1 Ecosites of Ontario

Operational Draft

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Ecological Land Classification Working Group

(In alphabetical order)

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Special thanks to Rob Arnup (Rob Arnup Consulting), John Parton (NESI, MNR), Bob Watt (NESI, MNR), Stan Vasiliauskas (NESI, MNR) and Hugh Devon (IMAS, MNR) who provided additional expert advice and knowledge for the development of the provincial ecosite classification.

All components of this document relating to substrate terminology or classification may be found in the *Substrates of Ontario* chapter of this manual. The substrate chapter was created by the ELC Working Group and based upon modifications of the OCSRE Field Manual for Describing Soils in Ontario (1993). However, several other sources were used during the development of this document and in particular for the identification of regional trends for describing ecology, ecoregional variability and edaphic variability for both the boreal and Great Lakes – St. Lawrence (GLSL) factsheets. A complete list of all sources of information will be included in the final version. Please refer to the list below for the various field guides that were used.

Chambers, B.A., B.J. Naylor, J. Nieppola, B.G. Merchant and P. Uhlig. 1997. Field Guide to Forest Ecosystems of Central Ontario. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-01. 200 pp.

Harris, A.G., S.C., McMurray, P.W.C. Uhlig, J.K. Jeglum, R.F. Foster and G.D. Racey. 1996. Field Guide to the Wetland Ecosystem Classification for northwestern Ontario. Ont. Min. Natur. Resour., Northwest Sci & Technol. Field Guide FG-01. 74 pp. + Append.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02. 225 pp.

Ontario Centre for Soil Resource Evaluation. 1993. Field manual for Describing Soils in Ontario. 4th Edition. Ontario Centre for Soil Resource Evaluation. Publication No. 93-1, 62 pp.

Racey, G.D., A.G. Harris, J. K. Jeglum, R.F. Foster and G.M. Wickware. 1996. Terrestrial and Wetland Ecosites of northwestern Ontario. Ont. Min. Natur. Resour., Northwest Sci & Technol. Field Guide FG-02. 94 pp. + Append.

Sims, R.A., W.D. Towill, K.A. Baldwin, P. Uhlig and G.M. Wickware. 1997. Field Guide to the Forested Ecosystem Classification for northwestern Ontario. Ont. Min. Natur. Resour., Northwest Sci & Technol. Field Guide FG-03. 176 pp.

Taylor, K.C., R.W. Arnup, B.G. Merchant, W.J. Parton and J. Nieppola. 2000. A Field Guide to Forest Ecosystems of northeastern Ontario. 2nd Edition. Ont. Min. Natur. Resour., Northeast Sci & Technol. NEST Field Guide FG-001.

<u>Boreal Factsheets</u>
Authors: Erin Banton, Michelle Mico and Gerry Racey.

Thanks to Stan Vasiliauskas (NESI, MNR) and Evan McCaul (NWSI, MNR) for their efforts in the analysis, update and review of plot data for the boreal factsheets. Expert advice and knowledge was provided by Rob Arnup (Rob Arnup Consulting), John Parton (NESI, MNR), Bob Watt (NESI, MNR), Stan Vasiliauskas (NESI, MNR) and Evan McCaul (NWSI, MNR).

Datasets that were made available for the development of the boreal ecosite factsheets include: Growth and Yield data provided by the Ontario Terrestrial Assessment Program

(OnTAP); Ecological Land Classification (ELC) data; Forest Company Permanent Growth Plots; Natural Succession Plots provided by Stan Vasiliauskas; Northern Boreal Initiative (NBI) data; Cohort data provided by the Northeast Science and Information and; re-measurement data from historic American Can of Canada (AmCan) and Beckwith & Roebbelen (BR) plots. A combined total of 5000 plots were used to help in the population of the boreal factsheets.

GLSL Factsheets

Authors: Monique Wester, Peter Uhlig and Harold Lee.

Thanks to all who provided datasets which could be utilized in the creation of the GLSL ecosite factsheets. Datasets included: Growth and Yield data provided by the Ontario Terrestrial Assessment Program (OnTAP); Ecological Land Classification (ELC) data; National Forest Inventory data; Forest Resource Inventory data from Bancroft forest; NEBIE for Petawawa provided by Wayne Bell; Oak Trial data provided by Bill Parker and Ecological Effects of Harvesting and Site Preparation in White Pine data provided by Andree Morneault.

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Introduction

Ontario has a diverse group of resource management and planning agencies, consisting of both government and non-government organizations. A common need amongst these resource managers and planners is having standardized and consistent ways to identify, describe, name and map ecosystems, at different scales (i.e., inventory). Local planning authorities (i.e., municipalities, Conservation Authorities) and MNR (i.e., Forest Resource Inventory, Parks) practitioners have been faced with that challenge, the broader scale interpretation and mapping of ecological units.

The goal of the provincial ELC program is to meet this need, by developing a standardized and consistent approach to interpreting and mapping *all* components of our landscape (i.e., “no holes” in map). The provincial ELC program has been developing a hierarchy of ecological classifications (refer to Figure 1) to meet varying needs at different scales. The ecosite level in the ELC hierarchy has been developed specifically to meet the needs of mesoscale (i.e., 1:8,000 to 1:50,000) operational inventories for forestry and planning applications.

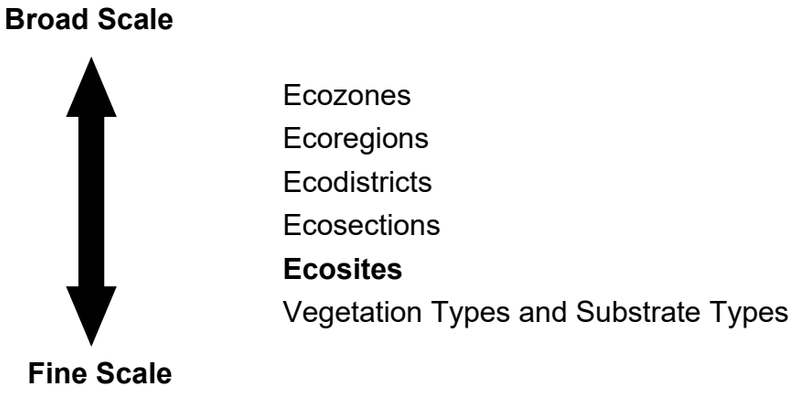


Figure 1. ELC hierarchy – where the ecosite is the lowest level of the ELC hierarchy where polygons are mapped using the classification.

In collaboration with partner agencies and MNR, the ELC program has refined and built upon the existing ecosite concepts found in earlier products “Terrestrial and Wetland Ecosites of Northwestern Ontario” (Racey *et al.* 1996); “Field Guide to Forest Ecosystems of Northeastern Ontario” (Taylor *et al.* 2000); “Field Guide to the Forest Ecosystem Classification for Northwestern Ontario” (Sims *et al.* 1997); “Field Guide to Forest Ecosystems of Central Ontario” (Chambers *et al.* 1997); “Ecological Land Classification for Southern Ontario” (Lee *et al.* 1998) to create a unified and consistent structure, development, and format that meets our expanding needs across the province. Furthermore, support products like the ecosite photo interpretation manual, ecosite keys, ecosite fact sheets, glossaries, and training programs have been developed to make the ecosites accessible and operational.

The Ecosites of Ontario is a reference document developed to accompany the new provincial ecosite classification, its keys, factsheets, terms, and conventions. The *Ecosites of Ontario* is consistent with and utilizes the class terms and conventions of the lower levels of the ELC Hierarchy; namely ecoelement, vegetation type, and substrate type. The suite of new ELC products has been designed to meet the immediate needs of current practitioners; accessible products that puts detailed ecological information and knowledge at the fingertips of resource managers and planners.

1.1 Ecosite Development Drivers

Ecosites have been developed to support MNR corporate goals and partner applications.

1. **Inventory**

   Ecosites are spatial units to facilitate major corporate and partner ecological inventory, monitoring and assessment programs in support of operational planning, natural heritage planning and various program deliveries. Our goal is to have ecosites become the accepted standard for broader scale interpretation, modelling, and mapping (via interpretation or automated) across the province. Ecosites will provide the consistent framework for operational planning of forests, wetlands, wildlife habitat, natural heritage, and planning applications.

2. **Ecological Knowledge**

   Ecosites have been developed to increase our knowledge of ecological patterns and the spatial distribution of ecosystems. Ecosites are characterized using a prevailing, or dominant condition, along with a description of other ecological conditions or inclusions that may be found within an ecosite, however are too small to define independently. By identifying and understanding the inherent variability of spatial units we expand our ecological knowledge and ability to manage ecosystems. Similarly, it facilitates our ability to identify significant elements within landscape patterns which typically get lost at broader scales (e.g., significant habitat, wetlands, and species at risk).

3. **Standardization and Consistency**

   In order for MNR and partners (e.g., Conservation Authorities, Forestry Companies) to accomplish ecosystem management and sustainability, there is a need for standardization and consistency across the province. Ecosites have been developed to provide the common language, ecological understanding, consistent mapping techniques and imagery interpretation that are required to accomplish such broader goals.

   Ecosites are required to create corporate products which satisfy the role of General Standard Site Types as described in the Terms and Conditions for the Class Environmental Assessment for Timber Management. These products will be applied through the Crown Forest Sustainability Act (CFSA) to the silvicultural guidelines, silviculture effectiveness monitoring and other forest and wildlife management applications. Provincial ecosites will become the fabric for stratification and reporting frameworks within growth and yield, forest succession, rare species inventory and restoration, and management response assessments.

Ecosite Definition and Background

2.1 Ecosite Definition

Ecosites are landscape areas consisting of typical, recurring associations of vegetation types (v-type) and substrate types (s-type) combinations (v-type x s-type = ecoelement).

Ecosite is a scale dependant level in the ELC hierarchy, appropriate for mapping between the scales of 1:8,000 and 1:20,000 and may be feasible to apply at broader scales up to 1:50,000. Ecosites have been developed as an operational classification to identify the patterns we observe and delineate on air-photos and imagery. Although ecosites are typically resolved at a scale ranging from 10's to 100's of hectares,

resolution is dependent on the project area and purpose of the inventory. The challenge is that at these scales polygons typically contain more than one ecological condition or a series of ecoelements (v-types X s-types) that create recurring patterns on the landscape. Ecosites are therefore spatial units, developed to capture the inherent variability (i.e., heterogeneity) that we typically observe within polygons at these scales. Once mapped, an ecosite is typically stable for 20-40 years on a temporal scale.

Ecosites are, first and foremost, based on the stable features of the physical landscape (substrate depth, texture, landform, and nutrient regimes). Ecosite polygons are identified and delineated using those features of the environment which most affects the distribution and character of the vegetation, including substrate formation or depositional types (e.g., rock, organic, frozen, active, flooded), along with the substrate depth, texture, slope, and moisture. These physical features make up the “ecological domains”, or the ecological drivers, which direct the establishment and growth of vegetation, or community assembly. The delineation of the polygon is finally determined by the varying character of the vegetation, which is responding to not only the physical environment, but disturbance and succession as well. Since different vegetation communities can exist on similar environmental features, vegetation characteristics like treed, shrub, herbaceous, coniferous, deciduous (to name a few) are used as the basis to further distinguish and delineate polygons.

2.2 Ecosite Development

Ecosites are determined through synthesis of expert knowledge, and multivariate and GIS-assisted analyses. They are based on: (1) expert knowledge of plant community composition and structure and commonly occurring vegetation / substrate relationships, (2) ground-based validation of coincident vegetation and substrate types using transects, slope sequences or landform / substrate relationships, (3) high resolution remotely sensed data, and (4) predictive ecosystem mapping and modelling approaches that use thematic data (i.e., vegetation and substrates) in conjunction with ground-validation studies.

The ecosite conventions were designed to maximize flexibility while maintaining the structure and integrity of definitive attributes such as substrate origin, mode of deposition, parent material origin, relative depth, texture and moisture, organic matter characteristics, dominant overstory species and, understory species physiognomy. It is also necessary to incorporate specific information on the common / typical landscape position, recurring spatial associations of component types and can be described in terms of their associated ecoelements (v + s-type combinations) as well as typical / recurring inclusions and complexes.

A province wide approach to ecosite classification posses some unique challenges. For example, how do you accurately represent an ecosite in the northwest of the province when it is also found in the south? To address this, the main ecosite characteristics are similar and reflect the common ecological drivers (substrate type, moisture etc.), yet the ecosites differ based on climatic and bio-physical context, along with the plant species associations typical of such physical conditions. So, you will find that a northwest ecosite and southern ecosite may key out to a common family of ecosites (say jack pine rock barren) yet will be distinguished (using coding) based on their regional affinity and subtle differences in species and other characteristics. In order to maintain ecosite differences, four main geographic ranges have been established and include Sub-arctic, Boreal, Great Lakes-St. Lawrence and Southern.

Occurrences of ecosites exist within a climatic and bio-physical context established at an ecoregional scale, refer to Figure 2. Ecosites will be confined to limited portions of the province as determined by ecoregional characteristics in order to maintain

understanding ecological processes such as productivity and succession. Four main geographic ranges are recognized and include Sub-arctic, Boreal, Great Lakes-St. Lawrence and Southern. Structurally analogous units will be correlated but interpretations and functional attributes will be unique to the geographic range. Each ecosite is comprised of a membership set of recurring and spatially associated Eco elements.

By organizing it in this way, the ELC program has made it possible for all ecosystems in the province to be collated and listed. The added benefit of the current concepts makes it possible to see common ecological patterns, across the province (i.e., being able "roll up" to see all jack pine rock barrens in the same part of the classification) while also being able to further distinguish the uniqueness of regional ecosites.

2.3 Desirable Attributes Achieved Through Design

This ecosite classification is one of the tools in the suite of ELC products and where possible the tools were developed utilizing the same conventions such as the hierarchy of influence and vegetation cover classes to ensure conceptual consistency. Several site factors (e.g., moisture and substrate depth) that related most closely to potential, and productivity were front loaded during the development process. This was to ensure that the static features of the landscape were the drivers of the classification followed by the dynamic vegetative features. Without the anthropogenic impacts of humans, an ecosite for a polygon will remain on a single ecosite key thereby permitting vegetation to change. For example, a young black spruce and jack pine plantation on fresh coarse loamy substrate with time will likely experience ingress of hardwood species and balsam fir, which towards maturity may move towards a pine - black spruce ecosite however the substrate remains consistent.

Users with an imperfect knowledge, incomplete data or technology-limited inventory methods are able to utilize this classification based on the following: inherent ability to roll-up the ecosite nomenclature; ability to generalize vegetation to larger classes that capture the essential ecology but provide high complementary value when associated with ecoelement, or Forest Resource Inventory attributes (often be used in tandem) and; the parameters of sites not easily determined remotely or from inventory can become defaults (depth and chemistry).

Figure 2. **Ecoregions and ecodistricts within Ontario. As referenced in the construction of the geographic ranges for application within ecosites.**

Using the Keys

The ecosite keys are designed to allow for broad classification of the landscape into polygons that represent typical, recurring associations of v-types and s-types. Features are described with detail compatible with the classification of ecosites from ground survey information. The appropriate season for applying the ecosite classification is from late May to late September for forested conditions, bogs and fens and late June to early September for marshes (note that aquatic systems are only sampled to ≤ 2 m deep). The key may be difficult to apply at other times of the year because the cover of deciduous trees and understory plants will vary significantly, and substrate sampling may not be practical.

Vegetation can grow on many different sites but the appropriate availability of nutrients and water on a site that determines the frequency and abundance of that vegetation. Identification of the substrate and any associated restrictions to productivity will lead the user through the high-level decisions and to a family of ecosites. Then, through the identification of vegetation and specific regional location, a specific ecosite is determined. The hierarchy of influence allows for higher level decisions to be made based on the understanding that some characteristics have more of an impact on plant frequency and abundance than others.

3.1 Hierarchy of Influence

There are many interacting factors which combine to drive and direct the assembly of ecosystems. Ecological factors and gradients are not all equal in their influence on plant community assembly, meaning that some factors are more important than others. The hierarchy of influence (Figure 3) recognizes that some ecological factors take precedence over others in understanding the distribution, organization and expression of ecosystems. This approach provides a basis for ecologically consistent nomenclature and numbering conventions.

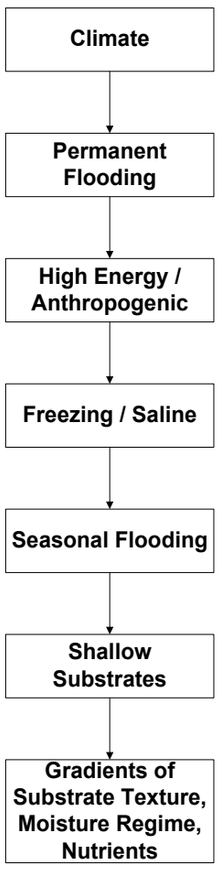


Figure 3. Hierarchy of influence.

3.2 General process to classify an Ecosite

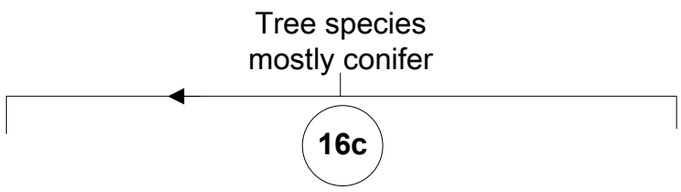
Section 3.2 was excerpted and modified from Racey et al. 1996. The remainder of this section will identify the steps of ecosite classification and provide the necessary information required classify an ecosite.

1. Determine the approximate boundaries of the polygon to be classified from a general reconnaissance of the site or aerial photos. Relative homogeneity of vegetation cover, landform, topography, aspect, and hydrological position should be considered. Generally, a mapped ecosite will consist of several hectares however the size of polygon may vary from hundreds of hectares in the far north to as little as a ½ hectare in the far south. The applicable scale is largely driven by vegetative diversity.

2. Survey the polygon to determine the general vegetation cover and relief. Use substrate observations from pits or augers to determine effective texture of the substrate and moisture regime at several locations representing the prevailing conditions. If more than one texture, moisture regime or vegetation condition is encountered, estimate the most common, or modal, condition to describe the polygon. Refer to Chapter 2 - *Substrates of Ontario* for all charts, tables, and keys.

3. Work through the ecosite keys, always beginning at Key 1, using the information gathered in the reconnaissance. If clarification of a decision is required, or when a difficult decision is encountered, refer to the **Section 8 Detailed Description of the Field Key Decision Nodes**. Resolve each division point by working through the decision rule and, depending on the result, proceed either to the left or to the right. Terminology used in decision rules, decision nodes and factsheets are explained in **Section 4 Ecosite Terminology and Conventions**.

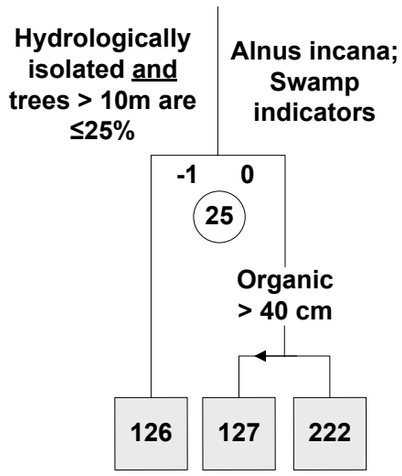
   Decision rules consist of yes/no questions (where you follow the direction of the arrow for a yes) or indicator scores (*i.e.,* -1/0). An example of a yes, no question is:



   In this example, if more than 50% of the tree species in the polygon are conifer you would say “yes” and follow the arrow to the left. If not, you would proceed to the right.

   Where indicator scores are used, score “-1” for the occurrence of each negative indicator species or condition [*i.e.,* listed on the left (negative) side of the division point] and “+1” for the occurrence of each positive condition [i.e., listed on the right (positive) side]. Total the scores on each side and calculate their sum by adding up the negative and positive subtotals.

   - If the sum is greater than or equal to the number on the right-hand side of the decision rule, proceed right.
   - If the sum is less than or equal to the number on the left-hand side of the decision rule, proceed left.



In this example score “-1” if you meet the condition of: *Hydrologically isolated and trees > 10 m are ≤ 25%*. Score “+1” for each of: *Alnus incana, swamp indicators*. If the sum of indicator scores is less than or equal to “-1”, proceed left; if greater than or equal to 0, proceed to right. If criteria on either side of the decision are not met then follow the 0 to the right, also called the “default” rule. Note: some ecosites key out using many “default” decisions – so “default” decisions are real and valid responses.

4. Repeat step 3 until an ecosite number is determined.

5. Assign a geographic range prior to the number (refer Figure 4 for the map). Then use the vegetation cover key (refer to Figure 5 and Table 3) to determine which vegetative modifier will be applied after the number. Use this key carefully because as soon as there is > 10% cover of a higher life form (e.g., tree is higher than shrub) then you go with that vegetative class as a measure of the site’s potential for growth. Once these components have been determined, then the ecosite code has been created that is required to get to a factsheet.

6. Turn to the appropriate factsheet for a description of the ecosite and compare the description to the site. If it fits, then accept that ecosite code. If the ecosite factsheet does not fit the observed conditions well, compare the ecoregional variability and the edaphic variability to the site and see if the differing conditions are explained. If it is still a poor fit, look at the related ecosites for comparison. Undergo a similar process by examining the components of these related factsheets and compare them to the conditions of the site. The ecosite factsheet most closely resembling the field conditions is assumed to be correct, provided the substrate conditions are met. Remember that ecosite polygons, as any mappable land unit, may be quite variable. Inclusions within the ecosite polygon may differ from the factsheet description without requiring the ecosite to be reclassified, or without compromising the integrity of the factsheet description. Remember that factsheets describe the average or modal conditions.

7. The final step is to determine the complete code applied based on the individual program requirements for detail. As previously mentioned, there are multiple levels of ecosite coding that will vary from program to program. The absolute minimum required ecosite code includes the geographic range, unique ecosite number and vegetation cover. These 5 or 6 alpha-numeric codes is the minimum amount of ecosite code that is required for ecosite data collection. This code should not be shortened but can be built upon using the optional as listed in below.

3.3 Ecosite Coding Structure

Minimum Required Ecosite Code

Geographic Range	Ecosite Number	Vegetation Cover Modifier
1 digit	3 digits	1 or 2 digits

Example: G053Tt (Dry to Fresh, Coarse: Conifer)

Geographic range: In order to capture the inherent site variability associated with a single provincial classification system, a series of maps were developed depicting the geographic ranges within Ontario. A geographic range is primarily delineated by ecoregional boundaries permitting the use of a single ecosite key regardless of your location in Ontario. Based on these boundaries, the province has been divided into 4 geographic ranges as mapped in Figure 4. For the first letter of the ecosite code you must select one of:

A-Sub-arctic

B-Boreal

G-Great Lakes – St. Lawrence (GLSL) or

S-Southern

Table 1 outlines the relationship between the geographic ranges and the ecoregions and ecodistricts in Ontario. An overlap refers to built in flexibility which allows ecology and not administrative boundaries to drive the classification of an ecosite.

Table 1. Geographic range associations with the ecoregions and ecodistricts of Ontario.

Geographic Range	Ecoregion / Ecodistrict (Refer to Figure 2)
Sub-arctic	0E, 1E
Sub-arctic Overlap on Boreal	2E
Boreal	2E, 2W, 3E, 3W, 3S, 4W, 4S, 5S
Boreal Overlap on GLSL	4E, 5E-13
GLSL	4E, 5E
GLSL Overlap on Boreal	3E-4, 3E-5, 3E-6, 4W-1, 4W-2, 4S-3, 4S-4, 4S-5, 4S-6, 5S-2
GLSL Overlap on Southern	6E-9, 6E-10, 6E-11, 6E-12, 6E-16, 6E-17
Southern	6E, 7E

Unique Ecosite number: Allows for the identification of similar ecosites across the province and is determined from the ecosite keys in **Section 6 Ecosite Keys**.

Vegetation Cover: Refer to Table 2 below in addition to the complete listing of all vegetative cover codes and vegetative cover classes are listed in Table 3. Figure 5 provides the vegetative cover key.

Table 2. Codes and description of vegetation cover.

Vegetation Cover Code	Vegetation Cover	Text Description
Tt	Tall Treed	tree species ≥ 10m tall
Tl	Low Treed	tree species <10m tall
S	Shrub	tall or low shrub species
N	Not Woody	any herbaceous or nonvascular vegetation
X	Not Vegetated	<2% vascular cover, <10% bryophyte or foliose lichen cover, and unlimited crustose

Vegetation within an ecosite may be described by two different components of the ecosite code. The first is the vegetation cover which is a broad classification based on the capability of a site to produce identified levels of vegetation cover (tall treed, low treed, shrub, not woody or not vegetated). The vegetation cover class describes and identifies the absolute vegetation cover of trees, shrubs, not woody, non-vascular and not vegetated site conditions which allows the user to better envision the structure and productivity of the site. By using the key in Figure 5, one can assign the appropriate vegetation cover and vegetation cover class to an ecosite code.

Table 3. **Codes and definitions of vegetation cover classes. The bold text is the required level of resolution for the purpose of ecosites, while the regular text is optional for ecosites but required resolution for vegetation types in ELC.**

Broad Vegetation Codes		**Vegetation Cover Codes (required code)**	Vegetation Cover Class Codes (optional code)	Text Description
V (Vegetated)	T (Treed)	**Tt (Tall Treed)**	cTt – closed tall treed	Tall (> 10 m) trees with > 60% absolute cover.
			oTt – open tall treed	Tall (> 10 m) trees with > 25% and ≤ 60% absolute cover.
			sTt – sparse tall treed	Tall (> 10 m) trees with > 10% and ≤ 25% absolute cover.
		Tl (Low Treed)	Tl – low treed	Low (≤10 m) trees with > 25% absolute cover.
			sTl – sparse low treed	Low (≤10 m) trees with > 10% and ≤ 25% absolute cover.
	S (Shrub)	**S (Shrub)**	St – tall shrub	Tall (> 2 m) shrubs with > 25% absolute cover.
			sSt – sparse tall shrub	Tall (> 2 m) shrubs with > 10% and ≤ 25% absolute cover.
			Sl – low shrub	Low (≤ 2 m) shrubs with > 25% absolute cover.
			sSl – sparse low shrub	Low (≤ 2 m) shrubs with > 10% and ≤ 25% absolute cover.
	N (Not Woody)	**N (Not Woody)**	H - herbaceous	Herbaceous (forbs, graminoids and aquatic) vegetation with > 25% absolute cover and the ratio of non-vascular to vascular cover is ≤ 2:1.
			sH – sparse herbaceous	Herbaceous (forbs, graminoids and aquatic) vegetation with > 10% and ≤ 25% absolute cover.
			Nv – non-vascular	Non-vascular (bryophyte and lichen) vegetation with >10% absolute cover.
X (Not Vegetated)	X (Not Vegetated)	**X (Not Vegetated)**	X – not vegetated	Consists of ≤ 10% bryophyte + foliose lichen absolute cover and ≤ 2% vascular absolute cover.

