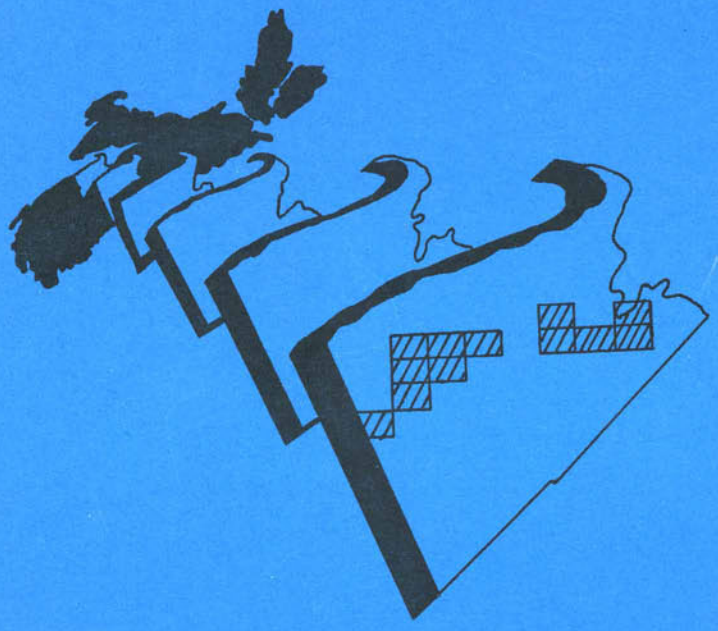
INTERIM REPORT No.2



DETAILED SOIL SURVEY OF KINGS CO. NOVA SCOTIA

A PROJECT OF THE NOVA SCOTIA DEPARTMENT OF AGRICULTURE AND MARKETING

1984

INTERIM REPORT NO. 2

DETAILED SOIL SURVEY OF KINGS COUNTY

NOVA SCOTIA

(1:20,000)

Prepared by:
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PREFACE

The purpose of this report is to make available the most up to date soil survey information for Kings County, Nova Scotia. The style and layout of this report is similar to the initial project report, entitled "Interim Report No. 1, Detailed Soil Survey of Kings County, Nova Scotia". The table of contents has been altered only slightly to include a new section on geology and physiography and a list of figures. As with previous soil surveys, the "Canadian System of Soil Classification"(11) has been followed, where possible, in collecting and presenting the information. Any different or modified techniques that have been employed, are explained in the text of this report.

The major differences between this report and Interim Report No. 1 are as follows:

(1) This report covers the areas represented by the following map sheets: Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, Kentville West, New Minas, South Greenwood, Torbrook Mines, Weston and Wolfville. Interim Report No. 1 covers the Cambridge Station, Canning, Prospect and South Berwick map sheets.

(2) Detailed soil profile descriptions are included with the analytical data.

(3) Areas delineated on the soil maps are referred to as Soil Map Units in Section 5.0 instead of Soils as in Interim Report No. 1. This does not influence how the reader uses the map (discussed in Section 3.0). The description of map units describes the range in characteristics of the whole map unit whereas in Interim Report No. 1, the range in characteristics referred to only the dominant soil in a map unit.

(4) Sketches of soil profiles are provided with the map unit descriptions. These illustrations highlight important differences between soils and can be used to index the soils.

(5) The section on Geology and Physiography is presented as background information. In this section, the map units are related to the most up to date accounts of their geological and physiographic setting.

(6) Soils names have been replaced by a number system (discussed in Section 3.1).

The author accepts responsibility for any errors or omissions.

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Anton Schori, for providing project administration and technical advice.

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Jan van der Leest and Robert Thompson, for editing the report and maps.

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Sean Colville, Leonard North and Edgar St. George, for assisting with field mapping.

The soils were mapped by Kevin Little and Barry Thompson.

SUMMARY

This interim soil report deals with the second phase of a 1:20,000 scale soil survey project in Kings County, Nova Scotia. The first phase of the project began in 1980 and was completed in 1982. Interim Report No. 1, entitled "Detailed Soil Survey of Kings County, Nova Scotia" deals with the initial phase of the project.

The area reported on in the present report is approximately 34,000 ha. This corresponds to twelve orthophoto map sheets: Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, Kentville West, New Minas, South Greenwood, Torbrook Mines, Weston and Wolfville.

The soil report is organized to discuss the soil survey project in five (5) sections. Each section deals with a particular aspect of the project.

SECTION 1.0

Section 1.0 provides a readers guide to the report. Use of the guide will enable the reader to quickly locate pertinent information.

SECTION 2.0

Section 2.0 discusses the methods used in mapping the soils and interpreting the soil data, and the laboratory procedures followed.

A 150 meter fixed interval transect system was employed in mapping all twelve sheets. This ensured an equal coverage of field and forested areas.

Map units were given agricultural capability ratings according to the Canada Land Inventory Soil Capability for Agriculture classification. A soil suitability rating system was used to rate the suitability of each map unit for the production of apples, barley and corn.

Physical laboratory determinations made include:particle size analysis, % gravel content by weight, hydraulic conductivity and moisture retention. Chemical data provided are pH, % organic matter, exchangeable cations, pyrophosphate and oxalate extractable iron and aluminum.

SECTION 3.0

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

SECTION 4.0

Section 4.0 describes the geological and physiographic setting of the map units. Physiographically the area is divided into three major topographic divisions, the North Mountain, the Valley Floor and the South Mountain. Surficial and bedrock geology is discussed for each division and related to soil development and distribution.

Surficial geology mapping is correlated with the soil parent material of the map units. Generally, the Valley Floor is dominated by water deposited glacial and marine sediments, whereas shallow till deposits are more characteristic of the Northern and Southern Uplands.

The North Mountain is a basaltic lava flow of the Triassic period. The South Mountain is a Devonian granite batholith which intruded older sedimentary formations. These older formations are exposed by road cuts along the northern slopes of the South Mountain. The Valley Floor is underlain by eroded Triassic shales and sandstone which are buried by deep deposits of glacial and marine sediments.

Section 5.0

Section 5.0 describes the map units in more detail according to eight categories of information. The map units are discussed according to their occurrence, drainage, stoniness, topography and general description.

The appendix to the report contains the soil suitability rating system, detailed profile description with laboratory data, definitions of classes used to describe the map units, and a profile indexing system of the map units according to parent material type and drainage.

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

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 soil map units in twelve (12) map sheet areas in Kings County, Nova Scotia. The names of the map sheets are Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, Kentville West, New Minas, South Greenwood, Torbrook Mines, Weston and Wolfville. The soil maps are included at the back of the report and are shown in the index map (Figure 1).

On the soil maps, the names and the location of the major soil map units are shown. The map legend provides a brief description of some of the major properties of each map unit. A listing of the interpretations for the agricultural use of these map units 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 map unit is provided in the map unit descriptions. Laboratory data on physical and chemical soil properties and detailed soil profile descriptions are included in Appendix IV 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 map unit descriptions. The detailed soil profile descriptions and the laboratory data provide technical details for representative sites on some

map units. The sections in the report dealing with map accuracy and methods 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 map unit descriptions, Section 5.0, for an overall discussion of the map unit features. Graphic soil profile indexes are provided with these descriptions. Technical details are provided in the laboratory data listing which is found in Appendix IV to the report.
6. Section 4.0 gives a summary of the geological history and physiography of the area.
7. The key map, Figure 1, shows the location of other 1:20,000 scale soil maps which are available for Kings County.

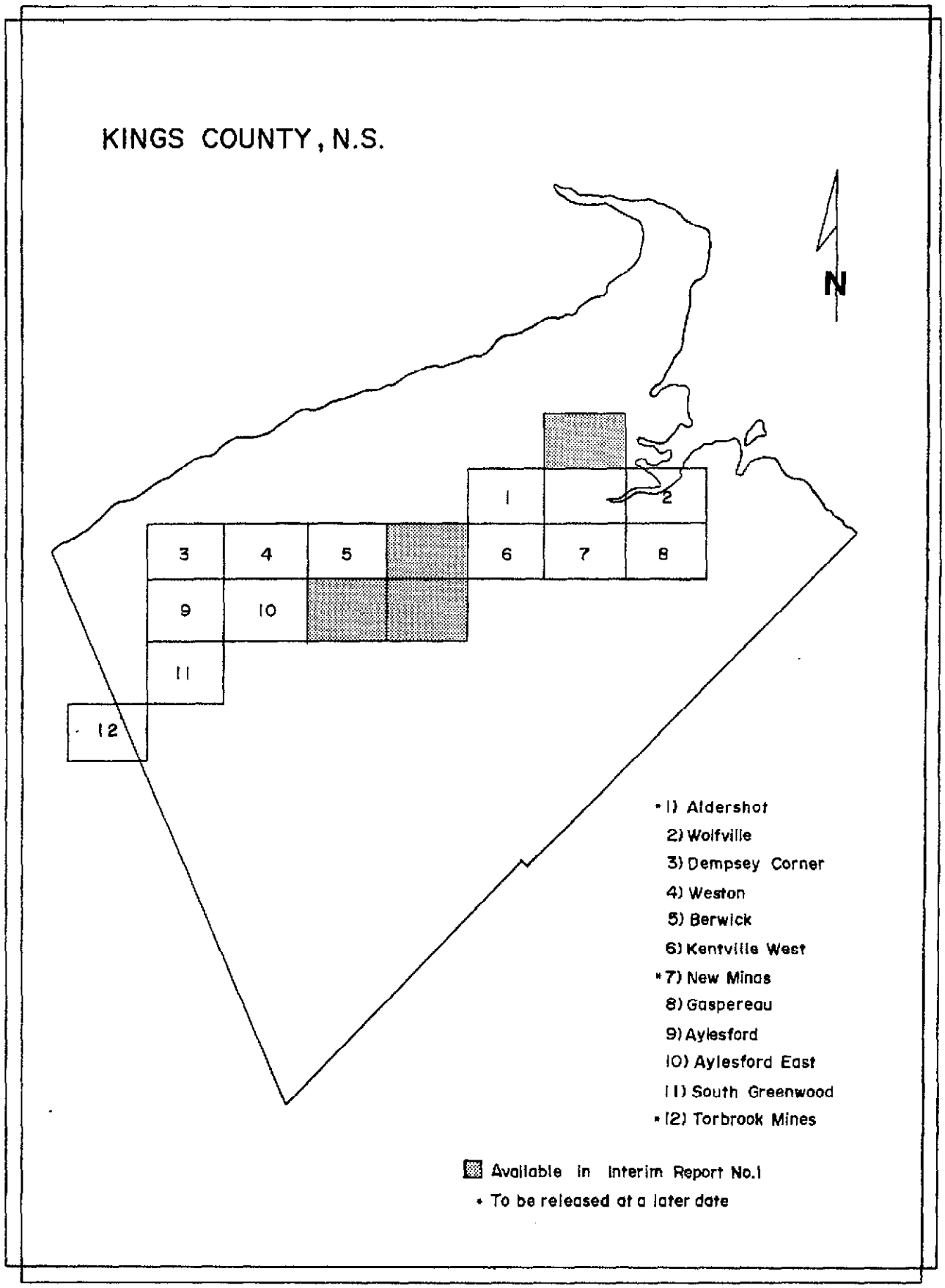

Figure 1:
Kings County Index Map showing areas surveyed at 1:20,000 scale to date

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 (May-November, 1982-1983). On all twelve map sheets soil inspection sites were located using a point intercept or fixed interval transect system. Office work was carried out during the fall-winter of 1982-84. This period was used to prepare the soil maps and report, and to perform laboratory analyses.

The soil survey project involved basically five steps: (1) preparatory work; (2) field investigation;(3) naming and describing map units;(4) preparation and interpretation of soil data;and (5) preparation and publication 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 (4), (7), (13) were consulted and the map units of each of the study areas were reviewed.

Field procedures involved detailed descriptions of the soils at preselected sites by using a transect system (34). First twenty-five (25) transects were superimposed on each map sheet. These were 150 meter fixed interval or point intercept transects. This system gave an unbiased selection of sample points (e.g. it allowed for an equal coverage of cleared and forested areas). 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 soils 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 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 and consistence were recorded. These, and other more specific observations were recorded on computer forms. Procedures followed in recording observations on these computer forms were according to guidelines outlined in the Manual for Describing Soils in the Field (11).

Soils with similar overall features, or which occurred together in a pattern in the landscape, were grouped to form soil map units. Data from grouped soils were compiled and used to form a soil legend, which appears on the soil map. The use of a micro-computer was employed (discussed in Section 5.1) to establish the range in map unit characteristics.

2.3 Laboratory Methods

Laboratory data for some map units were obtained by very detailed examination and sampling of representative sites.

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* *For example, the common horizon sequence in a #1 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 aluminum oxides and is usually 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*

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 Soil Survey 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 (24) with one exception, particle size analysis (the amount of sand, silt and clay) was by the filter candle method.

These data and the detailed soil profile descriptions are included in Appendix IV at the back of this report.

2.4 Interpretation Methods

Two interpretive classifications are listed in the map legend for each map unit. The first classification, Canada Land Inventory Soil Capability for Agriculture, (CLI) is based upon established guidelines outlined in Report No. 2 of the Canada Land Inventory (10). The second classification, a soil suitability rating, is based upon a method outlined in Appendix 1.

With the agricultural capability (CLI) 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 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 map units for the sustained production of Apples, Barley and Corn. Map units having a "Good" suitability rating have only slight or no significant limitations for the production of the specified crop. Map units 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. Map units 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. Map units rated "Unsuitable" either have limitations too severe to be overcome by an individual farmer, or many, less severe limitations which could cumulatively make improvement unfeasible using current technology within the present day economics. Examples are map units with a high risk of flooding for all crops and map units 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 Appendix 1.

3.0 MAP UNITS

3.1 Introduction

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

The symbol used to identify areas delineated on the map is composed of a number and a letter (e.g. 2.b). The numerical part of the symbol identifies the soil component of a particular area (see Section 3.2 below). Map unit features are described briefly in the map legend and discussed in more detail in Section 5.2 of this report. The letter indicates the dominant slope of the area. Slope classes are defined in Appendix III.

The above system of designating map units differs from the systems used in Interim Report No. 1. In this report map units, which are numbered (1-30), may represent a grouping of two or more of the previous map units. For example map Unit 5 is used to represent map units previously designated as P11 or W2. A decision to group very similar map units was made when further study revealed no significant differences in the major soil characteristics and agricultural capability. A comparison of current and previous map symbols is presented in Section 5.1.

3.2 Soil VS Map Units

There is a difference between a soil and a map unit. In this report, map unit refers to a repetitive soil-landscape unit occurring throughout the map sheet area (23). A map unit has a soil component and a slope component.

The soil component may represent: (1) soil with properties that range within defined limits. Limits are defined in the Range in Characteristics, Section 5.2, e.g. the depth to bedrock in 2; or (2) a grouping of widely differing soils which occur together in the landscape in a pattern which makes separation impractical or impossible at this scale. In this case the range in properties is specified for the overall map unit as in the previous case, but the nature of the map unit is described in the General Description, Section 5.2; (e.g. drainage in 16). The landscape component is the slope of the area delineated on the map. Slope classes are defined in Appendix III.

Hence, all soil map units will have a fixed and defined soil component which is unique to that map unit. Different delineations of the same map unit may have different landscape components or slopes. This distinction is of practical importance. Consider the suitability of the following two map units for the production of corn, a row crop. The first map unit - 14.b, with slopes of less than 2% is rated good for corn production, whereas the map unit - 14.d with slopes of 6-9%, is rated poor for corn production due to erosion hazard. Another difference is that not all delineations of the same map unit will necessarily have the same range in properties but will fall within the range of properties specified for that unit. (See Section 3.3)

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 dependent, with large scale maps being more precise than small scale maps.

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 (23). The minimum size delineation that can be shown cartographically is 1 cm^2. On the Kings County detailed soils maps, this minimum size delineation corresponds to an actual field size of 4 ha (10 ac).

It is estimated that overall map accuracy is about 80%. This assumes that variability will be as discussed under Map Unit Descriptions in Section 5.0. The map legend shows somewhat less variability for each map unit. Therefore accuracy will generally be less than about 80% if only the legend description is considered.

