Apples, Barley and Corn. Soils having a "Good" suitability rating have only slight or no significant limitations for the production of the specified crop. Soils having a "Fair" suitability rating have moderate limitations for the production of the specified crop. Examples are moderate stoniness for barley and gentle slopes for corn. Soils having a "Poor" suitability rating have severe limitations for the sustained production of the specified crop. Examples are poor drainage for apples and moderate stoniness for corn. Soils rated "Unsuitable" either have limitations too severe to be overcome by an individual farmer, or many, less severe limitations which would cumulatively make improvement unfeasible using current technology within the present day economics. Examples are soils with a high rish of flooding for all crops and soils with very steep slopes for corn..

One important difference between a soil suitability rating system for specific crops and a general agricultural capability classification is that the latter is more general in applying a wide range of crops. The soil suitability system on the other hand is crop specific and takes into account the adaptations and tolerances of each crop for certain soil conditions. An outline of the soil suitability rating system appears in the Appendix.

Soils having very similar overall features were grouped and given soil or soil phase names. Data from grouped soils were compiled and used to form a soil legend, which appears on the soil map.

## 2.3 Laboratory Methods

Laboratory data for some soils and soil phases were obtained by very detailed examination and sampling of representative sites.

Moisture retention (the ability of soils to retain water under different atmospheric conditions); saturated hydraulic conductivity (the rate of water flow through soils by gravity) and pH (or degree of acidity) in water (1:1) were determined at the Atlantic Soil Survey Unit Laboratory, Truro, N.S.

All other analyses were performed by the Analytical Services Laboratory, Research Branch, L.R.R.I., Ottawa.

Procedures followed at both laboratories were those outlined by the Canada Soil Survey Committee (9); with one exception, particle size analysis (the amount of sand, silt and clay) was by the filter candle method.

These data are included in Appendix II at the back of this report.

## 2.4 Interpretation Methods

Two interpretive classifications are listed in the map legend for each soil. The first classification, an Agricultural Capability rating, is based upon established guidelines outlined in Report No. 2 of the Canada Land Inventory (6). The second classification, a soil suitability rating, is based upon a method outlined in Appendix I.

With the agricultural capability system, mineral soils are grouped into seven classes according to their potentialities and limitations for agricultural use. The first three classes are considered capable of sustained production of common field crops, the fourth is marginal for sustained arable culture, the fifth is capable of use only for permanent pasture and hay, the sixth is capable of use only for wild pasture, while the seventh class is for soils considered incapable of use for arable culture or

# 3.0 MAP UNITS

## 3.1 Introduction

On the soil map, lines are drawn around areas with soil or soil features that differ from adjacent areas. Each area, called a map unit, is keyed to a description in the map legend by a symbol.

The symbol is composed of two (2) parts separated by a dot. The first part of the symbol indicates the dominant soil within the map unit; the second part of the symbol, a lower case letter, denotes the slope class of the map unit.

Soils with the same name but with a different number (Mn1, Mn2) are closely related soils but have one or more important differences. These differences have been treated in this report as phases of the older series, and are named as such. Thus Mn1 and S1 are most like the older series whereas Mn2 and S2 are slightly different and are called phases of the old series.

This method of designating map units was chosen for simplicity of map use and to provide some continuity with previous soil maps of Kings County.

## 3.2 Soils vs Map Units

There is a difference between a soil and a map unit. In this report the word soil refers to the dominant type of soil to be found in the areas outlined on the map. A map unit however, refers to repetitive soil-landscape units occuring throughout the mapsheet area (8).

For example, the areas with symbols Cg1-b and Cg1-d on the Canning map are different slope phases of the same soil (ie Canning). They are different map units because of slope differences.

This distinction is of practical importance. Consider the suitability of these two map units for the production of corn, a row crop. The first unit, Cg1-b, with slopes of less than 2% is rated good for corn production, whereas the map unit Cg1-d with slopes of 6-9% is rated poor for corn production due to erosion hazard. Another difference is that all map units

with the same designation will not necessarily have the same inclusions, but will have the same dominant soils.

### 3.3 Map Accuracy and Precision

A soil report presents information. The quality of the information presented depends upon its accuracy and precision. As it relates to soil maps, accuracy is defined as the closeness with which the information presented represents conditions in the field. Map precision, on the other hand, is a measure of the level of detail of the information presented. Map precision is scale dependant, with large scale maps being more precise than small scale maps. (8).

Hence one might compare a 1:450,000 scale soils map of Nova Scotia as being just as accurate as a 1:500 scale farm planning soil map, but the latter is obviously more precise.

The Kings County detailed soil maps are at a scale of 1:20,000. Generally, soils maps at this scale are precise enough for urban planning, location of parks,or local planning for groups of farms (8). The minimum size delineation that can be shown cartographically is 1 $cm^2$. On the Kings County detailed soil maps this minimum size delineation corresponds to an actual field size of 4 ha (10A).*

It is estimated that overall map accuracy is about 80%. The variability within each soil,and the inclusions to be expected in map units,are discussed under Soil Descriptions, Section 4.3.

* *Areas smaller than this may occur as inclusions too small to map out. Examples of possible inclusions are - associated soils, small wet spots, often peaty; small gravel pits, or man made areas such as parking lots.*

# 4.0 SOIL DESCRIPTIONS

## 4.1 Introduction

This part of the report describes in more detail the dominant soils within each map unit. For each soil the occurance, drainage, stoniness and topography is listed first.

The general description given for each soil refers to the nature of the surface and subsurface soil materials. Where possible, special or identifiable features of the soils are listed here. The most variable feature(s) of each soil and the range in properties to be expected are given under Range in Characteristics. The section on Associated Soils tells which other soils are found in the landscape with that soil and how these soils are related to one another. The percentage of other soils to be expected within the map unit is given under Map Unit Inclusions.

These descriptions apply only to the soils as mapped within the four map sheets completed. Detailed profile descriptions of representative sites are available for most of these soils. These soil profile descriptions, which include morphological characterictics such as horizon depth, consistence, structure and pore space, are on tabular form. These are available upon request from the Soils and Crops Branch, P. O. Box 550, Truro, Nova Scotia, B2N 5E3; (Phone: 895-1571).

## 4.2 Background Geology and Physiography

This soil report deals with a relatively small area of the soils of Kings County. Therefore, a complete, more detailed account of the broader geological and physiographic setting of these soils is not possible at this time.* As mapping progresses to cover a larger area of the country, observations of landform and other geomorphological features will be used to supplement or revise the existing information on these subjects. For the present, the most update and reliable source of such information is the 1965 Soil Survey Report of Kings County (3).

* *Where encountered, new or additional observations of these features have been reported in the descriptions of each soil*

## 4.3 Soil Descriptions

SOIL NAME:

Acadia 1 (Ac1)

OCCURANCE:

On the Canning sheet along the Habitant Creek and the Canard River

DRAINAGE:

Imperfect

STONINESS:

Nonstony

TOPOGRAPHY:

Level (0-0.5%)

GENERAL DESCRIPTION:

30-65 cm of firm silty clay loam over very firm reddish gray clay loam to silty clay loam. This soil is recognized by its location (on dyked marine sediments) by its heavy surface texture (silty clay loam), and by its weakly developed profile (lack of distinct layers).

Extensive land reclamation and drainage projects have greatly improved this soil over the years.

RANGE IN CHARACTERISTICS:

The overall soil consistence varies from plastic and sticky when wet to firm when dry. Some of the profiles examined have layers of very fine sands and silts. The drainage ranges from poor in depressions to moderately well on land-formed crowns.

ASSOCIATED SOILS:

Closely associated with Acadia soils are Organic, Chaswood and Millar soils. These are found in poorly drained depressions and along stream channels.

MAP UNIT INCLUSIONS:

Map units designated as Ac1 may have up to 20% inclusions of associated soils, stream channels or open ditch dykes.

SOIL NAME:

Annapolis 1 (An1)

OCCURANCE:

On the South Berwick sheet along the South Mountain.

DRAINAGE:

Imperfect

STONINESS:

Moderately to very stony

TOPOGRAPHY:

Very gentle stopes (2.5-5.0%)

GENERAL DESCRIPTION:

30-60 cm of friable sandy loam over compact dark reddish brown gravelly coarse sandy loam. This soil is recognized by its surface stoniness (mainly granite and sandstone) and by its topographic position (usually depressional).

RANGE IN CHARACTERISTICS:

Surface stoniness varies from slightly stony to very stony. Overall soil consistence is generally firm or compact but some profiles examined are friable.

ASSOCIATED SOILS:

Bridgetown which occurs on similar parent materials, is the well drained associate of Annapolis. Other soils which occur together with Annapolis in the landscape are Nictaux and Middlewood.

MAP UNIT INCLUSIONS:

Map units designated as An1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Berwick 1 (B1)

OCCURANCE:

On the Prospect, South Berwick and Cambridge Station sheets along the lower slopes of the South Mountain.

DRAINAGE:

Well to moderately well

STONINESS:

Nonstony to slightly stony

TOPOGRAPHY:

Very gentle to strong slopes (2-30%)

GENERAL DESCRIPTION:

50-80 cm of friable sandy loam over friable dark reddish brown loam. This soil is recognized by its subsoil texture (loam), by its overall colour (reddish) and by its consistence (friable). It closely resembles Morristown soils but lacks the rusty-brown cast.

This soil is among the best agriculture soils on the South Mountain slopes.

RANGE IN CHARACTERISTICS:

The overall soil texture varies from a sandy loam to a silt loam. The finer textured soils which occur on the Prospect sheet, contain slate chips. Small pockets of moderately stony Berwick soil occur on the middle to upper slopes of the South Mountain.

ASSOCIATED SOILS:

Berwick 2 (*loamy sand phase*) occurs where the Berwick till is more sandy. Nictaux 2 (*gully phase*), Debert, and Riverport occupy imperfectly drained topographic positions. Middlewood is found in the poorly drained areas. These associated soils occur on widely differing parent materials.