Figure 4. Geographic ranges of Ontario.

The following components of the code are all optional modifiers which would be applied to the end of the previous ecosite code: depth, moisture, chemistry, vegetation cover class (Figure 5) and ecology. The extent of application of these modifiers is flexible and optional (all or only some may be selected and used by a program). Refer to the Chapter 5: *Glossary* for a detailed description of these modifiers. The use of these modifiers is determined by the scope and detail of the project. We suggest that these detailed modifiers are used when any field work is done, since the time and money spent to get to the sample site warrants the detailed description of ecosites.

Optional Ecosite Code

Depth	**Moisture**	**Chemistry**	**Vegetation Cover Class**
1or 2 digits	1 or 2 digits	1 digit	1, 2 or 3 digits

Example: G053Tt (Dry to Fresh, Coarse: Conifer) that is moderately deep, fresh, acidic, open tall treed and no limitations to growth would have a coding string of: **G053Tt MfaoTt**

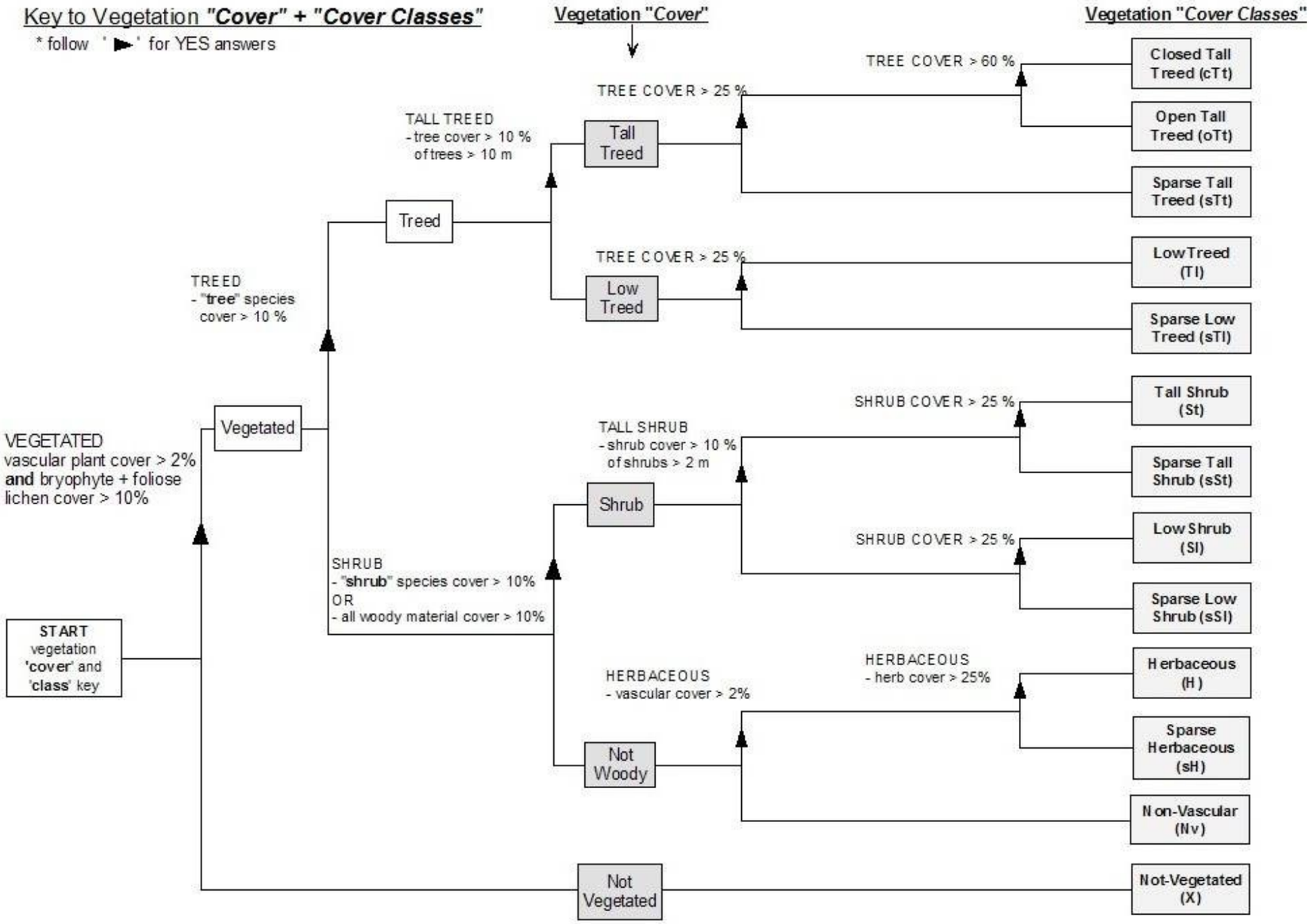


Figure 5 Key to vegetation cover (mandatory for ecosites) and vegetation cover classes (optional for ecosites).

Depth of Substrate: Depth of substrate refers to the depth of organic or mineral materials over top of bedrock or coarse fragments, according to the thresholds listed in Table 4. Depth terminology does not apply to substrates which are permanently or seasonally flooded, anthropogenic, or active (high energy).

Table 4. Complete listing of substrate depth and definitions for use with the ecosite keys and coding structure.

Substrate Depth Code	Term	Text Description
R**	Rock	Depth of unconsolidated mineral material ≤ 5 cm or organic material ≤ 10 cm over coarse fragments or bedrock or > 80% of area is exposed bedrock or coarse fragments
VS**	Very Shallow	Depth of unconsolidated mineral material > 5 cm to ≤ 15 cm over rock or bedrock, or depth of organic material > 10 cm but ≤ 40 cm overlying < 5 cm of mineral material.
S	Shallow	Depth of unconsolidated mineral material > 15 cm to ≤ 30 cm over rock or bedrock.
M	Moderate	Depth of unconsolidated mineral material > 30 cm to ≤ 60 cm over rock or bedrock.
MD	Moderately Deep	Depth of unconsolidated mineral material > 60 cm to ≤ 120 cm over rock or bedrock.
D	Deep	Depth of unconsolidated mineral material > 120 cm over rock or bedrock, or > 40 cm of organic material or any floating mat.

**R and VS do not occur within the ecosite coding structure because they are inherent in the ecosite name. However, it is important to recognize and understand the depth criteria associated with these two substrate depths.

Moisture Regime (MR): Refers to the available moisture supply for plant growth estimated in relative or absolute terms. Moisture regimes are determined by the field examination of physical properties and profile characteristics of the substrate and then classified by using one of three moisture regime charts as presented in Chapter 3 - *Substrates of Ontario.*

Moisture regimes were designed to calculate the moisture content of mineral substrates and deep organics based on texture, depths to mottles and gley and decomposition. As a result, the use of this system is not appropriate for describing the moisture content of many substrates including the vertical mineral, folic organic, rock, and limnetic types. However, it is recognized that a measure of moisture in these substrates is required and therefore three additional terms (xeric, humid, and saturated) have been introduced (refer to Table 5).

Table 5. Complete listing of moisture regime codes and definitions for use with the ecosite keys.

Moisture Regime Code	Term	Text Description
d	dry	Moisture regime is Θ or 0
f	fresh	Moisture regime is 1, 2 or 3
m	moist	Moisture regime is 4 or 5
v	very moist	Moisture regime is 6
w	wet	Moisture regime is 7, 8 or 9
x	xeric	This condition typically occurs on upper slope positions, steep slopes and exposed rock outcrops. Vegetation is typically restricted to lichen and bryophytes. Vascular or treed vegetation may occasionally be present in the sparse condition and is generally restricted to cracks and crevices.
h	humid	This condition typically occurs on lower slopes and rock outcrops sheltered from climatic extremes by aspect or surrounding vegetation. Lichen and bryophyte cover typically abundant. Vascular or treed vegetation is common.
s	saturated	This condition typically occurs on lower slopes or bedrock systems where rock surface shape causes accumulation or persistence of water. Seepage from bedrock cracks or crevices may be visible. Lichen and bryophytes are abundant and reflective of the wetter environment. Organic accumulations typically derived from sphagnum or graminoid peats.

Texture Family: An association of mineral substrate textures and grouped together based on particle size (as indicated in Table 6). Texture family categories include sandy, coarse loamy, silty, fine loamy, clayey, and organic.

Table 6. ELC Material Groupings. The following table is an overview of material types described above and their related properties, and various groupings.

Material Type				Degree of Decomposition Class	Organic Modifiers
organic	folic	F	**folic** *upland organic material derived from upland vegetation*	L, F, H, Hi	*He hemic* *Hu humic* *Li lignic* *Hi histic* *Note: coarse fragment description are not applicable*
	peat	O	**peat** *lowland organic material derived from hydrophytic vegetation*	vP1, vP2, vP3, vP4, vP5, vP6, vP7, vP8, vP9, vP10, W	*"W" denotes a hydric layer and its use is restricted to peaty organic substrates.* *Note: coarse fragment description not applicable*
				Size Class	**Rock Modifiers**
rock	**bedrock**	**R**	consolidated rock	BR	
	coarse fragments	**CF**	> 90% rock fragments > 2 mm	Gr, Co, St, Bo	
	Texture Family			**Texture Class**	**Mineral Modifiers**
mineral	**sandy**	**S**	**coarse sandy**	vcS, LvcS, cS, LcS, mS, LmS	**coarse fragment modifiers**: **>15% to 35% by volume** *Prefix texture class with the appropriate* coarse fragment adjective(s). gr = gravelly 2 mm - 8 cm co = cobbly 8 cm - 25 cm st = stony 25 cm - 60 cm bo = bouldery > 60 cm **> 35 to ≤ 90% by volume** *Prefix the coarse fragment modifier(s) with* "v" meaning "very".
			fine sandy	fS, LfS	
	coarse loamy	**cL**	**coarse loamy** *note: includes all very fine sands, and all silty sands*	SivcS, SicS, SimS, SifS, SivfS, vcSL, cSL, mSL, fSL, vfSL, L, LvfS, vfS	
	silty	**Si**	**silty**	Si, SiL	
	fine loamy	**fL**	**fine loamy**	SCL, CL, SiCL	
	clayey	**C**	**clayey** *all mineral materials with > 35% clay particles*	SiC, C, SC	

Chemistry: Substrates are chemically influenced by mineral composition, organic material and environmental factors (refer to Table 7).

Table 7. There are three chemistry modifiers that are used to describe an ecosite.

Chemistry Code	Term	Text Description
k	Calcareous	A mineral material or rock substrate that contains carbonate minerals which when tested with acid (10% HCl) will produce a fizzing or bubbling reaction. For ELC purposes, interest is only in determining whether the substrate displays a presence or absence of carbonates.
n	Non-calcareous	A mineral material or rock substrate where the presence of carbonates is not detected.
z	Saline	A mineral material substrate that is saturated by salt water or secondary enrichment of salt by ground water or dry deposition.

Ecosite Terminology and Conventions

◄ ►: Indicate the direction of agreement (answering yes) to the stated decision criteria in the ecosite keys. Follow the direction of the arrow to the next decision criteria or ecosite number.

%: Refers to the percent "cover" of a specified vegetation type out of 100. Percent cover is presented as either "relative cover" or "absolute cover". Chapter 6 – *Glossary* contains ELC definitions for all aspects of cover.

+/: This pair of symbols are used throughout the ecosite keys and are to be interpreted as "and/or". This means that one or the other or all conditions could apply at that decision node. For example, Cw +/ He indicates the presence of eastern white cedar and/or hemlock.

Active: Sites that are not vegetated due to natural energy (wind, water, or gravity) or human influences. Vascular plant cover is ≤ 2%, bryophyte and foliose lichen cover ≤10% but crustose lichen cover is unlimited.

Dry Sandy: Refers to ecosites that consist of sandy substrate and a moisture regime (MR) ≤ 1. While MR = 1 is fresh and not dry it is used as an upper limit indicator of ecosites that may be prone to droughty conditions. These ecosites will consist of vegetation that is capable of surviving on sites that frequently experience droughts.

Indicator Species: Species, usually plants, used to indicate an ecological condition such as substrate moisture or nutrient regime that may not be directly measured. For ELC purposed the suite of plant species helps to distinguish fen from swamp, fen from bog, swamp from bog, between bogs and between fens. Indicator species should only be invoked if a decision cannot be made based on previously stated criteria and if there are at least 2 indicator species present continuously throughout the ecosite (not a single occurrence). Refer to Figure 6 for a complete listing of all common and scientific names for swamp and fen indicators representative of Northwestern Ontario. Indicator species for the rest of the province are under development.

Fen indicators: Plant species that distinguish fens from bogs.

Rich fen indicators: Plant species that distinguish moderately and extremely rich fens from poor fens.

Extremely rich fen indicators: Plant species that distinguish extremely rich fens from moderately rich and poor fens.

Swamp indicators: Plant species that distinguish swamps from bogs.

Intermediate swamp indicators: Plant species that distinguish intermediate and rich swamps from poor swamps.

Rich swamp indicators: Plant species that distinguish rich swamps from intermediate and poor swamp

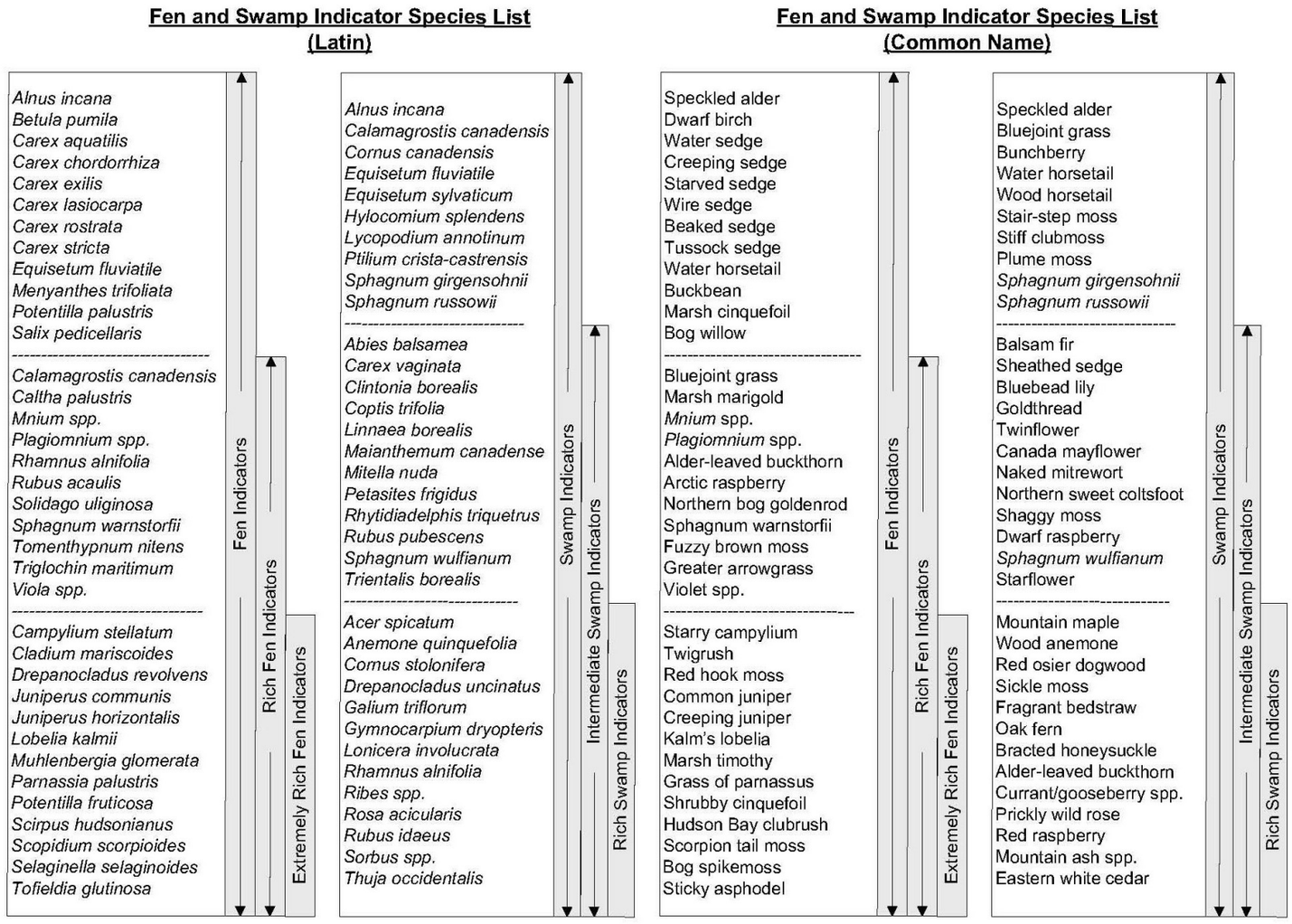


Figure 6. Indicator species are representative of Northwestern Ontario (Racey *et al.* 1996). Equivalent lists have not yet been developed for the other regions of Ontario.

Effective Canopy: A process used to determine which tree species should be used in decision node 16 (Polygon mostly conifer) in the ecosite keys. When single or complex stand structures are present, all tree species (tall and low) in the canopy are to be used to determine if the polygon is mostly conifer. Treed fens, treed bogs, and other sites where environmental factors (poor nutrients, wind/wave energy, excessive/limited moisture etc) restrict the growth potential of trees are examples where all tree species would be used.

If the stand contains two or more tiers, only the tall trees (> 10m) will be used. For example, a white pine and trembling aspen overstory (>10 m) with a balsam fir understory (Figure 7); if the overstory were removed, the site would be significantly altered. But if the balsam fir understory was absent, the wildlife habitat potential may change but not the overall site characteristics such as shade and ground litter composition. While in most cases using tall (> 10m) trees would suffice, it would not apply to successional or newly regenerating stands where the site is capable of producing tall trees, but tall trees are currently absent or poorly represented (< 10% absolute cover). Under these circumstances, use the low tree species as the effective canopy as indicated in Figure 8.

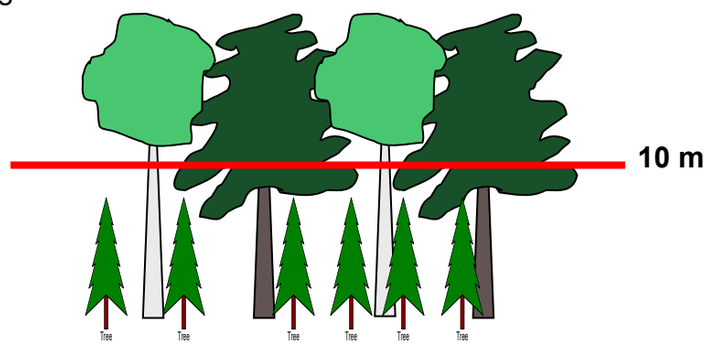


Figure 6. Presence of two tiers – where the white pine and trembling aspen overstory would constitute the effective canopy and the balsam fir understory would be ignored in decision node 16 of ecosite keys.

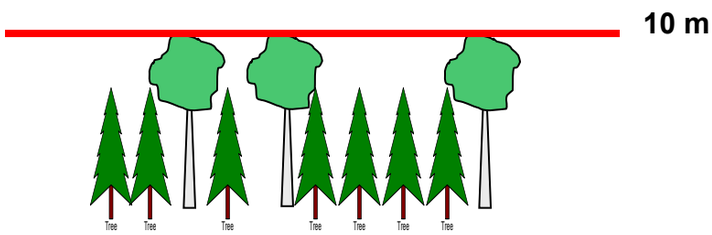


Figure 7. When stand structure is single tier or complex, the trembling aspen and balsam fir now together becomes the effective canopy in this example of a 25-year-old regenerating stand.

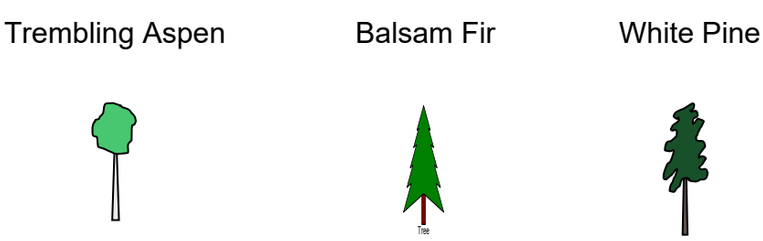


Figure 8. Symbols used in figures 7 and 8.

Tree Species Code: Table 8 contains the 2 letter species abbreviations commonly used to identify tree species used within the ecosite keys. For a complete list of ELC tree species and associated abbreviations, refer to the Chapter 4 – *Life Forms.*

Table 8. Species abbreviations required to navigate through the ecosite keys.

Abbrev.	Species Name	Abbrev.	Species Name	Abbrev.	Species Name
Ab	Black Ash	Ew	American Elm	Pj	Jack Pine
Ag	Green Ash	He	Eastern Hemlock	Po	Poplar/aspen species
Ax	Ash species	La	Larch/Tamarack	Pr	Red Pine
Bf	Balsam Fir	Mh	Sugar Maple	Pt	Trembling Aspen
Bw	White Birch	Mr	Red Maple	Pw	White Pine
Bx	Birch species	Mx	Maple species	Px	Pine species
Ce	Cedar species	Ox	Oak species	Sb	Black Spruce
Cw	White Cedar	Pb	Balsam Poplar	Sx	Spruce species

Interpretation of phrases:

"Tree species mostly conifer" – This means that the combined total relative cover of any conifer species consists of more than 50% of the total tree species. If the combined total percent cover of all conifer species is more than 50% then say "yes" and follow the arrow to the next decision. In the event of a tie, the first species listed in the species composition will break the tie. For example, if Pt listed first and 50/50 split then say "no", if Sb listed first and 50/50 split then say "yes" and follow arrow.

"Pr +/ Pw cover ≥ 20% of polygon" – This means that of the tree species present, red pine and / or white pine must cover greater than or equal to 20% of the polygon area.

"Shrub cover > 25% of polygon" – This means that the shrub species present are the highest level of vegetation and have absolute cover more than 25%. Tree species may be present on the site but must be ≤ 10% to be at this decision node. If there is more than 10% absolute cover then revisit decision node 15 and work through the key again.

"Shrub cover > 10% of polygon" – This means that the shrub species present are the highest level of vegetation (according to Figure 5) and have absolute cover more than 10%. Tree species may be present on the site but must be ≤ 10% to be at this decision node; if this there is more than 10% absolute cover then revisit decision node 15 and work through the ecosite key again. Similarly, shrub species must also be ≤ 25% absolute cover; if there is more than 25% then revisit the decision for "shrub cover > 25% of polygon".

"Hardwood species mostly Mx" – This means that the combined total relative cover of any maple species consists of more than 50% of the total hardwood species. For example, in a species composition of Mh3Or2Pw2Mr2Ow1Be1 the total of hardwood species is 80% of which sugar maple and red maple consist of 50% and therefore you can say "yes" and proceed in the direction of the arrow. In this example, Mh2Or2Bw2He2Mr1Pw1, sugar maple is the greatest component however, it does not meet the criteria for "most" (>50%) and therefore by following the decisions through the key, this species composition leads to a mixed wood ecosite.

"Conifer species mostly Sx +/ Bf" – This means that the combined total relative cover of any spruce species and / or balsam fir consists of more than 50% of the total conifer species. For example, in a species composition of Pt4Sw2Pj2Sb1Bf1, the combined total relative cover of conifer species is 60% where spruce species and / or balsam fir must be more than 50% (of the 60% conifer, spruce and balsam fir must represent 30%) relative cover to satisfy the question. In this case, the relative cover of spruce and / or balsam fir is 40% therefore the minimum has been exceeded therefore you can say "yes" and proceed in the direction of the arrow.

Polygon: A community of trees possessing sufficient uniformity in composition, constitution, age, arrangement, or ecological condition to be distinguishable from adjacent communities.

Site Class 4: Occurs when the stand's height is below average growth for its age. These are the site class 4 designated stands under Plonski's Normal Yield Tables. This can occur as a result of low site productivity, "stand history", or as a result of an "off-site" species. Refer to Table 9.

Stunted: Generally, this term refers to populations of trees that are often widely spaced, exceptionally old, deformed, and slow growing. This term can be further described as being equivalent to a site class 4 site condition.