4.0 GEOLOGY AND PHYSIOGRAPHY

4.1 Introduction

This section describes the broad geological and physiographic setting of the map units. The interaction of soil forming processes and soil parent materials within this setting has determined the nature and properties of our present day soils. Figure 2 summarizes this interaction using two soils of the Valley Floor as an example.

The following generalized account of the geology and physiography of Kings County is a synthesis from a number of sources (e.g. 2,5,6,7,9,12,14-22,16-28).

Interested readers are directed to Roland (28) for a more complete account of physiography and to Keppie (19) for a discussion of geologic history and plate tectonics of the area. Many of the features discussed may be observed directly in the field at stops 20-32 on the geological Highway Map of Nova Scotia (5).

4.2 Bedrock Geology

The bedrock geology of Kings County and the stratigraphic relationships of the major formations are shown in Figure 3. The accompanying legend compares the chronological and topographical relationships of the formations and lists the major rock types which make up each formation.

The North Mountain formation was formed by a number of basaltic lava flows which accompanied the opening of the Atlantic Ocean during the late Triassic and early Jurassic Periods. Much of the matrix of this formation is amygdoloidal. The Amygdales are pockets of secondary minerals (mainly zeolites) which have crystallized in pores formed when lava cooled. Fragments of this formation, known locally as trap rock, have been used to trace the direction and extent of glaciation in Nova Scotia (12). Soils derived from the North Mountain basalt tend to be shallow and stony, which reflects a higher degree of resistance to weathering than most bedrock types in Kings County.

The Look Off at the southeastern crest of this formation is an escarpment formed by the erosion of the less resistant Blomidon formation which lies below the basalt.

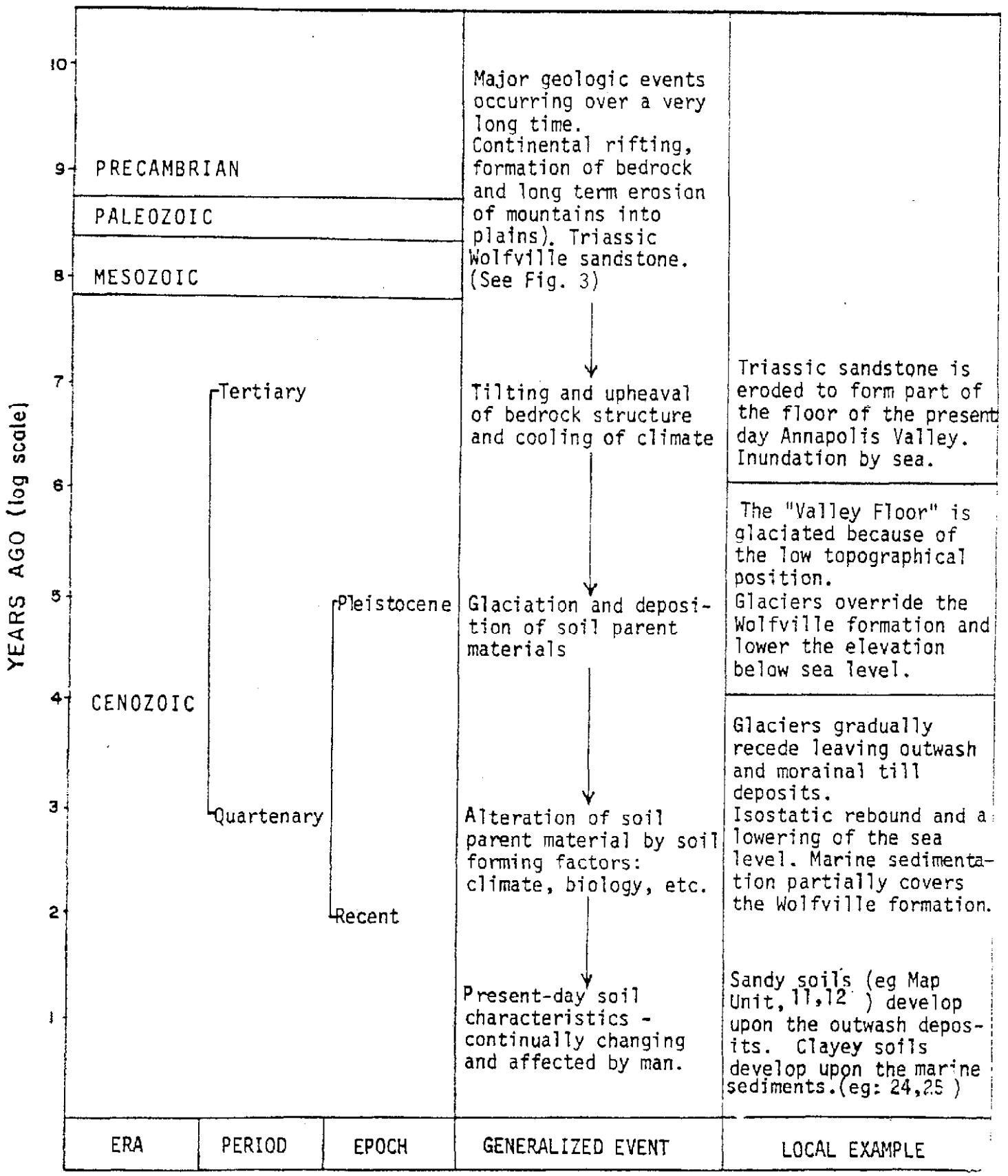
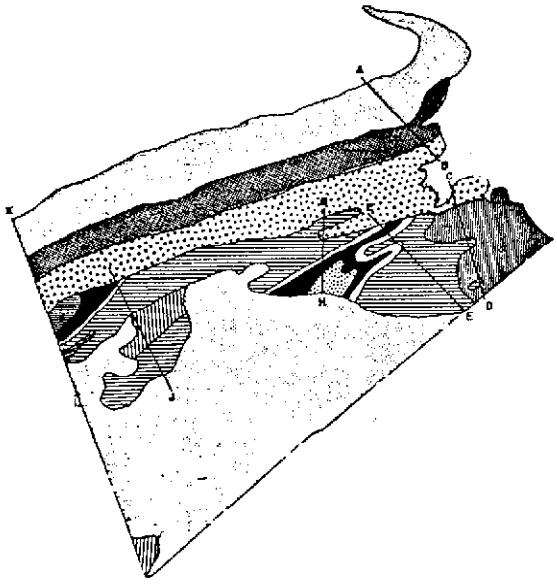
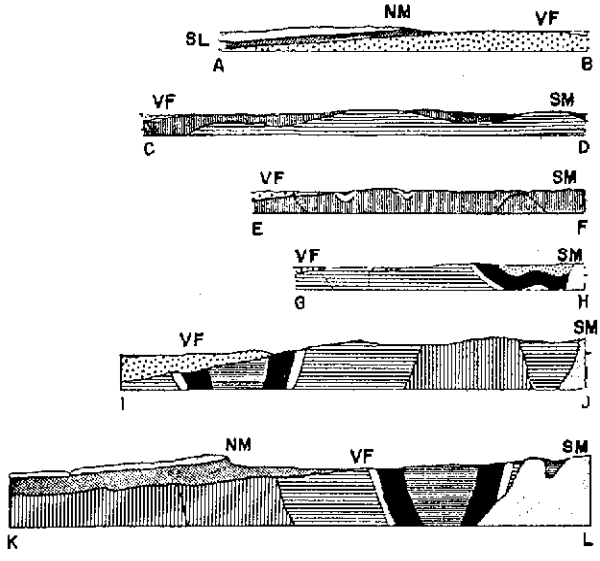
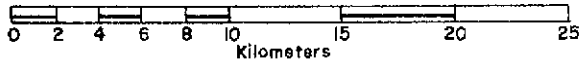


FIGURE 2:

The relationship of geologic events (acting over time) to the nature of two soils of the Annapolis Valley, Kings County, Nova Scotia.







Cross Section Scale Only

TOPOGRAPHICAL DIVISION	GEOLOGICAL FORMATION	BEDROCK TYPE	CHRONOLOGY Million Yrs. BP	CHRONOLOGY Period	CHRONOLOGY Tetonic Province
North Mountain	North Mountain Basalt	massive and amygdaloidal basalt	135	TRIASSIC	
	Blomidon Formation	red, gray-green, gray claystone, siltstone and fine grained sandstone			Blomidon Epi-cratonic
Valley Floor	Wolfville Formation	interbedded red,purple gray and green shale, siltstone, medium to coarse sandstone, conglomerate			
Carboniferous Uplands	Windsor Horton Group	sandstone, shale conglomerate	290	CARBONI-FEROUS	Nova Scotia Epi-cratonic
	South Mountain Batholith	porphyritic granite, granite, basic dykes	380	DEVONIAN	
	Torbrook Formation				
	New Canaan	marine brecia,slate limestone	430	SILURIAN	Sonosco
South Mountain	Kentville Formation	slate, siltstone			Pre-cratonic
	White Rock Formation	slate, siltstone			
	Halifax Formation	slate, quartzite	460	ORDOVICIAN	
	Golden-ville Formation	quartzite, slate	530	CAMBRIAN	

FIGURE 3:

Bedrock Geology of Kings County, Nova Scotia by Topographic Sub-Division. Map sketch modified from: Cann et al (1965) Crosby (1962); Lane (1975); and Jensen (1975). Chronology from Keppie (1977); Cross Section A-B, C-D, E-F and G-H from Crosby (1977); I-J from Klein (1954); J-K from Hickox (1962).

SL - Sea Level

NM - North Mountain

VF - Valley Floor

SM - South Mountain

The South Mountain has a core of devonian granite, a granite batholith. The inclined beds of slate exposed along the upper slopes of the South Mountain are remnants of earlier formations into which the granite intruded. Evident in these slate beds are basaltic intrusions in the form of sills and dykes. Except for the presence of granite boulders and stones on the surface, the slate formations have the greatest effect upon the soil in this area. The high content of slate chips, the significant silt component (about 20% of most tills) and the steep gullies of the South Mountain all reflect the weathering of the slate formations.

The Valley Floor is underlain by shales and sandstones of the Blomidon and Wolfville formations. In most areas deep deposits of glacial sediments overlie these formations and outcrops are rare. The uppermost strata of these formations are best observed along the shore of the Minas Basin near Medford. At Kingsport, contact between these two formations may be observed (18). The significance of these formations in the geological history of the area is that shale and sandstone are easily weathered, compared with the more resistant upland igneous formations. The present day Annapolis-Cornwallis Valley evolved as the result of the differential erosion of bedrock structure in preglacial times. The resultant low topographic position means that these formations were extensively glaciated during the Wisconsin glaciation. Hence, soils underlain by these formations have been more affected by Quaternary geological events, which are discussed in Section 4.3.

4.3 Physiography and Surficial Geology

The Wisconsin glaciation which affected most of Canada covered Nova Scotia about 11,600-12,200 years ago (22,27). This great ice mass moved across the area from the Northwest (N20-40W) and grew by accretion to a height of almost 305 m, as it crossed the Bay of Fundy and the North Mountain (15). Its colossal weight exerted extreme stresses and strains upon the earth's surface as evidenced by horizontal striations on exposed bedrock (12,27). Detailed discussions of the mechanics of this event and the evidence for its occurrence can be found in the literature cited in this section.

The significance of glaciation as it relates to soils however is that it was the most recent geological event to shape the landscape in which these soils occur. Also, for most of the soils, glacial events directly affected both

the composition and the depth of the parent materials (surficial geology) from which the soils developed.

Figures 4 and 5 compare surficial geology with the location of soil parent materials. In studying these maps it should be remembered that the soil sketches also show organic, fluvial and marine deposits which are of post-glacial origin.

Physiographically, there are two groups of surficial deposits originating from glaciation that are important in discussing soils. The first of these was deposited directly by ice as it moved across the landscape. These deposits are referred to as moraine (till). The material composition and morphology (structure) of tills is varied. Generally, till composition is closely related to the underlying bedrock (6). It has been reported from till fabric analysis (2) that about 80% of the till is deposited within 1 km of its source. The remaining 20%, sometimes referred to as glacial drift, is usually found at greater distances from its source. In Kings County, the dominant type of till is the lodgement till of the North and South Mountains, which are gravelly morainal veneers over bedrock. The surface expression of these tills generally follows the contours of the underlying bedrock. The soils of map units 2 and 3 are examples of soils formed on lodgement till. Such soils tend to be shallow and compact and lithologically are very closely related to the bedrock below. Similar characteristics of soils formed on lodgement tills have been reported in New Brunswick (35).

The second group of glacial sediments were deposited by glacial meltwaters flowing on or through the ice mass. The four most common types of these deposits found on the floor of the Annapolis Valley are outwash plains, deltas, eskers and kames. The location of these deposits is shown in Figures 4 and 5.

Outwash plains were deposited by a broad sheet of water moving rapidly away from the front of the terminal moraine. The materials tend to be stratified and the topography is undulating to level. Soils of map unit 12 were likely deposited in this way (See Aldershot map, Figure 4).

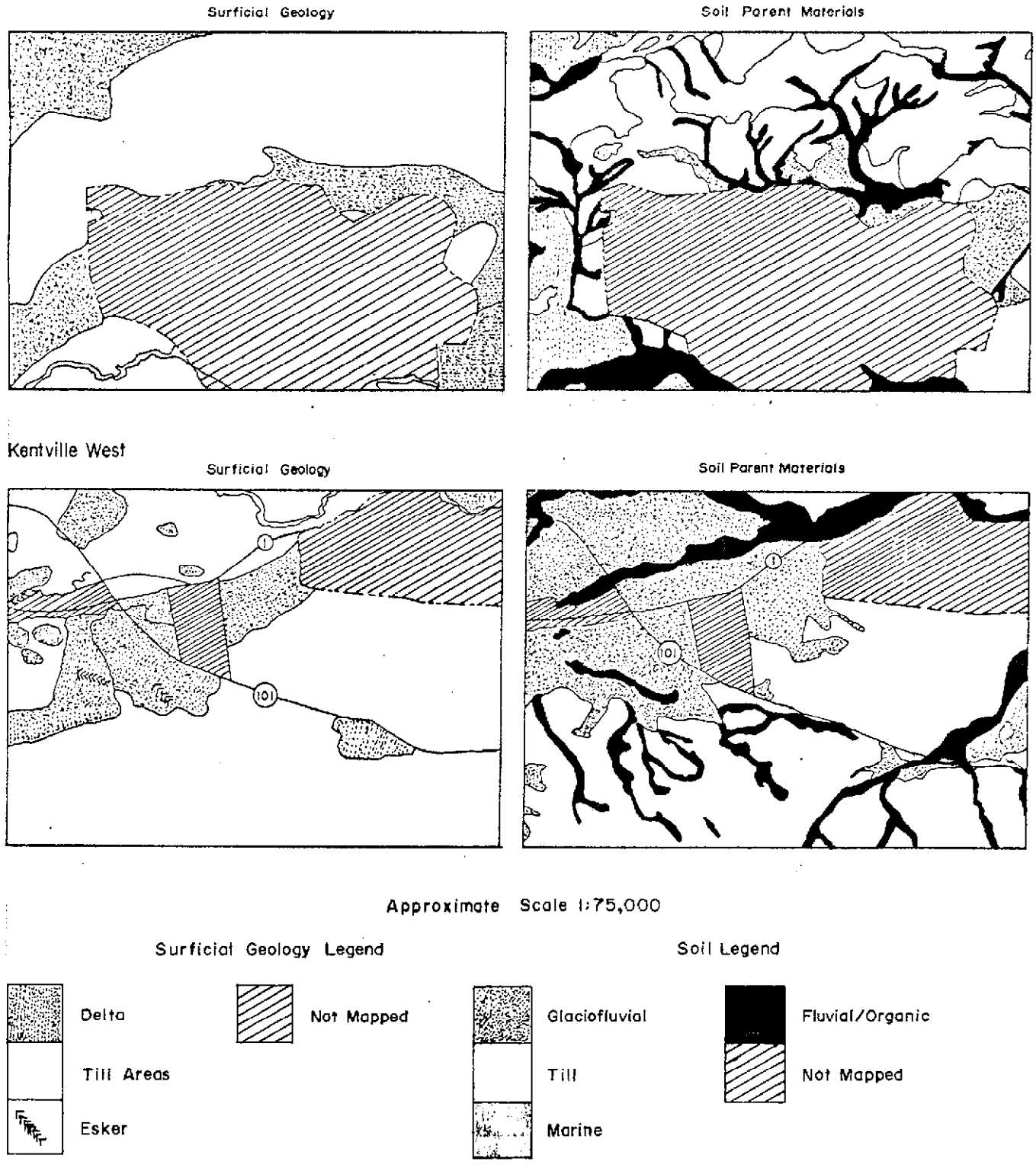


FIGURE 4:
Comparison of surficial geology maps and soil parent material maps for Aldershot and Kentville West mapsheets. Surficial geology maps were compiled from 1:50,000 surficial geology base maps (N.S.R.F., 1960-70). Soil parent material maps were compiled from 1:20,000 soil maps (N.S.D.A.M., 1983) by grouping map units according to parent material type.