MAP UNIT INCLUSIONS:

Map units designated as B1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Berwick 2 (*Loamy sand phase*, B2)

OCCURANCE:

On the South Berwick and Cambridge Station sheets along the lower slopes of the South Mountain.

DRAINAGE:

Well drained

STONINESS:

Nonstony to slightly stony

TOPOGRAPHY:

Nearly level to strong slopes (0.5-30%)

GENERAL DESCRIPTION:

60-90 cm of friable sandy loam over friable dark reddish brown loamy sand to coarse sandy loam.

The sandy phase of Berwick soils have developed from the same till and under similar conditions as Berwick 1 soil. It is recognized by its texture (coarse sandy loam) by its drainage (well) and by its consistence (generally loose).

RANGE IN CHARACTERISTICS:

The soil consistence is usually friable but it varies. About 30% of the profiles examined have compact layers, mostly in the form of ortsteins or ironpans. About 20% of the soils have gravelly subsoils.

ASSOCIATED SOILS:

Berwick 1 occurs where the Berwick till is less sandy. Nictaux 2 (*gully phase*), Debert and Riverport soils occupy imperfectly drained topographic positions. Middlewood is found in the poorly drained areas. These associated soils are of widely differing parent material.

MAP UNIT INCLUSIONS:

Map units designated as B2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Bridgetown 1 (Bt1)

OCCURANCE:

On the South Berwick sheet along the base of the South Mountain.

DRAINAGE:

Well to moderately well

STONINESS:

Moderately stony

TOPOGRAPHY:

Gentle to moderate slopes (6-15%)

GENERAL DESCRIPTION:

60-90 cm of friable loamy fine sandy over friable dark reddish brown coarse sandy loam. Bridgetown soils are reddish gray at the surface and have a high content of granitic coarse fragments. They differ from Annapolis soils in that they usually occupy the higher topographic positions and have better drainage.

RANGE IN CHARACTERISTICS:

The subsoil texture is variable. It is usually coarse sandy loam but a small percentage of Bridgetown soils are underlain by fine sandy loam. Most Bridgetown soils are also gravelly. Often the soil is modified by cobbles and stones throughout the profile. Where this occurs the soil is usually compact or cemented.

ASSOCIATED SOILS:

Bridgetown is in association with Annapolis soils, which occur in the imperfectly drained areas, generally down slope or in depressions.

MAP UNIT INCLUSIONS:

Map units designated as Bt1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Bridgeville 1 (Bv1)

OCCURANCE:

On the South Berwick and Cambridge Station sheets along stream channels.

DRAINAGE:

Imperfect

STONINESS:

Nonstony to moderately stony

TOPOGRAPHY:

Nearly level to gentle slopes (0.5-9%)

GENERAL DESCRIPTION:

20-40 cm of friable silt loam over compact dark yellowish brown sandy clay loam.

Bridgeville soils have developed in association with Chaswood soils on river alluvium. They are found on the level to depressional areas of the floodplains where the drainage is imperfect.

Like the Chaswood soils they are recent alluvium and hence exhibit little profile development, except for a shallow surface layer that is high in organic matter.

RANGE IN CHARACTERISTICS:

Where Bridgeville merges with upland soils, drainage is moderately well. The overall soil texture is variable, ranging from sandy loam to silty clay loam. Surface stoniness varies from nonstony to moderately stony over short distances.

ASSOCIATED SOILS:

Bridgeville soils are associated with Chaswood soils, which occur in the more poorly drained areas.

MAP UNIT INCLUSIONS:

Map units designated as Bv1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Canning 1 (Cg1)

OCCURANCE:

On the Canning and Cambridge Station sheets.

DRAINAGE:

Well drained

STONINESS:

Nonstony

TOPOGRAPHY:

Level to moderate slopes (0-15%)

GENERAL DESCRIPTION:

50-85 cm of very friable loamy very fine sand over friable yellowish red very fine sand.

Canning soils are easily recognized by the surface soil which is a yellowish red, loose fine sand. Often the landform is hummocky and dune shaped. Observations of more recent wind action on these soils suggest that these hummocks may be old stabilized sand dunes.

RANGE IN CHARACTERISTICS:

A small percentage of these soils have a cemented layer below the surface soil. These areas are not extensive and generally texture and other soil features are relatively uniform. Where these soils merge with Somerset and Woodville soils, the surface soil is slightly gravelly.

ASSOCIATED SOILS:

Canning soil is found in association with Somerset and Woodville soils which occur at the same topographic position. The imperfect and poorly drained associates are Kingsport 2 (*fine sandy phase*) and Millar respectively.

MAP UNIT INCLUSIONS:

Map units designated as Cg1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Chaswood 1 (Cw1)

OCCURANCE:

On the South Berwick and Cambridge Station sheets, along river and stream floodplains.

DRAINAGE:

Poor

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level to very gentle slopes (0.5-5%)

GENERAL DESCRIPTION:

30-60 cm of friable loamy fine sand over friable reddish brown silt. Chaswood soils have developed on reddish brown alluvial sediment. They are found in poorly drained positions along rivers, where the alluvium is fine textured, usually a silty clay loam.

The surface is often covered by a peaty deposit of variable thickness. There is little profile development, except the presence of Ap horizons, (plow layers) which have developed on areas used as pasture.

RANGE IN CHARACTERISTICS:

The texture of Chaswood soils range from a loamy fine sand to a clay loam. Drainage ranges from imperfect to very poor over short distances. This is most evident where the soils occur as long narrow deposits between upland soils.

ASSOCIATED SOILS:

Chaswood soils are associated with Bridgeville soils which occur in the imperfectly drained areas. Chaswood 2 (*peaty phase*) is the more poorly drained associate.

MAP UNIT INCLUSIONS:

Map units designated as Cw1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Chaswood 2 (*peaty phase*, Cw2)

OCCURANCE:

On the Canning, Prospect, South Berwick and Cambridge Station sheets, in floodplain areas that undergo frequent inundation.

DRAINAGE:

Very poor

STONINESS:

Nonstony

TOPOGRAPHY:

Level to very gentle slopes (0-5%)

GENERAL DESCRIPTION:

10-20 cm of peat over stratified sands and silts. The peaty phase of Chaswood soil is stratified and better sorted than other Chaswood soils. Also the drainage is slower. This soil is best recognized by its topographic position (in depressional areas along stream banks) and by its shallow peaty surface layer.

RANGE IN CHARACTERISTICS:

In some areas along the river floodplains the deposits are deeper and better sorted. In other areas, these soils occur as peaty layers over silty clay loam. The depth of the peaty layer varies considerably and is often incorporated with the mineral layer where Chaswood 2 (*peaty phase*) borders pastureland.

ASSOCIATED SOILS:

Chaswood 2 (*peaty phase*) is found in association with Chaswood soils which occur on poorly drained alluvial sediments. The organic soils are closely associated with this soil in the landscape.

MAP UNIT INCLUSIONS:

Map units designated as Cw2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Cornwallis 1 (Cn1)

OCCURANCE:

On the Prospect, South Berwick and Cambridge Station sheets along the valley floor.

DRAINAGE:

Rapid

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level to moderate slopes (0.5-15%)

GENERAL DESCRIPTION:

60-80 cm of very friable sand over friable yellowish brown sand. Cornwallis soils have developed on yellowish brown outwash sand. They are found in the Central Valley region where the deposits are deep and well sorted. The surface soil is a sand with a loose poor structure. As with Canning soils, there is the occasional occurance of cemented layers. The topography is generally undulating and the surface is relatively stone free. Where these soils border other outwash deposits, especially Nictaux, they are often difficult to map separately since they occur in a complex pattern.

RANGE IN CHARACTERISTICS:

Generally these soils are loose or friable, but often strongly cemented layers are encountered. These hardpans or ortsteins are usually found within the top 50 cm and vary in thickness. They are often discontinuous and difficult to map out at this scale.

Horizonation, or the presence of soil layers, is much more pronounced in forested areas than in cultivated fields.

ASSOCIATED SOILS:

Nictaux and Canning soils occur in upland positions. Kingsport and Millar soils occur in the lowland positions in a complex pattern with Cornwallis in the landscape.

MAP UNIT INCLUSIONS:

Map units designated as Cn1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Cornwallis 2 (*loamy sand phase*, Cn2)

OCCURANCE:

On the South Berwick sheet along the valley floor.

DRAINAGE:

Rapid to well

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level to moderate slopes (0.5-15%)

GENERAL DESCRIPTION:

60-80 cm of very friable loamy sand over friable yellowish red loamy fine sand. The *loamy sand phase* of Cornwallis is very similar to other Cornwallis soils except thatit is finer textured and generally more gravelly. This soil is very similar to the Somerset soils except that the colour and rock type differs. Although both soils have a wide range of coarse fragments, Cornwallis soils generally contain mainly quartz and quartzite, and are more yellowish than Somerset soils.

RANGE IN CHARACTERISTICS:

About 10% of these soils are underlain by a gravelly coarse sand. The soil consistence is usually very friable or friable but about 20% of the profiles examined show ortsteins or ironpans. About 10% of the profiles examined are gravelly. Overall soil texture ranges from loamy sand to gravelly loamy fine sand.

ASSOCIATED SOILS:

Cornwallis 2 (*loamy sand phase*) is found in association with Berwick and Morristown, which occur in upland positions. The other Cornwallis soil occurs where the subsoil is more sandy.

MAP UNIT INCLUSIONS:

Map units designated as Cn2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Debert 1 (*sandy loam phase*, Del)

OCCURANCE:

On the Canning, South Berwick and Cambridge Station sheets on the valley floor and lower slopes of the South Mountain.