Table 9. **Height/age relationships based on Plonski for determining the condition of "protection forest" or site class 4.**

Age		Spruce	Jack	Poplar	White	Tolerant	White Pine	Red
From	To	Maximum Height for PF Condition (Site Class 4)						
	1	0.1	0.2	0.2	0.1	0.2	0.2	0.1
	5	0.1	0.3	1	0.5	0.2	0.2	0.2
	10	0.2	0.8	2.1	1	0.8	0.7	0.4
	15	0.4	1.8	3.6	2.5	1.8	0.9	1.5
18	22	0.7	3.8	5.5	3.8	2.7	1.5	3.5
23	27	1.2	5.3	7.1	5.5	3.9	1.7	4.9
28	32	1.6	6.7	8.6	7.2	5	1.9	6.3
33	37	2.2	7.9	10.1	8.8	6.1	2.3	7.5
38	42	2.9	9	11.5	10.1	7.2	2.9	8.5
43	47	3.5	10	12.8	11.1	8.2	3.5	9.5
48	52	4.2	10.8	14	11.9	9.1	4.3	10.3
53	57	4.8	11.5	15.1	12.5	10	5.2	11.1
58	62	5.4	12.1	16.1	12.9	10.8	6	11.7
63	67	6	12.7	16.9	13.2	11.5	6.9	12.1
68	72	6.6	13.1	17.7	13.4	12.2	7.7	12.5
73	77	7.1	13.4	18.2	13.5	12.8	8.5	12.9
78	82	7.6	13.6	18.6	13.5	13.4	9.2	13.2
83	87	8.1	13.8	18.9	13.5	13.9	9.9	13.4
88	92	8.4	13.9	19.1	13.5	14.4	10.6	13.7
93	97	8.8	14	19.2	13.5	14.8	11.3	13.9
98	102	9.1	14.1	19.3	13.5	15.1	11.8	14.1
103	107	9.4	14.1	19.3	13.5	15.4	12.3	14.2
108	112	9.7	14.1	19.3	13.5	15.6	12.8	14.3
113	117	9.9	14.1	19.3	13.5	15.8	13.3	14.5
118	122	10.1	14.1	19.3	13.5	16	13.6	14.6
123	127	10.3	14.1	19.3	13.5	16.2	13.9	14.7
128	132	10.5	14.1	19.3	13.5	16.3	14.3	14.8
133	137	10.6	14.1	19.3	13.5	16.5	14.5	14.9
138	142	10.8	14.1	19.3	13.5	16.6	14.7	14.9
143	147	10.9	14.1	19.3	13.5	16.6	14.9	15
148	152	11	14.1	19.3	13.5	16.7	15.1	15.1
153	157	11	14.1	19.3	13.5	16.7	15.2	15.1
158	162	11	14.1	19.3	13.5	16.8	15.3	15.1
163	167	11	14.1	19.3	13.5	16.8	15.4	15.1
168	172	11	14.1	19.3	13.5	16.8	15.4	15.1
173	177	11	14.1	19.3	13.5	16.8	15.5	15.1
178	182	11	14.1	19.3	13.5	16.8	15.5	15.1
183	187	11	14.1	19.3	13.5	16.8	15.6	15.1
188	999	11	14.1	19.3	13.5	16.8	15.6	15.1

Using the Factsheets

5.1 General

Ecosite factsheets provide the typical descriptive information for each ecosite listed in the key. The information presented in the factsheet is based on sound ecological knowledge obtained from research, expert knowledge and interpreted plot data. The factsheets focus the user on the distinguishing features and expected variations that may occur within the ecosite and across the geographic range. Once familiar with the factsheets, the user will develop a better understanding of the main substrate and vegetation condition, along with the ecology, ecoregional variation, and edaphic variation, associated with each ecosite. Ecosite factsheets can provide insight into variation but will seldom describe exactly what is encountered in the field.

A complete suite of ecosite factsheets will be developed, however currently only the treed factsheets are available at this time. The treed ecosite factsheets consist of both tall treed and low treed conditions which may be differentiated if there is significant ecological information which cannot be addressed on a single factsheet.

Active Ecosites: A term used to describe the grouping of ecosites for the purpose of presentation on the ecosite factsheets. Active ecosites include all ecosites with the vegetation cover class of X (Not Vegetated) indicating vegetation that has been limited due to excessive natural energy or human influences.

Not Woody Ecosites: A term used to describe the grouping of ecosites for the purpose of presentation on the ecosite factsheets. Not Woody ecosites include all ecosites with the vegetation cover of N (Not Woody), which includes vegetation cover classes of herbaceous (H), sparse herbaceous (sH) and non-vascular (Nv).

Shrub Ecosites: A term used to describe the grouping of ecosites for the purpose of presentation on the ecosite factsheets. Shrub ecosites include all ecosites with the vegetation cover of S (shrub), which includes vegetation cover classes of tall shrub (St), sparse tall shrub (sSt), low shrub (Sl) and sparse low shrub (sSl).

Treed Ecosites: A term used to describe the grouping of ecosites for the purpose of presentation on the ecosite factsheets. Treed ecosites include all ecosites with the vegetation cover of Tt (tall treed) or Tl (low treed), which includes closed tall treed (cTt), open tall treed (oTt), sparse tall treed (sTt), low treed (Tl) and sparse low treed (sTl).

5.2 Layout of the Ecosite Factsheets

The following section is based on Figures 10 and 11 which form a single ecosite factsheet sample. The number within a triangle corresponds directly to an explanation or description below.

The identification banner at the top of each factsheet provides the ecosite name [1], ecosite code [2], and background reliability bar [3]. The ecosite name may consist of the substrate depth, substrate moisture regime, substrate texture, and distinguishing plant species or condition (e.g., marsh, fen, cliff, rock barren). Commas, colons and dashes are used to separate substrate features (depth, moisture and texture) and to separate species, respectively. The ecosite code is a series of letters and numbers used to generate concise and unique identifiers to an ecosite condition. The ecosite code presented on a factsheet is composed of the geographic range, 3-digit unique ecosite number and vegetative modifier (Refer to Section 3.2 for more on the coding structure). For example, B027Tt is in the boreal geographic range, ecosite number 027 with a tall treed vegetative modifier. The code shown on a factsheet meets the minimum

requirements for coding. The background reliability bar provides the user with a relative scale of the quantity and quality of source information that was used to populate the factsheets. The corresponding box in the bar is filled in grey (Low (L), Moderate (M), or High (H)) according to the relative information used to describe the factsheet.

Ecosite Description [4] is a brief text description highlighting a few main characteristics of the ecosite. It re-iterates important features that are found in the ecosite keys, such as plant species composition that are used to determine the ecosite as well as important stand characteristics that may not be expressed in the keys [5]. When pertinent to the ecosite description, regenerating tree species in the understory are listed in order of likelihood. A description of the general condition of shrub and herb richness [6] expresses species diversity, evenness of abundance, and vigour of a layer. Richness represents the typical condition for the ecosite. The user is then directed towards the ground surface [7] to compare the presence of the most common surface cover elements that are associated with the particular ecosite. The key substrate features [8] are re-iterated, in order of texture, depth and moisture regime.

The **Substrate Description** [9] is presented in tabular form to compare the substrate in the field with what is communicated in the factsheet. The substrate series lists all possible substrates that may compose an ecosite. When data is available to support a substrate series relationship to an ecosite the series is bolded [10]. Shading represents the likelihood of associated substrate features with this ecosite, dark grey [11] indicates extremely likely, light grey [12] expected in some areas and white [13] indicates highly unlikely but not impossible.

Vegetation Description [14] defines the floristic components of the ecosite. It includes important physiognomy and structural characteristics [15] of the ecosite to help further refine the user's confidence in identifying the site. Common understory species [16] are listed by common name and include shrubs, vascular herbaceous, non-vascular, and indicator species that are frequently encountered. Commonly associated v-types [17] are listed in order of likelihood.

The **Vegetation Table** [18] lists the characteristic species by scientific name in order of typical abundance and dominance.

The user can use **Ecology** [19] to orient them to the floristic variability that may occur. Variation may be the result of substrate restriction [20], canopy closure [21], disturbance (natural and anthropogenic) [22], and successional trends [23].

Ecoregional Variability [24] gives the reader an appreciation for the commonality [25], distribution [26], and differences in occurrence of the floristic composition or expected vegetation conditions in different parts of the boreal geographic range [27]. The expected variation is expressed in terms of climatic or landform processes and the relationship to adjacent ecological regions or districts.

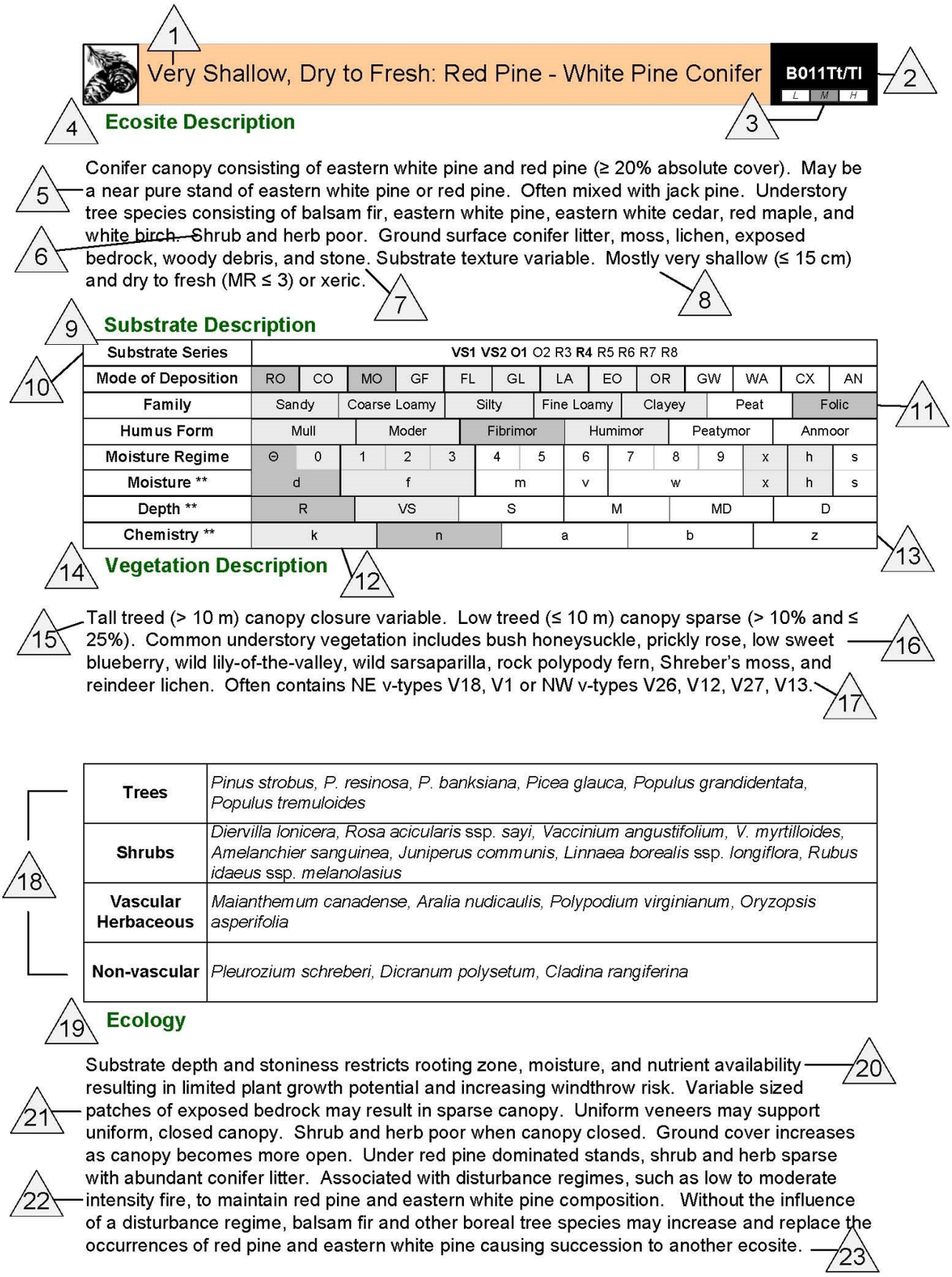
The **Edatopic Grid** [28] expresses the spatial representation of the ecosite's moisture and nutrient holding capacity (fertility) relative to other ecosites. It is designed to help the user find closely related ecosites that may better describe what is found within the field.

Edaphic Variability [29] describes to the user the variation that can occur within the ecosite and floristic expressions that are associated with this variation. Substrate depth [30], slope position [31], and surrounding waterbodies [32] can all affect the variation that may occur in the substrate.

Related Ecosites [33] is a quick reference to direct the user to closely related ecosites. It expresses the nearest ecosite neighbor in depth, texture and moisture regime, and will help the user further confirm the correct identification of the ecosite.

Profile/Slope Sequence [34] is a visual display identifying the range of conditions that may exist in the ecosite.

5.3 Sample Factsheet



Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer

B011Tt/Tl

L M H

Ecosite Description

Conifer canopy consisting of eastern white pine and red pine (≥ 20% absolute cover). May be a near pure stand of eastern white pine or red pine. Often mixed with jack pine. Understory tree species consisting of balsam fir, eastern white pine, eastern white cedar, red maple, and white birch. Shrub and herb poor. Ground surface conifer litter, moss, lichen, exposed bedrock, woody debris, and stone. Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	**VS1 VS2 O1** O2 R3 **R4** R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy	Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture **	d		f			m		v		w		x	h	s
Depth **	R		VS		S		M		MD		D			
Chemistry **	k		n		a		b		z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10% and ≤ 25%). Common understory vegetation includes bush honeysuckle, prickly rose, low sweet blueberry, wild lily-of-the-valley, wild sarsaparilla, rock polypody fern, Shreber's moss, and reindeer lichen. Often contains NE v-types V18, V1 or NW v-types V26, V12, V27, V13.

Trees	*Pinus strobus, P. resinosa, P. banksiana, Picea glauca, Populus grandidentata, Populus tremuloides*
Shrubs	*Diervilla lonicera, Rosa acicularis* ssp. *sayi, Vaccinium angustifolium, V. myrtilloides, Amelanchier sanguinea, Juniperus communis, Linnaea borealis* ssp. *longiflora, Rubus idaeus* ssp. *melanolasius*
Vascular Herbaceous	*Maianthemum canadense, Aralia nudicaulis, Polypodium virginianum, Oryzopsis asperifolia*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum, Cladina rangiferina*

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniform veneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Under red pine dominated stands, shrub and herb sparse with abundant conifer litter. Associated with disturbance regimes, such as low to moderate intensity fire, to maintain red pine and eastern white pine composition. Without the influence of a disturbance regime, balsam fir and other boreal tree species may increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

Figure 9. Example of page 1 – Boreal Treed Factsheet.

B011Tt/Tl Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer

24 **Ecoregional Variability**

Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portion of 3E. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 3E, 4S-1, and 4S-6. Eastern hemlock may occur in 3E-5. Yellow birch, red maple, American basswood, and red oak may occur in 4S, 4W, 5S, and southern portion of 3E.

25 26 27

Increasing Fertility

Increasing Moisture Gradient	VP	P	MR	R	VR
X*					
D					
F					
H*					
M					
V					
W					
S*					

28 Not Available

** moisture classes ordered according to relative position in scale of moisture gradient.*

29 **Edaphic Variability**

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur in poorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral substrates or over base-rich bedrock.

30 31 32

33 **Related Ecosites**

If humid (not dry, fresh or xeric), B023. If depth > 15 cm and: dry sandy, B033; fresh sandy to dry/fresh coarse loamy, B048; fresh clayey, B081; fresh silty/fine loamy, B097; moist sandy/ coarse loamy, B064; moist clayey/silty/fine loamy, B113.

34 **Profile/Slope Sequence**

Not Available

Approximately 250m

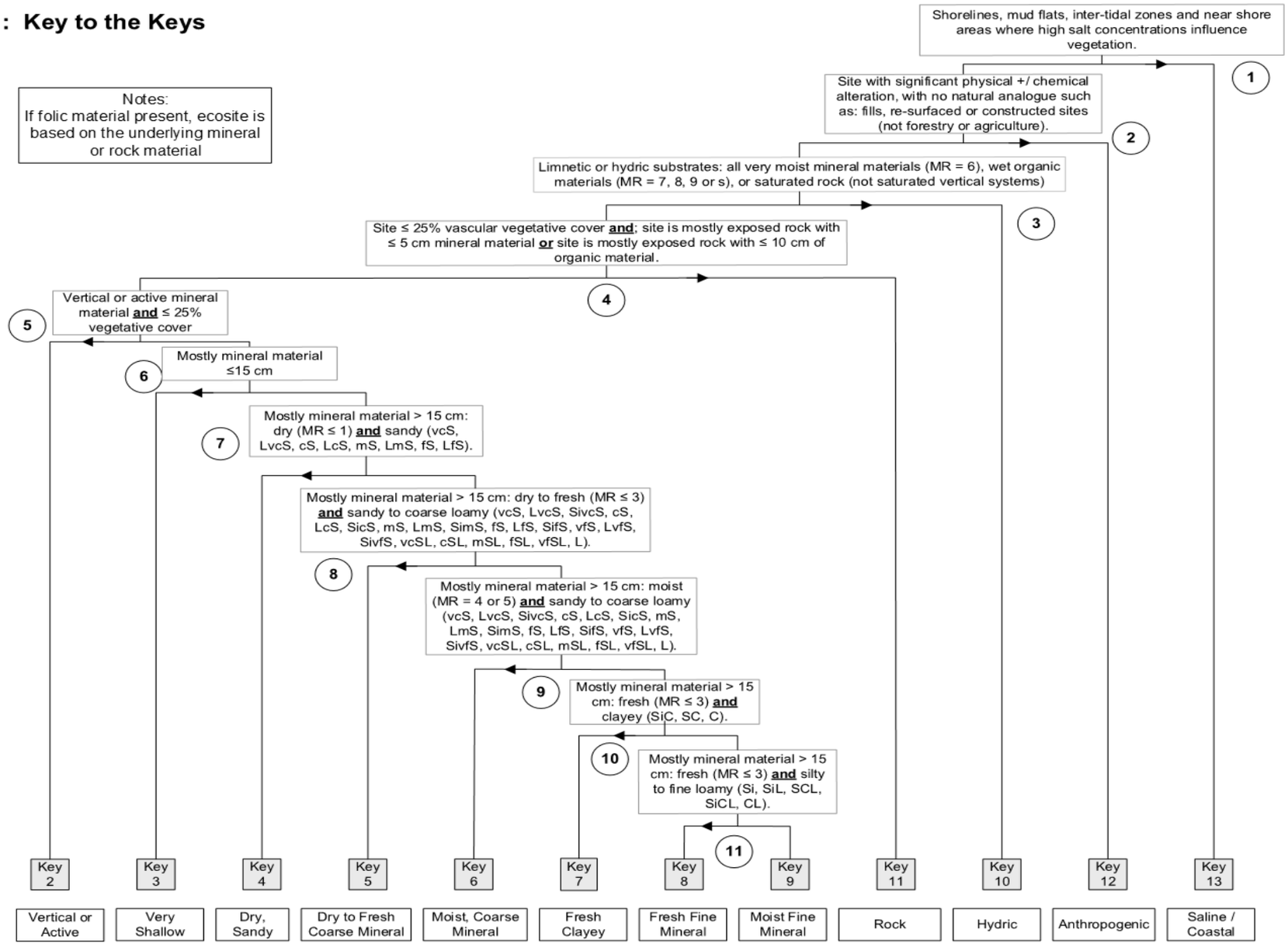
Figure 10. Example of page 2 – Boreal Treed Factsheet.

Ecosite Keys:

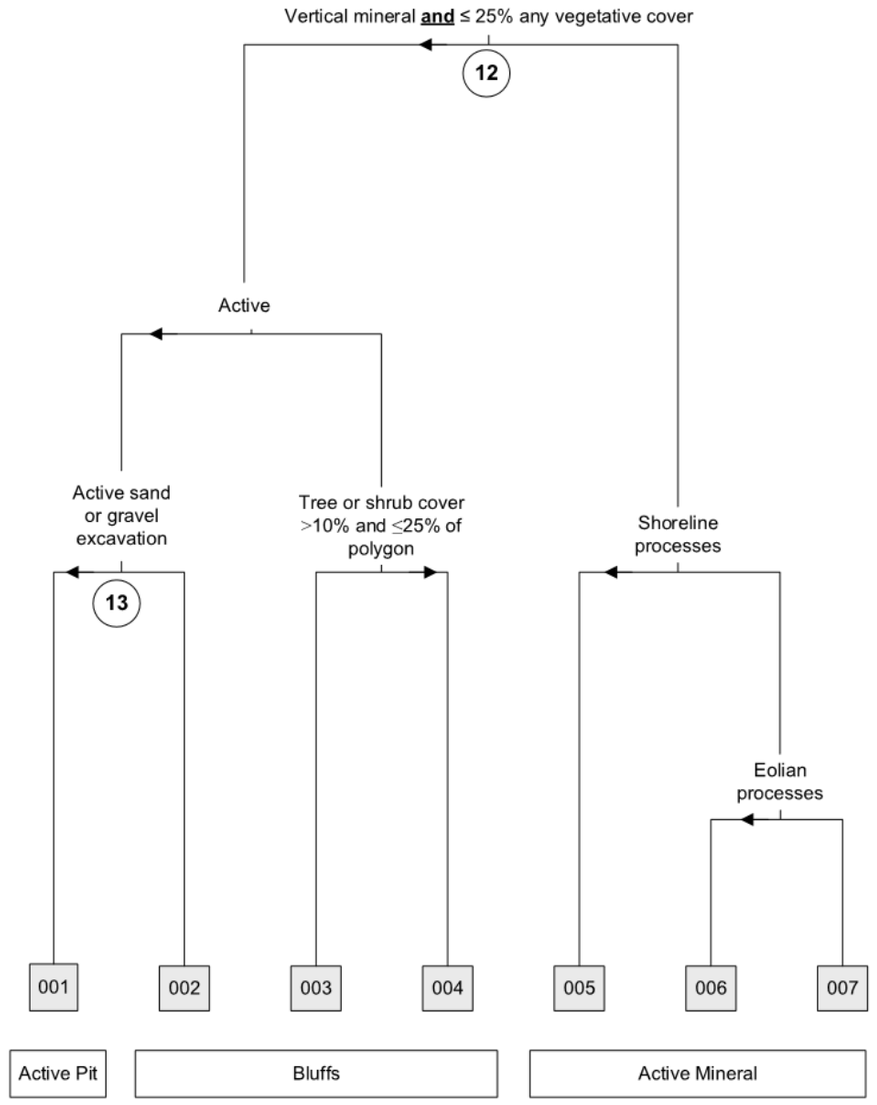
Draft Provincial Ecosite Field Keys

25/02/2015

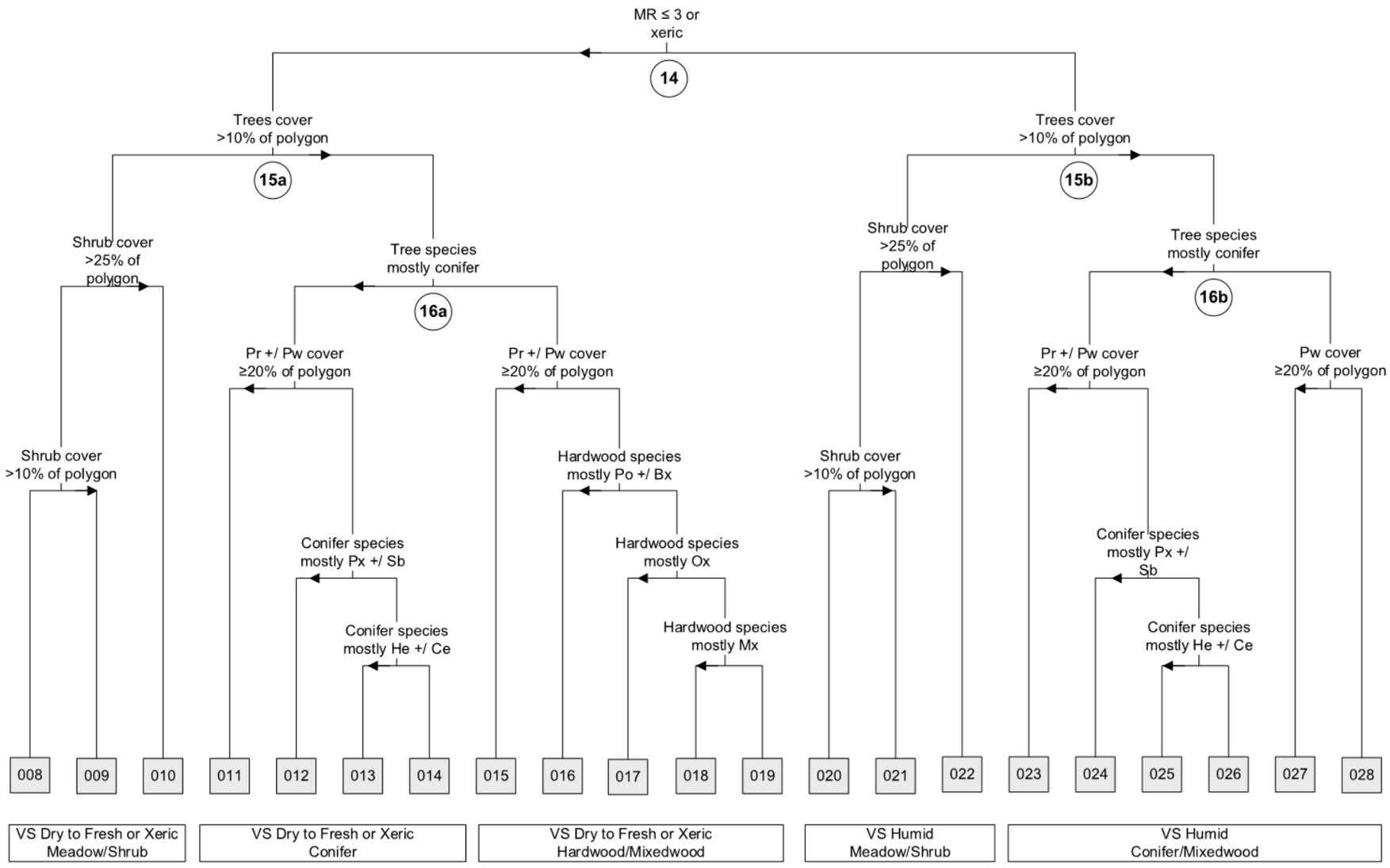
Key 1: Key to the Keys



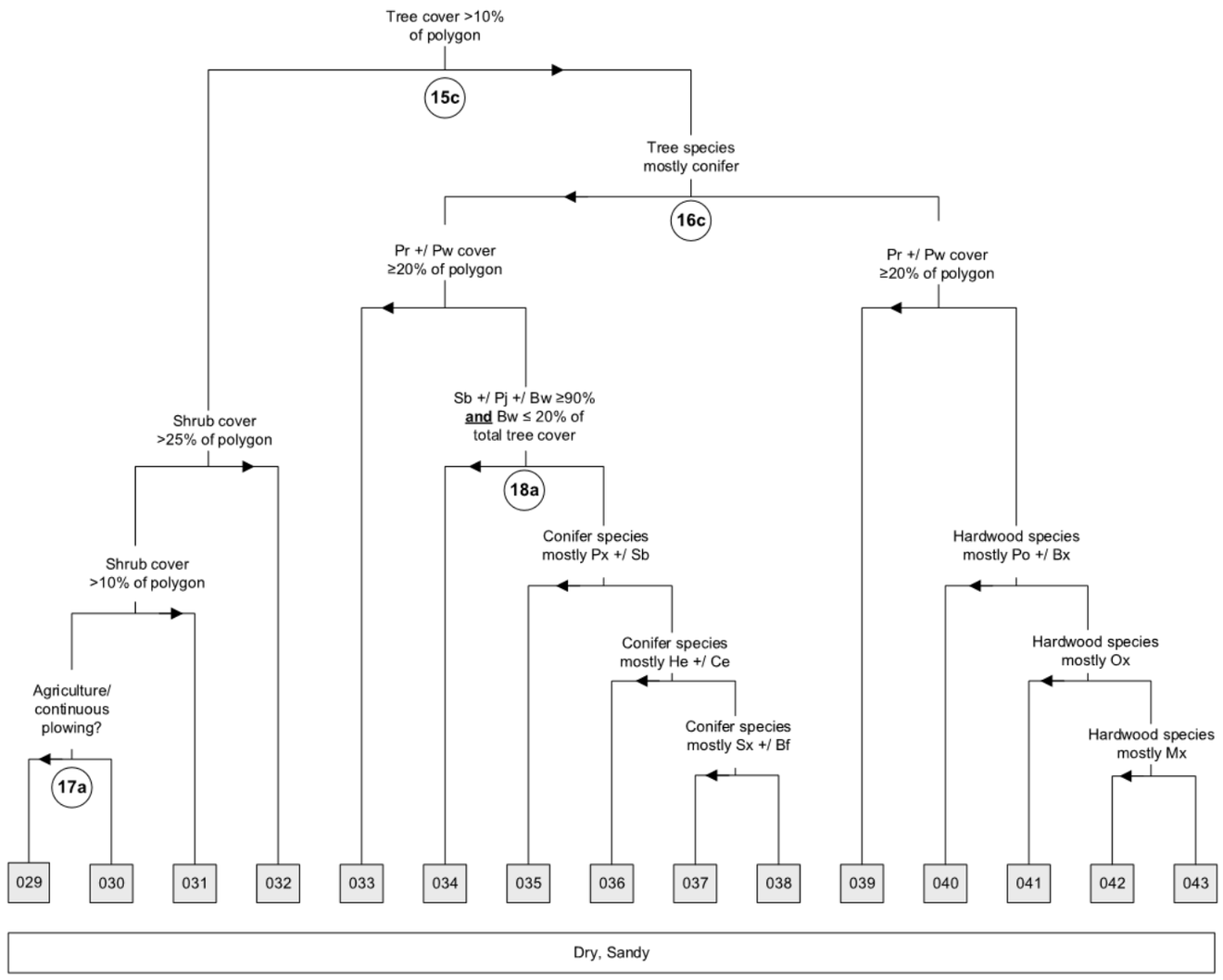
Key 2: Vertical or Active Mineral Ecosites