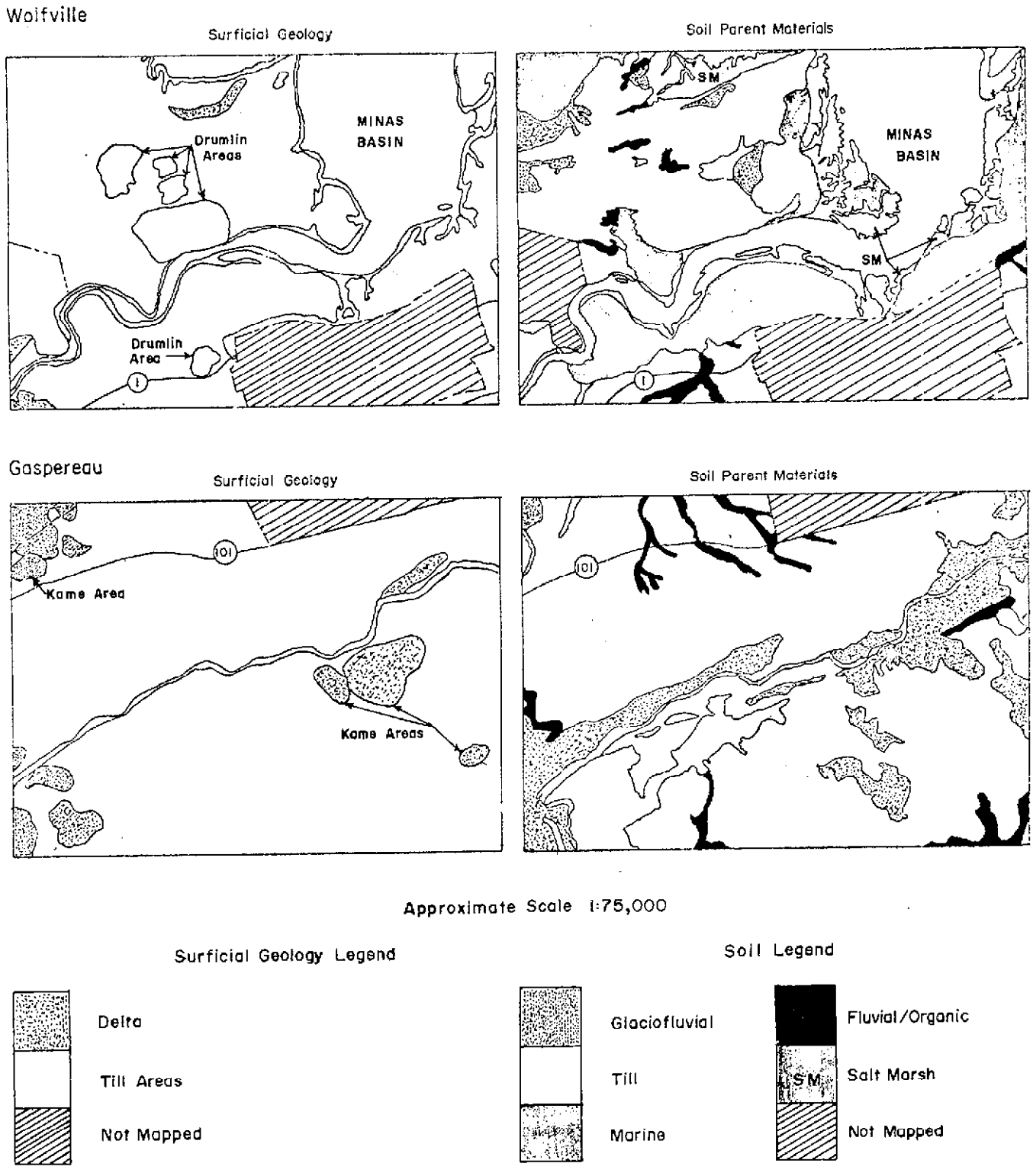


FIGURE 5:

Comparison of surficial geology maps and soil parent material maps for Wolfville and Gaspereau mapsheets. Surficial geology maps were compiled from 1:50,000 surficial geology base maps (N.S.R.F., 1960-70). Soil parent material maps were compiled from 1:20,000 soil maps (N.S.D.A.M., 1983) by grouping map units according to parent material type.

Deltas are very similar to outwash plains in material composition and form. They differ in that they were deposited at the mouth of confined glacial streams (spillways) flowing into glacial lakes. On the surficial geology maps, much of the floor of the Annapolis Valley is shown as a deltaic deposit. On the soil parent material maps, deltaic deposits have been grouped with outwash deposits. Soils of map unit 22, where imperfectly drained sands overlie marine clay, are likely derived from deltaic deposits.

Eskers are knobby, elongated ridges of irregularly stratified sand and gravel which are aligned to the direction of movement of the glacier. Eskers are actually raised beds of glacial streams which flowed underneath the ice mass. These ridges form the parent materials of a number of map units depending upon the particle size and degree of sorting of the materials making up the deposits. Along the base of the South Mountain, map units 11 and 13 are found on cobbly or gravelly eskers.

Kames are irregularly shaped hills of poorly to well sorted sands and gravels. They may occur as isolated deposits or in clusters, in which case they are referred to as kame fields. In the Annapolis Valley, kames were deposited by glacial meltwaters which were confined between the melting ice front and a terminal moraine or an upland region. Coarse fragments entrapped in the ice mass were released as the glacier receded. On the Gaspereau and Kentville West map sheets, kame areas generally correspond to the location of map unit 13. The dominant soil of this map unit consists of very gravelly coarse sand with occasional occurrences of cobble layers.

Other soil map units have been identified and described which are not shown on the surficial geology maps. These are mainly fluvial deposits, or post-glacial river alluvium. The marine and organic deposits are also of post-glacial origin. Because of the small scale (1:50,000) of the surficial geology maps these deposits have not been separated from the deltaic deposits.

In summary, the nature and distribution of soil parent materials can be related to past geological events and processes. An understanding of these events and processes is helpful in mapping soils because it assists us in predicting where certain soils are likely to occur. In a much broader sense, an understanding of the depositional environment of soils enables us to make judgements about certain soil properties, particularly texture. Finally, an appreciation that processes such as erosion, sedimentation and flooding are active today better prepares us to manage our soil resources wisely.

5.0 MAP UNIT DESCRIPTIONS

5.1 Introduction

In this section map units are described in more detail than in the map legend. The map legend describes only the model or control map unit concept; that is, it lists only those soil conditions most frequently associated with a given map unit. Here the full range in soil conditions observed for each map unit is discussed.

To fully utilize all field observations recorded for each map unit a Victor 9000 micro-computer was employed. A data base management system, d base II, was used to store and analyse data collected from all field sites. Data recorded for each site (see section 2.2) included estimates of ten (10) different soil parameters which were entered as one or two digit codes. A final map unit code was added later, making a total of twelve (12) values for each site record. The file structure allowed sets of records (re field sites) to be selected and analysed on the basis of any parameter or any combination of parameters. Histogram plots of each parameter by individual soil map units showed the total variability of soil conditions observed. The histograms thereby served to establish the range in map unit properties and to finalize the map legend.

General Description

These map unit descriptions summarize field data and observations within the map areas completed. The dominant texture and consistence is listed first and followed, where appropriate, by a brief description of recognizable features. Map unit variability is discussed last giving emphasis to significant deviations from the map legend description.

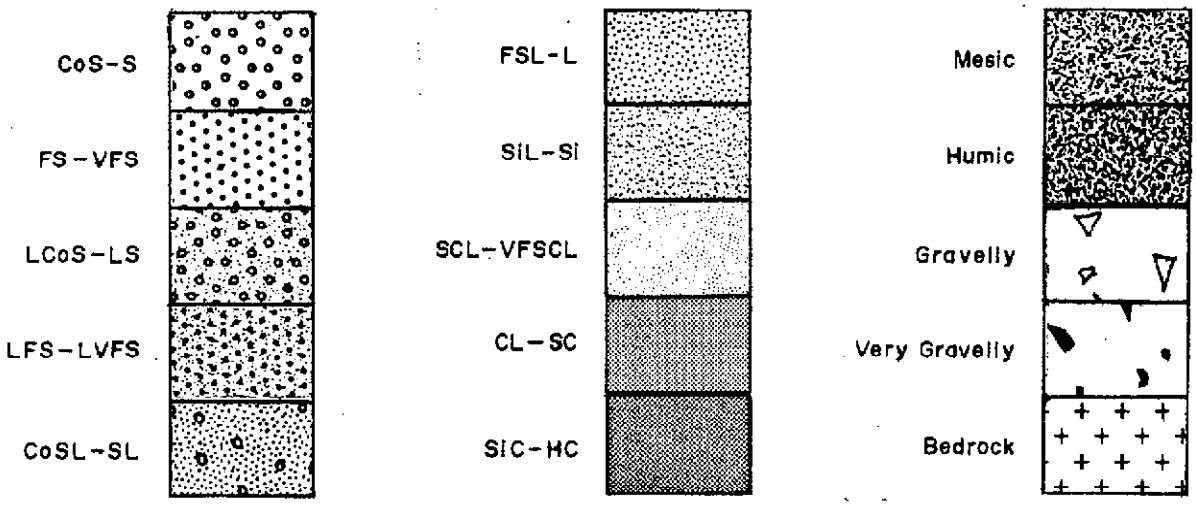
Accompanying each description is a graphic soil profile index which shows the dominant texture of that map unit and the depth range of the surface soil. Since these profile sketches do not show topographical or drainage differences between map units, they should be used in combination with the text as a guide, or simply as an index for which they were designed. This system is also used in Appendix II to group map units according to the mode of deposition of the soil parent materials.

Map unit descriptions summarize field data and observations within the map areas completed. Areas covered by these maps may be compared with areas covered by the previous detailed soil maps (4) by reference to the following table. It would be recognized that this comparison does not indicate equivalence of map units since the current map unit descriptions are based upon additional information now available.

COMPARISON OF MAP UNITS DESIGNATIONS

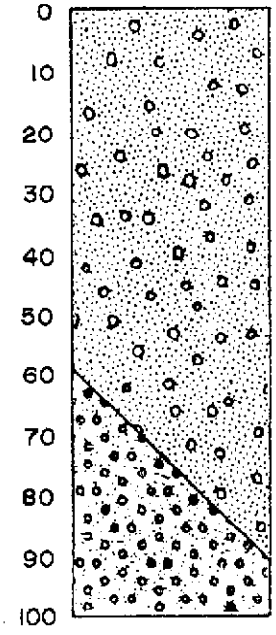
THIS REPORT	INTERIM REPORT NO. 1 (4)
1	B2
2	Mn2
3	Bt1, Mn1
4	B1, W1
5	P11,W2
6	An1, Rp1
7	De1
8	Kt1, M1
9	Mw1, Ma1
10	Mh1
11	N1
12	Cn1,Cn2,S1
13	Mn3,T1
14	Cg1,S2
15	-
16	-
17	Kp1,Kp2
18	Mr1
19	-
20	Bv1
21	Cw1,Cw2
22	-
23	-
24	Ac3
25	Ac1,Ac2
26	Or1,Or3
27	Or2,Or4
28	N2,T2
29	-
30	-

MAP UNIT PROFILE INDEX OF MATERIALS



5.2 Soils developed from till

MAP UNIT NUMBER: 1



LOCATION:

Aylesford, Aylesford East, Berwick, Gaspereau, Kentville West, South Greenwood, Torbrook Mines, Weston and Wolfville Sheets

DRAINAGE:

Dominantly well drained. About 10% of the map unit area is either rapidly or moderately well drained depending upon topographic position.

STONINESS:

Dominantly nonstony. About 5% of the map unit area is slightly stony.

TOPOGRAPHY:

Level to very strongly sloping (0-45%).

GENERAL DESCRIPTION:

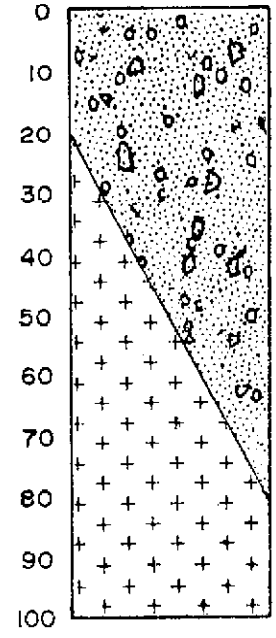
60-90 cm of friable sandy loam over dark reddish brown friable loamy sand to coarse sandy loam.

The soils of map unit 1 have developed from similar till and under similar conditions as the soils of map unit 4. It is recognized by its texture (coarse sandy loam), by its drainage (well) and by its consistence (generally friable). The soil consistence is usually friable but it varies. About 30% of the profiles examined have compact layers, mostly in the form of orsteins or ironpans. About 20% of the map unit area has a gravelly subsoil.

MAP UNIT NUMBER: 2

LOCATION:

Gaspereau, Kentville West, New Minas, South Greenwood and Torbrook Mines sheets.



DRAINAGE:

Dominantly well to moderately well but ranges from well to imperfectly drained.

STONINESS:

Dominantly moderately stony but ranges from nonstony in pastures to very stony where the bedrock is close to the surface.

TOPOGRAPHY:

Nearly level to extreme slopes (0.5 - 70%).

GENERAL DESCRIPTION:

20-80 cm of friable gravelly sandy loam over unconsolidated slate bedrock.

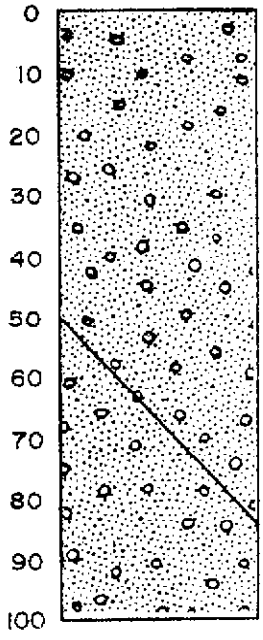
The dominant soil of this map unit is recognized by its high content of gravel (flaggy slate) and by its shallowness to bedrock.

The soils of map unit 2 are 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 silt loam to very gravelly sandy loam.

MAP UNIT NUMBER: 3

LOCATION:

Aylesford East, Berwick, Gaspereau, Kentville West, New Minas, South Greenwood and Torbrook Mines sheets.



DRAINAGE:

Dominantly well to moderately well, but ranges from well on mounds to poor in depressions.

STONINESS:

Slightly stony to very stony.

TOPOGRAPHY:

Level to extreme slopes (0.5-70%)

GENERAL DESCRIPTION:

50-85 cm of friable sandy loam over firm reddish brown sandy loam.

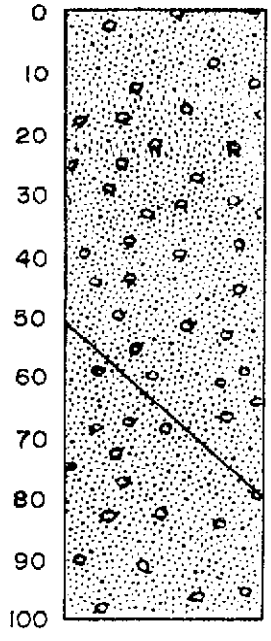
This map unit is recognized by its topographic position (mainly upper slopes of the South Mountain) and its gravel content (slate and granite).