DRAINAGE:

Imperfect

STONINESS:

Nonstony to slightly stony

TOPOGRAPHY:

Nearly level to gentle slopes (0.5-9%)

GENERAL DESCRIPTION:

50-85 cm of friable sandy loam over compact dark reddish brown sandy loam. Debert soils have developed on dark reddish brown sandy loam till. The surface soil is a friable sandy loam similar to Woodville but duller in colour, and usually slightly stony. The subsoil is usually a friable, mottled sandy loam.

RANGE IN CHARACTERISTICS:

Where Debert soils merge with Woodville the surface is stone free. The subsoil consistence is usually firm and compact but it may vary from friable to firm. Overall soil texture is variable and ranges from a sandy loam to a gravelly sandy clay loam. About 10% of these soils are underlain by heavy textured deposits.

ASSOCIATED SOILS:

Debert 1 (*sandy loam phase*) is found in association with sandy phase of Woodville and Berwick soils where the drainage is imperfect.

MAP UNIT INCLUSIONS:

Map units designated as Del may have up to 20% inclusions of associated soils.

SOIL NAME:

Kentville 1 (Ktl)

OCCURANCE:

On the Cambridge Station sheet on level to depressional areas of the valley floor.

DRAINAGE:

Imperfect

STONINESS:

Nonstony

TOPOGRAPHY:

Level to very gentle slopes (0-5%)

GENERAL DESCRIPTION:

50-70 cm of friable sandy loam over compact dark reddish brown sandy clay loam. Kentville soils have developed on a reddish brown sandy loam till. The surface soil is a stone free friable sandy loam. Pinkish quartz pebbles are commonly found on the surface. The subsoil is compact and finer textured, often a sandy clay loam.

RANGE IN CHARACTERISTICS:

The sruface soil is generally sandy loam but the subsoil texture ranges from a fine sandy loam to a silty clay cloam. Where these soils border Acadia soils the texture approaches a clay loam. Drainage varies from moderately well in elevated positions to poor in small depressions. About 10% of the map units have a compact subsoil.

ASSOCIATED SOILS:

Kentville soils are found in association with the fine textured phase of Woodville soils, where the drainage is imperfect.

MAP UNIT INCLUSIONS:

Map units designated as Ktl may have up to 20% inclusions of associated soils

SOIL NAME:

Kingsport 1 (Kp1)

OCCURANCE:

On the Canning, Cambridge Station and South Berwick sheets in depressional or seepage areas of the valley floor.

DRAINAGE:

Imperfect

STONINESS:

Nonstony

TOPOGRAPHY:

Level to gentle slopes (0-9%)

GENERAL DESCRIPTION:

50-80 cm of very friable loamy sand over loose light brown sand. Kingsport soils are recognized by their high content of sand and by their occurance in depressional or seepage areas. They are similar to Chaswood soils but are not as poorly drained. Profile development is only weakly expressed and soil horizons (or layers) are difficult to identify in the field.

RANGE IN CHARACTERISTICS:

Where Kingsport merges with Somerset and Cornwallis soils drainage is slightly improved. The overall soil texture ranges from a loamy coarse sand to a loamy fine sand. The topography is level to depressional except in seepage areas that are gently sloping.

ASSOCIATED SOILS:

Kingsport is found in association with Somerset and Cornwallis soils, which occur in upland well drained positions. The Kingsport 2 (*fine sandy phase*) occupies the same topographic position but is finer textured and not as well drained.

MAP UNIT INCLUSIONS:

Map units designated as Kp1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Kingsport 2 (*fine sandy phase*, Kp2)

OCCURANCE:

On the Canning and South Berwick sheets in imperfectly drained depressions and seepage areas of the valley floor.

DRAINAGE:

Imperfect to poor

STONINESS:

Nonstony

TOPOGRAPHY:

Level to gentle slopes (0-9%)

GENERAL DESCRIPTION:

50-75 cm of very friable loamy fine sand over loose reddish brown fine sand to loamy fine sand. Kingsport soils are found on reddish brown sandy alluvium where drainage is imperfect. Usually the surface soil is a dark humic layer about 20 cm deep. The underlying friable fine sand is light brown resembling Canning soil but differs from Canning in being mottled or stained due to prolonged wetness.

RANGE IN CHARACTERISTICS:

The most variable features of Kingsport soils are drainage and depth to water table. Where the Kingsport 2 (*fine sandy phase*) borders organic soils drainage is slower and a thin peaty layer (<10cm) is present at the surface. The overall soil texture ranges from a sand to a loamy very fine sand.

ASSOCIATED SOILS:

Kingsport 2 (*fine sandy phase*) is found in association with Canning which occurs in well drained upland positions and with Millar soils, which are more poorly drained. The other Kingsport soil (Kp1) is coarser textured and has better drainage.

MAP UNIT INCLUSIONS:

Map units designated as Kp2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Masstown 1 (*sandy loam phase*, Ma1)

OCCURANCE:

On the Canning sheet in isolated areas of the valley floor.

DRAINAGE:

Poor

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level (0.5-2.5%)

GENERAL DESCRIPTION:

40-70 cm of firm sandy loam over compact dark red coarse sandy loam. Masstown 1 soils have developed on a dark red sandy loam till and resemble Debert soils. Masstown 1 soils differ from Debert soils in that they occupy the more poorly drained position in the landscape. As such, these soils are very similar to Debert soils except that they are generally much wetter and show mottling throughout the profile.

RANGE IN CHARACTERISTICS:

The overall soil texture ranges from a sandy loam to a sandy clay loam. The soil is generally gravel free but may contain up to 20% gravel. Drainage may range from imperfect to very poor.

ASSOCIATED SOILS:

Masstown is found in association with Woodville and Berwick soils, which occur in the well drained positions of the landscape.

MAP UNIT INCLUSIONS:

Map units designated as Ma1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Middleton 1 (M1)

OCCURANCE:

On the South Berwick and Cambridge Station sheet on the lower slopes of the South Mountain.

DRAINAGE:

Imperfect

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level slopes (0.5-2.5%)

GENERAL DESCRIPTION:

20-50 cm of very friable sandy loam over compact reddish brown clay loam. Middleton soils have developed on a reddish brown clay loam till. The surface soil is generally shallow, less than 20-50 cm. It is a friable sandy loam usually mixed with a small amount of gravel. The subsoil is very finely textured and very firm when dry. Internal drainage is very slow because of the massive structure of the clayey subsoil.

RANGE IN CHARACTERISTICS:

The surface soil is often gravelly. The subsoil ranges from a sandy clay loam to a clay loam. Drainage varies from moderately well to imperfect depending upon slope position and subsoil texture. About 10% of the profiles examined are friable but the consistence is generally firm.

ASSOCIATED SOILS:

Middleton is found in association with Berwick soils, which occur in the same topographic position.

MAP UNIT INCLUSIONS:

Map units designated as M1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Middlewood 1 (Mw1)

OCCURANCE:

On the Prospect, Cambridge Station and South Berwick sheets in depressional and seepage areas of the South Mountain.

DRAINAGE:

Poor

STONINESS:

Moderately stony

TOPOGRAPHY:

Nearly level to moderate slopes (0.5-15%)

GENERAL DESCRIPTION:

20-40 cm of friable gravelly sandy loam over fine yellowish brown gravelly sandy loam. Middlewood soils have developed on a slaty yellowish-brown sandy loam till. In this respect, they are similar to Riverport and Morristown soils. They differ in that they are found in areas where the till is poorly drained. Drainage is slowed by a combination of impermeable subsoil, shallowness to bedrock or slope position. In depressional areas they have shallow peaty surface layers.

RANGE IN CHARACTERISTICS:

The most significant variation of these soils is stoniness and drainage. Drainage varies from imperfect to very poor. Stoniness varies from slightly stony to very stony over short distances. Slope varies from level or depressional to gently sloping. A small percentage of these soils have shallow peaty surface layers.

ASSOCIATED SOILS:

Riverport is the imperfect associate which occurs in the same topographic position. Morristown and Berwick soils occupy the well drained upland positions.

MAP UNIT INCLUSIONS:

Map units designated as Mw1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Millar 1 (Mr1)

OCCURANCE:

On the Canning, South Berwick and Cambridge Station sheets in seepage areas of the valley floor.

DRAINAGE:

Poor

STONINESS:

Nonstony

TOPOGRAPHY:

Level to gentle slopes (0-9%)

GENERAL DESCRIPTION:

60-90 cm of friable sand over very friable reddish brown loamy coarse sand. This soil is recognized by its topographic position (depressions), by its overall texture (sandy) and by its profile mottling (grayish stains).

RANGE IN CHARACTERISTICS:

Drainage varies from imperfect to poor. This is usually dependant upon slope position. The subsoil texture ranges from a coarse sand to a coarse sandy loam. The surface soil texture is more variable. In depressional areas a peat layer may be incorporated with the sandy surface soil.

ASSOCIATED SOILS:

Kingsport soils are found near Millar soils in imperfect areas. Cornwallis, Canning and Somerset soils occur in well drained areas. Chaswood and Bridgeville soils also occupy similar topographic positions as Millar.

MAP UNIT INCLUSIONS:

Map units designated as Mr1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Morristown 1 (Mn1)

OCCURANCE:

On the Prospect, South Berwick and Cambridge Station sheets on the slopes of the South Mountain.

DRAINAGE:

Well to moderately well

STONINESS:

Slightly to moderately stony

TOPOGRAPHY:

Nearly level to strong slopes (0.5-30%)

GENERAL DESCRIPTION:

50-75 cm of friable sandy loam over compact reddish brown sandy loam. This soil is recognized by its topographic position (upper slopes of the South Mountain) by its gravel content (slate chips) and by its rusty brown colour.

RANGE IN CHARACTERISTICS:

Topography varies from nearly level to strongly sloping. Drainage varies from well to imperfect. Surface stoniness varies from nonstony to very stony. In cultivated fields the surface is smooth but in forested areas the surface is strongly mounded.

ASSOCIATED SOILS:

Morristown 2 (*shallow phase*) and Morristown 3 (*stratified phase*) occur with Morristown soils in a complex pattern on the same topographic position. The imperfectly and poorly drained associates are Riverport and Middlewood respectively.