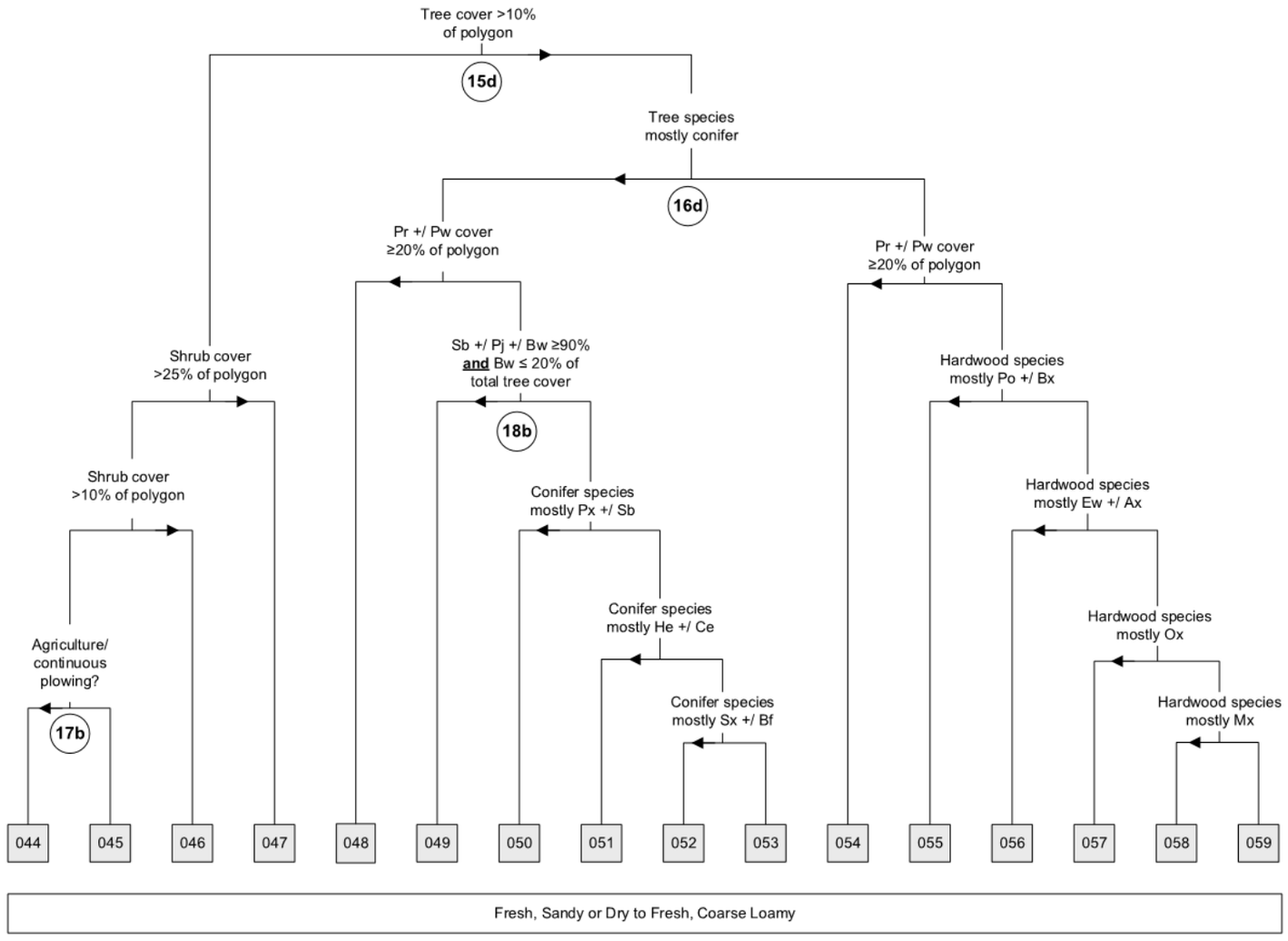
Key 3: Very Shallow Ecosites



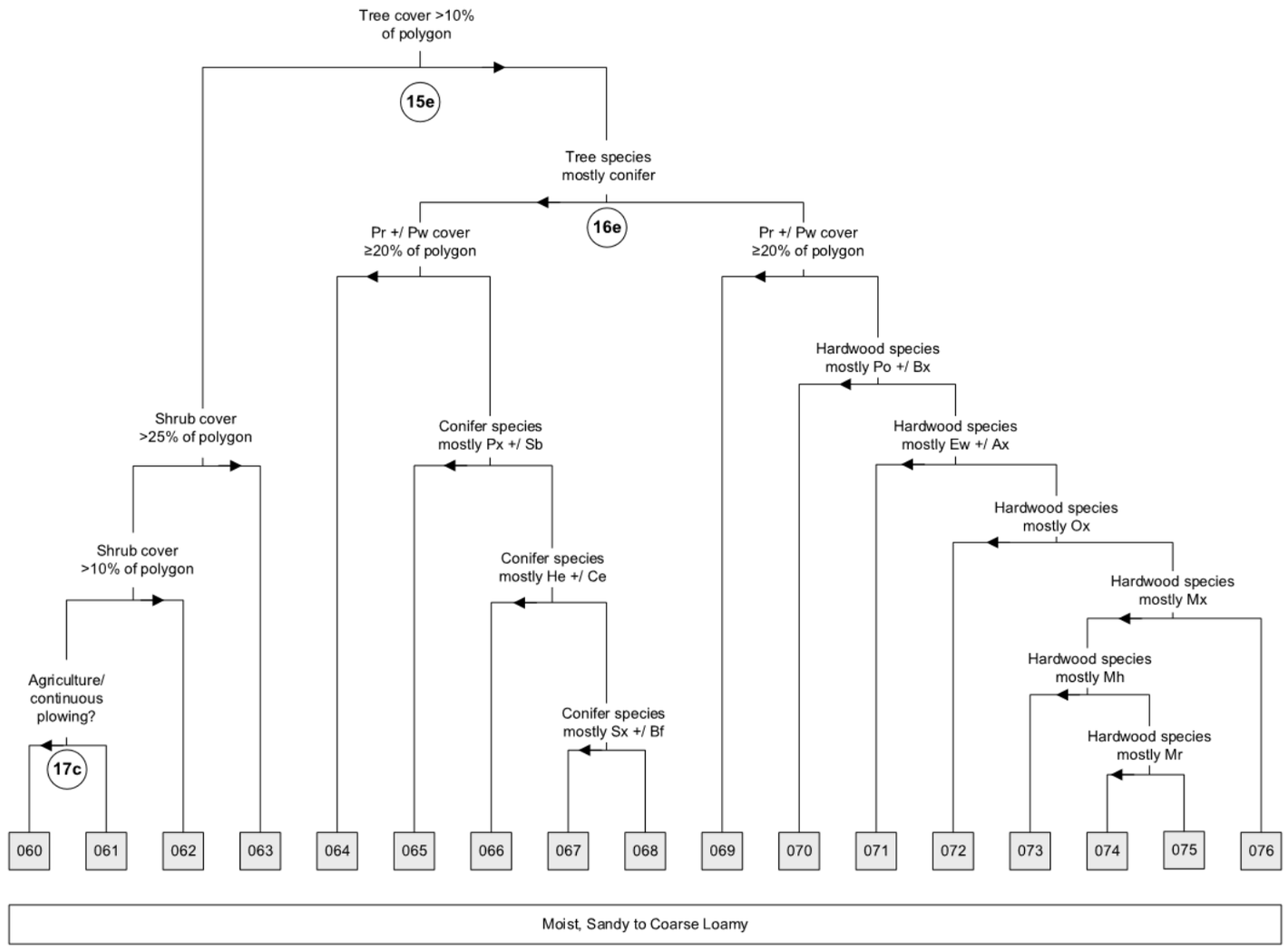
Key 4: Dry, Sandy Ecosites



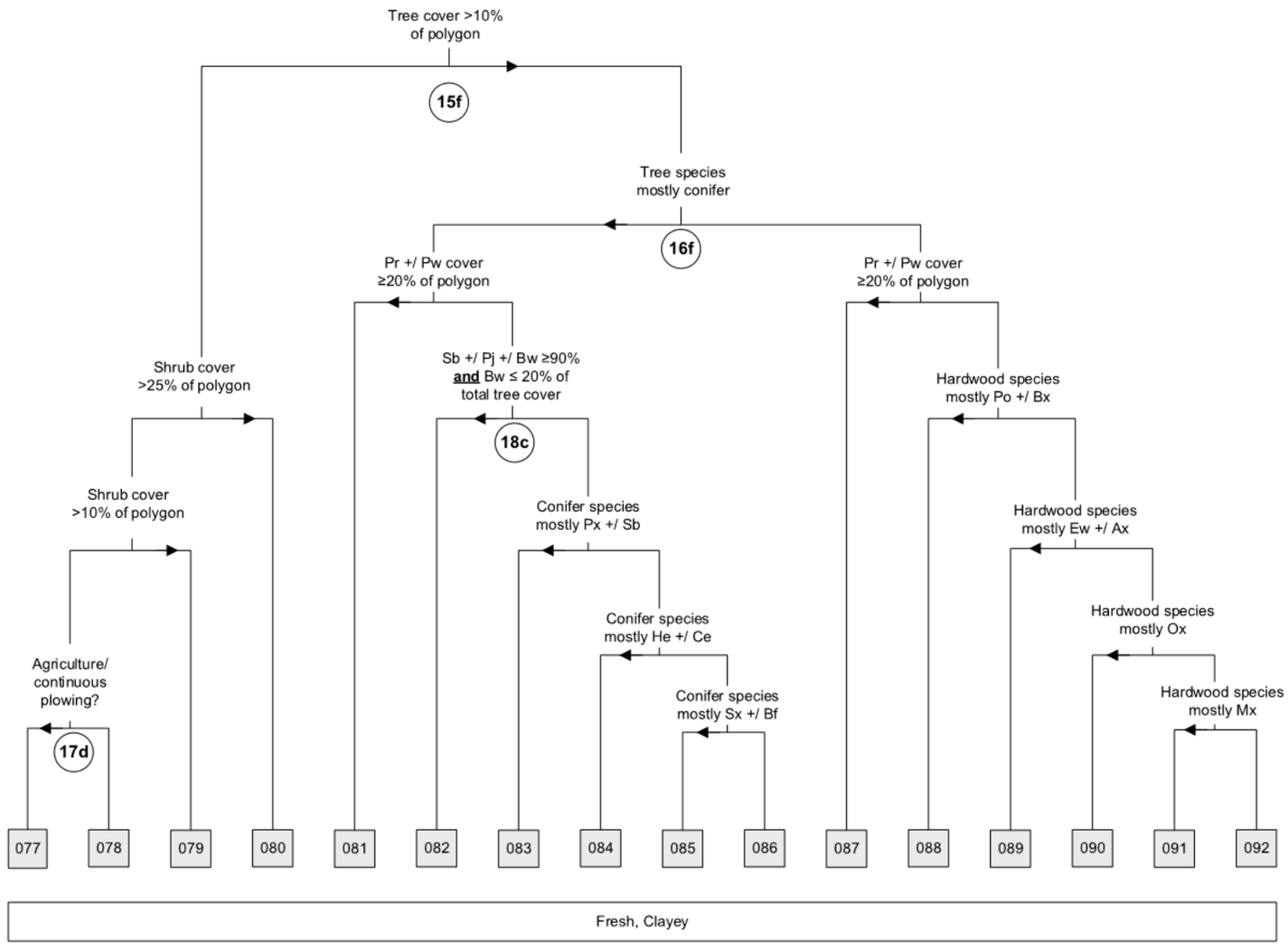
Key 5: Fresh, Sandy or Dry to Fresh, Coarse Loamy Ecosites



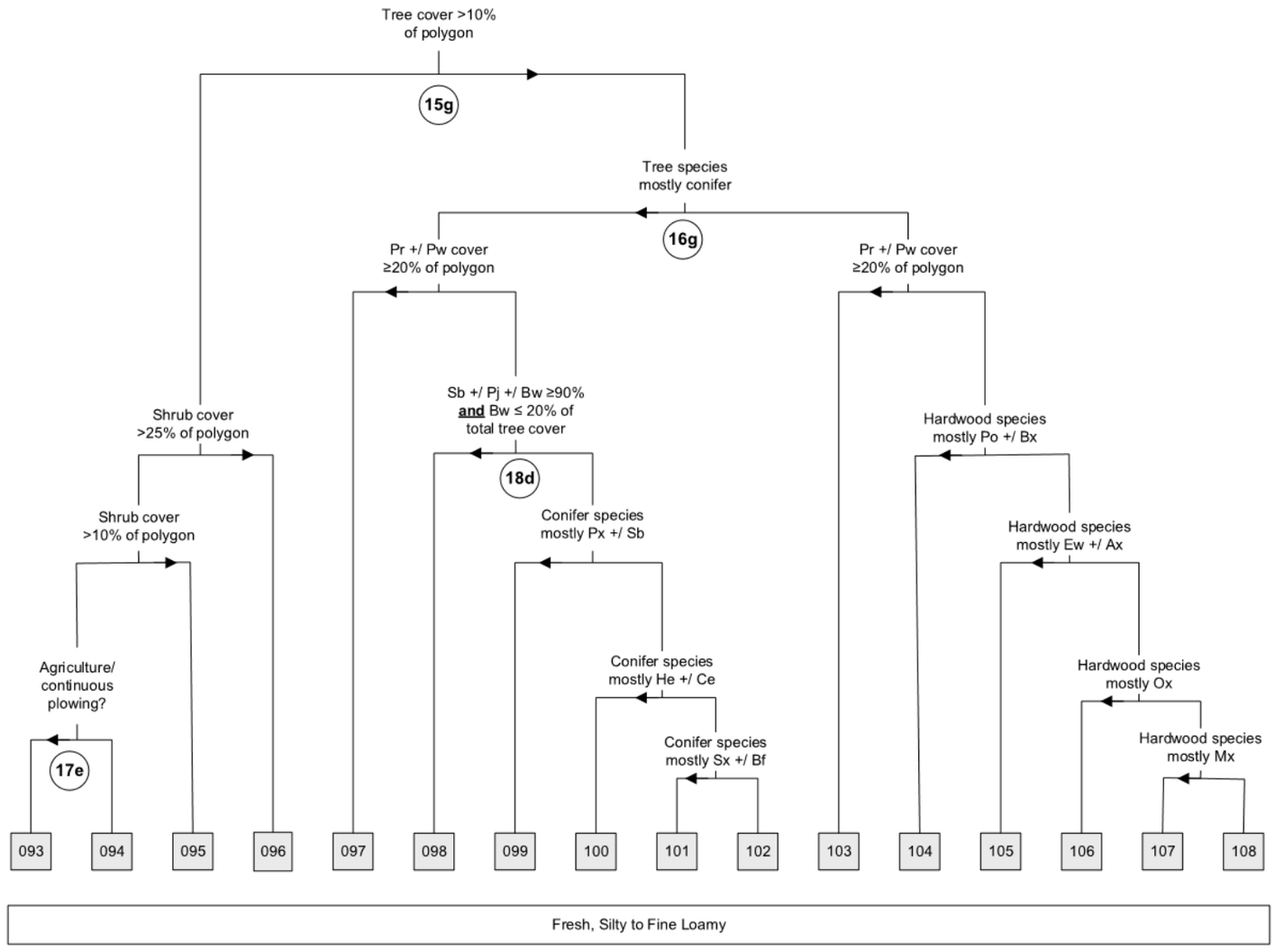
Key 6: Moist, Sandy to Coarse Loamy Ecosites



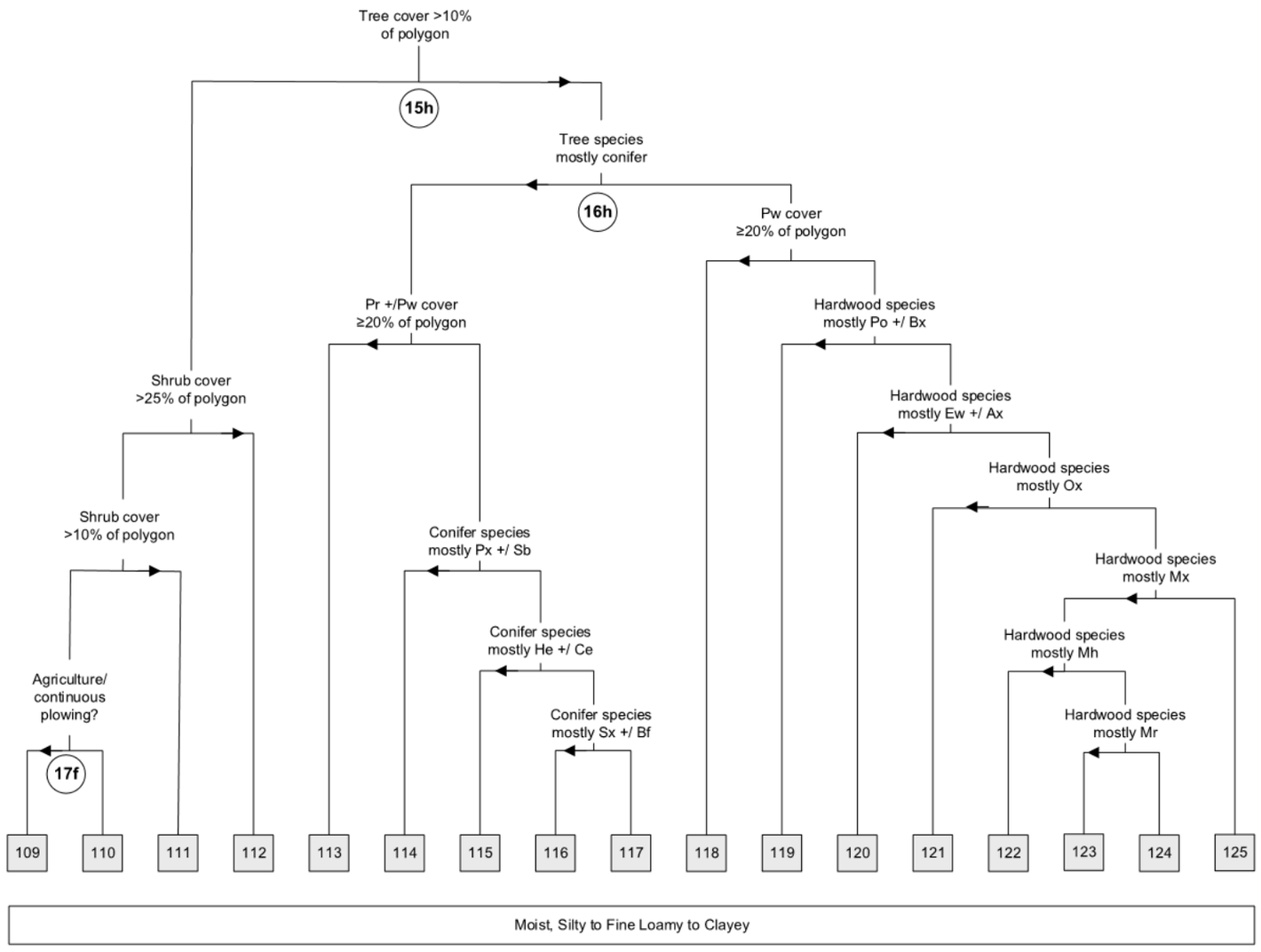
Key 7: Fresh, Clayey Ecosites



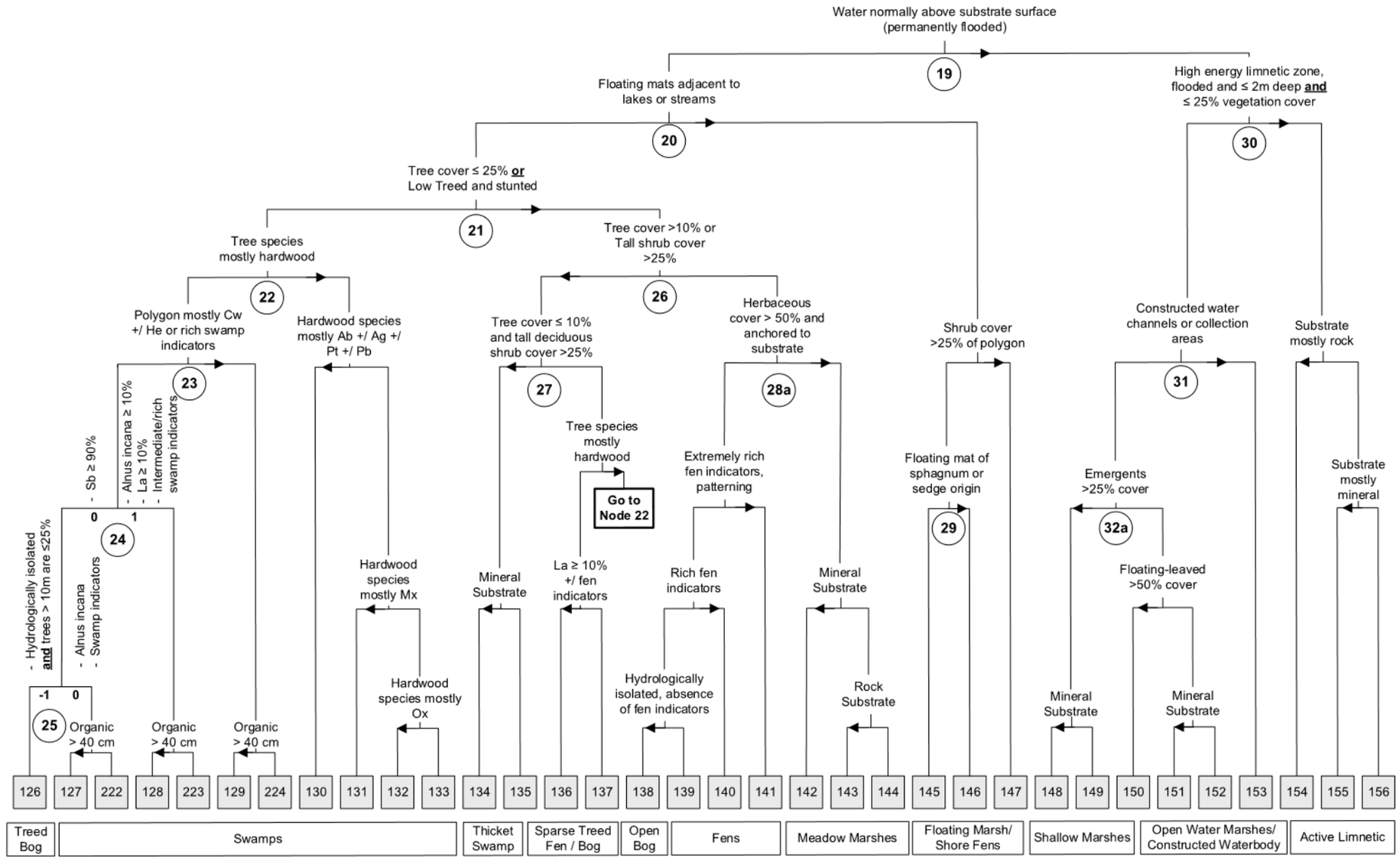
Key 8: Fresh, Silty to Fine Loamy Ecosites