In cultivated fields the surface is smooth but in forested areas the surface is strongly mounded. The soil is often modified by cobbles and stones throughout the profile. Where this occurs the soil is usually compact or cemented.

MAP UNIT NUMBER: 4

LOCATION:

Aldershot, Aylesford, Berwick, Dempsey Corner, Gaspereau, New Minas, South Greenwood, Torbrook Mines, Weston and Wolfville sheets.



DRAINAGE:

Well to moderately well drained.

STONINESS:

Dominantly nonstony to slightly stony. Small pockets of moderately to very stony soil occur on the middle to upper slopes of the South Mountain.

TOPOGRAPHY:

Dominantly nearly level to moderate slopes (0.5-15%), but a few areas have very strong slopes (45%).

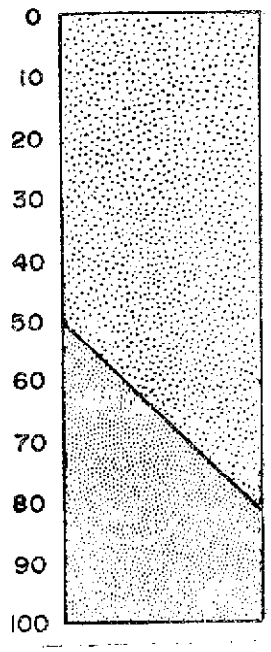
GENERAL DESCRIPTION:

More than 1m of friable sandy loam. The subsoil is dark reddish brown.

The dominant soil of this map unit is recognized by its overall colour and texture (reddish sandy loam), by its consistence (usually friable) and by the lack of surface stones.

Although mainly sandy loam, soil texture is sometimes as fine as silt loam. Usually the soil has about 10-15% gravel but small areas have up to 30% gravel, usually in the surface soil. About 35% of the area has a compact layer. The degree of cementation and the depth to the compact layer varies, but it is generally firm and when present usually is found within 75 cm. This map unit represents some of the best agricultural soils in Kings County.

MAP UNIT NUMBER: 5



LOCATION:

Aldershot, Aylesford, Berwick, Dempsey Corner, Gaspereau, Kentville West, New Minas, South Greenwood, Torbrook Mines, Weston and Wolfville sheets.

DRAINAGE:

Well to moderately well

STONINESS:

Dominantly nonstony with small areas of slight to moderately stony.

TOPOGRAPHY:

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

GENERAL DESCRIPTION:

50-80 cm of friable very fine sandy loam over firm dark red sandy clay loam to silty clay loam.

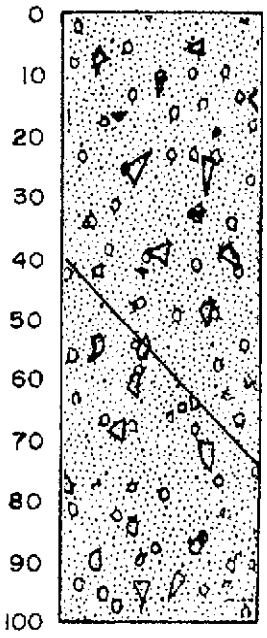
The dominant soil of this map unit is similar to that of map units 8 and 10, which occur on similar parent materials but have impeded drainage. Because of the fine texture and the impermeable subsoil, soil horizons (layers) are only weakly expressed. In a few areas the parent material is modified by slaty gravel. This is observed on the South Mountain adjacent to map unit 3.

The most variable feature of the map unit 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. Surface texture ranges from sandy loam to sandy clay loam. The consistence of the compact layer is moisture-dependent and ranges from friable when moist to slightly hard when dry.

MAP UNIT NUMBER: 6

LOCATION:

Aylesford East, Berwick, Gaspereau, Kentville West, New Minas, South Greenwood and Torbrook Mines sheets.



DRAINAGE:

Dominantly imperfect, but ranges from moderately well to poorly drained.

STONINESS:

Nonstony to moderately stony.

TOPOGRAPHY:

Level to strong slopes (0-30%).

GENERAL DESCRIPTION:

40-75 cm of friable gravelly sandy loam over firm strong brown gravelly sandy loam.

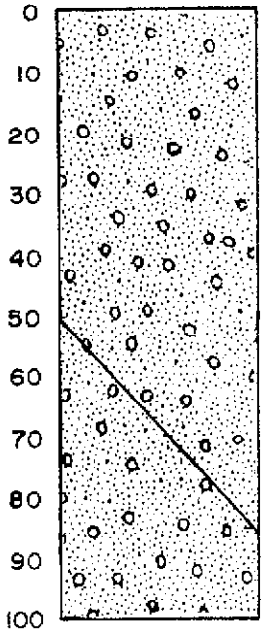
Soils of this map unit have developed on slaty deposits of sandy loam till similar to that of map units 3 and 9. However, imperfect drainage makes this map unit intermediate between map unit 3 and 9. Drainage is slowed by a combination of impermeable subsoil, slope position and occasionally, shallowness to bedrock.

Overall texture varies from silt loam to coarse sandy loam. Drainage is quite variable over short distances because of hummocks and mounds.

MAP UNIT NUMBER: 7

LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, South Greenwood, Torbrook Mines, Weston and Wolfville sheets.



DRAINAGE:

Imperfectly drained.

STONINESS:

Nonstony to moderately stony.

TOPOGRAPHY:

Level to gentle slopes (0-9%).

GENERAL DESCRIPTION:

More than 1m of friable sandy loam. The subsoil is dark reddish brown.

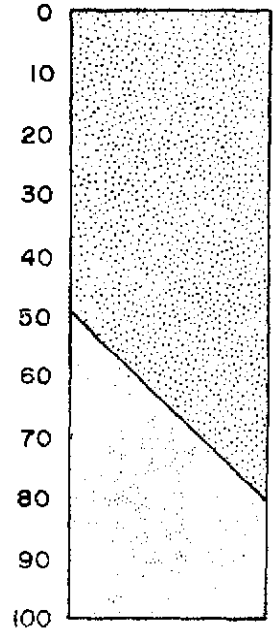
Soils of this map unit have developed on dark reddish brown sandy loam till. The surface soil resembles that of map unit 4 but is slightly duller in colour and generally slightly stony.

Where this map unit merges with map unit 4 the surface soil is stone free. Subsoil consistence is usually friable but it varies from friable to firm. Overall soil texture is variable and ranges from sandy loam to gravelly sandy clay loam. About 10% of the area is underlain by heavier textured deposits.

MAP UNIT NUMBER: 8

LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, South Greenwood, Torbrook Mines, Weston and Wolfville sheets.



DRAINAGE:

Dominantly imperfect. Ranges from moderately well to imperfectly drained.

STONINESS:

Dominantly nonstony but ranges from nonstony to very stony, particularly on the Kentville West map sheet.

TOPOGRAPHY:

Level to very strong slopes (0-45%).

GENERAL DESCRIPTION:

50-80 cm of friable loam over firm dark reddish brown sandy clay loam.

Soils of this map unit have developed from reddish brown sandy clay loam till. Soils of map units 5, 8 and 10 are very similar but have different drainages.

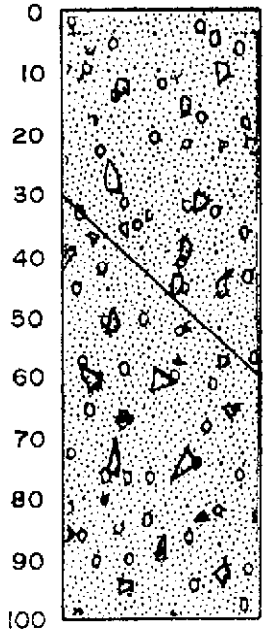
Surface soil is generally stone free, friable loam, but the subsoil texture ranges from sandy clay loam to silty clay loam. Near map units 24 and 25, subsoil texture approaches clay loam. About 3% of the profiles examined have gravelly parent material, particularly on the Gaspereau map sheet.

Drainage varies from moderately well in elevated areas to poor in small depressions.

MAP UNIT NUMBER: 9

LOCATION:

Aylesford, Aylesford East, Gaspereau, Kentville West, New Minas and South Greenwood sheets.



DRAINAGE:

Dominantly poor, but ranges from imperfect on small mounds to very poor in depressions.

STONINESS:

Nonstony to moderately stony.

TOPOGRAPHY:

Nearly level to moderate slopes (0.5-15%).

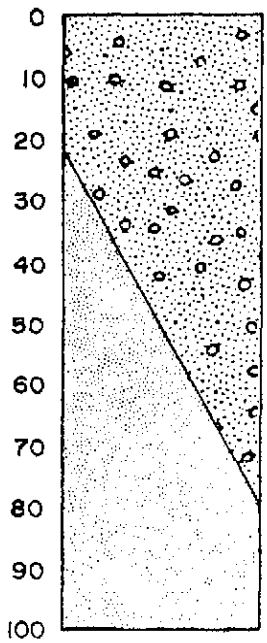
GENERAL DESCRIPTION:

30-60 cm of friable gravelly sandy loam over friable to firm yellowish brown gravelly sandy loam.

Soils of this map unit have developed on slaty yellowish-brown sandy loam till. In this respect, they are similar to soils of map units 3 and 6. 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 and slope position. In depressional areas shallow peaty layers are often present on the surface.

The most variable features of this map unit are stoniness and drainage. Drainage varies from imperfect to poor and stoniness varies from nonstony to very stony over short distances. Less than 10% of the map unit area has bedrock within 1 meter.

MAP UNIT NUMBER: 10



LOCATION:

Aylesford, Aylesford East, Gaspereau, Kentville West, South Greenwood and Wolfville sheets.

DRAINAGE:

Poorly drained.

STONINESS:

Nonstony to slightly stony.

TOPOGRAPHY:

Level to very gentle slopes (0-5%).

GENERAL DESCRIPTION:

20-80 cm of friable sandy loam over firm reddish brown sandy clay loam.

The dominant soil of this map unit is similar to that of map units 5 and 8, the major difference being that of drainage.

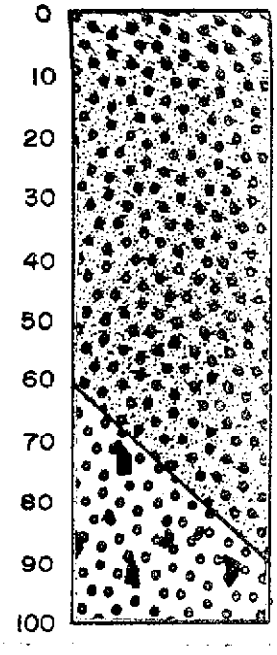
Surface texture ranges from sandy loam to sandy clay loam. Where the map unit merges with map units 24 or 25 the soil tends to be of finer texture. About one third (1/3) of the profiles examined have sandy loam subsoils.

5.3 Soils Developed from Outwash Sand

MAP UNIT NUMBER: 11

LOCATION:

Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, Kentville West, South Greenwood and Wolfville sheets.



DRAINAGE:

Very rapid to rapidly drained.

STONINESS:

Nonstony to moderately stony.

TOPOGRAPHY:

Level to very strong slopes (0-45%).

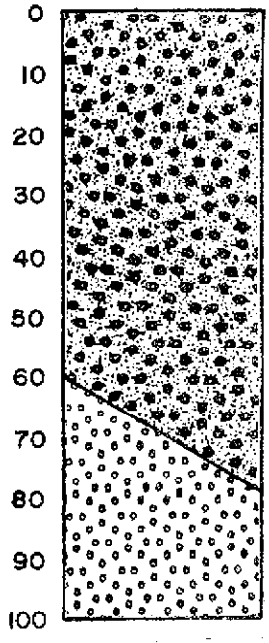
GENERAL DESCRIPTION:

60-90 cm of friable loamy coarse sand over loose dark gray very gravelly coarse sand.

Soils of this map unit are recognized by the presence of coarse gray sand or fine washed gravel on the surface. Because of the low silt and clay content these soils become loose, structureless and very droughty without organic matter.

Soil consistence is usually loose or very friable but about 15% of the profiles examined contain cemented or compacted layers in the form of ortsteins (ironpans) or fragipans (hardpans). The parent material texture ranges from loamy coarse sand to gravel. In forested areas profiles show better horizonation (layering) than in cultivated fields.

MAP UNIT NUMBER: 12



LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, Kentville West, New Minas, South Greenwood, Torbrook Mines, Weston and Wolfville sheets.

DRAINAGE:

Dominantly rapid, but ranges from rapid to moderately well drained.

STONINESS:

Nonstony

TOPOGRAPHY:

Dominantly nearly level to very strong slopes (0.5-45%).
Small areas on the Kentville West and Aldershot map sheets are strong to very strongly sloping.

GENERAL DESCRIPTION:

60-80 cm of very friable loamy sand over loose yellowish brown sand.

Soils of this map unit have developed on brown outwash sand and are mainly found on the floor of the Annapolis Valley, where the deposits are deep and well sorted.

The surface soil is generally loose or friable loamy sand but about 20% of the profiles examined have cemented layers (ortsteins). These layers range in thickness; are mainly discontinuous, and are often underlain by gravelly coarse sand.

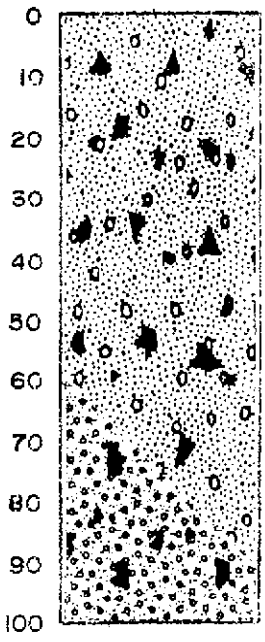
The topography is generally undulating and the surface is relatively stone free. Where these soils border soils of map unit 14 they are difficult to map out because they occur in a complex pattern.

Overall soil texture ranges from coarse sand to gravelly loamy fine sand. Horizonation, or the presence of soil layers, is less pronounced in cultivated fields than in forested areas.

MAP UNIT NUMBER: 13

LOCATION:

Aldershot, Aylesford East, Berwick, Gaspereau, Kentville West, New Minas, South Greenwood, Torbrook Mines and Wolfville sheets.



DRAINAGE:

Rapid to well drained.

STONINESS:

Nonstony to moderately stony.

TOPOGRAPHY:

Level to very strong slopes (0-45%).

GENERAL DESCRIPTION:

60-90 cm of loose very gravelly sandy loam over very friable yellowish brown very gravelly loamy coarse sand.

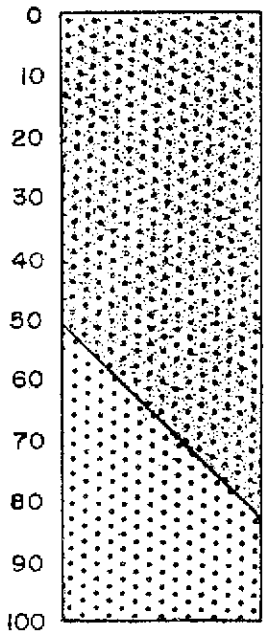
Soils of this map unit are easily recognized by their high slate content and by the presence of rounded cobbles, which are often present as layers visible in road cuts through the deposits.

Overall soil texture ranges from gravel to sandy loam. About 10% of the profiles examined have weakly cemented layers.

MAP UNIT NUMBER: 14

LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Kentville West, South Greenwood, Torbrook Mines, Weston and Wolfville.



DRAINAGE:

Dominantly well drained, but ranges from well to imperfectly drained.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to strong slopes (0-30%).

GENERAL DESCRIPTION:

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

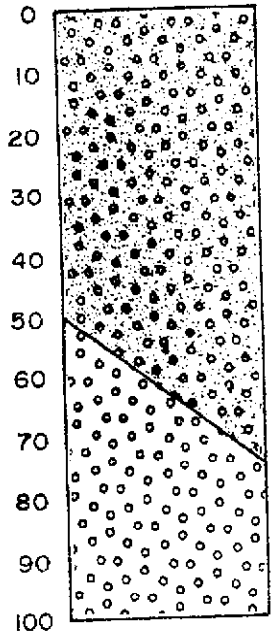
Soils of this map unit can frequently be recognized by the surface soil which is yellowish red, loose loamy fine sand. These soils can be distinguished from the sandy soils of map units 12 and 11 which are medium and coarse sand, respectively. Often the landform is hummocky and dune-shaped. Observations of recent wind action on these soils suggest that these hummocks may be old stabilized sand dunes.