MAP UNIT INCLUSIONS:

Map units designated as Mn1, may have up to 20% inclusions of associated soils.

SOIL NAME:

Morristown 2 (*shallow phase*, Mn2)

OCCURANCE:

On the Prospect and South Berwick sheets on the South Mountain

DRAINAGE:

Well to moderately well

STONINESS:

Moderately stony

TOPOGRAPHY:

Nearly level to extreme slopes (0.5-70%)

GENERAL DESCRIPTION:

20-80 cm of friable gravelly sandy loam over slate bedrock. This soil is recognized by its high content of gravel (flaggy slate) and its shallowness to bedrock.

RANGE IN CHARACTERISTICS:

The Morristown 2 (*shallow phase*) is most variable in depth to bedrock. In mounded or hummocky areas the bedrock is deeper than 1 meter but where eroded stream banks occur, it is often exposed at the surface. The surface texture ranges from a silt loam to a very gravelly sandy loam.

ASSOCIATED SOILS:

Morristown and Morristown 3 (*stratified phase*) occur with Morristown 2 (*shallow bedrock phase*) in a complex pattern on the same topographic position. The imperfectly and poorly drained associates are Riverport and Middlewood respectively.

MAP UNIT INCLUSIONS:

Map units designated as Mn2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Morristown 3 (*stratified phase*, Mn3)

OCCURANCE:

On the Prospect, Cambridge Station and South Berwick sheets on the middle to lower slopes of the South Mountain.

DRAINAGE:

Well

STONINESS:

Moderately stony

TOPOGRAPHY:

Very gentle - strong slopes (2.5-30%)

GENERAL DESCRIPTION:

50-75 cm of friable gravelly sandy loam over stratified sands and gravels. This soil is recognized by its similarity to other Morristown soils but it differs in colour (lighter brown) and in the high gravel content. This soil also tends to be more droughty than other Morristown soils.

RANGE IN CHARACTERISTICS:

Drainage varies from rapid, where the underlying materials are gravelly, to moderately well, where the underlying material is fine sand. The depth to and sequence of the underlying sand and gravel strata are difficult to predict. Topography varies from near level slope to strongly sloping.

ASSOCIATED SOILS:

Morristown, Morristown 2 (*shallow phase*) and Nictaux occur with Morristown 3 (*stratified phase*) in a complex pattern on the same topographic position.

MAP UNIT INCLUSIONS:

Map units designated as Mn3 may have up to 20% inclusions of associated soils.

SOIL NAME:

Nictaux 1 (N1)

OCCURANCE:

On the South Berwick and Cambridge Station sheets on the lower slopes of the South Mountain and on the Canning sheet along the base of the North Mountain.

DRAINAGE:

Very rapid

STONINESS:

Nonstony to slightly stony

TOPOGRAPHY:

Level to strong slopes (0-30%)

GENERAL DESCRIPTION:

60-90 cm of friable loamy coarse sand over loose dark gray very gravelly coarse sand. This soil is recognized by the presence of coarse gray sand and fine washed gravel on the surface. Because of the low silt and clay content these soils become very loose and structureless without organic matter.

RANGE IN CHARACTERISTICS:

The soil consistence is usually loose or very friable firm but about one third (1/3) of the profiles examined contain cemented or compacted layers in the form of ortsteins (iron pans) or fragipans (hardpans). The overall soil texture ranges from a loamy coarse sand to a gravel. In forested areas the profiles show better horizonation (layering) than in cultivated fields.

ASSOCIATED SOILS:

Finer textured deposits of Nictaux are found in association with Cornwallis soils.

MAP UNIT INCLUSIONS:

Map units designated as N1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Nictaux 2 (*gully phase*, N2)

OCCURANCE:

On the South Berwick sheet.

DRAINAGE:

Imperfect to poor

STONINESS:

Moderately stony

TOPOGRAPHY:

Nearly level to moderate slopes (0.5-15%)

GENERAL DESCRIPTION:

30-60 cm of loose gravelly coarse sand over loose dark brown very gravelly coarse sand. This soil is recognized by its topographic position (along stream channels) and by its steep slopes. It is usually found in forested areas.

RANGE IN CHARACTERISTICS:

Most features of this soil vary markedly across the stream banks unit. Lower on the stream banks the texture is finer and the drainage is imperfect to poor. Higher up along the stream banks, drainage is imperfect to well and the texture is coarser. Rill erosion channels are evident along the coarse of the streams.

ASSOCIATED SOILS:

Nictaux 2 (*gully phase*) is associated with Nictaux and Berwick soils which occur in higher topographic positions. Torbrook 2 (*gully phase*) soils occur in the same topographic position.

MAP UNIT INCLUSIONS:

Map units designated as N2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Organic 1 (*shallow humic phase*, Or1)

OCCURANCE:

On the Canning, South Berwick and Cambridge Station sheets.

DRAINAGE:

Very Poor

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level slopes (0.5-2.5%)

GENERAL DESCRIPTION:

Less than 40 cm of fibric (slightly decomposed) sedge peat over 40 to 100 cm of humic (decomposed) sedge peat underlain by gravelly coarse sand. This soil is recognized by its depressional position in the landscape and by its characteristic vegetation which includes sedges, bulrushes and alders. It is separated from other organic soil phases in being more shallow and well decomposed.

RANGE IN CHARACTERISTICS:

As with other organic soil phases, where the Organic 1 (*shallow humic phase*) borders with mineral soils, drainage is improved. Here the depth to the mineral soil also ranges between 60 to 100 cm over very short distances.

ASSOCIATED SOILS:

The type and pattern of soils occuring in the landscape with the Organic soils varies from area to area and is difficult to predict. Generally Chaswood and Millar soils occupy the poorly drained topographic positions in close association with the Organic soils.

MAP UNIT INCLUSIONS:

Map units designated as Or1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Organic 2 (*humic phase*, Or2)

OCCURANCE:

On the Canning sheet.

DRAINAGE:

Very poor

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level slopes (0.5-2.5%)

GENERAL DESCRIPTION:

Humic (decomposed) sedge peat deposits deeper than 200 cm. This soil is recognized by its depressional position in the landscape and by its characteristic vegetation which includes sedges, bulrushes and alders. It is separated from other organic soil phases in that it is deeper and more decomposed.

RANGE IN CHARACTERISTICS:

Where the Organic 2 (*humic phase*) merges with Chaswood and Masstown soils, the organic layer is shallow and drainage is poor to imperfect.

ASSOCIATED SOILS:

The type and pattern of soils occuring in the landscape with the organic soils varies from area to area and is difficult to predict. Generally Chaswood and Masstown soils occupy the poorly drained topographic positions in close association with the Organic soils.

MAP UNIT INCLUSIONS:

Map units designated as Or2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Organic 3 (*shallow mesic phase*, Or3)

OCCURANCE:

On the Canning sheet.

DRAINAGE:

Very poor

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level slopes (0.5-2.5%)

GENERAL DESCRIPTION:

40-160 cm of mesic (moderately decomposed) sedge peat over coarse sand. This soil is recognized by its depressional position in the landscape and by its characteristic vegetation which includes sedges, bulrushes and alders. This soil is separated from other organic soils in that it is shallow and only moderately decomposed.

RANGE IN CHARACTERISTICS:

Where the Organic 3 (*shallow mesic phase*) borders the mineral soils, drainage is poor to imperfect, and the depth to the mineral contact is shallow.

ASSOCIATED SOILS:

The type and pattern of soils occuring in the landscape with the Organic soils varies from area to area and is difficult to predict. Generally Chaswood and Millar soils occupy the poorly drained topographic positions in close association with the Organic soils.

MAP UNIT INCLUSIONS:

Map units designated as Or3 may have up to 20% inclusions of associated soils.

SOIL NAME:

Organic 4 (*fibric phase*, Or4)

OCCURANCE:

On the Canning sheet

DRAINAGE:

Very poor

STONINESS:

Nonstony

TOPOGRAPHY:

Nearly level slopes (0.5-2.5%)

GENERAL DESCRIPTION:

Less than 25 cm of mesic (moderately decomposed) sedge peat over fibric (slightly decomposed) sedge peat, deeper than 200 cm. This soil is recognized by its depressional position in the landscape and by its characteristic vegetation which includes sedges, bulrushes and alders. It is separated from other organic soil phases in that it is deeper and only slightly decomposed.

RANGE IN CHARACTERISTICS:

Where these soils border mineral soils, the depth to the mineral soil contact is shallow and drainage is often improved. Where streams dissect the deposits mineral layers are sometimes present.

ASSOCIATED SOILS:

The type and pattern of soils occuring in the landscape with the Organic soils varies from area to area and is difficult to predict. Generally Chaswood and Millar soils occupy the poorly drained topographic positions in close association with the Organic soils.

MAP UNIT INCLUSIONS:

Map units designated as Or4 may have up to 20% inclusions of associated soils.

SOIL NAME:

Pelton 1 (*sandy loam phase*, P11)

OCCURANCE:

On the Canning sheet

DRAINAGE:

Moderately well

STONINESS:

Nonstony

TOPOGRAPHY:

Very gentle to very steep slopes (2.5-100%)

GENERAL DESCRIPTION:

50-80 cm of friable very fine sandy loam over compact dark red sandy clay loam. Pelton soils are recognized by their topographic position (on the lower slopes of the North Mountain) and by their distinctive fine textured reddish surface soil. Because of the fine texture and impermeable subsoil, soil horizons (layers) are only weakly expressed.

RANGE IN CHARACTERISTICS:

The surface texture ranges from a sandy loam to sandy clay loam. The consistence of the subsoil is moisture-dependent and it ranges from friable when moist to firm when dry.

ASSOCIATED SOILS:

Pelton 1 (*sandy clay loam phase*) is upland relative to Woodville and Somerset soils which also occur in the same general area.