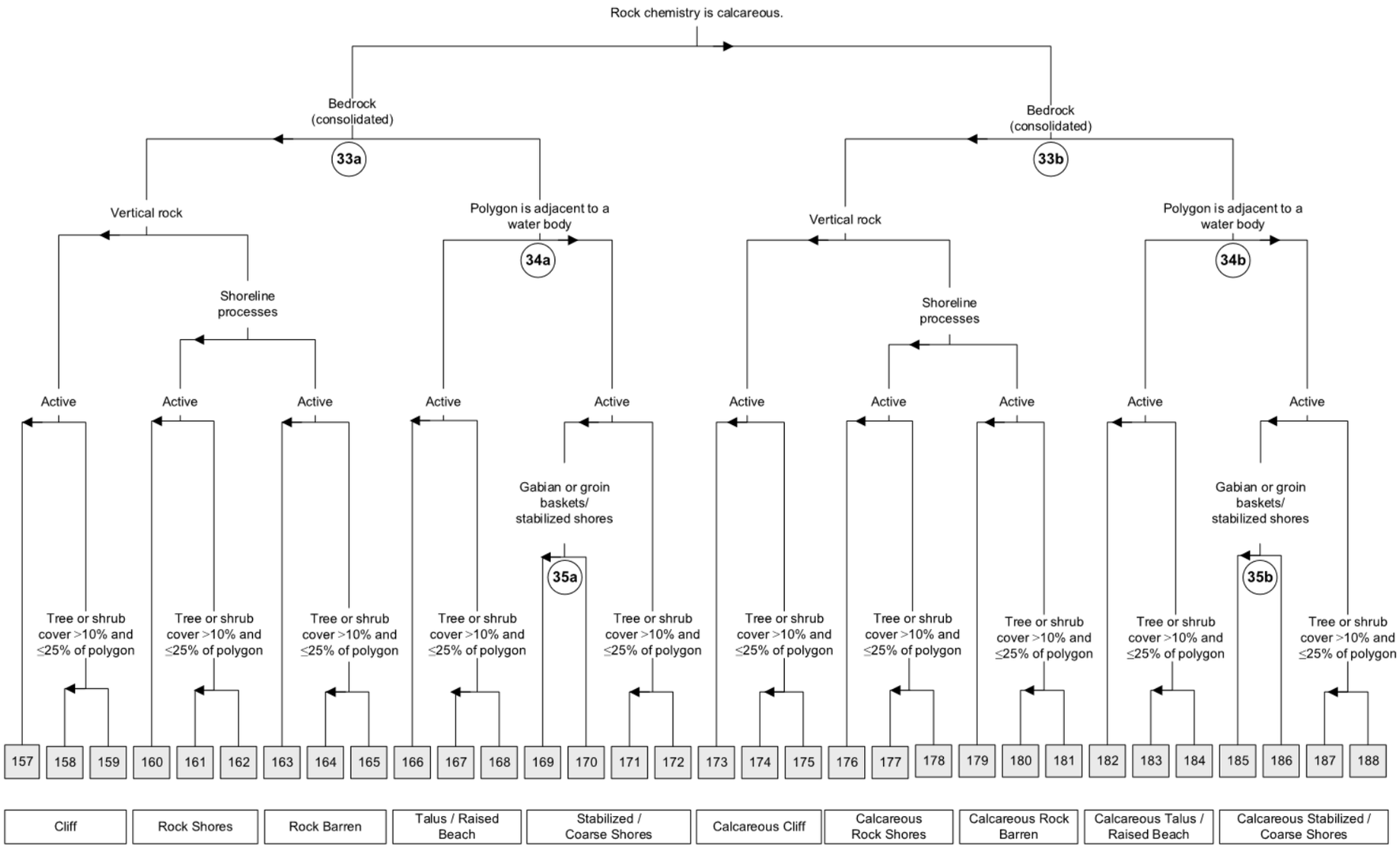
Key 9: Moist, Silty to Fine Loamy to Clayey Ecosites



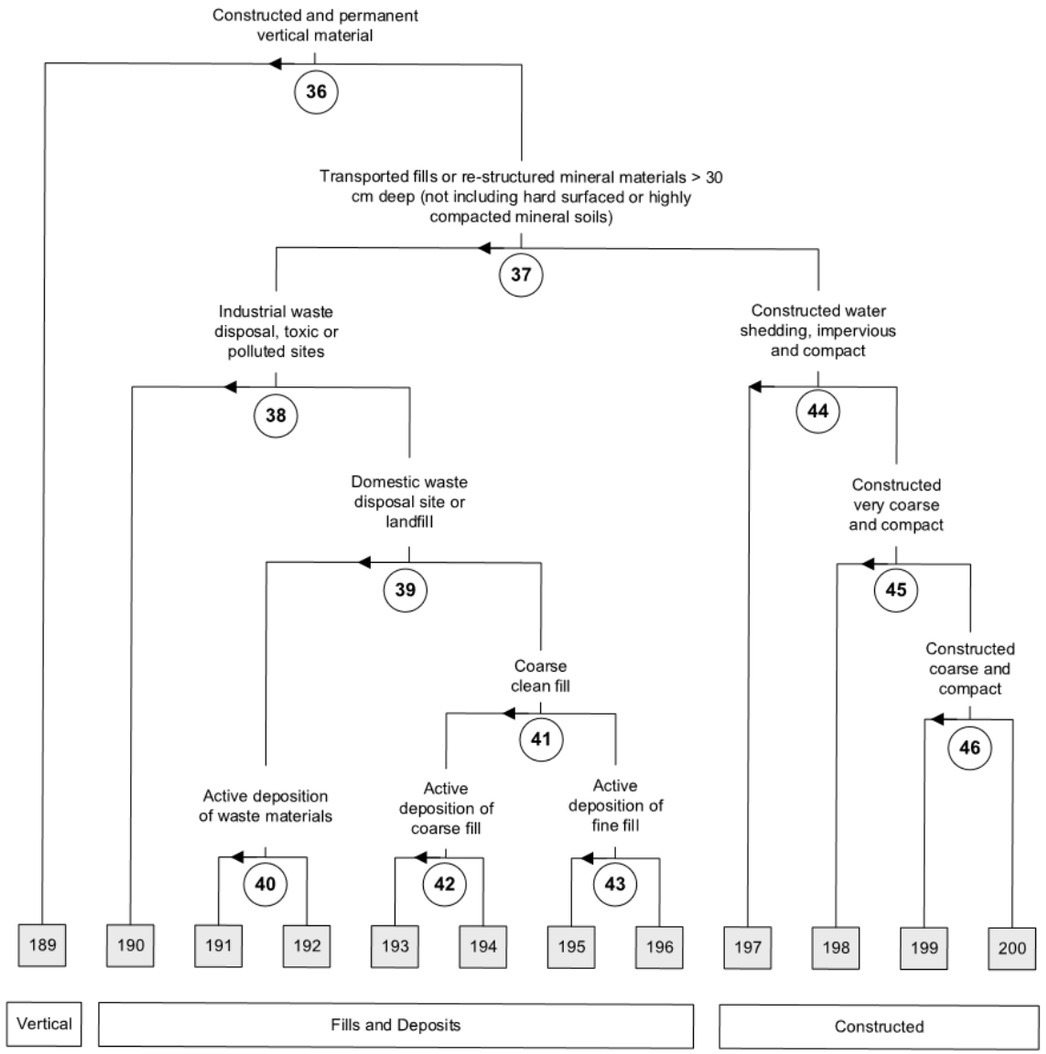
Key 10: Permanently Flooded or Hydric Ecosites



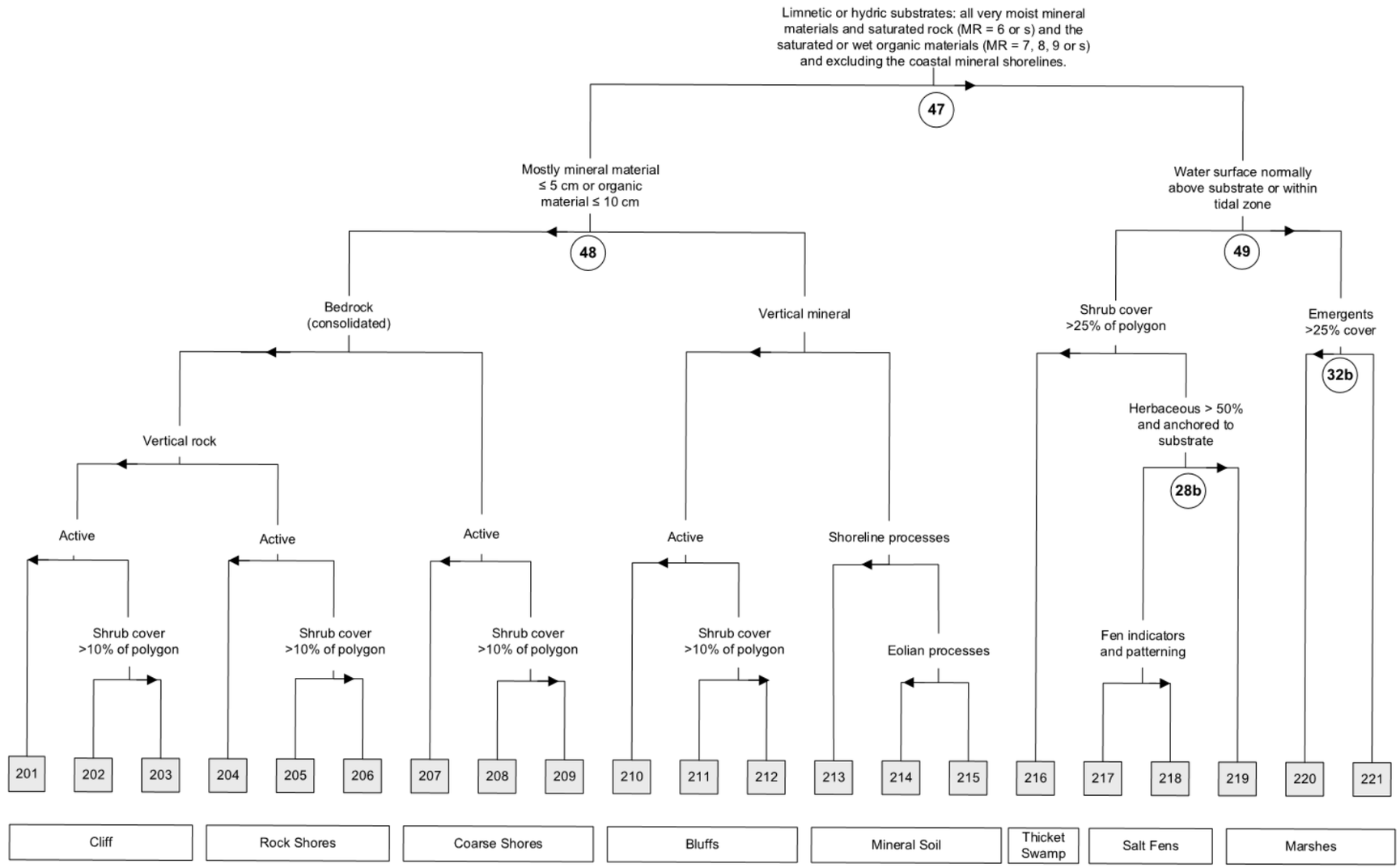
Key 11: Rock Ecosites



Key 12: Anthropogenic Ecosites



Key 13: Coastal or Tidal Ecosites



Ecosite Node Descriptions:

Detailed Information to Aid in the Decision Process in the Keys

Note: Where a node description applies in more than one location it has been assigned a letter to denote the specific location to make referencing easier. For example, decision node 15 includes 15a (Key 3) through to 15h (Key 9) but the description of 15a and 15h is that of decision node 15 shown below.

1

This division segregates the very unique northern shorelines and near shore areas of James Bay and Hudson Bay that are affected by high salinity. The extant shorelines, mud flats, and inter-tidal zones are affected directly by the salt water, influencing the suite of plant species are able to grow there (i.e., halophytes), along with their distribution and abundance. Terrestrial near shore areas affected by a high saltwater table or salt spray and deposition may also be included here if the salt concentration is high enough to affect the vegetation.

2

This division segregates the sites that have significant physical and/or chemical alteration by human activity and have no real natural analogue. These types of sites therefore pose unique conditions or are inhibitive to the establishment and growth of natural vegetation assemblages. These ‘anthropogenic’ sites include the hard or compacted surfaces, including pavement, concrete, and other re-surfaced materials like gravel, fills (> 30 cm deep), waste disposal, quarries, and aggregate pits. Please note that this node does not include sites subjected to lesser alterations like forestry, recreation (e.g., parks), agricultural practices, sand/gravel excavation, water channels/collection areas and stabilized shores (groin or gabion baskets).

3

This division segregates the sites where excess moisture or flooding poses an environmental limitation on the growth and establishment of vegetation. Sites with the water table near, at or above the substrate surface for much of the year acts as a significant ecological driver and encourages the growth of hydrophytic vegetation. These sites include all those that are nearly always flooded (i.e., limnetic) and the periodically flooded hydric substrates, including all very moist mineral materials and saturated rock (MR = 6, or s), and the saturated or wet organic materials (MR = 7, 8, 9, or s). Please note that this node does not mean “wetland”, which is a legislated term and has an existing definition within the Ontario Wetland Evaluation System. Instead, Node 3 is read as “hydric”, and relates to the accumulation of excess moisture and its influence on vegetation.

4

This division segregates the sites controlled by environmental limitations imposed by bedrock or rock substrates. The surface of these sites are mostly exposed rock surfaces, but typically have a mosaic pattern, with surficial mineral materials not exceeding 5 cm deep, or organic materials exceeding 10 cm deep. Because of the severe environmental limitations, the vascular vegetation cover does not exceed 25% absolute cover, yet the bryophyte, lichen and algal communities may thrive. This node includes vertical as well as horizontal bedrock and rock surfaces, such as cliffs, talus, barrens, and shorelines.

5

This division segregates the mineral sites which have environmental limitations imposed by either ongoing gravitational induced erosion, or by high energy inputs, that inhibit vegetation establishment and growth. When mineral slopes exceed a vertical height of 3 m accompanied by a slope that exceeds 60 degrees (or 173%), mass wasting erosion events typically occur with some periodicity. These ‘landslide’ events remove the vegetation and reset the ‘successional clock’ on the site. Similarly, high energy sites, like active shorelines, inhibit plant

establishment and growth, and maintain very little vegetation cover. Active sites are limited to the definition where vascular plant cover may not exceed 2%, bryophyte and foliose lichen cover may not exceed 10% and crustose lichen cover is unlimited. As a result of these active processes, vascular vegetation cover on such sites does not exceed 25% absolute cover.

6

This division segregates the very shallow mineral sites from the shallow, moderate, moderately deep and deep sites. Mineral material may not exceed 15 cm over bedrock for these ecosites while organic materials may be unlimited provided the mineral material criteria have been met. Ecological limitations imposed by the very shallow substrates influence vegetation patterns. Vegetation cover tends to be variable, and the type of species found are limited. Subtle vegetation differences may occur on different texture families (i.e., sand versus clay), however the very shallow depth remain the key ecological driver, masking most other affects.

7

This division segregates the mineral materials that exceed 15 cm in addition to organic material depth while relying on other more subtle gradients of mineral material texture and moisture as the driver's affecting vegetation. This node distinguishes sites which are sandy (vcS, LvcS, cS, LcS, mS, LmS, fS and LfS) and are represented as dry to moderately fresh on the moisture gradient (MR ≦ 1). These sites are typically on upper, water shedding topographic positions. The combination of the less fertile coarser sands, that are rapid to very rapidly drained, leads to some limitations and extended periods of drought, the ecological drivers here. Such droughty substrates are the most moisture limited, and often lead to secondary ecological influences like fire, and direct the assembly of the vegetation communities. Please note that a MR of 1 is not normally associated with the 'dry' conditions (labelled as 'moderately fresh' in the MR chart), as with other textures of mineral materials. The coarser sands are prone to drought and their susceptibility is severe enough to be considered "dry" here.

8

This division segregates the mineral materials that exceed 15 cm in addition to organic material depth while relying on other more subtle gradients of mineral materials texture and moisture as the driver's affecting vegetation. This node distinguishes sites which are sandy to coarse loamy (vcS, LvcS, SivcS, cS, LcS, SicS, mS, LmS, SimS, fS, LfS, SifS, vfS, LvfS, SivfS, vcSL, cSL, mSL, fSL, vfSL, L), and represented as dry to fresh on the moisture gradient (MR ≤ 3). These sites are typically on upper to mid slope, water shedding topographic positions. With the increase in finer particles (silts and clays), fertility is higher, and moisture is typically adequate, yet may experience short to intermediate periods of drought.

9

This division segregates the mineral materials that exceed 15 cm in addition to organic material depth while relying on other more subtle gradients of mineral materials texture and moisture as the driver's affecting vegetation. This node distinguishes sites which are sandy to coarse loamy (vcS, LvcS, SivcS, cS, LcS, SicS, mS, LmS, SimS, fS, LfS, SifS, vfS, LvfS, SivfS, vcSL, cSL, mSL, fSL, vfSL, L), and represented as moist on the moisture gradient (MR = 4 or 5). These sites are typically on middle to lower slope, water accumulating topographic positions. With the increase in finer particles (silts and clays), fertility is higher, and moisture is more than adequate, for the growth and establishment of the vegetation.

10

This division segregates the mineral materials that exceed 15 cm in addition to organic material depth while relying on other more subtle gradients of mineral materials texture and moisture as the driver's affecting vegetation. This node distinguishes sites which are clayey (SiC, SC, C) and represented as fresh on the moisture gradient (MR ≤ 3). These sites are typically on upper to mid slope, water shedding topographic positions when there is relief, or on the slightly higher positions when you have a nearly flat or gently rolling lacustrine deposit. Although these sites are rich, they experience some level of moisture limitation through the growing season, which affects the vegetation.

11

This final division of this key separates the silty to fine loamy (Si, SiL, SCL, CL, SiCL) and represented as fresh on the moisture gradient (MR ≤ 3) from sites which are silty to fine loamy to clayey (Si, SiL, SCL, CL, SiCL, SiC, C, SC) and represented as moist on the moisture gradient (MR = 4 or 5). These are still mineral materials that exceed 15 cm in addition to organic material depth while relying on other more subtle gradients of mineral materials texture and moisture as the driver's affecting vegetation. The fresh, silty to fine loamy sites are typically on upper to middle slope, water shedding topographic positions when there is relief, or on the slightly higher positions when you have a near level or gently rolling topography. Although these fresh sites are rich, they may experience some level of moisture limitation through the growing season, which affects the vegetation. The moist, silty to fine loamy to clayey sites will likely be associated with low or toe slopes and may be indicated by a drainage-way or adjacent water body from which there is little relief. Often associated with alluvial or lacustrine landforms.

12

This division separates the vertical mineral sites from other active and environmentally limited sites. A site may be classified as vertical mineral if the following criteria describe the site: a minimum vertical height of 3 m: slope that exceeds 60 degrees or 173% and any absolute vegetative cover must not exceed 25%.

13

This division separates an active bluff of natural origin from an active bluff that has been excavated by humans. A natural origin active bluff would commonly be associated with water features such as shorelines and riverbanks, whereas an excavated bluff would be associated with gravel pits and road construction.

14

This division segregates very shallow conditions represented as dry to fresh (MR ≤ 3) or xeric substrates from humid substrates. Please note that folic materials (unlimited depth) are the only substrate that will follow the key to the right at this decision node. From the air, these divisions are most readily identified by changes in forest or vegetation cover, slope position, relative elevation and uphill catchment area. On the ground, the division must be determined by measuring the depth to mottles or gley within a substrate sample. If the moisture regime is determined to be very moist (MR = 6) by using the shallow moisture regime chart, then you may be using the wrong ecosite key. Ensure that this site does not meet the criteria for the hydric ecosites found on Key 10 and then re-evaluate the steps to get to the Key 3.

15

This division separates treed and sparse treed sites from shrub or herbaceous sites. For a complete list of ELC tree species, refer to Chapter 4 - *ELC Life Forms*. A site is considered treed if the absolute cover of trees is > 10%.

16

This division separates conifer led sites from hardwood led sites. The conifer led condition occurs where the relative cover of trees is mostly conifer; where “mostly” means that the combined total relative coverage of all conifer species is > 50% of the total tree coverage on the site.

17

This division separates fields from meadows. A “Field” ecosite is intended to capture sites that are continuously altered by humans. Key traits to determine a field are evidence of agriculture, continuous plowing; or heavy grazing/cattle paths. A “Meadow” ecosite is a natural or naturalized site which is dominated by herbaceous vegetation including forbs, grasses, sedges, and ferns.

18

This division separates the pure conifer condition from a conifer led mixedwood. It indicates that the total relative cover of black spruce, jack pine and white birch must be ≥ 90% and that the white birch component must not exceed 20% for this site to be classed as a “Black Spruce-Jack Pine Dominated” ecosite.

19

This division separates sites permanently flooded by lake or stream water (shallow marshes/open water marshes) from those where the water is always close to the surface but seldom or seasonally flooded (fen, swamps, meadow marshes). Permanently sites are continuously under water and may be subject to various levels of wave energy which is directly related to the type of vegetation growing on the site. Terrestrial sites that are seasonally flooded are subject to fluctuations of water level and are enriched by silt deposition during flooding. Evidence of seasonal flooding includes proximity to lake or stream, low sphagnum cover, patches of bare peat or mineral substrate, rub lines on trees and suspended stream debris.

20

This division separates shore fens and floating marshes from other hydric sites exhibiting the characteristics of a high-water table including meadow marshes, bog, fens and swamps. These sites commonly occur adjacent to ponds, streams or lakes forming a floating mat underlain by water or fluid loose peat. They are transitional between marsh and fen or represent an early successional stage of a fen. Floating mat vegetation (usually sedges and shrubs) is in contact with lake or stream water but tends to rise and fall with water level changes.

21

This division separates treed swamps from thicket swamps, fens, and bogs. If the absolute cover of tree species is ≤ 25% **or** the site is occupied by low trees (≤ 10 m tall) that are stunted, follow the decision node to the right. Stunted refers to trees that are constrained by environmental limitations to growth such as low productivity, equivalent to Plonski’s classification of a Site Class 4 (refer to Table 9).

22

This division separates hardwood led sites from conifer led sites. The hardwood condition occurs where the relative cover of trees is mostly hardwood; where “mostly” means that the combined total coverage of all hardwood tree species is > 50% of the total tree coverage on the site.

23

This division separates rich conifer swamps from intermediate and poor swamps and treed bogs. Rich conifer swamps (ecosite 129 or 224) are “mostly” eastern white cedar and/or eastern hemlock or has at least 2 rich swamp indicators. Though not required, these ecosites are generally accompanied by a number of

poor and/or intermediate swamp indicators. There is often a well-developed shrub layer of *Acer spicatum* or *Alnus incana*.

24

This division separates intermediate conifer swamps from poor conifer swamps and treed bogs on the basis of tree species and intermediate/rich swamp indicators. Intermediate conifer swamps have at least 2 intermediate or rich swamp indicators and may have > 10% absolute cover of tamarack or *Alnus incana*. Poor swamps and treed bogs generally lack the intermediate and rich swamp indicators. Tree cover is generally more open than intermediate conifer swamps and contains mostly black spruce.

25

This division separates poor conifer swamps from treed bogs on the basis of hydrologic isolation and trees > 10 m tall occupying ≤ 25% of the absolute cover. Hydrologically isolation refers to a surface raised above surrounding terrain and isolated from mineral-rich substrate waters where nutrient input is from atmospheric deposition only. Poor conifer swamps are not hydrologically isolated and often have a tall, treed component (> 10 m) occupying > 25% of the absolute cover. Please note that this will still allow for low trees ≤ 10 m tall to have up to 100% cover while still meeting the criteria for a treed bog.

26

This division separates thicket swamp, treed bog and treed fen from open bogs, open fens and meadow marshes. Tree cover must be > 10% to become a treed bog or fen; or tall shrub cover must be > 25% to become a thicket swamp. For a complete list of ELC tree and shrub species, refer to Chapter 4 - *ELC Life Forms*.

27

This division separates thicket swamps from treed bog and treed fen. Thicket swamps are dominated by tall shrubs for example *Alnus incana*, the criteria for a thicket swamp include tree cover ≤ 10% and > 25% deciduous shrubs that are > 2 m tall.

28

This division separates meadow marshes from bogs and fens. A meadow marsh must have > 50% absolute cover of herbaceous vegetation. These ecosites tend to be graminoid dominated or less commonly herb dominated on floodplains of small streams, lakeshores, beaver meadows, ditches and occasionally in isolated basins. The substrate is anchored and may be classified as mineral, rock or organic.

29

This division separates shore fens based on a floating mat of sphagnum and sedge origin from a floating marsh. A floating marsh is a mat of cattail and organic debris that over time becomes dense enough to support other vegetation. Each site is underlain by water or fluid, loose peat.

30

This division separates “active”, high energy, open water shorelines with ≤ 25% absolute vegetation cover from low energy, sheltered, open water marshes with > 25% absolute vegetation cover. In the former, the substrate is mineral, coarse fragments or bedrock, although sedimentary peat accumulates in deeper sites and crevices. Vegetation consists of ≤ 25% absolute cover of plant species that are tolerant of high wave and current energy. The low energy sites have low wave or current action. Sedimentary peat may accumulate. Vegetation may include species not tolerant of wave energy such as floating leaved species.