A small percentage of these soils have weakly cemented layers below the surface. Also where these soils merge with soils of map units 4, the surface soil is slightly gravelly and sometimes cobbly. These areas are not extensive, however, and generally soil texture and other features are relatively uniform.

MAP UNIT NUMBER: 15

LOCATION:

Torbrook Mines and Weston sheets.



DRAINAGE:

Imperfectly drained.

STONINESS:

Nonstony

TOPOGRAPHY:

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

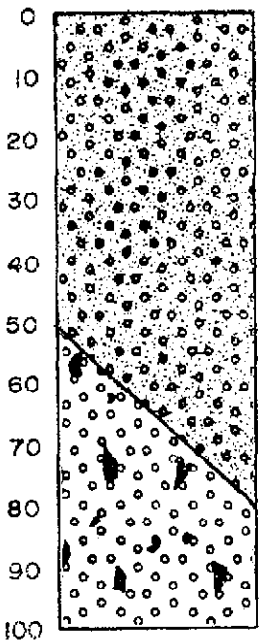
GENERAL DESCRIPTION:

50-75 cm of friable to firm loamy sand over loose sand to loamy sand.

This map unit represents soils formed on imperfectly drained deposits of glaciofluvial sand, which have a hardpan.

Cemented layers occur in about 35% of the area surveyed. The cemented layers, either ironpans or hardpans, are generally found within 50 cm of the surface. The imperfect drainage results from a combination of poor soil structure and low topographic position.

MAP UNIT NUMBER: 16



LOCATION:

Aylesford East, Gaspereau, South Greenwood, Torbrook Mines and Wolfville sheets.

DRAINAGE:

Imperfect to poorly drained.

STONINESS:

Nonstony to slightly stony.

TOPOGRAPHY:

Nearly level to strong slopes (0.5-30%).

GENERAL DESCRIPTION:

50-80 cm of very friable loamy sand to sandy loam over loose very gravelly coarse sand.

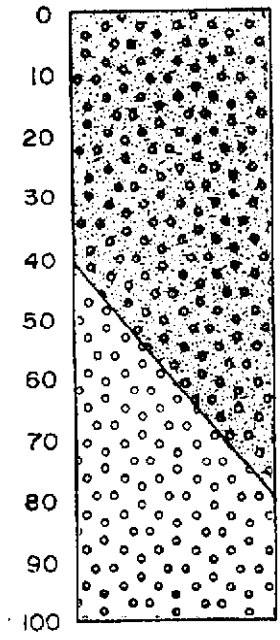
This map unit represents a drainage complex of soils formed on coarse textured glaciofluvial deposits. Drainage is dominantly imperfect but because of the variability in microtopography, numerous pockets of poorly drained soil occur in depressions.

Surface soil texture ranges from loamy fine sand to sandy loam, and is often modified by as much as 20% rounded gravel.

MAP UNIT NUMBER: 17

LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Gaspereau, Kentville West, South Greenwood, Torbrook Mines, Weston and Wolfville.



DRAINAGE:

Dominantly imperfect, but small depressional areas are poorly drained.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to moderate slopes (0-15%).

GENERAL DESCRIPTION:

40-80 cm of very friable loamy sand over loose light brown sand.

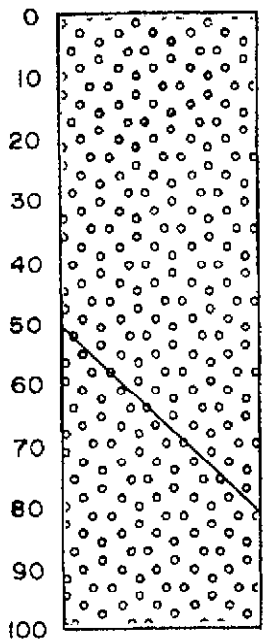
Soils of this map unit are recognized by their high content of sand and by their occurrence in depressional and seepage areas. Soils are similar to soils of map unit 16 but are of finer texture and do not have as wide a range in drainage. Profile development is only weakly expressed and soil horizons (or layers) are difficult to identify in the field.

Where this map unit merges with map units 12 and 14 drainage is slightly improved. Overall soil texture ranges from coarse sand to a loamy fine sand. Topography is level to depressional except in seepage areas that are gently sloping. The most variable feature of this map unit is the depth to water table. Also near organic map units drainage tends to be slower and a thin peaty layer (<10cm) is often present at the surface.

MAP UNIT NUMBER: 18

LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Gaspereau, South Greenwood, Weston and Wolfville.



DRAINAGE:

Dominantly poor, but small depressions are very poorly drained.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to nearly level (0-2%).

GENERAL DESCRIPTION:

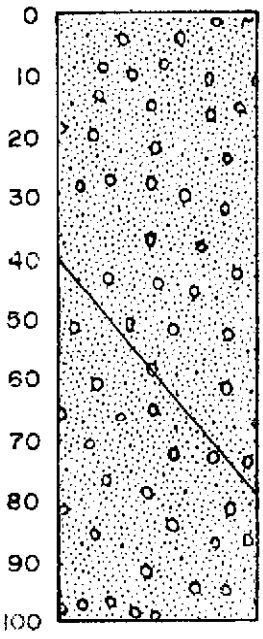
50-85 cm of loose sand over very friable reddish brown sand.

Soils of this map unit are recognized by topographic position (depressions), by overall texture (sandy) and by profile mottling (grayish stains).

Subsoil texture ranges from sand to sandy loam. In deeper depressions a peaty layer is sometimes incorporated with the sandy surface soil.

5.4 Soils developed from alluvium

MAP UNIT NUMBER: 19



LOCATION:

Aylesford, Aylesford East, Berwick, South Greenwood and Weston sheets.

DRAINAGE:

Moderately well drained.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to very gentle slopes (0-5%).

GENERAL DESCRIPTION:

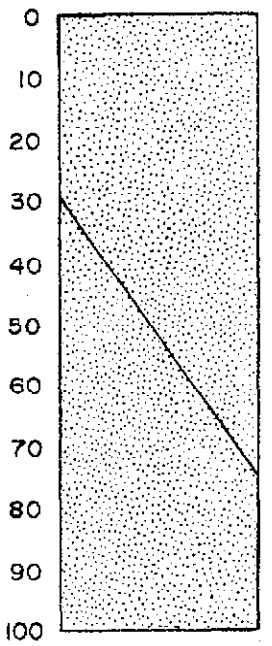
40-80 cm of friable sandy loam over friable sandy loam to silt loam.

This map unit is recognized by its position (along floodplains) and by its generally level topography. It differs from map units 20 and 21 in being better drained. Overall soil texture is variable with sand and silt strata often present.

MAP UNIT NUMBER: 20

LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corner, Gaspereau, Kentville West, South Greenwood, Torbrook Mines and Weston sheets.



DRAINAGE:

Dominantly imperfect, but ranges from moderately well to poor over very short distances.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to moderate slopes (0-15%).

GENERAL DESCRIPTION:

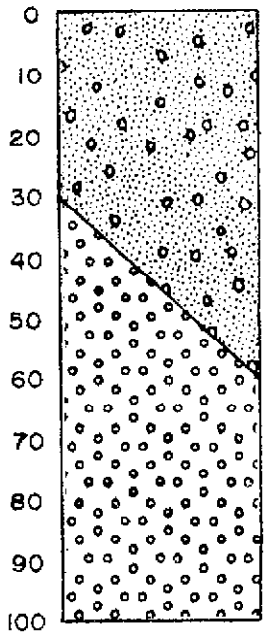
30-75 cm of friable loam over firm dark yellowish brown loam.

This map unit represents soils formed on level to depressional areas of floodplains where drainage is imperfect.

Like soils of map units 19 and 21 the soil is recent alluvium and hence exhibit little profile development, except for a surface layer enriched with organic matter.

Where map unit 20 merges with upland soils, drainage is moderately well. Overall soil texture is variable, ranging from sand to silty clay loam.

MAP UNIT NUMBER: 21



LOCATION:

Aldershot, Aylesford, Aylesford East, Berwick, Dempsey Corners, Gaspereau, Kentville West, New Minas, South Greenwood, Torbrook Mines, Weston and Wolfville.

DRAINAGE:

Dominantly poor, but ranges from imperfect to very poor over short distances.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to very gentle slopes (0.5-5%), except for minor seepage areas on the Kentville West Map sheets which are moderately sloping (10%).

GENERAL DESCRIPTION:

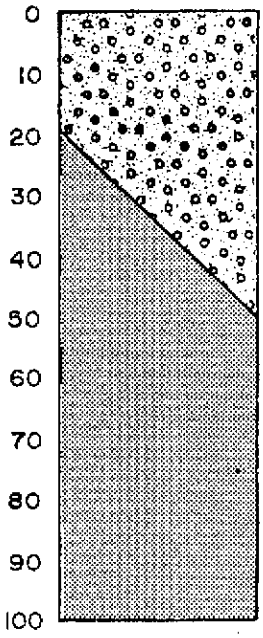
30-60 cm of friable sandy loam to silt loam over stratified sand and silt.

Soils of this map unit have developed on reddish brown alluvial sediments. They are found in poorly drained positions along rivers and streams. In some areas along the floodplains the deposits are deeper and better sorted. In other areas, the soil occurs as peaty layers over silty clay loam. The depth of the peaty layer varies considerably and is often incorporated with the mineral layer.

Overall texture ranges from fine sand to clay loam, and gravel layers are sometimes present.

5.5 Soils developed from lacustrine materials

MAP UNIT NUMBER: 22



LOCATION:

Aldershot, Aylesford, Aylesford East, Weston, and Wolfville.

DRAINAGE:

Dominantly imperfect; a small percentage of the map units have poor to very poorly drained depressions.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to very gentle slopes (0.5-5%).

GENERAL DESCRIPTION:

20-50 cm of very friable loamy sand over firm reddish brown clay loam.

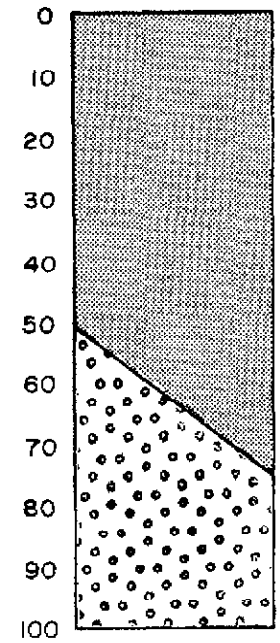
Soils of this map unit differ from those of map units 24 and 25 in that the latter do not have surface layers of glaciofluvial sand. Map unit 22 also differs from map unit 23 in being better drained.

Surface texture ranges from sandy loam to sand. The parent material is generally clay loam but in some areas it is heavy clay.

MAP UNIT NUMBER: 23

LOCATION:

Aldershot, Aylesford, Aylesford East, Weston and Wolfville



DRAINAGE:

Poorly drained.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to nearly level (0-2%)

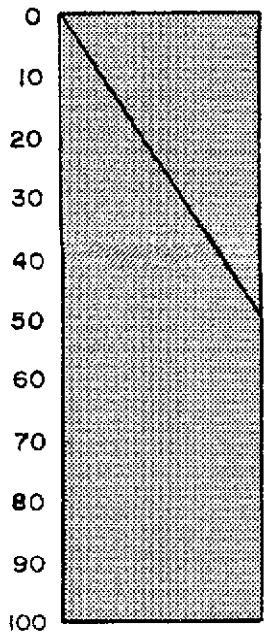
GENERAL DESCRIPTION:

50-75 cm of firm clay loam over compact yellowish red sand.

Soils of this map unit are recognized by their surface expression which is smooth and level. In this sense they resemble soils of map unit 22, but are more poorly drained.

About 25% of the profiles examined do not have sandy subsoils at the depth examined (1m).

5.6 Soils developed from marine material



MAP UNIT NUMBER: 24

LOCATION:

Aldershot, Aylesford, Aylesford East, New Minas, Weston and Wolfville sheets.

DRAINAGE:

Moderately well to imperfectly drained.

STONINESS:

Nonstony

TOPOGRAPHY:

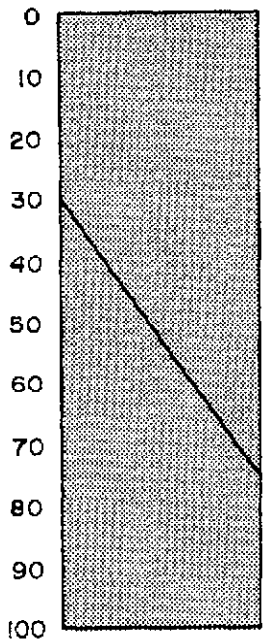
Level slopes (0-0.5%).

GENERAL DESCRIPTION:

0-50 cm of firm clay loam over firm reddish gray clay loam to heavy clay. This soil is recognized by its location on the land formed crowns of dyked marine sediments. The improved drainage of this map unit is a result of land forming and ditching operations.

The surface texture ranges from a fine sandy loam to clay loam. The parent material ranges from silt loam to heavy clay.

MAP UNIT NUMBER: 25



LOCATION:

Aldershot, New Minas and Wolfville sheets.

DRAINAGE:

Imperfect to poorly drained

STONINESS:

Nonstony

TOPOGRAPHY:

Level to very gentle slope (0-5%).

GENERAL DESCRIPTION:

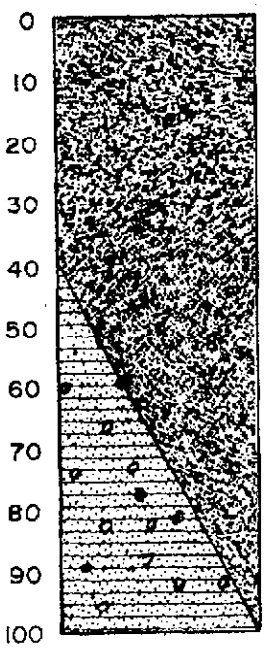
30-75 cm of firm silty clay loam over firm reddish grey clay loam to heavy clay. The cominant soil of this map unit is recognized by its location (on dyked marine sediments), by its level topography, by its fine surface texture (silty clay loam), and by its weakly developed profile (lack of distinct horizons).

The overall soil consistence varies from plastic and sticky when wet to firm when dry. The surface texture ranges from loam to heavy clay and the parent material texture ranges from silt loam to heavy clay. Some of the profiles examined have layers of very fine sands and silts.

The major differences between map unit 25 and 24 is that the latter has better drainage.

5.7 Organic soils

MAP UNIT NUMBER: 26



LOCATION:

Aldershot, Aylesford East, Berwick, Kentville West, South Greenwood and Weston.

DRAINAGE:

Very poorly drained.

STONINESS:

Nonstony

TOPOGRAPHY:

Level to gentle slopes (0-9%).

GENERAL DESCRIPTION:

40-160 cm of mesic (moderately decomposed) to humic (decomposed) sedge peat over undifferentiated sediments.

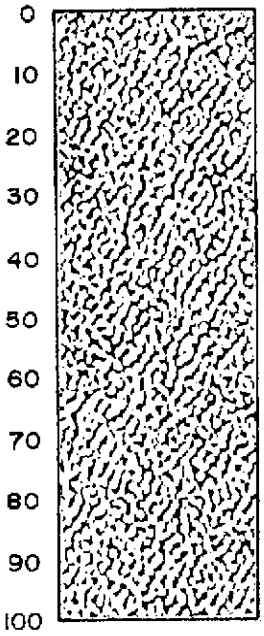
This map unit is recognized by its depressional position in the landscape and by its characteristic vegetation which includes sedges, bulrushes and alders. It is separated from map unit 27 in being more shallow.

As with map unit 27 where this map unit borders mineral soils, drainage is improved. Here the depth to the mineral soil also ranges between 60 to 100 cm over very short distances.