MAP UNIT INCLUSIONS:

Map units designated as P11 may have up to 20% inclusions of associated soils.

SOIL NAME:

Riverport 1 (Rp1)

OCCURANCE:

On the Prospect, Cambridge Station and South Berwick sheets in depressions and seepage areas.

DRAINAGE:

Imperfect

STONINESS:

Moderately stony

TOPOGRAPHY:

Very gentle to moderate slopes (2.5-15%)

GENERAL DESCRIPTION:

40-60 cm of friable gravelly sandy loam over compact strong brown gravelly sandy loam. Riverport soils have developed on slaty deposits of sandy loam till similar to Morristown soils. They differ from Morristown mainly in that the drainage is slower. Drainage is slowed by a combination of impermeable subsoil and slope position.

RANGE IN CHARACTERISTICS:

Texture varies from a silt loam to a coarse sandy loam. Drainage is quite variable over small distances because of hummocks and mounds.

ASSOCIATED SOILS:

Morristown and Berwick soils (all phases) occur on well drained upland positions. Middlewood is the poorly drained associate of Riverport.

MAP UNIT INCLUSIONS:

Map units designated as Rp1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Somerset 1 (S1)

OCCURANCE:

On the Canning sheet

DRAINAGE:

Well drained

STONINESS:

Nonstony

TOPOGRAPHY:

Level to strong slopes (0-30%)

GENERAL DESCRIPTION:

60-80 cm of friable sand over friable yellowish red coarse sand. Somerset soils are the intermediate in between Woodville 1 and Cornwallis 1 soils in texture, consistence and drainage. They resemble Woodville 1 in colour and Cornwallis 1 in surface texture.

RANGE IN CHARACTERISTICS:

The surface texture ranges from coarse sandy loam to gravelly sand. Somerset 1 is generally friable or very friable but about 10% of these soils have compact layers.

ASSOCIATED SOILS:

Where the till is finer and more loamy the loamy fine sand phase of Somerset occurs. Also Woodville soils occur with Somerset soils in a complex pattern. Kingsport soils are found in the imperfectly drained landscape positions.

MAP UNIT INCLUSIONS:

Map units designated as S1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Somerset 2 (*loamy sand phase*, S2 )

OCCURANCE:

On the Canning sheet

DRAINAGE:

Well drained

STONINESS:

Nonstony

TOPOGRAPHY:

Level to gentle slopes (0-9%)

GENERAL DESCRIPTION:

60-85 cm of friable loamy sand over yellowish red loamy fine sand to sandy loam. In texture, these soils resemble the loamy sand phase of Cornwallis but the surface soil is reddish and resembles Woodville soils. They differ from Somerset 1 in that they are finer textured and are generally gravel free.

RANGE IN CHARACTERISTICS:

Where these soils merge with Somerset and Woodville soils the texture varies from a loamy sand to a sandy loam respectively.

ASSOCIATED SOILS:

Somerset 1 occurs where the till is coarser and more gravelly. Woodville soils merge with Somerset 1 (loamy sand phase) in the same topographic position. Kingsport soils occur in the imperfectly drained depressional areas.

MAP UNIT INCLUSIONS:

Map units designated as S2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Torbrook 1 (T1)

OCCURANCE:

On the Prospect, South Berwick and Cambridge Station sheets

DRAINAGE:

Rapid to well

STONINESS:

Moderately stony

TOPOGRAPHY:

Nearly level to very strong slopes (0.5-45%)

GENERAL DESCRIPTION:

60-90 cm of loose very gravelly sandy loam over very friable yellowish brown very gravelly loamy coarse sand. Torbrook soils are easily recognized by their high slate content and the presence of rounded cobbles, which often occur as layers visible in road cuts through the deposits.

RANGE IN CHARACTERISTICS:

Overall soil texture ranges from gravel to sandy loam. About 10% of the profiles examined have weakly cemented cobble layers. The depth of the surface soil is often shallow but varies from 20 to 60 cm. Near Morristown and Berwick soils the surface is finer textured and contains less gravel.

ASSOCIATED SOILS:

The Torbrook 2(*gully phase*) is found in the upland topographic positions along stream channels. Morristown, Berwick and Nictaux soils are commonly intermixed with Torbrook in the same area.

MAP UNIT INCLUSIONS:

Map units designated as T1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Torbrook 2 (*gully phase*, T2)

OCCURANCE:

On the South Berwick sheet

DRAINAGE:

Imperfect to poor

STONINESS:

Moderately stony

TOPOGRAPHY:

Nearly level to moderate slopes (0.5-15%)

GENERAL DESCRIPTION:

40-70 cm of loose gravelly loamy sand over loose very gravelly coarse sand. The *gully phase* of Torbrook is similar to other Torbrook soils in texture, colour and gravel content. They differ mainly because of their topographic position (along stream banks) and the wide variation in drainage over short distances. Usually this soil occurs in wooded areas.

RANGE IN CHARACTERISTICS:

General soil characteristics vary widely as with the Nictaux 2 (*gully phase*). In the lower slope positions drainage is poor and the texture is finer; in higher slope positions the texture is coarser and the drainage is moderately well.

ASSOCIATED SOILS:

The Nictaux 2 (*gully phase*) occurs in similar topographic positions but is more gravelly and less cobbly. Other soils which occur in upland positions are Berwick, Torbrook, Nictaux and Morristown.

MAP UNIT INCLUSIONS:

Map units designated as T2 may have up to 20% inclusions of associated soils.

SOIL NAME:

Woodville 1 (W1)

OCCURANCE:

On the Canning sheet

DRAINAGE:

Well to moderately well

STONINESS:

Nonstony

TOPOGRAPHY:

Level to moderate slopes (0-15%)

GENERAL DESCRIPTION:

40-60 cm of friable sandy loam over compact reddish brown sandy loam to loam. This soil is recognized by a combination of topographic position (on upper slopes along the valley floor) and the distinct reddish brown colour of the surface soil.

RANGE IN CHARACTERISTICS:

The most variable feature of this soil is its gravel content. Usually the soil has about 10-15% gravel but small areas may have up to 30% gravel, usually in the surface soil. Also the depth to, and the degree of compaction of the compact layer varies over short distances.

ASSOCIATED SOILS:

Woodville 2 (sandy clay loam phase) occurs near Woodville 1 where the texture is finer. In depressional areas where drainage is imperfect Debert and Kentville soils occur. Somerset soils, which are more sandy, also occur with Woodville in a complex pattern.

MAP UNIT INCLUSIONS:

Map units designated as W1 may have up to 20% inclusions of associated soils.

SOIL NAME:

Woodville 2 (*sandy clay loam phase*, W2)

OCCURANCE:

On the Canning sheet

DRAINAGE:

Moderately well

STONINESS:

Nonstony

TOPOGRAPHY:

Level to moderate slopes (0-15%)

GENERAL DESCRIPTION:

40-60 cm of friable loam over compact reddish brown sandy clay loam. This soil is very similar to Woodville 1 and Kentville soils. It differs from Woodville 1 in that the subsoil is finer textured and more compact when dry, and it usually contains less gravel. It differs from Kentville in being better drained.

RANGE IN CHARACTERISTICS:

The most variable feature of this soil is the depth to the compact layer. Generally it occurs at about 50 cm but may be as deep as 100 cm or as shallow as 30 cm. Also like Woodville 1 soils, the texture of the surface soil often resembles other soils with which it is associated in the landscape.

ASSOCIATED SOILS:

Woodville 1 occurs where the subsoil is coarser textured. Kentville soils occur as an imperfectly drained associate in depressional areas. Canning often occurs as a shallow overblown surface soil.

MAP UNIT INCLUSIONS:

Map units designated as W2 may have up to 20% inclusions of associated soils.

# APPENDIX I

## GUIDELINES FOR RATING THE SUITABILITY OF MAP UNITS FOR APPLES, BARLEY AND CORN

### General Procedure:

1. Locate the map unit on the Nomogram Fig. I and record the number of points

2. From the map legend and soil descriptions in the report, record the limiting factors for the crop considered. Deduct points as per Table 1.

3. Assess the effect of the slope of that unit as follows:

   (a) Steep slopes (> 50%) are considered class 7t and are therefore unsuitable for all crop production.

   (b) Up to 25 points are added or subsracted for slope effect as follows:

   - deduct points for slope greater than Class C on well to very rapidly drained soils or for slopes less than Class C on mod. well to very poorly drained soils.

   - add points for slopes greater than Class C on mod. well to very poorly drained sites, or for slopes less than Class C on well to very rapidly drained soils.

   - Slopes Class C or greater are considered to present erosion hazards for row crops and are rated fair at best.