31

This division separates human constructed water catchments from the natural shallow and open water marshes. Examples of these catchments are irrigation channels/ditches for agriculture purposes, storm water collection ponds, irrigation ponds and constructed/rehabilitated wetlands. These sites may be vegetated and utilized by wildlife, but they still need to be classified based on other characteristics such as artificial structure (concrete dams etc.) and patterning (irrigation channels/ditches).

32

This division separates shallow marshes from open marshes on the basis of emergent plant cover. Shallow marshes are characterized by emergent plant cover > 25% and exposed water. They are often associated with sheltered bays and quiet streams with low wave and current energy. Open marshes have standing or flowing water with emergent plant cover ≤ 25% and submergent and/or floating-leaved plant cover normally > 25%. Open water marshes are typically associated with wave-washed shores and river with high water energy.

33

This division separates consolidated rock (bedrock) sites from unconsolidated (coarse fragments) sites. Bedrock sites include cliffs, rock shores, and rock barrens with a consolidated or solid surface, some cracks and crevices are permitted. Coarse fragment sites, such as thallus/raised beaches, and stabilized/coarse shores are composed of gravel, cobbles, stones, or boulders with a diameter > 2 mm occupying > 90% of the substrate volume.

34

This division separates stabilized/coarse shores from talus and raised beaches based on adjacency to a water body. Stabilized and coarse shores will be located in close proximity to and affected by water.

35

This division separates “Active” coarse shorelines modified by humans through gabion or groin baskets or shore stabilization, from “Active” coarse shorelines of natural origin. An “Anthropogenic Coarse Shoreline” would be associated with pier/breakwater walls, shoreline stability, or urban ditching/roadways whereas a natural origin “Active Coarse Shoreline” would commonly be associated with water features such as shorelines and riverbanks.

36

This division separates constructed permanent and vertical structures from other anthropogenic sites. These structures must be at least 3 m tall and have a slope >60 degrees or 173%. Examples of structures that would be included in this ecosite are hydro-electric dams, retaining walls, sound barriers, large apartment buildings and skyscrapers.

37

This division separates transported fills or re-structured mineral materials that are > 30 cm deep from varying degrees of constructed, hard surfaced and highly compacted materials. Signs of transported fills and restructured mineral materials would include golf courses, sporting fields, recreational parks, landfill/waste disposal sites, mine tailings, river dredging and clean fill. Signs of constructed and compact materials would include pavement, concrete, parking lots, buildings, highways, airports, large building roof tops, road/rail beds and trail systems.

38

This division separates sites that are currently or were previously used for the storage or disposal of industrial, toxic, or polluted waste from other forms of deposits such as clean fill, landfill, or disposal of domestic waste.

39 This division separates sites that are currently or were previously used for domestic waste disposal from clean fill deposits. Golf courses and parks that exist on re-claimed waste disposal or landfill sites would also be included here.

40 This division separates “active” or not-vegetated deposits of a waste disposal/landfill from the vegetated or not recently utilized fill sites. In this case, “active” refers to the site having ≤ 10% absolute cover of any vegetation. If these criteria are not met, then the site is not active and the appropriate vegetation modifier may be applied.

41 This division separates coarse clean fill from fine clean fill. Coarse fill would include materials such as concrete, mine tailings, construction rubble, in addition to coarse organic materials such as stumps and slash piles. Fine fill materials would include river/lake bottom dredging, fine organic materials and other fine mineral materials.

42 This division separates “active” or not-vegetated deposits of coarse clean fill from the vegetated or not recently utilized fill sites. Examples of ecosites 193 and 194 would include rubble, construction materials, tree stumps and mine tailings. In this case, “active” refers to the site having ≤ 10% absolute cover of any vegetation. If these criteria are not met, then the site is not active, and the appropriate vegetation modifier may be applied.

43 This division separates “active” or not-vegetated deposits of fine clean fill from the vegetated or not recently utilized fill sites. Examples of ecosites 195 and 196 would include mineral substrate deposits and material from river dredging. In this case, “active” refers to the site having ≤ 10% absolute cover of any vegetation. If these criteria are not met, then the site is not active, and the appropriate vegetation modifier may be applied.

44 This division separates constructed, water shedding, impervious and compact materials from those that are not impervious and water shedding. Examples of this ecosite would include parking lots, commercial paved roof tops, airports, highways (i.e., 400 series), and residential housing.

45 This division separates constructed, very coarse and compact materials from other constructed materials. Examples of ecosite 198 would include: commercial tar and gravel roof tops, gravel highways and road systems.

46 This divisions separates constructed, coarse, and compact materials from other materials. Examples of ecosite 199 would include: dirt racetracks, trail systems and actively used portions of Provincial Parks or campgrounds.

47 This division separates the tidal and permanently flooded substrates from other coastal cliff, rock shoreline or bluff ecosites.

48

This division separates the ecosites dominated by rock substrates from those with > 5 cm of mineral material and organic material is > 10 cm. Mostly exposed rock (> 50% of the site) is characteristic of these Ecosites but they may include patches of very shallow to deep mineral or organic substrates where vegetation may be present.

49

This division separates sites permanently flooded by lake or stream water from those where the water is always close to the surface but seldom flooded. Open salt marshes and salt marshes are permanently flooded with visible water surfaces. The salt thicket swamp, salt poor fen, open salt fen and salt meadow marsh are all vegetated and water contained below the surface or exhibited by ephemeral pools of water >10% of the site.

Ecosite Names

Ecosite #	Ecosite Name	Key
1	Excavated Bluff	2
2	Active Bluff	2
3	Open Bluff	2
4	Bluff	2
5	Active Mineral Shoreline	2
6	Active Sand Dune	2
7	Active Mineral Barren	2
8	Very Shallow, Dry to Fresh: Meadow	3
9	Very Shallow, Dry to Fresh: Sparse Shrrub	3
10	Very Shallow, Dry to Fresh: Shrub	3
11	Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer	3
12	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer	3
13	Very Shallow, Dry to Fresh: Hamlock - Cedar Conifer	3
14	Very Shallow, Dry to Fresh: Conifer	3
15	Very Shallow, Dry to Fresh: Red Pine - White Pine Mixedwood	3
16	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood	3
17	Very Shallow, Dry to Fresh: Oak Hardwood	3
18	Very Shallow, Dry to Fresh: Maple Hardwood	3
19	Very Shallow, Dry to Fresh: Mixedwood	3
20	Very Shallow, Humid: Meadow	3
21	Very Shallow, Humid: Sparse Shrub	3
22	Very Shallow, Humid: Shrub	3
23	Very Shallow, Humid: Red Pine - White Pine Conifer	3
24	Very Shallow, Humid: Pine - Black Spruce Conifer	3
25	Very Shallow, Humid: Hemlock - Cedar Conifer	3
26	Very Shallow, Humid: Conifer	3
27	Very Shallow, Humid: Red Pine - White Pine Mixedwood	3
28	Very Shallow, Humid: Mixedwood	3
29	Dry, Sandy: Field	4
30	Dry, Sandy: Meadow	4
31	Dry, Sandy: Sparse Shrub	4
32	Dry, Sandy: Shrub	4
33	Dry, Sandy: Red Pine - White Pine Conifer	4
34	Dry, Sandy: Jack Pine - Black Spruce Dominated	4
35	Dry, Sandy: Pine - Black Spruce Conifer	4
36	Dry, Sandy: Hemlock - Cedar Conifer	4
37	Dry, Sandy: Spruce - Fir Conifer	4
38	Dry, Sandy: Conifer	4
39	Dry, Sandy: Red Pine - White Pine Mixedwood	4
40	Dry, Sandy: Aspen - Birch Hardwood	4
41	Dry, Sandy: Oak Hardwood	4
42	Dry, Sandy: Maple Hardwood	4
43	Dry, Sandy: Mixedwood	4
44	Dry to Fresh, Coarse: Field	5
45	Dry to Fresh, Coarse: Meadow	5
46	Dry to Fresh, Coarse: Sparse Shrub	5
47	Dry to Fresh, Coarse: Shrub	5
48	Dry to Fresh, Coarse: Red Pine - White Pine Conifer	5
49	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	5
50	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	5
51	Dry to Fresh, Coarse: Hemlock - Cedar Conifer	5

Ecosite #	Ecosite Name	Key
52	Dry to Fresh, Coarse: Spruce - Fir Conifer	5
53	Dry to Fresh, Coarse: Conifer	5
54	Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood	5
55	Dry to Fresh, Coarse: Aspen - Birch Hardwood	5
56	Dry to Fresh, Coarse: Elm - Ash Hardwood	5
57	Dry to Fresh, Coarse: Oak Hardwood	5
58	Dry to Fresh, Coarse: Maple Hardwood	5
59	Dry to Fresh, Coarse: Mixedwood	5
60	Moist, Coarse: Field	6
61	Moist, Coarse: Meadow	6
62	Moist, Coarse: Sparse Shrub	6
63	Moist, Coarse: Shrub	6
64	Moist, Coarse: Red Pine - White Pine Conifer	6
65	Moist, Coarse: Pine - Black Spruce Conifer	6
66	Moist, Coarse: Hemlock - Cedar Conifer	6
67	Moist, Coarse: Spruce - Fir Conifer	6
68	Moist, Coarse: Conifer	6
69	Moist, Coarse: Red Pine - White Pine Mixedwood	6
70	Moist, Coarse: Aspen - Birch Hardwood	6
71	Moist, Coarse: Elm - Ash Hardwood	6
72	Moist, Coarse: Oak Hardwood	6
73	Moist, Coarse: Sugar Maple Hardwood	6
74	Moist, Coarse: Red Maple Hardwood	6
75	Moist, Coarse: Maple Hardwood	6
76	Moist, Coarse: Mixedwood	6
77	Fresh, Clayey: Field	7
78	Fresh, Clayey: Meadow	7
79	Fresh, Clayey: Sparse Shrub	7
80	Fresh, Clayey: Shrub	7
81	Fresh, Clayey: Red Pine - White Pine Conifer	7
82	Fresh, Clayey: Jack Pine - Black Spruce Dominated	7
83	Fresh, Clayey: Pine - Black Spruce Conifer	7
84	Fresh, Clayey: Cedar Conifer	7
85	Fresh, Clayey: Spruce - Fir Conifer	7
86	Fresh, Clayey: Conifer	7
87	Fresh, Clayey: Red Pine - White Pine Mixedwood	7
88	Fresh, Clayey: Aspen - Birch Hardwood	7
89	Fresh, Clayey: Elm - Ash Hardwood	7
90	Fresh, Clayey: Oak Hardwood	7
91	Fresh, Clayey: Maple Hardwood	7
92	Fresh, Clayey: Mixedwood	7
93	Fresh, Silty to Fine Loamy: Field	8
94	Fresh, Silty to Fine Loamy: Meadow	8
95	Fresh, Silty to Fine Loamy: Sparse Shrub	8
96	Fresh, Silty to Fine Loamy: Shrub	8
97	Fresh, Silty to Fine Loamy: Red Pine - White Pine Conifer	8
98	Fresh, Silty to Fine Loamy: Jack Pine - Black Spruce Dominated	8
99	Fresh, Silty to Fine Loamy: Pine - Black Spruce Conifer	8
100	Fresh, Silty to Fine Loamy: Hemlock - Cedar Conifer	8
101	Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	8
102	Fresh, Silty to Fine Loamy: Conifer	8

Ecosite #	Ecosite Name	Key
103	Fresh, Silty to Fine Loamy: Red Pine - White Pine Mixedwood	8
104	Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood	8
105	Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	8
106	Fresh, Silty to Fine Loamy: Oak Hardwood	8
107	Fresh, Silty to Fine Loamy: Maple Hardwood	8
108	Fresh, Silty to Fine Loamy: Mixedwood	8
109	Moist, Fine: Field	9
110	Moist, Fine: Meadow	9
111	Moist, Fine: Sparse Shrub	9
112	Moist, Fine: Shrub	9
113	Moist, Fine: White Pine Conifer	9
114	Moist, Fine: Pine - Black Spruce Conifer	9
115	Moist, Fine: Hemlock - Cedar Conifer	9
116	Moist, Fine: Spruce - Fir Conifer	9
117	Moist, Fine: Conifer	9
118	Moist, Fine: White Pine Mixedwood	9
119	Moist, Fine: Aspen - Birch Hardwood	9
120	Moist, Fine: Elm - Ash Hardwood	9
121	Moist, Fine: Oak Hardwood	9
122	Moist, Fine: Sugar Maple Hardwood	9
123	Moist, Fine: Red Maple Hardwood	9
124	Moist, Fine: Maple Hardwood	9
125	Moist, Fine: Mixedwood	9
126	Treed Bog	10
127	Poor Conifer Swamp	10
128	Intermediate Conifer Swamp	10
129	Rich Conifer Swamp	10
130	Intolerant Hardwood Swamp	10
131	Maple Hardwood Swamp	10
132	Oak Hardwood Swamp	10
133	Hardwood Swamp	10
134	Mineral Thicket Swamp	10
135	Organic Thicket Swamp	10
136	Sparse Treed Fen	10
137	Sparse Treed Bog	10
138	Open Bog	10
139	Poor Fen	10
140	Open Moderately Rich Fen	10
141	Open Extremely Rich Fen	10
142	Mineral Meadow Marsh	10
143	Rock Meadow Marsh	10
144	Organic Meadow Marsh	10
145	Floating Marsh	10
146	Open Shore Fen	10
147	Shrub Shore Fen	10
148	Mineral Shallow Marsh	10
149	Organic Shallow Marsh	10
150	Open Water Marsh: Floating-leaved	10
151	Open Water Marsh: Mineral	10
152	Open Water Marsh: Organic	10
153	Constructed Water Collections	10

Ecosite #	Ecosite Name	Key
154	Active Limnetic Rock	10
155	Active Limnetic Mineral	10
156	Active Limnetic Organic	10
157	Active Cliff	11
158	Cliff	11
159	Open Cliff	11
160	Active Bedrock Shoreline	11
161	Bedrock Shoreline	11
162	Open Bedrock Shoreline	11
163	Active Rock Barren	11
164	Rock Barren	11
165	Open Rock Barren	11
166	Active Talus or Historic/Raised Beach	11
167	Talus or Historic/Raised Beach	11
168	Open Talus or Historic/Raised Beach	11
169	Anthropogenic Coarse Shoreline	11
170	Active Coarse Shoreline	11
171	Coarse Shoreline	11
172	Open Coarse Shoreline	11
173	Calcareous Active Cliff	11
174	Calcareous Cliff	11
175	Calcareous Open Cliff	11
176	Calcareous Active Bedrock Shoreline	11
177	Calcareous Bedrock Shoreline	11
178	Calcareous Open Bedrock Shoreline	11
179	Calcareous Active Rock Barren	11
180	Calcareous Rock Barren	11
181	Calcareous Open Rock Barren	11
182	Calcareous Active Talus or Historic/Raised Beach	11
183	Calcareous Talus or Historic/Raised Beach	11
184	Calcareous Open Talus or Historic/Raised Beach	11
185	Calcareous Anthropogenic Coarse Shoreline	11
186	Calcareous Active Coarse Shoreline	11
187	Calcareous Coarse Shoreline	11
188	Calcareous Open Coarse Shoreline	11
189	Constructed Vertical Surface	12
190	Industrial Waste	12
191	Active Waste Disposal/Landfill	12
192	Waste Disposal/Landfill	12
193	Active Coarse Clean Fill	12
194	Coarse Clean Fill	12
195	Active Fine Clean Fill	12
196	Fine Clean Fill	12
197	Pavement/Concrete	12
198	Compact Graveled Surface	12
199	Compact Mineral Surface	12
200	Other Materials	12
201	Active Coastal Cliff	13
202	Open Coastal Cliff	13
203	Coastal Cliff	13
204	Active Coastal Bedrock shoreline	13

Ecosite #	Ecosite Name	Key
205	Open Coastal Bedrock Shoreline	13
206	Coastal Bedrock Shoreline	13
207	Active Coastal Coarse Shoreline	13
208	Open Coastal Coarse Shoreline	13
209	Coastal Coarse Shoreline	13
210	Active Coastal Bluff	13
211	Open Coastal Bluff	13
212	Coastal Bluff	13
213	Active Coastal Mineral Shoreline	13
214	Active Coastal Sand Dune	13
215	Coastal Mineral Barren	13
216	Salt Thicket Swamp	13
217	Salt Poor Fen	13
218	Open Salt Fen	13
219	Salt Meadow Marsh	13
220	Salt Marsh	13
221	Open Salt Marsh	13
222	Mineral Poor Conifer Swamp	10
223	Mineral Intermediate Conifer Swamp	10
224	Mineral Rich Conifer Swamp	10

Ecosite Matrix:

Ecosite Name	Ecosite Code	Vegetation Cover					Depth							Moisture								Chemistry		Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Excavated Bluff	A001X					●																														●
Excavated Bluff	B001X					●																														●
Excavated Bluff	G001X					●																														●
Excavated Bluff	S001X					●																														●
Active Bluff	A002X					●												●	●	●	●	●														●
Active Bluff	B002X					●												●	●	●	●	●														●
Active Bluff	G002X					●												●	●	●	●	●														●
Active Bluff	S002X					●												●	●	●	●	●														●
Open Bluff	A003N				●													●	●	●	●	●											●	●	●	
Open Bluff	B003N				●													●	●	●	●	●											●	●	●	
Open Bluff	G003N				●													●	●	●	●	●											●	●	●	
Open Bluff	S003N				●													●	●	●	●	●											●	●	●	
Bluff	A004S			●														●	●	●	●	●								●	●	●	●				
Bluff	B004S			●														●	●	●	●	●								●	●	●	●				
Bluff	G004S			●														●	●	●	●	●								●	●	●	●				
Bluff	S004S			●														●	●	●	●	●								●	●	●	●				
Bluff	A004Tl		●															●	●	●	●	●						●								
Bluff	B004Tl		●															●	●	●	●	●						●								
Bluff	G004Tl		●															●	●	●	●	●						●								
Bluff	S004Tl		●															●	●	●	●	●						●								
Bluff	A004Tt	●																●	●	●	●	●					●									
Bluff	B004Tt	●																●	●	●	●	●					●									
Bluff	G004Tt	●																●	●	●	●	●					●									
Bluff	S004Tt	●																●	●	●	●	●					●									
Active Mineral Shoreline	A005X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Mineral Shoreline	B005X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Mineral Shoreline	G005X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Mineral Shoreline	S005X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Sand Dune	A006X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Sand Dune	B006x					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Sand Dune	G006X					●		●	●	●	●	●	●	●	●	●					●	●														●