MAP UNIT NUMBER: 27

LOCATION:

On the Aldershot and Kentville West map sheets in depressions.



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 map unit 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 map units in that it is deeper and more decomposed.

Where this map unit merges with map unit 21 the organic layer is shallow and drainage is slightly improved.

5.8 LAND TYPES

Land types are used in soil classification and mapping for areas of land that have little or no natural soil or that are inaccessible, or where, for other reasons, it is not feasible to classify the soil (31).

Map units 28, 29 and 30 have been classified as land types in this report. The following descriptions of these land types are based partly upon field observations and partly upon information obtained from other sources (7) (13).

MAP UNIT 28 - GULLIED LAND

This map unit represents areas where streams or rivers have eroded deep channels in upland soils. The channels or gullies are usually elongate, narrow and have very steeply sloping banks. Most gullied land is actually old glacial meltwater channels, now occupied by smaller streams or creeks. On the South Mountain in particular, these channels have become sharply incised in the surrounding slate formations. Subsequent colluvial action has resulted in a thin veneer of gravelly material on the mid to lower slopes. Along the course of the shallow streams, small deposits of organic materials have accumulated in isolated depressions.

MAP UNIT 29 - ROCKY LAND

This map unit represents areas of bedrock outcrop. These areas occur mainly on the upper slopes of the South Mountain and the bedrock type is usually slate. Exposed bedrock occupies about 75% of the total area of these units. The remaining 25% of this area consists of shallow layers of very gravelly and very stony soil over unconsolidated bedrock.

MAP UNIT 30 - SALT MARSH

This map unit represents areas of undyked marine sediments bordering the Minas Basin, and its river estuaries. These deposits are the parent materials from which the now productive dykeland soils (map units 24 and 25) have developed.

Tides inundate the salt marshes twice daily depositing additional sediments. The materials are deposited as layers which range from silty clay to heavy clay, and consistence varies from very plastic to slightly plastic near the dyke walls.

APPENDIX 1

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

General Procedure:

1. Locate the map unit on the Nomogram fig. 6 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 subtracted 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 25.a for apples)

1. The map unit 25.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 25.a has 10 points, and is rated unsuitable for apples

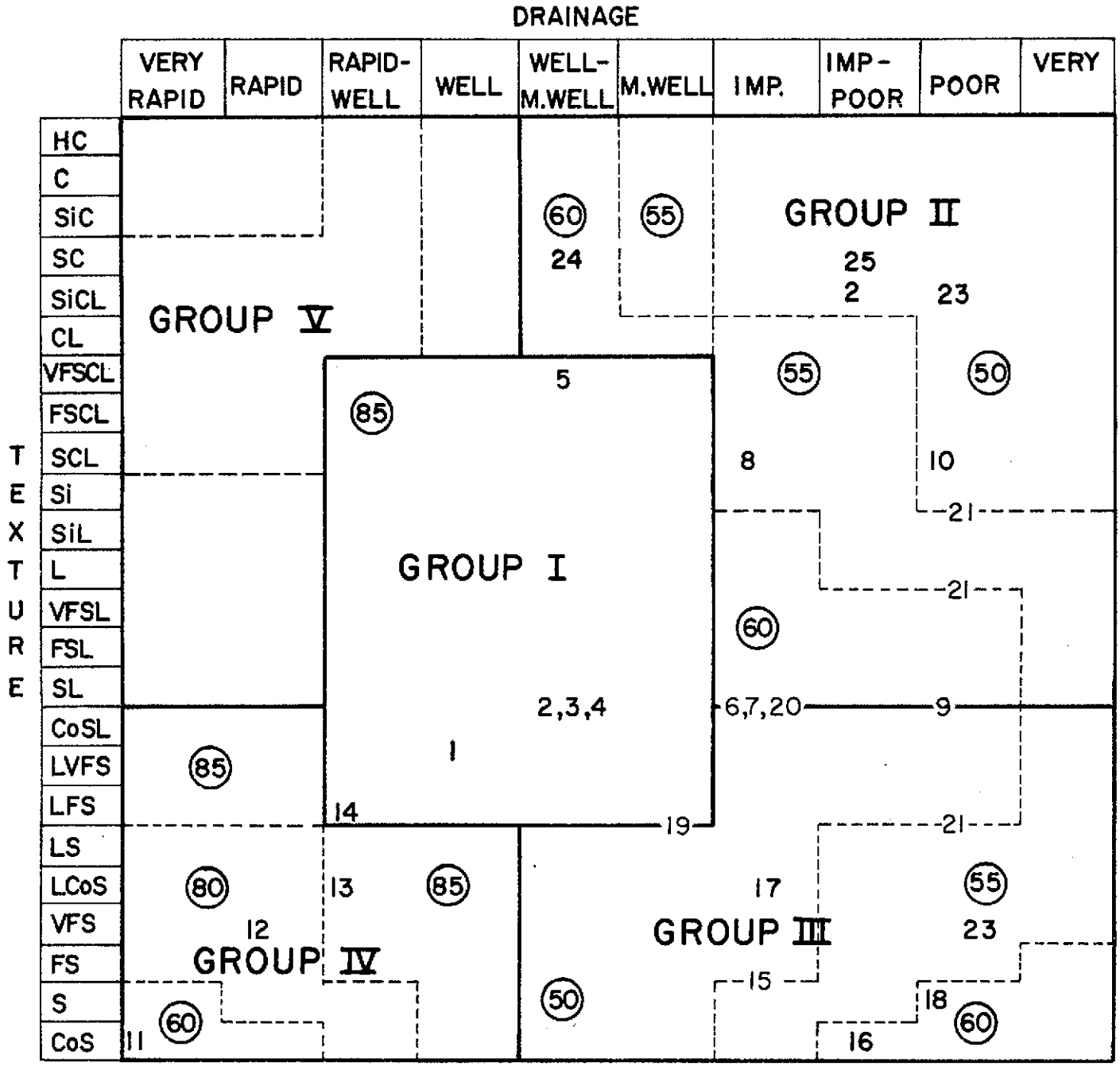


FIGURE 6: Primary grouping of soils according to drainage - texture suitability for apples, barley and corn, dotted lines indicate subgroups, and circled numbers indicate base rating of groups and subgroups.

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.

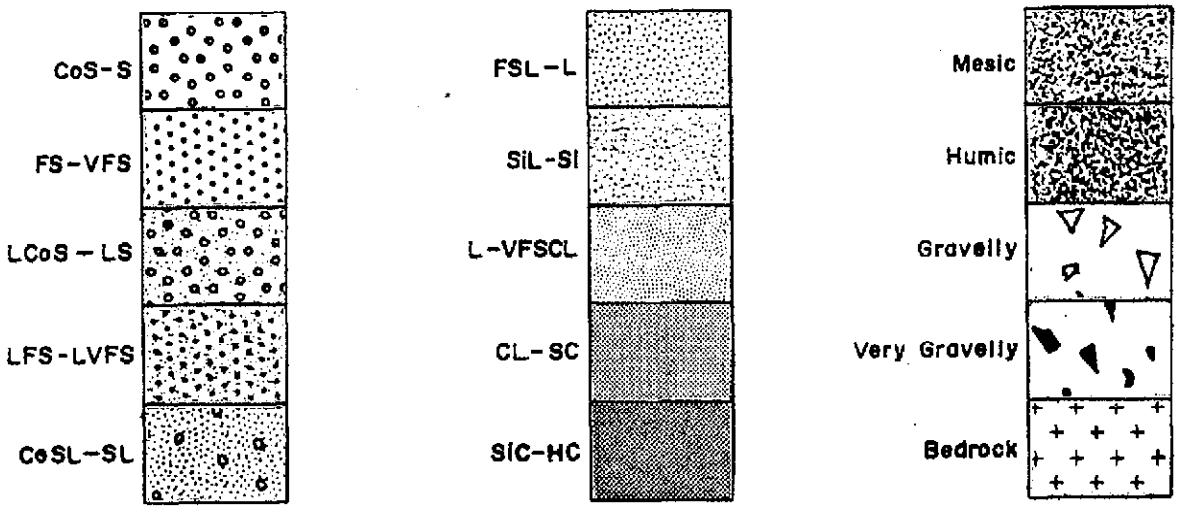
(1) Storie, R. (1938), VanVliet, L. (1979), Visser, J. (1977), Webster, D. (1978), Webster, D. (1976).

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

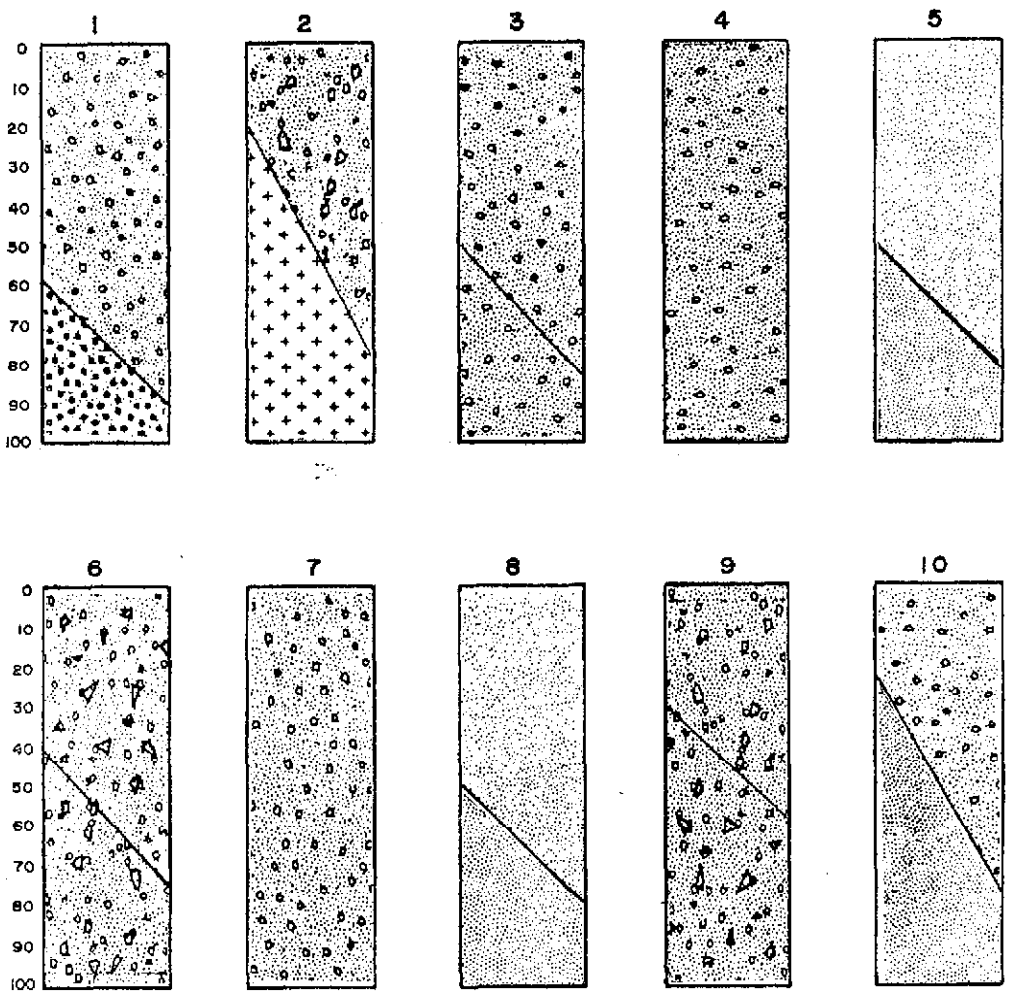
(3) Babalola, O. (1977), Carey, J. (1979), Field Crop Guide (1980), McKyes, E. (1978).

APPENDIX II

MAP UNIT PROFILE INDEX OF MATERIALS



MORAINALS

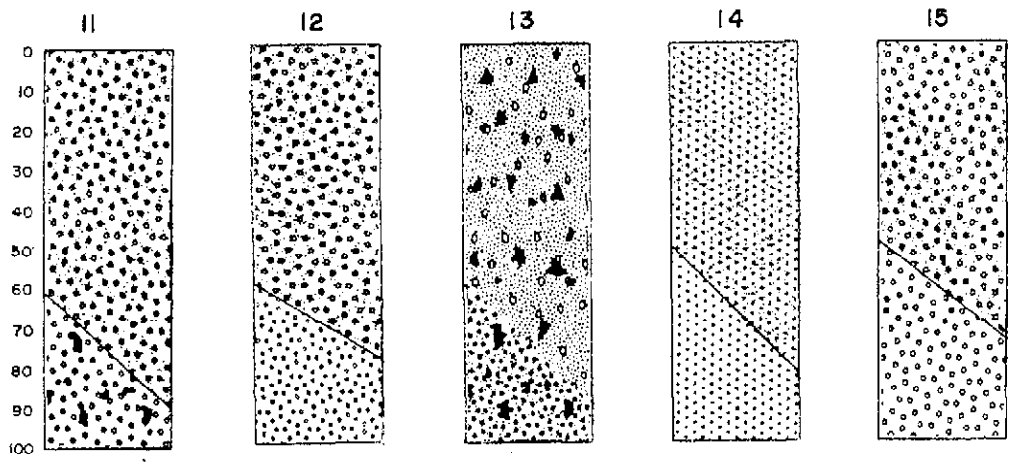


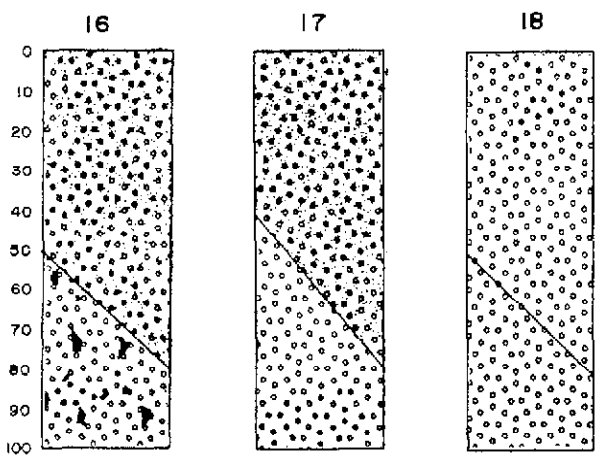
MORAINALS:

Most of the map units described in this report have soil that developed from debris deposited directly by glacial ice. This debris is called morainal till. Generally, morainal tills are heterogeneous mixtures of a wide range of particle sizes and shapes.

Most of the tills studied in Kings County are well to moderately well drained non gravelly, sandy loams and are usually deeper than one meter.

GLACIALFLUVIAL

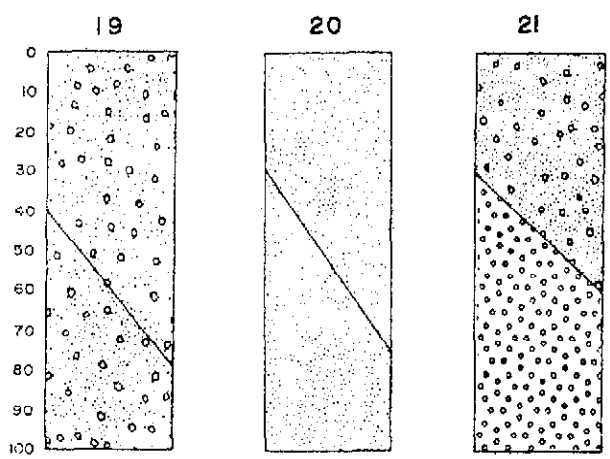




Glacialfluvial:

Map Units described as having soils developed on outwash deposits are generally sandy or have rounded, water-worked gravels. Outwash soil materials were deposited by meltwaters flowing from or through glacial ice. As discussed in Section 4.3, outwash deposits are usually found along the floor of the Annapolis Valley.