4. Assign an overall rating as follows:

| No. Points | Rating |
|---|---|
| 75-100 | Good |
| 50-74 | Fair |
| 25-49 | Poor |
| 0-24 | Uns. |

### Worked Examples: (Rate the map unit Acl-a for apples)

1. The map unit Acl-a occurs in Group II so award 50 points to start.

2. For apple production the firm consistence within the rooting zone is considered as a limitation; deduct 15 points. (50 - 15 = 35)

3. Considering the texture and drainage of this map unit, an "a" slope class is considered undesirable for apple production; deduct 25 points. (35 - 25 = 10)

4. The map unit Acl-a has 10 points, and is rated unsuitable for apples.

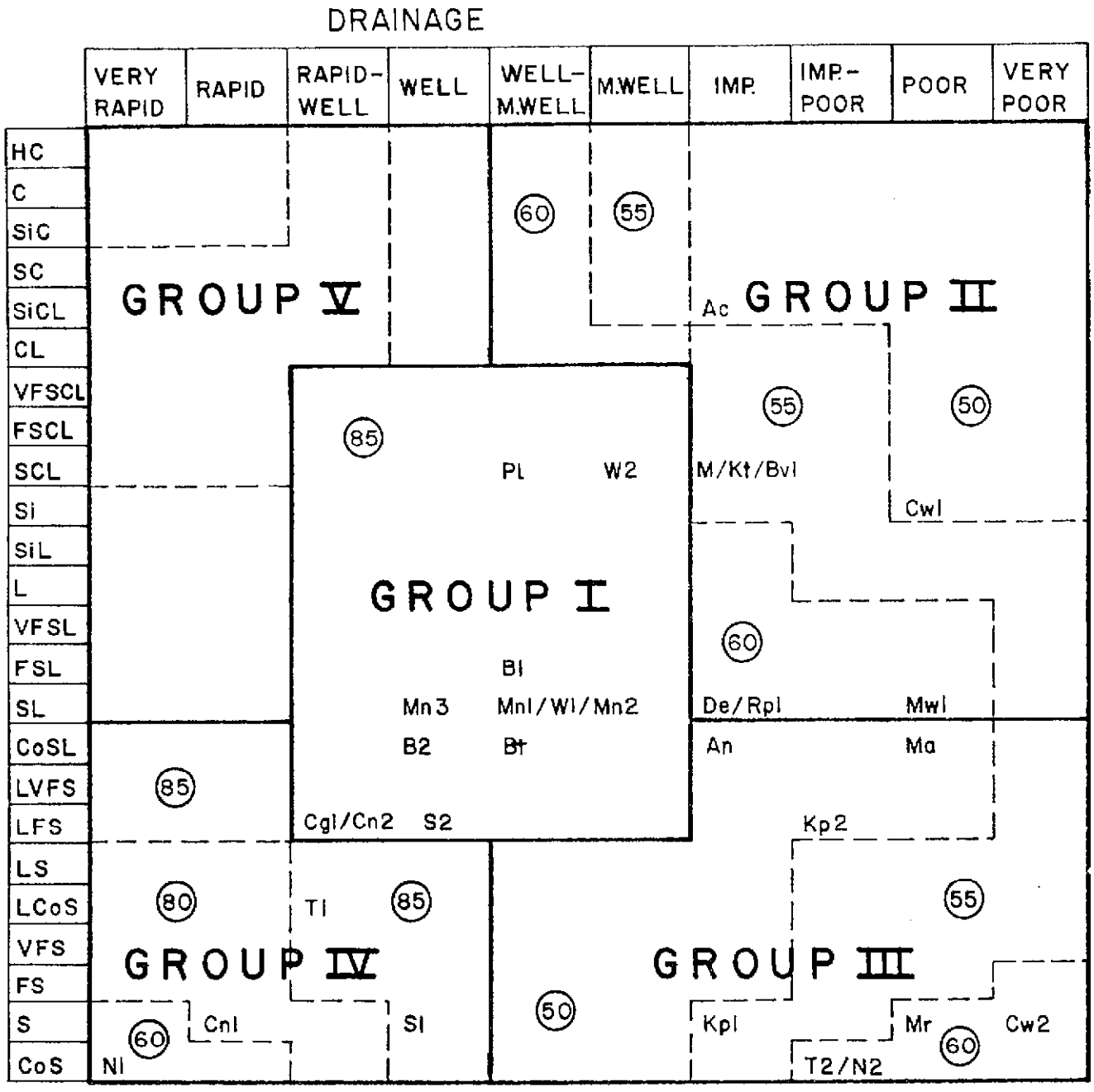


FIGURE I: PRIMARY GROUPING OF SOILS ACCORDING TO DRAINAGE - TEXTURE SUITABILITY FOR APPLES, BARLEY AND CORN. DOTTED LINES INDICATE SUBGROUPS, NUMBERS, 60, INDICATE BASE RATING OF GROUPS AND SUBGROUPS.

TABLE I. Point system used in evaluating secondary soil factors for the production of apples (1), barley (2) and corn (3).*

| SOIL FACTOR | | POINTS DEDUCTED | | |
|---|---|---|---|---|
| | | Apples | Barley | Corn |
| Stoniness: | | | | |
| Slightly | | 0 | 5 | 5 |
| Moderately | | 5 | 10 | 10 |
| Very | | 15 | 25 | 25 |
| Exceedingly | | 25 | 50 | 50 |
| Excessively | | 50 | 75 | 75 |
| Soil Consistence in Rooting Zone: | | | | |
| Loose | | 25 | 25 | 25 |
| Very Friable | | 15 | 15 | 15 |
| Friable | | 0 | 0 | 0 |
| **Firm | | 15 | 15 | 15 |
| **Very Firm | | 25 | 25 | 25 |
| Bedrock Depth: | | | | |
| >100 cm | | 0 | 0 | 0 |
| <100 cm | | 30 | 15 | 20 |
| Flooding Hazard (% Risk/yr.): | | | | |
| None | 0% | 0 | 0 | 0 |
| Slight | 10% | 50 | 50 | 50 |
| Moderate | 10-50% | 75 | 75 | 75 |
| Severe | 50% | 100 | 100 | 100 |

* In making point deductions, the average condition of the map unit was considered. Small areas within a unit (see Section 3.3) may have uncharacteristic factors which would alter the points to be deducted.

** These would include hardpans, ortsteins or fragipans.

(1) Storie, R. (1938), VanVleit, L. (1979), Visser, J. (1977), Webster, D. (1978), Webster, D. (1976).

(2) Field Crop Guide (1980), Sinha, N. (1979).

(3) Babalola, O. (1977), Carey, J. (1979), Field Crop Guide (1980), McKyes, E. (1978).

# APPENDIX II

SOIL: A C A D I A (Acl)

CLASSIFICATION: Orthic Gleysol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Apg | 0-33 | 3.50 | 3.28 | 0.80 | - | - | - | - | 1.25 | 1.24 | 0.53 | 6.62 |
| Bgj | 33-67 | 3.40 | 3.23 | 0.30 | 0.81 | 0.12 | 0.23 | 0.08 | 0.96 | 1.13 | 0.40 | 5.75 |
| Cg | 67-100 | 3.70 | 3.51 | 0.63 | - | - | - | - | 2.79 | 4.80 | 0.97 | 5.20 |
| | | | | | | | | | | | | |
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## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. cm/hr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | |
| Apg | 0-33 | 0 | 9.9 | 59.6 | 30.6 | - | - | - | - | - | - | - | - | 6.00 |
| Bgj | 33-67 | 0 | 8.9 | 63.8 | 27.2 | - | - | - | - | - | - | - | - | 1.80 |
| Cg | 67-100 | 0 | 4.2 | 65.3 | 30.5 | - | - | - | - | - | - | - | - | 0.75 |
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SOIL: B E R W I C K (B2) *(Loamy sandy phase)*

CLASSIFICATION: Sombric Humo-Ferric Podzol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ap | 0-13 | 5.10 | 4.64 | 1.66 | - | - | - | - | 3.46 | 0.19 | 0.11 | 0.33 |
| AB | 13-23 | - | 4.66 | 1.09 | 0.26 | 0.30 | 0.17 | 0.25 | 2.27 | 0.05 | 0.06 | 0.36 |
| Bf | 23-34 | 5.30 | 4.52 | 0.62 | 0.38 | 0.74 | 0.21 | 0.48 | 0.99 | 0.03 | 0.06 | 0.61 |
| BC | 34-59 | 4.60 | 4.03 | 0.08 | 0.10 | 0.15 | 0.08 | 0.15 | 0.92 | 0.50 | 0.16 | 4.48 |
| C | 59-100 | 4.20 | 3.72 | 0.04 | - | - | - | - | 0.80 | 1.04 | 0.26 | 6.26 |
| | | | | | | | | | | | | |
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## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| Ap | 0-13 | 13.5 | 75.3 | 16.1 | 8.5 | - | - | - | - | - | - | - | - | 37.55 |
| AB | 13-23 | 12.6 | 77.2 | 15.6 | 7.2 | - | - | - | - | - | - | - | - | - |
| Bf | 23-34 | 15.0 | 77.4 | 14.2 | 8.4 | - | - | - | - | - | - | - | - | - |
| BC | 34-59 | 11.6 | 67.1 | 24.5 | 8.5 | - | - | - | - | - | - | - | - | 0.61 |
| C | 59-100 | 20.2 | 57.1 | 34.4 | 8.4 | - | - | - | - | - | - | - | - | 0.42 |
| | | | | | | | | | | | | | | |
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SOIL: C A N N I N G (Cg1)

CLASSIFICATION: Eluviated Sombric Brunisol

## Chemical Data

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ap | 0-20 | 4.80 | 4.28 | 1.04 | - | - | - | - | 1.76 | 0.11 | 0.18 | 0.64 |
| Aej | 20-35 | 4.90 | 4.16 | 0.18 | - | - | - | - | 0.19 | 0.08 | 0.07 | 2.22 |
| Bmxj | 20-43 | 4.50 | 4.27 | 0.26 | 0.30 | 0.28 | 0.05 | 0.16 | 0.71 | 0.03 | 0.10 | 0.97 |
| BC | 43-58 | 4.80 | 4.48 | 0.24 | 0.24 | 0.41 | 0.06 | 0.20 | 0.63 | 0.03 | 0.11 | 0.36 |
| C | 58-100 | 4.90 | 4.52 | 0.06 | - | - | - | - | 0.33 | 0.03 | 0.06 | 0.39 |
| | | | | | | | | | | | | |
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## Physical Data

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| Ap | 0-20 | 8.4 | 84.6 | 8.1 | 7.3 | - | - | - | - | - | - | - | - | 32.79 |
| Aej | 20-35 | 7.5 | 82.4 | 11.6 | 6.0 | - | - | - | - | - | - | - | - | - |
| Bmxj | 20-43 | 8.7 | 87.3 | 6.2 | 6.5 | - | - | - | - | - | - | - | - | 30.60 |
| BC | 43-58 | 2.4 | 85.5 | 9.8 | 4.6 | - | - | - | - | - | - | - | - | 41.30 |
| C | 58-100 | 0.4 | 98.5 | - | 1.5 | - | - | - | - | - | - | - | - | 93.70 |
| | | | | | | | | | | | | | | |
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SOIL: C H A S W O O D (Cw1)