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Active Sand Dune	S006X					●		●	●	●	●	●	●	●	●	●					●	●								●						●
Active Mineral Barren	A007X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Mineral Barren	B007X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Mineral Barren	G007X					●		●	●	●	●	●	●	●	●	●					●	●														●
Active Mineral Barren	S007X					●		●	●	●	●	●	●	●	●	●					●	●														●
Very Shallow, Dry to Fresh: Meadow	A008N				●			●					●	●				●	●		●	●										●	●	●	
Very Shallow, Dry to Fresh: Meadow	B008N				●			●					●	●				●	●		●	●										●	●	●	
Very Shallow, Dry to Fresh: Meadow	G008N				●			●					●	●				●	●		●	●										●	●	●	
Very Shallow, Dry to Fresh: Meadow	S008N				●			●					●	●				●	●		●	●										●	●	●	
Very Shallow, Dry to Fresh: Sparse Shrrub	A009S			●				●					●	●				●	●		●	●								●		●				
Very Shallow, Dry to Fresh: Sparse Shrrub	B009S			●				●					●	●				●	●		●	●								●		●				
Very Shallow, Dry to Fresh: Sparse Shrrub	G009S			●				●					●	●				●	●		●	●								●		●				
Very Shallow, Dry to Fresh: Sparse Shrrub	S009S			●				●					●	●				●	●		●	●								●		●				
Very Shallow, Dry to Fresh: Shrub	A010S			●				●					●	●				●	●		●	●							●		●					
Very Shallow, Dry to Fresh: Shrub	B010S			●				●					●	●				●	●		●	●							●		●					
Very Shallow, Dry to Fresh: Shrub	G010S			●				●					●	●				●	●		●	●							●		●					
Very Shallow, Dry to Fresh: Shrub	S010S			●				●					●	●				●	●		●	●							●		●					
Very Shallow, Dry to Fresh: Red Pine - White	B011Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Red Pine - White	G011Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Red Pine - White	S011Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Red Pine - White	B011Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Red Pine - White	G011Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Red Pine - White	S011Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Pine - Black Spruce	A012Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Pine - Black Spruce	B012Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Pine - Black Spruce	G012Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Pine - Black Spruce	S012Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Pine - Black Spruce	A012Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Pine - Black Spruce	B012Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Pine - Black Spruce	G012Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Pine - Black Spruce	S012Tt	●						●					●	●				●	●		●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Very Shallow, Dry to Fresh: Hamlock - Cedar	B013Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Hamlock - Cedar	G013Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Hamlock - Cedar	S013Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Hamlock - Cedar	B013Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Hamlock - Cedar	G013Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Hamlock - Cedar	S013Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Conifer	A014Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Conifer	B014Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Conifer	G014Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Conifer	S014Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Conifer	A014Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Conifer	B014Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Conifer	G014Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Conifer	S014Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Red Pine - White	B015Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Red Pine - White	G015Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Red Pine - White	S015Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Red Pine - White	B015Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Red Pine - White	G015Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Red Pine - White	S015Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Aspen - Birch	A016Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Aspen - Birch	B016Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Aspen - Birch	G016Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Aspen - Birch	S016Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Aspen - Birch	A016Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Aspen - Birch	B016Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Aspen - Birch	G016Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Aspen - Birch	S016Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Oak Hardwood	B017Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Oak Hardwood	G017Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Oak Hardwood	S017Tl		●					●					●	●				●	●		●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Very Shallow, Dry to Fresh: Oak Hardwood	B017Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Oak Hardwood	G017Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Oak Hardwood	S017Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Maple Hardwood	B018Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Maple Hardwood	G018Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Maple Hardwood	S018Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Maple Hardwood	B018Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Maple Hardwood	G018Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Maple Hardwood	S018Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Mixedwood	B019Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Mixedwood	G019Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Mixedwood	S019Tl		●					●					●	●				●	●		●	●					●	●								
Very Shallow, Dry to Fresh: Mixedwood	B019Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Mixedwood	G019Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Dry to Fresh: Mixedwood	S019Tt	●						●					●	●				●	●		●	●		●	●	●										
Very Shallow, Humid: Meadow	A20N				●			●							●				●		●	●										●	●	●	
Very Shallow, Humid: Meadow	B020N				●			●							●				●		●	●										●	●	●	
Very Shallow, Humid: Meadow	G020N				●			●							●				●		●	●										●	●	●	
Very Shallow, Humid: Meadow	S020N				●			●							●				●		●	●										●	●	●	
Very Shallow, Humid: Sparse Shrub	A021S			●				●							●				●		●	●							●		●				
Very Shallow, Humid: Sparse Shrub	B021S			●				●							●				●		●	●							●		●				
Very Shallow, Humid: Sparse Shrub	G021S			●				●							●				●		●	●							●		●				
Very Shallow, Humid: Sparse Shrub	S021S			●				●							●				●		●	●							●		●				
Very Shallow, Humid: Shrub	A022S			●				●							●				●		●	●								●		●			
Very Shallow, Humid: Shrub	B022S			●				●							●				●		●	●								●		●			
Very Shallow, Humid: Shrub	G022S			●				●							●				●		●	●								●		●			
Very Shallow, Humid: Shrub	S022S			●				●							●				●		●	●								●		●			
Very Shallow, Humid: Red Pine - White Pine	B023Tl		●					●							●				●		●	●					●	●							
Very Shallow, Humid: Red Pine - White Pine	G023Tl		●					●							●				●		●	●					●	●							
Very Shallow, Humid: Red Pine - White Pine	S023Tl		●					●							●				●		●	●					●	●							
Very Shallow, Humid: Red Pine - White Pine	B023Tt	●						●							●				●		●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Very Shallow, Humid: Red Pine - White Pine	G023Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Red Pine - White Pine	S023Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Pine - Black Spruce	A024Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Pine - Black Spruce	B024Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Pine - Black Spruce	G024Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Pine - Black Spruce	S024Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Pine - Black Spruce	A024Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Pine - Black Spruce	B024Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Pine - Black Spruce	G024Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Pine - Black Spruce	S024Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Hemlock - Cedar Conifer	B025Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Hemlock - Cedar Conifer	G025Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Hemlock - Cedar Conifer	S025Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Hemlock - Cedar Conifer	B025Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Hemlock - Cedar Conifer	G025Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Hemlock - Cedar Conifer	S025Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Conifer	A026Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Conifer	B026Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Conifer	G026Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Conifer	S026Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Conifer	A026Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Conifer	B026Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Conifer	G026Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Conifer	S026Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Red Pine - White Pine	B027Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Red Pine - White Pine	G027Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Red Pine - White Pine	S027Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Red Pine - White Pine	B027Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Red Pine - White Pine	G027Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Red Pine - White Pine	S027Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Mixedwood	B028Tl		●					●							●				●		●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Very Shallow, Humid: Mixedwood	G028Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Mixedwood	S028Tl		●					●							●				●		●	●					●	●								
Very Shallow, Humid: Mixedwood	B028Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Mixedwood	G028Tt	●						●							●				●		●	●		●	●	●										
Very Shallow, Humid: Mixedwood	S028Tt	●						●							●				●		●	●		●	●	●										
Dry, Sandy: Field	A029N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Field	B029N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Field	G029N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Field	S029N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Meadow	A030N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Meadow	B030N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Meadow	G030N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Meadow	S030N				●				●	●	●	●	●								●	●										●	●	●	
Dry, Sandy: Sparse Shrub	A031S			●					●	●	●	●	●								●	●								●		●				
Dry, Sandy: Sparse Shrub	B031S			●					●	●	●	●	●								●	●								●		●				
Dry, Sandy: Sparse Shrub	G031S			●					●	●	●	●	●								●	●								●		●				
Dry, Sandy: Sparse Shrub	S031S			●					●	●	●	●	●								●	●								●		●				
Dry, Sandy: Shrub	A032S			●					●	●	●	●	●								●	●							●		●					
Dry, Sandy: Shrub	B032S			●					●	●	●	●	●								●	●							●		●					
Dry, Sandy: Shrub	G032S			●					●	●	●	●	●								●	●							●		●					
Dry, Sandy: Shrub	S032S			●					●	●	●	●	●								●	●							●		●					
Dry, Sandy: Red Pine - White Pine Conifer	B033Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Red Pine - White Pine Conifer	G033Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Red Pine - White Pine Conifer	S033Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Red Pine - White Pine Conifer	B033Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Red Pine - White Pine Conifer	G033Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Red Pine - White Pine Conifer	S033Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Jack Pine - Black Spruce	A034Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Jack Pine - Black Spruce	B034Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Jack Pine - Black Spruce	G034Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Jack Pine - Black Spruce	S034Tl		●						●	●	●	●	●								●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Dry, Sandy: Jack Pine - Black Spruce	A034Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Jack Pine - Black Spruce	B034Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Jack Pine - Black Spruce	G034Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Jack Pine - Black Spruce	S034Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Pine - Black Spruce Conifer	A035Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Pine - Black Spruce Conifer	B035Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Pine - Black Spruce Conifer	G035Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Pine - Black Spruce Conifer	S035Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Pine - Black Spruce Conifer	A035Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Pine - Black Spruce Conifer	B035Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Pine - Black Spruce Conifer	G035Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Pine - Black Spruce Conifer	S035Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Hemlock - Cedar Conifer	B036Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Hemlock - Cedar Conifer	G036Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Hemlock - Cedar Conifer	S036Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Hemlock - Cedar Conifer	B036Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Hemlock - Cedar Conifer	G036Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Hemlock - Cedar Conifer	S036Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Spruce - Fir Conifer	B037Tt		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Spruce - Fir Conifer	G037Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Spruce - Fir Conifer	S037Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Spruce - Fir Conifer	B037Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Spruce - Fir Conifer	G037Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Spruce - Fir Conifer	S037Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Conifer	A038Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Conifer	B038Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Conifer	G038Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Conifer	S038Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Conifer	A038Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Conifer	B038Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Conifer	G038Tt	●							●	●	●	●	●								●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Dry, Sandy: Conifer	S038Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Red Pine - White Pine Mixedwood	B039Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Red Pine - White Pine Mixedwood	G039Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Red Pine - White Pine Mixedwood	S039Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Red Pine - White Pine Mixedwood	B039Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Red Pine - White Pine Mixedwood	G039Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Red Pine - White Pine Mixedwood	S039Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Aspen - Birch Hardwood	A040Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Aspen - Birch Hardwood	B040Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Aspen - Birch Hardwood	G040Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Aspen - Birch Hardwood	S040Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Aspen - Birch Hardwood	A040Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Aspen - Birch Hardwood	B040Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Aspen - Birch Hardwood	G040Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Aspen - Birch Hardwood	S040Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Oak Hardwood	B041Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Oak Hardwood	G041Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Oak Hardwood	S041Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Oak Hardwood	B041Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Oak Hardwood	G041Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Oak Hardwood	S041Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Maple Hardwood	B042Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Maple Hardwood	G042Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Maple Hardwood	S042Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Maple Hardwood	B042Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Maple Hardwood	G042Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Maple Hardwood	S042Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Mixedwood	A043Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Mixedwood	B043Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Mixedwood	G043Tl		●						●	●	●	●	●								●	●					●	●								
Dry, Sandy: Mixedwood	S043Tl		●						●	●	●	●	●								●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation					Depth						Moisture								Chemistr			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cT	oT	sT	Ti	T	S	sS	Sl	sS	H	s	N	X
Dry, Sandy: Mixedwood	A043Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Mixedwood	B043Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Mixedwood	G043Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry, Sandy: Mixedwood	S043Tt	●							●	●	●	●	●								●	●		●	●	●										
Dry to Fresh, Coarse: Field	A044N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Field	B044N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Field	G044N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Field	S044N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Meadow	A045N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Meadow	B045N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Meadow	G045N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Meadow	S045N				●				●	●	●	●	●	●							●	●											●	●	●	
Dry to Fresh, Coarse: Sparse Shrub	A046S			●					●	●	●	●	●	●							●	●								●		●				
Dry to Fresh, Coarse: Sparse Shrub	B046S			●					●	●	●	●	●	●							●	●								●		●				
Dry to Fresh, Coarse: Sparse Shrub	G046S			●					●	●	●	●	●	●							●	●								●		●				
Dry to Fresh, Coarse: Sparse Shrub	S046S			●					●	●	●	●	●	●							●	●								●		●				
Dry to Fresh, Coarse: Shrub	A047S			●					●	●	●	●	●	●							●	●							●		●					
Dry to Fresh, Coarse: Shrub	B047S			●					●	●	●	●	●	●							●	●							●		●					
Dry to Fresh, Coarse: Shrub	G047S			●					●	●	●	●	●	●							●	●							●		●					
Dry to Fresh, Coarse: Shrub	S047S			●					●	●	●	●	●	●							●	●							●		●					
Dry to Fresh, Coarse: Red Pine - White Pine Conifer	B048Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Red Pine - White Pine Conifer	G048tL		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Red Pine - White Pine Conifer	S048Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Red Pine - White Pine Conifer	B048Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Red Pine - White Pine Conifer	G048Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Red Pine - White Pine Conifer	S048Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Jack Pine - Black Spruce	A049Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Jack Pine - Black Spruce	B049Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Jack Pine - Black Spruce	G049Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Jack Pine - Black Spruce	S049Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Jack Pine - Black Spruce	A049Tt	●							●	●	●	●	●	●							●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Dry to Fresh, Coarse: Jack Pine - Black Spruce	B049Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Jack Pine - Black Spruce	G049Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Jack Pine - Black Spruce	S049Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Pine - Black Spruce	A050Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Pine - Black Spruce	B050Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Pine - Black Spruce	G050Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Pine - Black Spruce	S050Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Pine - Black Spruce	A050Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Pine - Black Spruce	B050Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Pine - Black Spruce	G050Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Pine - Black Spruce	S050Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Hemlock - Cedar Conifer	B051Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Hemlock - Cedar Conifer	G051Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Hemlock - Cedar Conifer	S051Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Hemlock - Cedar Conifer	B051Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Hemlock - Cedar Conifer	G051Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Hemlock - Cedar Conifer	S051Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Spruce - Fir Conifer	A052Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Spruce - Fir Conifer	B052Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Spruce - Fir Conifer	G052Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Spruce - Fir Conifer	S052Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Spruce - Fir Conifer	A052Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Spruce - Fir Conifer	B052Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Spruce - Fir Conifer	G052Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Spruce - Fir Conifer	S052Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Conifer	A053Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Conifer	B053Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Conifer	G053Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Conifer	S053Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Conifer	A053Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Conifer	B053Tt	●							●	●	●	●	●	●							●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Dry to Fresh, Coarse: Conifer	G053Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Conifer	S053Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Red Pine - White Pine	B054Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Red Pine - White Pine	G054Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Red Pine - White Pine	S054Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Red Pine - White Pine	B054Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Red Pine - White Pine	G054Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Red Pine - White Pine	S054Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Aspen - Birch Hardwood	A055Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Aspen - Birch Hardwood	B055Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Aspen - Birch Hardwood	G055Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Aspen - Birch Hardwood	S055Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Aspen - Birch Hardwood	A055Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Aspen - Birch Hardwood	B055Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Aspen - Birch Hardwood	G055Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Aspen - Birch Hardwood	S055Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Elm - Ash Hardwood	B056Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Elm - Ash Hardwood	G056Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Elm - Ash Hardwood	S056Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Elm - Ash Hardwood	B056Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Elm - Ash Hardwood	G056Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Elm - Ash Hardwood	S056Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Oak Hardwood	B057Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Oak Hardwood	G057Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Oak Hardwood	S057Tt		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Oak Hardwood	B057Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Oak Hardwood	G057Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Oak Hardwood	S057Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Maple Hardwood	B058Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Maple Hardwood	G058Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Maple Hardwood	S058Tt		●						●	●	●	●	●	●							●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Dry to Fresh, Coarse: Maple Hardwood	B058Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Maple Hardwood	G058Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Maple Hardwood	S058Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Mixedwood	A059Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Mixedwood	B059Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Mixedwood	G059Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Mixedwood	S059Tl		●						●	●	●	●	●	●							●	●					●	●								
Dry to Fresh, Coarse: Mixedwood	A059Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Mixedwood	B059Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Mixedwood	G059Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Dry to Fresh, Coarse: Mixedwood	S059Tt	●							●	●	●	●	●	●							●	●		●	●	●										
Moist, Coarse: Field	A060N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Field	B060N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Field	G060N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Field	S060N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Meadow	A061N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Meadow	B061N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Meadow	G061N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Meadow	S061N				●				●	●	●	●			●						●	●											●	●	●	
Moist, Coarse: Sparse Shrub	A062S			●					●	●	●	●			●						●	●								●		●				
Moist, Coarse: Sparse Shrub	B062S			●					●	●	●	●			●						●	●								●		●				
Moist, Coarse: Sparse Shrub	G062S			●					●	●	●	●			●						●	●								●		●				
Moist, Coarse: Sparse Shrub	S062S			●					●	●	●	●			●						●	●								●		●				
Moist, Coarse: Shrub	A063S			●					●	●	●	●			●						●	●									●		●			
Moist, Coarse: Shrub	B063S			●					●	●	●	●			●						●	●									●		●			
Moist, Coarse: Shrub	G063S			●					●	●	●	●			●						●	●									●		●			
Moist, Coarse: Shrub	S063S			●					●	●	●	●			●						●	●									●		●			
Moist, Coarse: Red Pine - White Pine Conifer	B064Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Pine - White Pine Conifer	G064Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Pine - White Pine Conifer	S064Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Pine - White Pine Conifer	B064Tt	●							●	●	●	●			●						●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Moist, Coarse: Red Pine - White Pine Conifer	G064Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Red Pine - White Pine Conifer	S064Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Pine - Black Spruce Conifer	A065Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Pine - Black Spruce Conifer	B065Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Pine - Black Spruce Conifer	G065Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Pine - Black Spruce Conifer	S065Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Pine - Black Spruce Conifer	A065Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Pine - Black Spruce Conifer	B065Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Pine - Black Spruce Conifer	G065Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Pine - Black Spruce Conifer	S065Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Hemlock - Cedar Conifer	B066Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Hemlock - Cedar Conifer	G066Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Hemlock - Cedar Conifer	S066Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Hemlock - Cedar Conifer	B066Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Hemlock - Cedar Conifer	G066Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Hemlock - Cedar Conifer	S066Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Spruce - Fir Conifer	A067Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Spruce - Fir Conifer	B067Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Spruce - Fir Conifer	G067Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Spruce - Fir Conifer	S067Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Spruce - Fir Conifer	A067Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Spruce - Fir Conifer	B067Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Spruce - Fir Conifer	G067Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Spruce - Fir Conifer	S067Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Conifer	A068Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Conifer	B068Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Conifer	G068Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Conifer	S068Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Conifer	A068Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Conifer	B068Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Conifer	G068Tt	●							●	●	●	●			●						●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Moist, Coarse: Conifer	S068Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Red Pine - White Pine	B069Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Pine - White Pine	G069Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Pine - White Pine	S069Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Pine - White Pine	B069Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Red Pine - White Pine	G069Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Red Pine - White Pine	S069Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Aspen - Birch Hardwood	A070Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Aspen - Birch Hardwood	B070Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Aspen - Birch Hardwood	G070Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Aspen - Birch Hardwood	S070Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Aspen - Birch Hardwood	A070Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Aspen - Birch Hardwood	B070Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Aspen - Birch Hardwood	G070Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Aspen - Birch Hardwood	S070Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Elm - Ash Hardwood	B071Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Elm - Ash Hardwood	G071Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Elm - Ash Hardwood	S071Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Elm - Ash Hardwood	B071Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Elm - Ash Hardwood	G071Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Elm - Ash Hardwood	S071Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Oak Hardwood	B072Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Oak Hardwood	G072Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Oak Hardwood	S072Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Oak Hardwood	B072Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Oak Hardwood	G072Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Oak Hardwood	S072Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Sugar Maple Hardwood	B073Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Sugar Maple Hardwood	G073Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Sugar Maple Hardwood	S073Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Sugar Maple Hardwood	B073Tt	●							●	●	●	●			●						●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Moist, Coarse: Sugar Maple Hardwood	G073Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Sugar Maple Hardwood	S073Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Red Maple Hardwood	B074Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Maple Hardwood	G074Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Maple Hardwood	S074Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Red Maple Hardwood	B074Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Red Maple Hardwood	G074Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Red Maple Hardwood	S074Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Maple Hardwood	B075Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Maple Hardwood	G075Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Maple Hardwood	S075Tt		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Maple Hardwood	B075Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Maple Hardwood	G075Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Maple Hardwood	S075Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Mixedwood	A076Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Mixedwood	B076Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Mixedwood	G076Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Mixedwood	S076Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Coarse: Mixedwood	A076Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Mixedwood	B076Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Mixedwood	G076Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Coarse: Mixedwood	S076Tt	●							●	●	●	●			●						●	●		●	●	●										
Fresh, Clayey: Field	A077N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Field	B077N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Field	G077N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Field	S077N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Meadow	A078N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Meadow	B078N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Meadow	G078N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Meadow	S078N				●				●	●	●	●		●								●	●										●	●	●	
Fresh, Clayey: Sparse Shrub	A079S			●					●	●	●	●		●								●	●							●		●				

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Fresh, Clayey: Sparse Shrub	B079S			●					●	●	●	●		●							●	●									●		●				
Fresh, Clayey: Sparse Shrub	G079S			●					●	●	●	●		●							●	●									●		●				
Fresh, Clayey: Sparse Shrub	S079S			●					●	●	●	●		●							●	●									●		●				
Fresh, Clayey: Shrub	A080S			●					●	●	●	●		●							●	●								●		●					
Fresh, Clayey: Shrub	B080S			●					●	●	●	●		●							●	●								●		●					
Fresh, Clayey: Shrub	G080S			●					●	●	●	●		●							●	●								●		●					
Fresh, Clayey: Shrub	S080S			●					●	●	●	●		●							●	●								●		●					
Fresh, Clayey: Red Pine - White Pine Conifer	B081Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Red Pine - White Pine Conifer	G081Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Red Pine - White Pine Conifer	S081Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Red Pine - White Pine Conifer	B081Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Red Pine - White Pine Conifer	G081Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Red Pine - White Pine Conifer	S081Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Jack Pine - Black Spruce	A082Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Jack Pine - Black Spruce	B082Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Jack Pine - Black Spruce	G082Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Jack Pine - Black Spruce	S082Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Jack Pine - Black Spruce	A082Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Jack Pine - Black Spruce	B082Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Jack Pine - Black Spruce	G082Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Jack Pine - Black Spruce	S082Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Pine - Black Spruce Conifer	A083Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Pine - Black Spruce Conifer	B083Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Pine - Black Spruce Conifer	G083Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Pine - Black Spruce Conifer	S083Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Pine - Black Spruce Conifer	A083Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Pine - Black Spruce Conifer	B083Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Pine - Black Spruce Conifer	G083Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Pine - Black Spruce Conifer	S083Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Cedar Conifer	B084Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Cedar Conifer	G084Tl		●						●	●	●	●		●							●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture							Chemistry			Vegetation Cover Class												
Fresh, Clayey: Cedar Conifer	S084Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Cedar Conifer	B084Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Cedar Conifer	G084Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Cedar Conifer	S084Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Spruce - Fir Conifer	A085Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Spruce - Fir Conifer	B085Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Spruce - Fir Conifer	G085Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Spruce - Fir Conifer	S085Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Spruce - Fir Conifer	A085Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Spruce - Fir Conifer	B085Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Spruce - Fir Conifer	G085Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Spruce - Fir Conifer	S085Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Conifer	A086Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Conifer	B086Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Conifer	G086Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Conifer	S086Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Conifer	A086Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Conifer	B086Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Conifer	G086Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Conifer	S086Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Red Pine - White Pine	B087Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Red Pine - White Pine	G087Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Red Pine - White Pine	S087Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Red Pine - White Pine	B087Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Red Pine - White Pine	G087Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Red Pine - White Pine	S087Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Clayey: Aspen - Birch Hardwood	A088Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Aspen - Birch Hardwood	B088Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Aspen - Birch Hardwood	G088Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Aspen - Birch Hardwood	S088Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Clayey: Aspen - Birch Hardwood	A088Tt	●							●	●	●	●		●							●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture							Chemistry			Vegetation Cover Class												
Fresh, Clayey: Aspen - Birch Hardwood	B088Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Aspen - Birch Hardwood	G088Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Aspen - Birch Hardwood	S088Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Elm - Ash Hardwood	B089Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Elm - Ash Hardwood	G089Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Elm - Ash Hardwood	S089Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Elm - Ash Hardwood	B086Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Elm - Ash Hardwood	G086Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Elm - Ash Hardwood	S089Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Oak Hardwood	B090Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Oak Hardwood	G090Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Oak Hardwood	S090Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Oak Hardwood	B090Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Oak Hardwood	G090Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Oak Hardwood	S090Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Maple Hardwood	B091Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Maple Hardwood	G091Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Maple Hardwood	S091Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Maple Hardwood	B091Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Maple Hardwood	G091Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Maple Hardwood	S091Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Mixedwood	A092Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Mixedwood	B092Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Mixedwood	G092Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Mixedwood	S092Tl		●						●	●	●	●		●							●	●					●	●							
Fresh, Clayey: Mixedwood	A092Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Mixedwood	B092Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Mixedwood	G092Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Clayey: Mixedwood	S092Tt	●							●	●	●	●		●							●	●		●	●	●									
Fresh, Silty to Fine Loamy: Field	A093N				●				●	●	●	●		●							●	●										●	●	●	
Fresh, Silty to Fine Loamy: Field	B093N				●				●	●	●	●		●							●	●										●	●	●	

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		t	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Fresh, Silty to Fine Loamy: Field	G093N				●				●	●	●	●		●							●	●												●	●	●	
Fresh, Silty to Fine Loamy: Field	S093N				●				●	●	●	●		●							●	●												●	●	●	
Fresh, Silty to Fine Loamy: Meadow	A094N				●				●	●	●	●		●							●	●												●	●	●	
Fresh, Silty to Fine Loamy: Meadow	B094N				●				●	●	●	●		●							●	●												●	●	●	
Fresh, Silty to Fine Loamy: Meadow	G094N				●				●	●	●	●		●							●	●												●	●	●	
Fresh, Silty to Fine Loamy: Meadow	S094N			●					●	●	●	●		●							●	●												●	●	●	
Fresh, Silty to Fine Loamy: Sparse Shrub	A095S			●					●	●	●	●		●							●	●								●		●					
Fresh, Silty to Fine Loamy: Sparse Shrub	B095S			●					●	●	●	●		●							●	●								●		●					
Fresh, Silty to Fine Loamy: Sparse Shrub	G095S			●					●	●	●	●		●							●	●								●		●					
Fresh, Silty to Fine Loamy: Sparse Shrub	S095S			●					●	●	●	●		●							●	●								●		●					
Fresh, Silty to Fine Loamy: Shrub	A096S			●					●	●	●	●		●							●	●							●		●						
Fresh, Silty to Fine Loamy: Shrub	B096S			●					●	●	●	●		●							●	●							●		●						
Fresh, Silty to Fine Loamy: Shrub	G096S			●					●	●	●	●		●							●	●							●		●						
Fresh, Silty to Fine Loamy: Shrub	S096S			●					●	●	●	●		●							●	●							●		●						
Fresh, Silty to Fine Loamy: Red Pine - White	B097Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Red Pine - White	G097Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Red Pine - White	S097Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Red Pine - White	B097Tt	●							●	●	●	●		●							●	●		●	●	●											
Fresh, Silty to Fine Loamy: Red Pine - White	G097Tt	●							●	●	●	●		●							●	●		●	●	●											
Fresh, Silty to Fine Loamy: Red Pine - White	S097Tt	●							●	●	●	●		●							●	●		●	●	●											
Fresh, Silty to Fine Loamy: Jack Pine - Black	A098Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Jack Pine - Black	B098Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Jack Pine - Black	G098Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Jack Pine - Black	S098Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Jack Pine - Black	A098Tt	●							●	●	●	●		●							●	●		●	●	●											
Fresh, Silty to Fine Loamy: Jack Pine - Black	B098Tt	●							●	●	●	●		●							●	●		●	●	●											
Fresh, Silty to Fine Loamy: Jack Pine - Black	G098Tt	●							●	●	●	●		●							●	●		●	●	●											
Fresh, Silty to Fine Loamy: Jack Pine - Black	S098Tt	●							●	●	●	●		●							●	●		●	●	●											
Fresh, Silty to Fine Loamy: Pine - Black Spruce	A099Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Pine - Black Spruce	B099Tl		●						●	●	●	●		●							●	●					●	●									
Fresh, Silty to Fine Loamy: Pine - Black Spruce	G099Tl		●						●	●	●	●		●							●	●					●	●									

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Fresh, Silty to Fine Loamy: Pine - Black Spruce	S099Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Pine - Black Spruce	A099Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Pine - Black Spruce	B099Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Pine - Black Spruce	G099Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Pine - Black Spruce	S099Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Hemlock - Cedar	B100Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Hemlock - Cedar	G100Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Hemlock - Cedar	S100Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Hemlock - Cedar	B100Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Hemlock - Cedar	G100Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Hemlock - Cedar	S100Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	A101Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	B101Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	G101Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	S101Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	A101Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	B101Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	G101Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	S101Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Conifer	A102Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Conifer	B102Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Conifer	G102Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Conifer	S102Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Conifer	A102Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Conifer	B102Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Conifer	G102Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Conifer	S102Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Red Pine - White	B103Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Red Pine - White	G103Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Red Pine - White	S103Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Red Pine - White	B103Tt	●							●	●	●	●		●							●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	V	S	M	M	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	T	S	sSt	Sl	sSl	H	sH	Nv	X
Fresh, Silty to Fine Loamy: Red Pine - White	G103Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Red Pine - White	S103Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Aspen - Birch	A104Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Aspen - Birch	B104Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Aspen - Birch	G104Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Aspen - Birch	S104Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Aspen - Birch	A104Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Aspen - Birch	B104Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Aspen - Birch	G104Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Aspen - Birch	S104Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	B105Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	G105Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	S105Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	B105Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	G105Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Elm - Ash Hardwood	S105Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Oak Hardwood	B106Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Oak Hardwood	G106Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Oak Hardwood	S106Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Oak Hardwood	B106Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Oak Hardwood	G106Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Oak Hardwood	S106Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Maple Hardwood	B107Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Maple Hardwood	G107Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Maple Hardwood	S107Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Maple Hardwood	B107Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Maple Hardwood	G107Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Maple Hardwood	S107Tt	●							●	●	●	●		●							●	●		●	●	●										
Fresh, Silty to Fine Loamy: Mixedwood	A108Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Mixedwood	B108Tl		●						●	●	●	●		●							●	●					●	●								
Fresh, Silty to Fine Loamy: Mixedwood	G108Tl		●						●	●	●	●		●							●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Moist, Fine: Pine - Black Spruce Conifer	A114Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Pine - Black Spruce Conifer	B114Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Pine - Black Spruce Conifer	G114Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Pine - Black Spruce Conifer	S114Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Hemlock - Cedar Conifer	B115Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Hemlock - Cedar Conifer	G115Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Hemlock - Cedar Conifer	S115Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Hemlock - Cedar Conifer	B115Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Hemlock - Cedar Conifer	G115Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Hemlock - Cedar Conifer	S115Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Spruce - Fir Conifer	B116Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Spruce - Fir Conifer	G116Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Spruce - Fir Conifer	S116Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Spruce - Fir Conifer	B116Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Spruce - Fir Conifer	G116Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Spruce - Fir Conifer	S116Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Conifer	A117Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Conifer	B117Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Conifer	G117Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Conifer	S117Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Conifer	A117Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Conifer	B117Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Conifer	G117Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Conifer	S117Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: White Pine Mixedwood	B118Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: White Pine Mixedwood	G118Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: White Pine Mixedwood	S118Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: White Pine Mixedwood	B118Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: White Pine Mixedwood	G118Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: White Pine Mixedwood	S118Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Aspen - Birch Hardwood	A119Tl		●						●	●	●	●			●						●	●					●	●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Moist, Fine: Aspen - Birch Hardwood	B119Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Aspen - Birch Hardwood	G119Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Aspen - Birch Hardwood	S119Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Aspen - Birch Hardwood	A119Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Aspen - Birch Hardwood	B119Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Aspen - Birch Hardwood	G119Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Aspen - Birch Hardwood	S119Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Elm - Ash Hardwood	B120Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Elm - Ash Hardwood	G120Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Elm - Ash Hardwood	S120Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Elm - Ash Hardwood	B120Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Elm - Ash Hardwood	G120Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Elm - Ash Hardwood	S120Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Oak Hardwood	B121Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Oak Hardwood	G121Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Oak Hardwood	S121Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Oak Hardwood	B121Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Oak Hardwood	G121Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Oak Hardwood	S121Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Sugar Maple Hardwood	B122Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Sugar Maple Hardwood	G122Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Sugar Maple Hardwood	S122Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Sugar Maple Hardwood	B122Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Sugar Maple Hardwood	G122Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Sugar Maple Hardwood	S122Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Red Maple Hardwood	B123Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Red Maple Hardwood	G123Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Red Maple Hardwood	S123Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Red Maple Hardwood	B123Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Red Maple Hardwood	G123Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Red Maple Hardwood	S123Tt	●							●	●	●	●			●						●	●		●	●	●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Moist, Fine: Maple Hardwood	B124Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Maple Hardwood	G124Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Maple Hardwood	S124Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Maple Hardwood	B124Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Maple Hardwood	G124Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Maple Hardwood	S124Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Mixedwood	A125Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Mixedwood	B125Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Mixedwood	G125Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Mixedwood	S125Tl		●						●	●	●	●			●						●	●					●	●								
Moist, Fine: Mixedwood	A125Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Mixedwood	B125Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Mixedwood	G125Tt	●							●	●	●	●			●						●	●		●	●	●										
Moist, Fine: Mixedwood	S125Tt	●							●	●	●	●			●						●	●		●	●	●										
Treed Bog	A126Tl		●						●			●					●			●		●					●	●								
Treed Bog	B126Tl		●						●			●					●			●		●					●	●								
Treed Bog	G126Tl		●						●			●					●			●		●					●	●								
Treed Bog	S126Tl		●						●			●					●			●		●					●	●								
Treed Bog	A126Tt	●							●			●					●			●		●				●										
Treed Bog	B126Tt	●							●			●					●			●		●				●										
Treed Bog	G126Tt	●							●			●					●			●		●				●										
Treed Bog	S126Tt	●							●			●					●			●		●				●										
Organic Poor Conifer Swamp	A127Tl		●						●	●	●	●					●			●	●	●					●								
Organic Poor Conifer Swamp	B127Tl		●						●	●	●	●					●			●	●	●					●								
Organic Poor Conifer Swamp	G127Tl		●						●	●	●	●					●			●	●	●					●								
Organic Poor Conifer Swamp	S127Tl		●						●	●	●	●					●			●	●	●					●								
Organic Poor Conifer Swamp	A127Tt	●							●	●	●	●					●			●	●	●		●	●										
Organic Poor Conifer Swamp	B127Tt	●							●	●	●	●					●			●	●	●		●	●										
Organic Poor Conifer Swamp	G127Tt	●							●	●	●	●					●			●	●	●		●	●										
Organic Poor Conifer Swamp	S127Tt	●							●	●	●	●					●			●	●	●		●	●										
Organic Intermediate Conifer Swamp	A128Tl		●						●	●	●	●					●			●	●	●					●								