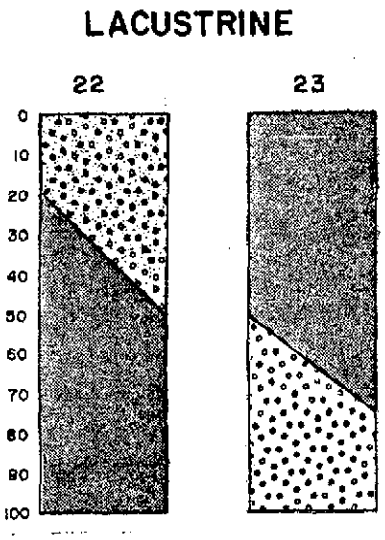
ALLUVIAL



Alluvial:

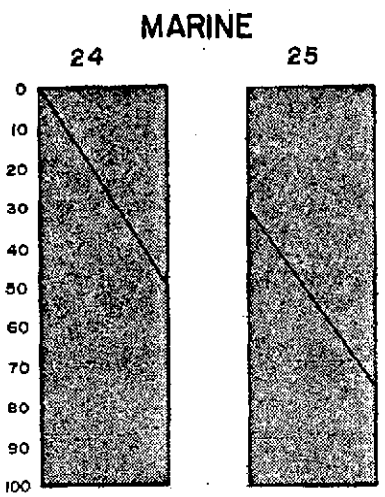
Three (3) map units have soils which developed from materials deposited by post glacial streams or rivers. These map units have been grouped here as fluvials.

The alluvial map units are of widely differing textures and drainages. On the map they can usually be recognized by their narrow elongated shape. In the field they occur in active or recent stream beds. Profile development is either lacking or very faint.



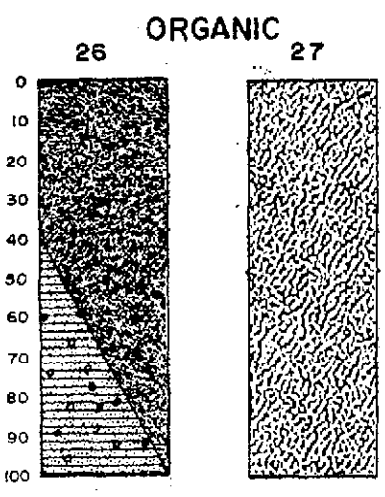
Lacustrine:

The map units 22 and 23 are probably of lacustrine origin, with glacial fluvial material deposited later.



Marines:

Only two map units have been described as having parent material of marine origin. These are 24 and 25 which are found along the Canard and Cornwallis Rivers on dyked sediments.



Organic:

The organic map units have soils with more than 30% organic matter by weight. Organic deposits accumulate in wet depressional areas where the rate of plant growth exceeds the rate of decomposition.

The degree of decomposition and the depth of the deposits vary. On this basis, two (2) map units have been identified in Kings County.

APPENDIX III

DEFINITIONS OF CLASSES USED TO DESCRIBE STONINESS, SLOPE AND DRAINAGE*

SOIL DRAINAGE CLASSES:

Very rapidly drained - Water is removed from the soil very rapidly in relation to supply. Excess water flows downward very rapidly if underlying material is pervious. There may be very rapid subsurface flow during heavy rainfall provided there is a steep gradient. Soils have very low available water storage capacity (usually less than 2.5 cm) within the control section and are usually coarse textured, or shallow, or both. Water source is precipitation.

Rapidly drained - Water is removed from the soil rapidly in relation to supply. Excess water flows downward if underlying material is pervious. Subsurface flow may occur on steep gradients during heavy rainfall. Soils have low available water storage capacity (2.5 - 4 cm) within the control section, and are usually coarse textured, or shallow, or both. Water source is precipitation.

Well drained - Water is removed from the soil readily but not rapidly. Excess water flows downward readily into underlying pervious material or laterally as subsurface flow. Soils have intermediate available water storage capacity (4 - 5 cm) within the control section, and are generally intermediate in texture and depth. Water source is precipitation. On slopes subsurface flow may occur for short durations but additions are equaled by losses.

Moderately well drained - Water is removed from the soil somewhat slowly in relation to supply. Excess water is removed somewhat slowly due to low perviousness, shallow water table, lack of gradient, or some combination of these. Soils have intermediate to high water storage capacity (5 - 6 cm) within the control section and are usually medium to fine textured. Precipitation is the dominant water source in medium to fine textured soils; precipitation and significant additions by subsurface flow are necessary in coarse textured soils.

Imperfectly drained - Water is removed from the soil sufficiently slow in relation to supply to keep the soil wet for a significant part of the growing season. Excess water moves slowly downward if precipitation is major supply. If subsurface water or groundwater, or both, is main source, flow rate may vary but the soil remains wet for a significant part of the growing season. Precipitation is main source if available water storage capacity is high; contribution by subsurface flow or groundwater flow, or both, increases as available water storage capacity decreases. Soils have a wide range in available water supply, texture, and depth, and are gleyed phases of well drained subgroups.

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*SOURCE: *J. Dumanski (ed.). The Canada Soil Information System: Manual for Describing Soils in the Field; Land Resource Research Institute, OTTAWA, Ontario.*

Soil Drainage Classes (cont'd):

Poorly drained - Water is removed so slowly in relation to supply that the soil remains wet for a comparatively large part of the time the soil is not frozen. Excess water is evident in the soil for a large part of the time. Subsurface flow or groundwater flow, or both, in addition to precipitation are main water sources; there may also be a perched water table, with precipitation exceeding evapotranspiration. Soils have a wide range in available water storage capacity, texture, and depth, and are gleyed subgroups, Gleysols, and organic soils.

Very poorly drained - Water is removed from the soil so slowly that the water table remains at or on the surface for the greater part of the time the soil is not frozen. Excess water is present in the soil for the greater part of the time. Groundwater flow and subsurface flow are major water sources. Precipitation is less important except where there is a perched water table with precipitation exceeding evapotranspiration. Soils have a wide range in available water storage capacity, texture, and depth, and are either Gleysolic or Organic.

STONINESS CLASSES:

Nonstony - Land having less than 0.01% of surface occupied by stones.

Slightly stony - Land having 0.01-0.1% of surface occupied by stones. Stones 15-30 cm in diameter,10-30 m apart. The stones offer only slight to no hindrance to cultivation.

Moderately stony - Land having 0.1-3% of surface occupied by stones. Stones 15-30 cm in diameter, 2-10 m apart. Stones cause some interference with cultivation.

Very stony - Land having 3-15% of surface occupied by stones. Stones 15-30 cm in diameter, 1-2 m apart. There are sufficient stones to constitute a serious handicap to cultivation.

Exceedingly stony - Land having 15-50% of surface occupied by stones. Stones 15-30 cm in diameter, 0.7-1.5 m apart. There are sufficient stones to prevent cultivation until considerable clearing has been done.

Excessively stony - Land having more than 50% of surface occupied by stones. Stones 15-30 cm in diameter, less than 0.7 m apart. Land is too stony to permit cultivation.

SLOPE CLASSES:

Class	Slope (%)	Description
a	0 - 0.5	level
b	0.5 - 2	nearly level
c	2 - 5	very gentle slopes
d	5 - 9	gentle slopes
e	9 - 15	moderate slopes
f	15 - 30	strong slopes
g	30 - 45	very strong slopes
h	45 - 70	extreme slopes
j	70 - 100	steep slopes
k	> 100	very steep slopes

APPENDIX IV

DETAILED SOIL PROFILE STUDY

The following detailed soil profile descriptions and the accompanying laboratory analyses are from sites which were selected to represent the dominant features of the map unit indicated.* Because this information is site-specific, it cannot be interpreted to represent the range of properties existing throughout the whole map unit. Readers interested in an overall description of the map unit are directed to Section 5.2 of this report.

Terminology used here to describe the soil profiles are according to the Canada Soil Information System : Manual for Describing Soil in the Field; Land Resource Research Institute, Ottawa, Ontario. (ed. J. Dumanski) Some of these definitions (Drainage, Stoniness and Slope) are supplied in Appendix IV.

Laboratory procedures followed are outlined in the Manual on Soil Sampling and Methods of Analysis, Canada Soil Survey Committee, 1976 (ed. J. A. McKeague).

* NOTE: *Data for some map units are unavailable at the time of publication. A dash (-) indicates unavailable data. The symbol N.A. indicates that the parameter is not applicable to this map unit.*

MAP UNIT: 1

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-8 DATE SAMPLED: October 23, 1981

MILITARY GRID REFERENCE: 20T LE 5800 5970

PLANIMETRIC MAP SHEET: South Berwick 21H/02-S2

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Sombric Humo-Ferric Podzol

DRAINAGE: Well SEEPAGE: Absent RUNOFF: Moderate

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Rolling sandy morainal till

SLOPE: 9% CLASS: Gently sloping ASPECT North POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 68cm

PRESENT LAND USE: Abandoned farmland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-13	gradual wavy	sandy loam	13.5% gravel	moderate medium subangular blocky	very friable	7.5 YR3/4 matrix moist	plentiful fine inped	NA
AB	13-23	abrupt broken	loamy sand	12.6% gravel	moderate medium subangular blocky	friable	7.5YR4.5/6 matrix moist	few fine inped	NA
Bf	23-34	clear wavy	loamy sand	15% gravel	moderate coarse subangular blocky	friable	7.5YR5/8 matrix moist	few micro inped	NA
BC	34-59	gradual wavy	sandy loam	11.6% gravel	moderate coarse subangular blocky	friable	2.5YR3.5/8 matrix moist	very few micro inped	NA
C	59-100		gravelly sandy loam	20.2% gravel	moderate coarse subangular blocky	firm	2.5YR3.5/6 matrix moist	very few micro inped	NA

MAP UNIT: I

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

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	0-13	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

MAP UNIT: 2

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-5 DATE SAMPLED: October 22, 1981

MILITARY GRID REFERENCE: 20T LE 2870 7120

PLANIMETRIC MAP SHEET: Prospect 21H/02-T1

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Orthic Humo-Ferric Podzol

DRAINAGE: Moderately well SEEPAGE: Absent RUNOFF: Moderate

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Gravelly morainal veneer

SLOPE: 6% CLASS: Gently sloping ASPECT Northwest POSITION ON SLOPE: Crest

STONINESS: Moderately stony ROOTING DEPTH: 80 cm

PRESENT LAND USE: Woodland grazing

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
LFH	8-0	clear broken	-	-	-	-	-	abundant medium exped	NA
Ap	0-7	gradual wavy	gravelly silt loam	49.1% slaty	strong fine granular	very friable	10YR 3/2 matrix moist	abundant medium exped	NA
Bf	7-19	gradual wavy	very gravelly silt loam	67.6% slaty	moderate medium subangular blocky	very friable	7.5YR 4/6 matrix moist	plentiful medium exped	NA
BC	19-45	gradual wavy	very gravelly silt loam	76.1% flaggy	weak medium platy	friable	10YR 4/4 matrix moist	few fine exped	NA
C	45-80	-	very gravelly fine sandy loam	70.1% flaggy	moderate medium subangular blocky	friable	10YR 3/3 matrix moist	very few very fine exped	few fine faint
R	80	NA	NA	NA	NA	NA	NA	NA	NA

MAP UNIT: 2

CLASSIFICATION: Orthie Hume-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	0.06	0.07	1.56
C	45-80	5.40	4.55	0.48					0.15	0.03	0.08	0.36
R	80-100											

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	
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	45-80	70.1	65.4	29.7	4.8	-	-	-	-	-	-	-	-	-
R	80-100													

MAP UNIT: 3

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-4 DATE SAMPLED: October 22, 1981

MILITARY GRID REFERENCE: 20T LE 5080 8470

PLANIMETRIC MAP SHEET: Prospect 21H/02-T1

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Eluviated Sombric Brunisol

DRAINAGE: Well SEEPAGE: Absent RUNOFF: Moderate

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Hummocky loamy morainal till

SLOPE: 7% CLASS: Gently sloping ASPECT Northeast POSITION ON SLOPE: Upper

STONINESS: Slightly stony ROOTING DEPTH: 120 cm

PRESENT LAND USE: Productive woodland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Bm1	0-6	abrupt smooth	very gravelly sandy loam	56.2% gravel	weak medium subangular blocky	very friable	5YR 4/4 matrix moist	abundant medium inped	NA
Ahb	6-16	clear wavy	sandy loam	7.3% gravel	moderate medium subangular blocky	very friable	7.5YR3/2 matrix moist	abundant fine inped	NA
Aej	16-24	clear broken	very fine sandy loam	8.6% gravel	weak medium subangular blocky	friable	7.5YR5.5/6 matrix moist	plentiful fine inped	NA
Bm2	24-38	clear wavy	very fine sandy loam	7.1% slate	moderate medium subangular blocky	friable	5YR 5/7 matrix moist	plentiful fine inped	NA
BC	38-67	gradual wavy	very fine sandy loam	7.6% slate	weak medium subangular blocky	very friable	5YR 5/6 matrix moist	few very fine inped	NA
C	67-120		very fine sandy loam	2.6% slate	weak medium platy	very friable	5YR 4/4 matrix moist	very few micro inped	NA

MAP UNIT: 3

CLASSIFICATION: Eluviated Sombric Branisol

CHEMICAL DATA

HORIZON	DEPTH (cm)	pH		ORGANIC C(%)	OXALATE		PYROPHOSPHATE		EXCHANGEABLE CATIONS me/100 g			
		H_2O	$CaCl_2$		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	67-120	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	67-120	2.6	68.4	25.8	5.8	29	28	27	15	10	7	4	3	3.80

MAP UNIT: 4

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-9 DATE SAMPLED: October 23, 1981

MILITARY GRID REFERENCE: 20T LE 8120 8110

PLANIMETRIC MAP SHEET: Canning 21H/01-U3

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Orthic Sombric Brunisol

DRAINAGE: Moderately well SEEPAGE: Absent RUNOFF: Moderate

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Level loamy morainal till

SLOPE: 5% CLASS: Very Gently sloping ASPECT Southwest POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 120 cm

PRESENT LAND USE: Cropland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-20	gradual wavy	sandy loam	8.4% gravel	weak fine subangular blocky	very friable	7.5YR 4/4 matrix moist	-	NA
Bm1	20-39	gradual wavy	sandy loam	19.8% gravel	weak coarse subangular blocky	friable	5YR 3.5/3 matrix moist	-	NA
Bm2	39-62	clear smooth	sandy loam	5.7% gravel	weak coarse subangular blocky	friable	5YR 3/3 matrix moist	-	NA
BC	62-74	clear broken	loamy sand	NA	moderate coarse subangular blocky	friable	5YR 3/4 matrix moist	-	NA
C	74-120	-	silt loam	3.6% gravel	weak fine platy	friable	2.5YR3.5/6 matrix moist	-	NA

MAP UNIT: 4

CLASSIFICATION: Orthie Sombric Brunisol

CHEMICAL DATA

HORIZON	DEPTH (cm)	pH		ORGANIC C(%)	OXALATE		PYROPHOSPHATE		EXCHANGEABLE CATIONS me/100 g			
		H_2O	$CaCl_2$		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	74-120	5.00	3.96	0.16	-	-	-	-	1.43	0.50	0.26	8.84

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	0-20	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	74-120	3.6	54.7	36.9	8.4	20	19	17	16	14	12	8	6	3.40

MAP UNIT: 5

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-11 DATE SAMPLED: October 29, 1981

MILITARY GRID REFERENCE: 20T LE 7910 8320

PLANIMETRIC MAP SHEET: Canning 21H/01-U3

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Gleyed Sombric Brunisol

DRAINAGE: Moderately well SEEPAGE: Absent RUNOFF: Slow

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Level silty morainal till

SLOPE: 0.5% CLASS: Level ASPECT Northwest POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 55 cm

PRESENT LAND USE: Cropland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-15	clear smooth	sandy loam	10.7% gravel	strong coarse subangular blocky	friable	7.5YR 3/2 matrix moist	few fine inped	many fine prominent
AB	15-40	gradual wavy	loamy sand	6.5% gravel	moderate medium subangular blocky	very friable	7.5YR 4/4 matrix moist	few fine inped	many fine prominent
BCgj	40-55	diffuse broken	sandy clay loam	3.8% gravel	strong medium subangular blocky	friable	5YR 4/4 matrix moist	very few very fine exped	many coarse prominent
Cg	55-100	-	sandy clay loam	4.7% gravel	strong fine platy	friable	2.5YR4.5/6 matrix moist	very few micro exped	few fine distinct