CLASSIFICATION: Rego Gleysol

## Chemical Data

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| LFH | 5-0 | 5.00 | 4.21 | 14.50 | - | - | - | - | 6.12 | 1.20 | 1.36 | 4.67 |
| ABg | 0-9 | 4.60 | 4.02 | 1.96 | 0.64 | 0.13 | 0.33 | 0.13 | 1.36 | 0.37 | 0.12 | 1.64 |
| ICg | 9-21 | 5.00 | 4.19 | 1.02 | - | - | - | - | 1.66 | 0.60 | 0.06 | 2.00 |
| IICgj | 21-41 | 5.00 | 4.05 | 0.53 | - | - | - | - | 1.53 | 0.70 | 0.07 | 2.25 |
| IIIC | 41-100 | 5.50 | 4.52 | 0.18 | - | - | - | - | 0.69 | 0.22 | 0.06 | 0.25 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

## Physical Data

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| LFH | 5-0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| ABg | 0-9 | 5.0 | 63.5 | 23.4 | 13.1 | - | - | - | - | - | - | - | - | 4.70 |
| ICg | 9-21 | 3.7 | 45.0 | 38.7 | 16.3 | - | - | - | - | - | - | - | - | 10.00 |
| IICgj | 21-41 | 1.3 | 46.8 | 36.5 | 16.8 | - | - | - | - | - | - | - | - | 6.50 |
| IIIC | 41-100 | 47.9 | 89.0 | 7.1 | 3.9 | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

SOIL: C O R N W A L L I S (Cn1)

CLASSIFICATION: Orthic Sombric Brunisol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ap | 0-25 | 6.00 | 5.41 | 1.34 | - | - | - | - | 2.85 | 0.71 | 0.14 | - |
| Bm | 25-43 | 6.10 | 5.50 | 0.53 | 0.28 | 0.44 | 0.11 | 0.23 | 2.01 | 0.54 | 0.17 | - |
| BC | 43-68 | 6.00 | 5.37 | 0.18 | 0.20 | 0.74 | 0.08 | 0.15 | 1.13 | 0.37 | 0.17 | - |
| C | 68-100 | 5.30 | 5.02 | 0.12 | - | - | - | - | 0.43 | 0.14 | 0.07 | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| Ap | 0-25 | 4.1 | 84.2 | 11.3 | 4.5 | - | - | - | - | - | - | - | - | 22.80 |
| Bm | 25-43 | 3.6 | 83.2 | 10.9 | 5.9 | - | - | - | - | - | - | - | - | 65.90 |
| BC | 43-68 | 4.9 | 84.6 | 9.0 | 6.4 | - | - | - | - | - | - | - | - | 16.90 |
| C | 68-100 | 8.0 | 94.0 | 2.8 | 3.2 | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | | |
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SOIL: M I L L A R (Mr1)

CLASSIFICATION: Gleyed Sombric Brunisol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ap | 0-20 | 4.80 | 3.73 | 0.30 | - | - | - | - | - | - | - | 0.31 |
| Bm1 | 20-46 | 4.50 | 4.13 | 0.26 | 0.21 | 0.07 | 0.07 | 0.05 | 1.44 | 0.53 | 0.10 | 0.78 |
| Bm2 | 46-54 | 4.50 | 4.10 | 0.28 | 0.13 | 0.11 | 0.05 | 0.08 | 4.22 | 1.46 | 0.14 | 1.70 |
| Cg | 54-63 | 4.50 | 4.08 | 0.44 | - | - | - | - | 8.67 | 3.35 | 0.19 | 2.84 |
| IICg | 63-72 | 5.40 | 4.30 | 0.10 | - | - | - | - | 2.66 | 0.89 | 0.07 | 0.83 |
| IIICg | 72-100 | 4.30 | 4.03 | 0.12 | - | - | - | - | 8.74 | 3.00 | 0.31 | 2.39 |
| | | | | | | | | | | | | |

## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| Ap | 0-20 | 20.6 | 95.2 | 1.9 | 2.9 | - | - | - | - | - | - | - | - | 34.60 |
| Bm1 | 20-46 | 39.4 | 87.5 | 4.9 | 7.6 | - | - | - | - | - | - | - | - | - |
| Bm2 | 46-54 | 4.8 | 73.7 | 14.1 | 12.2 | - | - | - | - | - | - | - | - | - |
| Cg | 54-63 | 0.7 | 26.6 | 38.0 | 35.3 | - | - | - | - | - | - | - | - | - |
| IICg | 63-72 | 10.4 | 65.2 | 25.5 | 9.3 | - | - | - | - | - | - | - | - | 0.03 |
| IIICg | 72-100 | 4.7 | 36.6 | 39.1 | 24.3 | - | - | - | - | - | - | - | - | 0.25 |
| | | | | | | | | | | | | | | |

SOIL: M O R R I S T O W N (Mn1)

CLASSIFICATION: Eluviated Sombric Brunisol

## Chemical Data

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Bm1 | 0-6 | 5.10 | 4.44 | 1.32 | 0.56 | 0.44 | 0.16 | 0.25 | 0.30 | 0.10 | 0.14 | 0.42 |
| Ahb | 6-16 | 4.60 | 3.94 | 4.80 | - | - | - | - | 0.76 | 0.27 | 0.21 | 2.25 |
| Aej | 16-24 | 4.70 | 3.93 | 0.78 | - | - | - | - | 0.38 | 0.16 | 0.05 | 2.86 |
| Bm2 | 24-38 | 4.70 | 4.28 | 0.20 | 0.08 | 0.05 | 0.06 | 0.06 | 0.57 | 0.03 | 0.06 | 0.56 |
| BC | 38-67 | 3.40 | 4.31 | 0.20 | 0.27 | 0.22 | 0.04 | 0.17 | 0.17 | 0.07 | 0.06 | 0.72 |
| C | 67-100 | 4.50 | 4.30 | 0.22 | - | - | - | - | 0.18 | 0.08 | 0.05 | 0.83 |
| | | | | | | | | | | | | |

## Physical Data

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. cm/hr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | |
| Bm1 | 0-6 | 56.2 | 63.0 | 26.2 | 10.8 | - | - | - | - | - | - | - | - | - |
| Ahb | 6-16 | 7.3 | 60.6 | 27.3 | 12.1 | - | - | - | - | - | - | - | - | - |
| Aej | 16-24 | 8.6 | 60.0 | 32.2 | 7.8 | - | - | - | - | - | - | - | - | - |
| Bm2 | 24-38 | 7.1 | 91.0 | 4.9 | 4.1 | 51 | 51 | 46 | 32 | 26 | 21 | 13 | 10 | 6.80 |
| BC | 38-67 | 7.6 | 73.6 | 18.7 | 7.7 | 30 | 29 | 26 | 18 | 11 | 8 | 5 | 4 | 3.30 |
| C | 67-100 | 2.6 | 68.4 | 25.8 | 5.8 | 29 | 28 | 27 | 15 | 10 | 7 | 4 | 3 | 3.80 |
| | | | | | | | | | | | | | | |

SOIL: M O R R I S T O W N (Mn2) *(Shallow phase)*

CLASSIFICATION: Orthic Humo-Ferric Podzol

## Chemical Data

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| LFH | 8-0 | 5.10 | 4.49 | 7.80 | - | - | - | - | 4.50 | 1.00 | 0.39 | 0.50 |
| Ap | 0-7 | 4.30 | 4.05 | 5.31 | - | - | - | - | 0.93 | 0.17 | 0.09 | 1.56 |
| Bf | 7-19 | 4.40 | 4.29 | 1.46 | 0.71 | 0.49 | 0.31 | 0.35 | 0.28 | 0.07 | 0.06 | 1.17 |
| BC | 19-45 | 4.20 | 4.10 | 0.60 | 0.68 | 0.19 | 0.23 | 0.15 | 0.18 | 0.05 | 0.07 | 1.56 |
| C | 45-100 | 5.40 | 4.55 | 0.48 | - | - | - | - | 0.15 | 0.03 | 0.08 | 0.36 |
| R | 45-100 | | | | | | | | | | | |
| | | | | | | | | | | | | |

## Physical Data

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| LFH | 8-0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ap | 0-7 | 49.1 | 54.8 | 34.1 | 11.1 | - | - | - | - | - | - | - | - | - |
| Bf | 7-19 | 67.6 | 54.4 | 37.7 | 7.9 | - | - | - | - | - | - | - | - | - |
| BC | 19-45 | 76.1 | 55.7 | 35.7 | 8.6 | - | - | - | - | - | - | - | - | - |
| C | 45-100 | 70.1 | 65.4 | 29.7 | 4.8 | - | - | - | - | - | - | - | - | - |
| R | 45-100 | | | | | | | | | | | | | |
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SOIL: M O R R I S T O W N (Mn3) *(stratified phase)*

CLASSIFICATION: Orthic Humo-Ferric Podzol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| LFH | 9-0 | 5.00 | 4.25 | 10.50 | - | - | - | - | 6.66 | 1.47 | 0.77 | 4.00 |
| Ae | 0-15 | 3.70 | 3.35 | 1.08 | - | - | - | - | 0.66 | 0.25 | 0.08 | 1.95 |
| Bf | 15-38 | 5.00 | 4.35 | 1.50 | 0.43 | 0.87 | 0.18 | 0.42 | 0.23 | 0.08 | 0.10 | 0.47 |
| BC | 38-67 | 5.10 | 4.32 | 0.62 | 0.27 | 0.16 | 0.13 | 0.32 | 0.15 | 0.05 | 0.06 | 0.81 |
| IIC | 67-89 | 4.40 | 4.42 | 0.28 | - | - | - | - | 0.15 | 0.08 | 0.04 | 0.56 |
| IIICx | 89-98 | 5.00 | 4.58 | 0.14 | - | - | - | - | 0.09 | 0.03 | 0.06 | 0.39 |
| IIC2 | 98-100 | 4.70 | 4.35 | 0.08 | - | - | - | - | 0.15 | 0.15 | 0.07 | 0.70 |

## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| LFH | 9-0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ae | 0-15 | 24.2 | 58.9 | 34.6 | 6.5 | - | - | - | - | - | - | - | - | - |
| Bf | 15-38 | 36.5 | 57.5 | 33.0 | 9.6 | 46 | 42 | 34 | 23 | 19 | 16 | 12 | 11 | 7.20 |
| BC | 38-67 | 39.6 | 52.5 | 42.1 | 5.4 | 22 | 21 | 18 | 13 | 10 | 7 | 6 | 4 | 5.00 |
| IIC | 67-89 | 69.9 | 86.2 | 10.5 | 3.3 | - | - | - | - | - | - | - | - | - |
| IIICx | 89-98 | 54.3 | 73.3 | 21.4 | 5.4 | - | - | - | - | - | - | - | - | - |
| IIC2 | 98-100 | 68.5 | 82.6 | 11.3 | 6.2 | - | - | - | - | - | - | - | - | - |

SOIL: N I C T A U X (N1)

CLASSIFICATION: Orthic Sombric Brunisol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ah | 0-18 | 5.00 | 4.20 | 2.22 | - | - | - | - | 0.29 | 0.06 | 0.07 | 1.33 |
| Bm | 18-29 | 4.30 | 4.34 | 1.35 | 0.88 | 1.21 | 0.14 | 0.45 | 0.20 | 0.03 | 0.04 | 0.92 |
| BC | 29-48 | 5.10 | 4.58 | 0.34 | 0.15 | 0.31 | 0.07 | 0.17 | 0.14 | 0.03 | 0.04 | 0.33 |
| C | 48-100 | 5.60 | 4.83 | 0.14 | - | - | - | - | 0.17 | 0.05 | 0.03 | 0.25 |
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## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| Ah | 0-18 | 23.6 | 83.4 | 10.0 | 6.5 | - | - | - | - | - | - | - | - | - |
| Bm | 18-29 | 35.2 | 72.6 | 18.7 | 8.7 | - | - | - | - | - | - | - | - | - |
| BC | 29-48 | 44.2 | 93.1 | 1.5 | 5.4 | - | - | - | - | - | - | - | - | - |
| C | 48-100 | 55.1 | 97.5 | 0.3 | 2.2 | - | - | - | - | - | - | - | - | - |
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SOIL: P E L T O N (P11)

CLASSIFICATION: Orthic Sombric Brunisol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ap | 0-12 | 4.90 | 4.62 | 4.08 | - | - | - | - | 8.72 | 3.75 | 1.06 | 0.75 |
| Bm | 12-50 | 5.00 | 4.07 | 0.90 | 0.30 | 0.29 | 0.19 | 0.28 | 2.38 | 0.87 | 0.26 | 7.53 |
| BCxj | 50-82 | 4.10 | 3.78 | 0.34 | 0.14 | 0.71 | 0.05 | 0.19 | 1.19 | 1.01 | 0.30 | 8.81 |
| Cx | 82-100 | 3.70 | 3.60 | 0.34 | - | - | - | - | 1.45 | 2.65 | 0.40 | 8.12 |
| | | | | | | | | | | | | |
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## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. cm/hr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | |
| Ap | 0-12 | 1.1 | 56.1 | 20.5 | 23.4 | - | - | - | - | - | - | - | - | 6.30 |
| Bm | 12-50 | 0.3 | 36.6 | 34.1 | 29.3 | - | - | - | - | - | - | - | - | 0.30 |
| BCxj | 50-82 | 0.2 | 28.7 | 41.6 | 29.7 | - | - | - | - | - | - | - | - | 0.00 |
| Cx | 82-100 | 0 | 25.1 | 40.5 | 34.4 | - | - | - | - | - | - | - | - | 0.01 |
| | | | | | | | | | | | | | | |
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SOIL: T O R B R O O K (T1)

CLASSIFICATION: Orthic Humo-Ferric Podzol

## Chemical Data

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ah | 0-9 | 4.10 | 3.91 | 4.00 | - | - | - | - | 0.55 | 0.19 | 0.15 | 2.00 |
| Bf | 9-20 | 5.10 | 4.52 | 0.92 | 0.54 | 0.83 | 0.12 | 0.79 | 0.16 | 0.04 | 0.07 | - |
| BC | 20-54 | 5.00 | 4.33 | 0.44 | 0.70 | 0.32 | 0.04 | 0.19 | 0.19 | 0.06 | 0.06 | 0.75 |
| C | 54-93 | 4.50 | 4.60 | 0.30 | - | - | - | - | 0.19 | 0.05 | 0.06 | - |
| IICc | 93-112 | 5.00 | 4.59 | 0.10 | - | - | - | - | 0.10 | 0.02 | 0.04 | - |
| IIIC | 112-144 | 5.20 | 4.26 | 0.04 | - | - | - | - | 0.14 | 0.12 | 0.06 | 0.72 |
| | | | | | | | | | | | | |

## Physical Data

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. cm/hr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | |
| Ah | 0-9 | 34.4 | 65.9 | 22.3 | 11.9 | - | - | - | - | - | - | - | - | - |
| Bf | 9-20 | 16.7 | 76.2 | 13.2 | 10.6 | - | - | - | - | - | - | - | - | - |
| BC | 20-54 | 19.2 | 78.8 | 12.9 | 8.3 | 22 | 21 | 18 | 13 | 10 | 8 | 5 | 4 | 5.50 |
| C | 54-93 | 84.9 | 92.7 | 2.2 | 5.1 | - | - | - | - | - | - | - | - | - |
| IICc | 93-112 | 32.3 | 89.3 | 7.8 | 2.9 | - | - | - | - | - | - | - | - | - |
| IIIC | 112-144 | 29.2 | 89.6 | 7.2 | 3.2 | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | | |

SOIL: W O O D V I L L E (W1)

CLASSIFICATION: Orthic Sombric Brunisol

## Chemical Data

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ap | 0-20 | 4.60 | 4.31 | 2.06 | - | - | - | - | 4.86 | 0.95 | 1.09 | 0.47 |
| Bm1 | 20-39 | 5.00 | 4.41 | 2.06 | 0.36 | 0.21 | 0.24 | 0.20 | 5.52 | 0.97 | 0.61 | 0.28 |
| Bm2 | 39-62 | 5.40 | 4.69 | 2.12 | 0.42 | 0.20 | 0.26 | 0.18 | 6.32 | 1.07 | 0.61 | - |
| BC | 62-74 | - | - | - | - | - | - | - | - | - | - | - |
| C | 74-100 | 5.00 | 3.96 | 0.16 | - | - | - | - | 1.43 | 0.50 | 0.26 | 8.84 |
| | | | | | | | | | | | | |
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## Physical Data

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| Ap | 0-20 | 8.4 | 64.4 | 18.9 | 16.7 | - | - | - | - | - | - | - | - | 12.10 |
| Bm1 | 20-39 | 19.8 | 62.8 | 19.7 | 17.5 | - | - | - | - | - | - | - | - | 32.30 |
| Bm2 | 39-62 | 5.7 | 63.9 | 19.6 | 16.5 | 30 | 29 | 27 | 26 | 25 | 24 | 13 | 10 | 19.40 |
| BC | 62-74 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| C | 74-100 | 3.6 | 54.7 | 36.9 | 8.4 | 20 | 19 | 17 | 16 | 14 | 12 | 8 | 6 | 3.40 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

SOIL: W O O D V I L L E (W2) *(sandy clay loam phase)*

CLASSIFICATION: Gleyed Sombric Brunisol

## CHEMICAL DATA

| HORIZON | DEPTH (cm) | pH | | ORGANIC | OXALATE | | PYROPHOSPHATE | | EXCHANGEABLE CATIONS me/100 g | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $H_2O$ | $CaCl_2$ | C(%) | Fe% | Al% | Fe% | Al% | Ca | Mg | K | Al |
| Ap | 0-15 | 5.50 | 5.02 | 1.47 | - | - | - | - | 4.95 | 2.07 | 0.60 | 0.25 |
| Bmgj | 15-40 | 5.10 | 4.06 | 0.32 | 0.40 | 0.15 | 0.18 | 0.13 | 0.86 | 0.52 | 0.36 | 2.97 |
| BCgj | 40-55 | 4.80 | 3.99 | 0.16 | 0.35 | 0.13 | 0.07 | 0.09 | 0.95 | 0.62 | 0.65 | 3.92 |
| Cg | 55-100 | 4.30 | 3.81 | 0.10 | - | - | - | - | 1.02 | 0.65 | 0.43 | 3.98 |
| | | | | | | | | | | | | |
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| | | | | | | | | | | | | |

## PHYSICAL DATA

| HORIZON | DEPTH (cm) | % COARSE FRAGMENTS (by wt) | PARTICLE SIZE (% by wt) | | | WATER (% by wt) AT TENSION (bars) | | | | | | | | K sat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sand | Silt | Clay | .01 | .02 | .06 | .10 | .33 | 1.0 | 3.0 | 15.0 | cm/hr |
| Ap | 0-15 | 10.7 | 64.2 | 20.9 | 14.9 | 28 | 26 | 21 | 20 | 19 | 16 | 10 | 8 | 1.20 |
| Bmgj | 15-40 | 6.5 | 62.9 | 20.7 | 16.5 | 22 | 21 | 19 | 17 | 16 | 15 | 11 | 8 | 3.50 |
| BCgj | 40-55 | 3.8 | 59.3 | 22.3 | 18.4 | - | - | - | - | - | - | - | - | 1.70 |
| Cg | 55-100 | 4.7 | 63.0 | 19.5 | 17.4 | - | - | - | - | - | - | - | - | 1.50 |
| | | | | | | | | | | | | | | |
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