MAP UNIT: 5

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
AB	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

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	0-15	10.7	64.2	20.9	14.9	28	26	21	20	19	16	10	8	1.20
AB	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

MAP UNIT: 8

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 82-05 DATE SAMPLED: November 22, 1982

MILITARY GRID REFERENCE: 20T LE 0740 5550

PLANIMETRIC MAP SHEET: Wolfville 21H/01-U2

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Orthic Humic Gleysol

DRAINAGE: Imperfect SEEPAGE: Absent RUNOFF: Slow

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Inclined loamy morainal till

SLOPE: 6% CLASS: Gently Sloping ASPECT North POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 60 cm

PRESENT LAND USE: Cropland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-32	abrupt smooth	sandy loam	7.1% gravel	weak medium subangular blocky	friable	7.5YR3.5/4 matrix moist	plentiful fine inped	NA
Bg	32-65	diffuse irregular	sandy clay loam	5.3% gravel	moderate medium subangular blocky	friable	5YR4.5/8 matrix moist	few micro inped	many coarse prominent
Cg	65-100	-	sandy clay loam	6.6% gravel	structure-less massive	firm	2.5YR3.5/8 matrix moist	NA	many coarse prominent

MAP UNIT: 8

CLASSIFICATION: Orthic Humic 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
Ap	0-32		6.0	0.97	0.64	0.17	0.16	0.09	7.68	4.19	0.50	-
Bg	32-65		4.5	0.15	0.30	0.09	0.02	0.05	5.11	6.08	0.30	0.70
Cg	65-100		4.8	0.14	0.16	0.06	0.02	0.03	7.36	6.60	0.32	-

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	0-32	7.1	54.6	29.6	15.8	-	-	-	-	-	-	-	-	-
Bg	32-65	5.3	59.0	20.6	20.4	-	-	-	-	-	-	-	-	0.13
Cg	65-100	6.6	57.6	20.9	21.6	-	-	-	-	-	-	-	-	0.01

MAP UNIT: 11

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-6 DATE SAMPLED: October 23, 1981

MILITARY GRID REFERENCE: 20T LE 7630 8060

PLANIMETRIC MAP SHEET: South Berwick 21H/02-S2

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Orthic Sombric Brunisol

DRAINAGE: Very rapid SEEPAGE: Absent RUNOFF: Very slow

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Ridged pebbly glaciofluvial

SLOPE: 0.5% CLASS: Level ASPECT South POSITION ON SLOPE: Crest

STONINESS: Nonstony ROOTING DEPTH: 60 cm

PRESENT LAND USE: Outdoor recreation

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ah	0-18	clear wavy	gravelly loamy sand	23.6% gravel	weak medium subangular blocky	very friable	5YR4/2.5 matrix moist	plentiful fine exped	NA
Bf	18-29	gradual wavy	gravelly loamy sand	35.2% gravel	structure-less single grain	loose	5YR 5/8 matrix moist	few very fine exped	NA
BC	29-48	clear wavy	gravelly sand	44.2% gravel	structure-less single grain	loose	2.5YR 4/7 matrix moist	few very fine exped	NA
C	48-100	-	very gravelly coarse sand	55.1% gravel	structure-less single grain	loose	7.5YR4.5/6 matrix moist	very few micro exped	NA

MAP UNIT: 11

CLASSIFICATION: Orthic Sombric Brunisol

CHEMICAL DATA

HORIZON	DEPTH (cm)	pH		ORGANIC C(%)	OXALATE		PYROPHOSPHATE		EXCHANGEABLE CATIONS me/100 g			
		H_2O	$CaCl_2$		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
Bf	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

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	0-18	23.6	83.4	10.0	6.5	-	-	-	-	-	-	-	-	-
Bf	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	-	-	-	-	-	-	-	-	-

MAP UNIT: 12

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-15 DATE SAMPLED: November 4, 1981

MILITARY GRID REFERENCE: 20T LE 2520 9500

PLANIMETRIC MAP SHEET: Cambridge Station 21H/02-T3

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Orthic Sombric Brunisol

DRAINAGE: Rapid SEEPAGE: Absent RUNOFF: Moderate

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Undulating sandy glaciofluvial

SLOPE: 3% CLASS: very gently sloping ASPECT North POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 100 cm

PRESENT LAND USE: Cropland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-25	-	loamy sand	4.1% gravel	structure-less massive	friable	10YR 3/2 matrix moist	plentiful coarse exped	NA
Bm	25-43	-	loamy sand	3.6% gravel	weak medium subangular blocky	friable	5YR 4/6 matrix moist	few medium exped	NA
BC	43-68	-	loamy sand	4.9% gravel	weak fine platy	friable	7.5YR 4/6 matrix moist	very few fine exped	NA
C	68-100	-	sand	8.0% gravel	structure-less single grain	loose	7.5YR 4/6 matrix moist	very few very fine exped	NA

MAP UNIT: 12

CLASSIFICATION: Orthic Sombric Brunisol

CHEMICAL DATA

HORIZON	DEPTH (cm)	pH		ORGANIC C(%)	OXALATE		PYROPHOSPHATE		EXCHANGEABLE CATIONS me/100 g			
		H_2O	$CaCl_2$		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	-

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.-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	-	-	-	-	-	-	-	-	-

MAP UNIT: 13

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-2 DATE SAMPLED: October 21, 1981

MILITARY GRID REFERENCE: 20T LE 0330 8240

PLANIMETRIC MAP SHEET: Prospect 21H/02-T1

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Orthic Humo-Ferric Podzol

DRAINAGE: Well SEEPAGE: Absent RUNOFF: Moderate

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Rolling gravelly glaciofluvial

SLOPE: 7% CLASS: Gently Sloping ASPECT Southeast POSITION ON SLOPE: Middle

STONINESS: Slightly stony ROOTING DEPTH: 93 cm

PRESENT LAND USE: Gravel pit

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ah	0-9	clear wavy	gravelly sandy loam	34.4% slate	moderate medium subangular blocky	very friable	7.5YR3.5/2 matrix moist	abundant fine inped	NA
Bhf	9-20	clear wavy	loamy sand	16.7% slate	moderate medium subangular blocky	very friable	5YR 5/8 matrix moist	plentiful very fine inped	NA
BC	20-54	abrupt wavy	loamy sand	19.2% slate	moderate medium subangular blocky	friable	5YR 5/6 matrix moist	few fine inped	NA
C	54-93	gradual wavy	very gravelly coarse sand	84.9% slate	structure-less single grain	loose	7.5YR 4/0 cxped moist	plentiful very fine inped	NA
IICc	93-112	clear smooth	gravelly sand	32.3% gravel	structure-less massive	very firm	7.5YR 5/6 matrix moist	NA	NA
IIIC	112-144	-	gravelly sand	29.2% gravel	structure-less massive	firm	7.5YR5/5.5 matrix moist	NA	NA

MAP UNIT: 13

CLASSIFICATION: Orthic Humo-Ferric Podzol

CHEMICAL DATA

HORIZON	DEPTH (cm)	pH		ORGANIC C(%)	OXALATE		PYROPHOSPHATE		EXCHANGEABLE CATIONS me/100 g			
		H_2O	$CaCl_2$		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.
			Sand	Silt	Clay	.01	.02	.06	.10	.33	1.0	3.0	15.0	cm/hr
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	-	-	-	-	-	-	-	-	-

MAP UNIT: 14

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-17 DATE SAMPLED: November 5, 1981

MILITARY GRID REFERENCE: 20T LE 0520 2970

PLANIMETRIC MAP SHEET: Cambridge Station 21H/02-T3

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Eluviated Sombric Brunisol

DRAINAGE: Well SEEPAGE: Absent RUNOFF: Slow

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Undulating sandy glaciofluvial

SLOPE: 1% CLASS: Nearly level ASPECT North POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 100 cm

PRESENT LAND USE: Cropland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-20	diffuse wavy	loamy fine sand	8.4% gravel	weak coarse subangular blocky	very friable	7.5YR 3/2 matrix moist	-	NA
Aej	20-35	abrupt smooth	fine sand	7.5% gravel	structure-less single grain	loose	5YR 6/3 matrix moist	-	NA
Bmxj	35-43	abrupt smooth	loamy fine sand	8.7% gravel	structure-less massive	firm	5YR 3/4 matrix moist	-	few coarse faint
BC	43-58	gradual smooth	loamy fine sand	2.4% gravel	structure-less single grain	friable	5YR 3/4 matrix moist	-	NA
C	58-100	-	fine sand	NA	structure-less single grain	very friable	7.5YR 4/6 matrix moist	-	NA

MAP UNIT: 14

CLASSIFICATION: Eluviated Sombric Brunisol

CHEMICAL DATA

HORIZON	DEPTH (cm)	pH		ORGANIC C(%)	OXALATE		PYROPHOSPHATE		EXCHANGEABLE CATIONS me/100 g			
		H_2O	$CaCl_2$		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

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	0-20	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

MAP UNIT: 18

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-16 DATE SAMPLED: November 4, 1981

MILITARY GRID REFERENCE: 20T LE 5330 7420

PLANIMETRIC MAP SHEET: South Berwick 21H/02-S2

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Gleyed Sombric Brunisol

DRAINAGE: Poor SEEPAGE: Present RUNOFF: Ponded

WATERTABLE: TYPE: Perched DEPTH: 100 cm

PARENT MATERIAL & LANDFORM: Level sandy glaciofluvial

SLOPE: 1% CLASS: Nearly level ASPECT Level POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 94 cm

PRESENT LAND USE: Improved pasture and forage

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-20	gradual smooth	gravelly sand	20.6% gravel	structure-less single grain	loose	7.5YR 5/4 matrix moist	abundant medium exped	NA
Bm1	20-46	clear broken	gravelly sand	39.4% gravel	structure less single grain	loose	7.5YR 4/3 matrix moist	plentiful medium exped	NA
Bm2	46-54	abrupt smooth	very fine sandy loam	4.8% gravel	moderate medium subangular blocky	very friable	7.5YR 4/2 matrix moist	few medium inped	NA
Cg	54-63	abrupt wavy	clay	NA	structure-less massive	firm	10YR 6/1 matrix moist	very few very fine inped	common medium distinct
IICg	63-72	clear wavy	sandy clay loam	10.4% gravel	moderate coarse angular blocky	firm	7.5YR5.5/2 matrix moist	very few micro inped	common medium distinct
IIICg	72-100	-	clay	4.7% gravel	structure-less massive	firm	10YR 6/2 matrix moist	very few micro inped	many coarse prominent

MAP UNIT: 18

CLASSIFICATION: Gleyed Sombric Brunisol

CHEMICAL DATA

HORIZON	DEPTH (cm)	pH		ORGANIC C(%)	OXALATE		PYROPHOSPHATE		EXCHANGEABLE CATIONS me/100 g			
		H_2O	$CaCl_2$		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. cm/hr
			Sand	Silt	Clay	.01	.02	.06	.10	.33	1.0	3.0	15.0	
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

MAP UNIT: 21

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 81-13 DATE SAMPLED: November 4, 1981

MILITARY GRID REFERENCE: 20T LE 1480 9040

PLANIMETRIC MAP SHEET: Cambridge Station 21H/02-T3

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Rego Gleysol

DRAINAGE: Poor SEEPAGE: Present RUNOFF: Ponded

WATERTABLE: TYPE: Apparent DEPTH: 40 cm

PARENT MATERIAL & LANDFORM: Level silty fluvial

SLOPE: 1% CLASS: Nearly level ASPECT West POSITION ON SLOPE: Lower

STONINESS: Nonstony ROOTING DEPTH: 21 cm

PRESENT LAND USE: Natural grazing

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Ap	0-14	-	silt loam	5% gravel	weak coarse subangular blocky	friable	10YR 4/2 matrix moist	few medium inped	many coarse prominent
Cg	14-26	-	silt	3.7% gravel	structure-less massive	friable	10YR 5/2 matrix moist	very few fine inped	many coarse prominent
IIICgj	26-46	-	silt	1.3% gravel	structure-less massive	friable	5YR 4/1 matrix moist	very few micro inped	NA
IIIC	46-100	-	gravelly coarse sandy loam	47.9% gravel	structure-less single grain	loose	10YR 4/3 matrix moist	NA	NA

MAP UNIT: 21

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
ABg	0-14	4.60	4.02	1.96	0.64	0.13	0.33	0.13	1.36	0.37	0.12	1.64
Cg	14-26	5.00	4.19	1.02	-	-	-	-	1.66	0.60	0.06	2.00
IICgj	26-46	5.00	4.05	0.53	-	-	-	-	1.53	0.70	0.07	2.25
IIIC	46-100	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
ABg	0-14	5.0	63.5	23.4	13.1	-	-	-	-	-	-	-	-	4.70
Cg	14-26	3.7	45.0	38.7	16.3	-	-	-	-	-	-	-	-	10.00
IICgj	26-46	1.3	46.8	36.5	16.8	-	-	-	-	-	-	-	-	6.50
IIIC	46-100	47.9	89.0	7.1	3.9	-	-	-	-	-	-	-	-	-

MAP UNIT: 24

SITE IDENTIFICATION

PROFILE IDENTIFICATION: 82-01 DATE SAMPLED: November 8, 1982

MILITARY GRID REFERENCE: 20T LE 3440 5940

PLANIMETRIC MAP SHEET: Grand Pre 21H/01-V1

SITE DESCRIPTION

TAXONOMIC CLASSIFICATION: Gleyed Sombric Brunisol

DRAINAGE: Moderately well SEEPAGE: Absent RUNOFF: Very slow

WATERTABLE: TYPE: NA DEPTH: NA

PARENT MATERIAL & LANDFORM: Level clayey marine

SLOPE: 1% CLASS: Nearly Level ASPECT South POSITION ON SLOPE: Middle

STONINESS: Nonstony ROOTING DEPTH: 98 cm

PRESENT LAND USE: Cropland

SOIL PROFILE DESCRIPTION

HORIZON	DEPTH (cm)	HORIZON BOUNDARY	TEXTURE	COARSE FRAGMENTS (% by wt)	STRUCTURE	CONSISTENCE	COLOUR	ROOTS	MOTTLES
Apgj	0-28	abrupt smooth	silt loam	NA	moderate medium subangular blocky	very friable	7.5YR 3/4 matrix moist	plentiful very fine inped	few fine faint
Bmgj	28-60	abrupt smooth	silty clay loam	NA	strong coarse angular blocky	firm	7.5YR 4/4 matrix moist	plentiful micro inped	few fine faint
BCgj	40-55	diffuse broken	silty clay loam	3.8% gravel	strong medium subangular blocky	friable	5YR 4/4 matrix moist	very few very fine exped	many coarse prominent
Cgl	74-110	abrupt smooth	silty clay loam	NA	structure-less massive	friable	7.5YR4.5/4 matrix moist	very few micro inped	many medium prominent
Cg2	100-240		silty clay loam	NA	structure-less massive	friable	5Y 5/2 matrix moist	NA	many coarse prominent

MAP UNIT: 24

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
Apgj	0-28		6.2	0.47	0.43	0.08	0.10	0.04	5.98	4.68	0.60	-
Bmgj	28-60		4.5	0.29	0.27	0.08	0.11	0.05	4.23	4.86	0.41	0.67
BCgj	60-74		3.9	0.29	0.50	0.09	0.19	0.07	1.81	3.82	0.54	2.17
Cg1	74-110		3.8	0.25	0.35	0.10	0.15	0.08	0.74	1.43	0.45	3.17
Cg2	110-240		3.1	0.50	0.50	0.13	0.57	0.10	1.83	2.75	0.54	7.48

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	
Apgj	0-28	-	9.7	67.0	23.0	-	-	-	-	-	-	-	-	-
Bmgj	28-60	-	4.6	61.8	33.6	-	-	-	-	-	-	-	-	-
BCgj	60-74	3.8	7.9	58.7	33.3	-	-	-	-	-	-	-	-	-
Cg1	74-110	-	13.3	58.5	28.2	-	-	-	-	-	-	4.5	2.7	-
Cg2	110-240	-	12.6	58.7	28.6	-	-	-	-	-	-	3.8	3.1	-

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