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Organic Intermediate Conifer Swamp	B128Tl		●						●	●	●	●					●			●	●	●					●									
Organic Intermediate Conifer Swamp	G128Tl		●						●	●	●	●					●			●	●	●					●									
Organic Intermediate Conifer Swamp	S128Tl		●						●	●	●	●					●			●	●	●					●									
Organic Intermediate Conifer Swamp	A128Tt	●							●	●	●	●					●			●	●	●		●	●											
Organic Intermediate Conifer Swamp	B128Tt	●							●	●	●	●					●			●	●	●		●	●											
Organic Intermediate Conifer Swamp	G128Tt	●							●	●	●	●					●			●	●	●		●	●											
Organic Intermediate Conifer Swamp	S128Tt	●							●	●	●	●					●			●	●	●		●	●											
Organic Rich Conifer Swamp	A129Tl		●						●	●	●	●					●				●	●					●									
Organic Rich Conifer Swamp	B129Tl		●						●	●	●	●					●				●	●					●									
Organic Rich Conifer Swamp	G129Tl		●						●	●	●	●					●				●	●					●									
Organic Rich Conifer Swamp	S129Tl		●						●	●	●	●					●				●	●					●									
Organic Rich Conifer Swamp	A129Tt	●							●	●	●	●					●				●	●		●	●											
Organic Rich Conifer Swamp	B129Tt	●							●	●	●	●					●				●	●		●	●											
Organic Rich Conifer Swamp	G129Tt	●							●	●	●	●					●				●	●		●	●											
Organic Rich Conifer Swamp	S129Tt	●							●	●	●	●					●				●	●		●	●											
Intolerant Hardwood Swamp	A130Tl		●						●	●	●	●				●	●				●	●					●									
Intolerant Hardwood Swamp	B130Tl		●						●	●	●	●				●	●				●	●					●									
Intolerant Hardwood Swamp	G130Tl		●						●	●	●	●				●	●				●	●					●									
Intolerant Hardwood Swamp	S130Tl		●						●	●	●	●				●	●				●	●					●									
Intolerant Hardwood Swamp	A130Tt	●							●	●	●	●				●	●				●	●		●	●											
Intolerant Hardwood Swamp	B130Tt	●							●	●	●	●				●	●				●	●		●	●											
Intolerant Hardwood Swamp	G130Tt	●							●	●	●	●				●	●				●	●		●	●											
Intolerant Hardwood Swamp	S130Tt	●							●	●	●	●				●	●				●	●		●	●											
Maple Hardwood Swamp	B131Tl		●						●	●	●	●				●	●				●	●					●									
Maple Hardwood Swamp	G131Tl		●						●	●	●	●				●	●				●	●					●									
Maple Hardwood Swamp	S131Tl		●						●	●	●	●				●	●				●	●					●									
Maple Hardwood Swamp	B131Tt	●							●	●	●	●				●	●				●	●		●	●											
Maple Hardwood Swamp	G131Tt	●							●	●	●	●				●	●				●	●		●	●											
Maple Hardwood Swamp	S131Tt	●							●	●	●	●				●	●				●	●		●	●											
Oak Hardwood Swamp	B132Tl		●						●	●	●	●				●	●				●	●					●									
Oak Hardwood Swamp	G132Tl		●						●	●	●	●				●	●				●	●					●									

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Oak Hardwood Swamp	S132Tl		●						●	●	●	●				●	●				●	●					●									
Oak Hardwood Swamp	B132Tt	●							●	●	●	●				●	●				●	●		●	●											
Oak Hardwood Swamp	G132Tt	●							●	●	●	●				●	●				●	●		●	●											
Oak Hardwood Swamp	S132Tt	●							●	●	●	●				●	●				●	●		●	●											
Hardwood Swamp	B133Tl		●						●	●	●	●				●	●				●	●					●									
Hardwood Swamp	G133Tl		●						●	●	●	●				●	●				●	●					●									
Hardwood Swamp	S133Tl		●						●	●	●	●				●	●				●	●					●									
Hardwood Swamp	B133Tt	●							●	●	●	●				●	●				●	●		●	●											
Hardwood Swamp	G133Tt	●							●	●	●	●				●	●				●	●		●	●											
Hardwood Swamp	S133Tt	●							●	●	●	●				●	●				●	●		●	●											
Mineral Thicket Swamp	A134S			●					●	●	●	●				●					●	●							●	●						
Mineral Thicket Swamp	B134S			●					●	●	●	●				●					●	●							●	●						
Mineral Thicket Swamp	G134S			●					●	●	●	●				●					●	●							●	●						
Mineral Thicket Swamp	S134S			●					●	●	●	●				●					●	●							●	●						
Mineral Thicket Swamp	A135S			●					●	●	●	●					●					●							●	●						
Mineral Thicket Swamp	B135S			●					●	●	●	●					●					●							●	●						
Mineral Thicket Swamp	G135S			●					●	●	●	●					●					●							●	●						
Mineral Thicket Swamp	S135S			●					●	●	●	●					●					●							●	●						
Sparse Treed Fen	A136Tl		●						●			●					●					●						●								
Sparse Treed Fen	B136Tl		●						●			●					●					●						●								
Sparse Treed Fen	G136Tl		●						●			●					●					●						●								
Sparse Treed Fen	S136Tl		●						●			●					●					●						●								
Sparse Treed Fen	A136Tt	●							●			●					●					●				●										
Sparse Treed Fen	B136Tt	●							●			●					●					●				●										
Sparse Treed Fen	G136Tt	●							●			●					●					●				●										
Sparse Treed Fen	S136Tt	●							●			●					●					●				●										
Sparse Treed Bog	A137Tl		●						●			●					●					●					●	●								
Sparse Treed Bog	B137Tl		●						●			●					●					●					●	●								
Sparse Treed Bog	G137Tl		●						●			●					●					●					●	●								
Sparse Treed Bog	S137Tl		●						●			●					●					●					●	●								
Sparse Treed Bog	A137Tt	●							●			●					●					●				●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Sparse Treed Bog	B137Tt	●							●			●					●					●				●										
Sparse Treed Bog	G137Tt	●							●			●					●					●				●										
Sparse Treed Bog	S137Tt	●							●			●					●					●				●										
Open Bog	A138N				●				●			●					●					●											●	●	●	
Open Bog	B138N				●				●			●					●					●											●	●	●	
Open Bog	G138N				●				●			●					●					●											●	●	●	
Open Bog	S138N				●				●			●					●					●											●	●	●	
Open Bog	A138S			●					●			●					●					●								●	●	●				
Open Bog	B138S			●					●			●					●					●								●	●	●				
Open Bog	G138S			●					●			●					●					●								●	●	●				
Open Bog	S138S			●					●			●					●					●								●	●	●				
Poor Fen	A139N				●				●			●					●					●											●	●	●	
Poor Fen	B139N				●				●			●					●					●											●	●	●	
Poor Fen	G139N				●				●			●					●					●											●	●	●	
Poor Fen	S139N				●				●			●					●					●											●	●	●	
Poor Fen	A139S			●					●			●					●					●								●	●	●				
Poor Fen	B139S			●					●			●					●					●								●	●	●				
Poor Fen	G139S			●					●			●					●					●								●	●	●				
Poor Fen	S139S			●					●			●					●					●								●	●	●				
Open Moderately Rich Fen	A140N				●				●			●					●					●											●	●	●	
Open Moderately Rich Fen	B140N				●				●			●					●					●											●	●	●	
Open Moderately Rich Fen	G140N				●				●			●					●					●											●	●	●	
Open Moderately Rich Fen	S140N				●				●			●					●					●											●	●	●	
Open Moderately Rich Fen	A140S			●					●			●					●					●								●	●	●				
Open Moderately Rich Fen	B140S			●					●			●					●					●								●	●	●				
Open Moderately Rich Fen	G140S			●					●			●					●					●								●	●	●				
Open Moderately Rich Fen	S140S			●					●			●					●					●								●	●	●				
Open Extremely Rich Fen	A141N				●				●			●					●					●											●	●	●	
Open Extremely Rich Fen	B141N				●				●			●					●					●											●	●	●	
Open Extremely Rich Fen	G141N				●				●			●					●					●											●	●	●	
Open Extremely Rich Fen	S141N				●				●			●					●					●											●	●	●	

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Open Extremely Rich Fen	A141S			●					●			●					●					●									●	●	●				
Open Extremely Rich Fen	B141S			●					●			●					●					●									●	●	●				
Open Extremely Rich Fen	G141S			●					●			●					●					●									●	●	●				
Open Extremely Rich Fen	S141S			●					●			●					●					●									●	●	●				
Mineral Meadow Marsh	A142N				●																●	●											●	●	●	
Mineral Meadow Marsh	B142N				●																●	●											●	●	●	
Mineral Meadow Marsh	G142N				●																●	●											●	●	●	
Mineral Meadow Marsh	S142N				●																●	●											●	●	●	
Rock Meadow Marsh	A143N				●																	●											●	●	●	
Rock Meadow Marsh	B143N				●																	●											●	●	●	
Rock Meadow Marsh	G143N				●																	●											●	●	●	
Rock Meadow Marsh	S143N				●																	●											●	●	●	
Organic Meadow Marsh	A144N				●																	●											●	●	●	
Organic Meadow Marsh	B144N				●																	●											●	●	●	
Organic Meadow Marsh	G144N				●																	●											●	●	●	
Organic Meadow Marsh	S144N				●																	●											●	●	●	
Floating Marsh	A145N				●																	●											●	●	●	
Floating Marsh	B145N				●																	●											●	●	●	
Floating Marsh	G145N				●																	●											●	●	●	
Floating Marsh	S145N				●																	●											●	●	●	
Floating Marsh	A145S			●																		●									●	●	●				
Floating Marsh	B145S			●																		●									●	●	●				
Floating Marsh	G145S			●																		●									●	●	●				
Floating Marsh	S145S			●																		●									●	●	●				
Open Shore Fen	A146N				●				●			●					●					●											●	●	●	
Open Shore Fen	B146N				●				●			●					●					●											●	●	●	
Open Shore Fen	G146N				●				●			●					●					●											●	●	●	
Open Shore Fen	S146N				●				●			●					●					●											●	●	●	
Open Shore Fen	A146S			●					●			●					●					●									●	●	●				
Open Shore Fen	B146S			●					●			●					●					●									●	●	●				
Open Shore Fen	G146S			●					●			●					●					●									●	●	●				

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Open Shore Fen	S146S			●					●			●					●					●									●	●	●				
Shrub Shore Fen	A147S			●					●			●					●					●								●		●					
Shrub Shore Fen	B147S			●					●			●					●					●								●		●					
Shrub Shore Fen	G147S			●					●			●					●					●								●		●					
Shrub Shore Fen	S147S			●					●			●					●					●								●		●					
Mineral Shallow Marsh	A148N				●																●	●											●	●	●	
Mineral Shallow Marsh	B148N				●																●	●											●	●	●	
Mineral Shallow Marsh	G148N				●																●	●											●	●	●	
Mineral Shallow Marsh	S148N				●																●	●											●	●	●	
Organic Shallow Marsh	A149N				●																	●											●	●	●	
Organic Shallow Marsh	B149N				●																	●											●	●	●	
Organic Shallow Marsh	G149N				●																	●											●	●	●	
Organic Shallow Marsh	S149N				●																	●											●	●	●	
Open Water Marsh: Floating-leaved	A150N				●																	●											●	●	●	
Open Water Marsh: Floating-leaved	B150N				●																	●											●	●	●	
Open Water Marsh: Floating-leaved	G150N				●																	●											●	●	●	
Open Water Marsh: Floating-leaved	S150N				●																	●											●	●	●	
Open Water Marsh: Mineral	A151N				●																●	●											●	●	●	
Open Water Marsh: Mineral	B151N				●																●	●											●	●	●	
Open Water Marsh: Mineral	G151N				●																●	●											●	●	●	
Open Water Marsh: Mineral	S151N				●																●	●											●	●	●	
Open Water Marsh: Organic	A152N				●																	●											●	●	●	
Open Water Marsh: Organic	B152N				●																	●											●	●	●	
Open Water Marsh: Organic	G152N				●																	●											●	●	●	
Open Water Marsh: Organic	S152N				●																	●											●	●	●	
Constructed Water Collections	A153X					●																														●
Constructed Water Collections	B153X					●																														●
Constructed Water Collections	G153X					●																														●
Constructed Water Collections	S153X					●																														●
Active Limnetic Bedrock	A154X					●																●														●
Active Limnetic Bedrock	B154X					●																●														●

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Active Limnetic Bedrock	G154X					•																•														•
Active Limnetic Bedrock	S154X					•																•														•
Active Limnetic Mineral	A155X					•															•	•														•
Active Limnetic Mineral	B155X					•															•	•														•
Active Limnetic Mineral	G155X					•															•	•														•
Active Limnetic Mineral	S155X					•															•	•														•
Active Limnetic Organic	A156X					•																•														•
Active Limnetic Organic	B156X					•																•														•
Active Limnetic Organic	G156X					•																•														•
Active Limnetic Organic	S156X					•																•														•
Active Cliff	A157X					•	•											•	•			•														•
Active Cliff	B157X					•	•											•	•			•														•
Active Cliff	G157X					•	•											•	•			•														•
Active Cliff	S157X					•	•											•	•			•														•
Cliff	A158S			•			•											•	•			•								•		•				
Cliff	B158S			•			•											•	•			•								•		•				
Cliff	G158S			•			•											•	•			•								•		•				
Cliff	S158S			•			•											•	•			•								•		•				
Cliff	A158Tl		•				•											•	•			•						•								
Cliff	B158Tl		•				•											•	•			•						•								
Cliff	G158Tl		•				•											•	•			•						•								
Cliff	S158Tl		•				•											•	•			•						•								
Cliff	B158Tt	•					•											•	•			•				•										
Cliff	G158Tt	•					•											•	•			•				•										
Cliff	S158Tt	•					•											•	•			•				•										
Open Cliff	A159N				•		•											•	•			•											•	•		
Open Cliff	B159N				•		•											•	•			•											•	•		
Open Cliff	G159N				•		•											•	•			•											•	•		
Open Cliff	S159N				•		•											•	•			•											•	•		
Active Bedrock Shoreline	A160X					•	•											•	•			•														•
Active Bedrock Shoreline	B160X					•	•											•	•			•														•

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Active Bedrock Shoreline	G160X					●	●											●	●			●														●
Active Bedrock Shoreline	S160X					●	●											●	●			●														●
Bedrock Shoreline	A161S			●			●											●	●			●								●		●				
Bedrock Shoreline	B161S			●			●											●	●			●								●		●				
Bedrock Shoreline	G161S			●			●											●	●			●								●		●				
Bedrock Shoreline	S161S			●			●											●	●			●								●		●				
Bedrock Shoreline	A161Tl		●				●											●	●			●						●								
Bedrock Shoreline	B161Tl		●				●											●	●			●						●								
Bedrock Shoreline	G161Tl		●				●											●	●			●						●								
Bedrock Shoreline	S161Tl		●				●											●	●			●						●								
Bedrock Shoreline	B161Tt	●					●											●	●			●				●										
Bedrock Shoreline	G161Tt	●					●											●	●			●				●										
Bedrock Shoreline	S161Tt	●					●											●	●			●				●										
Open Bedrock Shoreline	A162N				●		●											●	●			●												●	●	
Open Bedrock Shoreline	B162N				●		●											●	●			●												●	●	
Open Bedrock Shoreline	G162N				●		●											●	●			●												●	●	
Open Bedrock Shoreline	S162N				●		●											●	●			●												●	●	
Active Rock Barren	A163X					●	●											●	●			●														●
Active Rock Barren	B163X					●	●											●	●			●														●
Active Rock Barren	G163X					●	●											●	●			●														●
Active Rock Barren	S163X					●	●											●	●			●														●
Rock Barren	A164S			●			●											●	●			●								●		●				
Rock Barren	B164S			●			●											●	●			●								●		●				
Rock Barren	G164S			●			●											●	●			●								●		●				
Rock Barren	S164S			●			●											●	●			●								●		●				
Rock Barren	A164Tl		●				●											●	●			●						●								
Rock Barren	B164Tl		●				●											●	●			●						●								
Rock Barren	G164Tl		●				●											●	●			●						●								
Rock Barren	S164Tl		●				●											●	●			●						●								
Rock Barren	B164Tt	●					●											●	●			●				●										
Rock Barren	G164Tt	●					●											●	●			●				●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Rock Barren	S164Tt	●					●											●	●			●				●										
Open Rock Barren	A165N				●		●											●	●			●												●	●	
Open Rock Barren	B165N				●		●											●	●			●												●	●	
Open Rock Barren	G165N				●		●											●	●			●												●	●	
Open Rock Barren	S165N				●		●											●	●			●												●	●	
Active Talus or Historic/Raised Beach	A166X					●	●											●	●			●														●
Active Talus or Historic/Raised Beach	B166X					●	●											●	●			●														●
Active Talus or Historic/Raised Beach	G166X					●	●											●	●			●														●
Active Talus or Historic/Raised Beach	S166X					●	●											●	●			●														●
Talus or Historic/Raised Beach	A167S			●			●											●	●			●								●		●				
Talus or Historic/Raised Beach	B167S			●			●											●	●			●								●		●				
Talus or Historic/Raised Beach	G167S			●			●											●	●			●								●		●				
Talus or Historic/Raised Beach	S167S			●			●											●	●			●								●		●				
Talus or Historic/Raised Beach	A167Tl		●				●											●	●			●						●								
Talus or Historic/Raised Beach	B167Tl		●				●											●	●			●						●								
Talus or Historic/Raised Beach	G167Tl		●				●											●	●			●						●								
Talus or Historic/Raised Beach	S167Tl		●				●											●	●			●						●								
Talus or Historic/Raised Beach	B167Tt	●					●											●	●			●				●										
Talus or Historic/Raised Beach	G167Tt	●					●											●	●			●				●										
Talus or Historic/Raised Beach	S167Tt	●					●											●	●			●				●										
Open Talus or Historic/Raised Beach	A168N				●		●											●	●			●												●	●	
Open Talus or Historic/Raised Beach	B168N				●		●											●	●			●												●	●	
Open Talus or Historic/Raised Beach	G168N				●		●											●	●			●												●	●	
Open Talus or Historic/Raised Beach	S168N				●		●											●	●			●												●	●	
Anthropogenic Coarse Shoreline	A169X					●																														●
Anthropogenic Coarse Shoreline	B169X					●																														●
Anthropogenic Coarse Shoreline	G169X					●																														●
Anthropogenic Coarse Shoreline	S169X					●																														●
Active Coarse Shoreline	A170X					●	●											●	●			●														●
Active Coarse Shoreline	B170X					●	●											●	●			●														●
Active Coarse Shoreline	G170X					●	●											●	●			●														●

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Active Coarse Shoreline	S170X					●	●											●	●			●														●
Coarse Shoreline	A171S			●			●											●	●			●								●		●				
Coarse Shoreline	B171S			●			●											●	●			●								●		●				
Coarse Shoreline	G171S			●			●											●	●			●								●		●				
Coarse Shoreline	S171S			●			●											●	●			●								●		●				
Coarse Shoreline	A171Tl		●				●											●	●			●						●								
Coarse Shoreline	B171Tl		●				●											●	●			●						●								
Coarse Shoreline	G171Tl		●				●											●	●			●						●								
Coarse Shoreline	S171Tl		●				●											●	●			●						●								
Coarse Shoreline	A171Tt	●					●											●	●			●				●										
Coarse Shoreline	B171Tt	●					●											●	●			●				●										
Coarse Shoreline	G171Tt	●					●											●	●			●				●										
Coarse Shoreline	S171Tt	●					●											●	●			●				●										
Open Coarse Shoreline	A172N				●		●											●	●			●												●	●	
Open Coarse Shoreline	B172N				●		●											●	●			●												●	●	
Open Coarse Shoreline	G172N				●		●											●	●			●												●	●	
Open Coarse Shoreline	S172N				●		●											●	●			●												●	●	
Calcareous Active Cliff	A173X					●	●											●	●		●															●
Calcareous Active Cliff	B173X					●	●											●	●		●															●
Calcareous Active Cliff	G173X					●	●											●	●		●															●
Calcareous Active Cliff	S173X					●	●											●	●		●															●
Calcareous Cliff	A174S			●			●											●	●		●									●		●				
Calcareous Cliff	B174S			●			●											●	●		●									●		●				
Calcareous Cliff	G174S			●			●											●	●		●									●		●				
Calcareous Cliff	S174S			●			●											●	●		●									●		●				
Calcareous Cliff	A174Tl		●				●											●	●		●							●								
Calcareous Cliff	B174Tl		●				●											●	●		●							●								
Calcareous Cliff	G174Tl		●				●											●	●		●							●								
Calcareous Cliff	S174Tl		●				●											●	●		●							●								
Calcareous Cliff	B174Tt	●					●											●	●		●					●										
Calcareous Cliff	G174Tt	●					●											●	●		●					●										

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Calcareous Cliff	S175Tt	●					●											●	●		●					●										
Calcareous Open Cliff	A176N				●		●											●	●		●													●	●	
Calcareous Open Cliff	B176N				●		●											●	●		●													●	●	
Calcareous Open Cliff	G176N				●		●											●	●		●													●	●	
Calcareous Open Cliff	S176N				●		●											●	●		●													●	●	
Calcareous Active Bedrock Shoreline	A177X					●	●											●	●		●															●
Calcareous Active Bedrock Shoreline	B177X					●	●											●	●		●															●
Calcareous Active Bedrock Shoreline	G177X					●	●											●	●		●															●
Calcareous Active Bedrock Shoreline	S177X					●	●											●	●		●															●
Calcareous Bedrock Shoreline	A178S			●			●											●	●		●									●		●				
Calcareous Bedrock Shoreline	B178S			●			●											●	●		●									●		●				
Calcareous Bedrock Shoreline	G178S			●			●											●	●		●									●		●				
Calcareous Bedrock Shoreline	S178S			●			●											●	●		●									●		●				
Calcareous Bedrock Shoreline	A178Tl		●				●											●	●		●							●								
Calcareous Bedrock Shoreline	B178Tl		●				●											●	●		●							●								
Calcareous Bedrock Shoreline	G178Tl		●				●											●	●		●							●								
Calcareous Bedrock Shoreline	S178Tl		●				●											●	●		●							●								
Calcareous Bedrock Shoreline	B178Tt	●					●											●	●		●					●										
Calcareous Bedrock Shoreline	G178Tt	●					●											●	●		●					●										
Calcareous Bedrock Shoreline	S178Tt	●					●											●	●		●					●										
Calcareous Open Bedrock Shoreline	A179N				●		●											●	●		●													●	●	
Calcareous Open Bedrock Shoreline	B179N				●		●											●	●		●													●	●	
Calcareous Open Bedrock Shoreline	G179N				●		●											●	●		●													●	●	
Calcareous Open Bedrock Shoreline	S179N				●		●											●	●		●													●	●	
Calcareous Active Rock Barren	A180X					●	●											●	●		●															●
Calcareous Active Rock Barren	B180X					●	●											●	●		●															●
Calcareous Active Rock Barren	G180X					●	●											●	●		●															●
Calcareous Active Rock Barren	S180X					●	●											●	●		●															●
Calcareous Rock Barren	A181S			●			●											●	●		●									●		●				
Calcareous Rock Barren	B181S			●			●											●	●		●									●		●				
Calcareous Rock Barren	G181S			●			●											●	●		●									●		●				

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Calcareous Rock Barren	S181S			●			●											●	●		●									●		●				
Calcareous Rock Barren	A180Tl		●				●											●	●		●							●								
Calcareous Rock Barren	B180Tl		●				●											●	●		●							●								
Calcareous Rock Barren	G180Tl		●				●											●	●		●							●								
Calcareous Rock Barren	S180Tl		●				●											●	●		●							●								
Calcareous Rock Barren	B180Tt	●					●											●	●		●					●										
Calcareous Rock Barren	G180Tt	●					●											●	●		●					●										
Calcareous Rock Barren	S180Tt	●					●											●	●		●					●										
Calcareous Open Rock Barren	A181N				●		●											●	●		●													●	●	
Calcareous Open Rock Barren	B181N				●		●											●	●		●													●	●	
Calcareous Open Rock Barren	G181N				●		●											●	●		●													●	●	
Calcareous Open Rock Barren	S181N				●		●											●	●		●													●	●	
Calcareous Active Talus or Historic/Raised	A182X					●	●											●	●		●															●
Calcareous Active Talus or Historic/Raised	B182X					●	●											●	●		●															●
Calcareous Active Talus or Historic/Raised	G182X					●	●											●	●		●															●
Calcareous Active Talus or Historic/Raised	S182X					●	●											●	●		●															●
Calcareous Talus or Historic/Raised Beach	A183S			●			●											●	●		●									●		●				
Calcareous Talus or Historic/Raised Beach	B183S			●			●											●	●		●									●		●				
Calcareous Talus or Historic/Raised Beach	G183S			●			●											●	●		●									●		●				
Calcareous Talus or Historic/Raised Beach	S183S			●			●											●	●		●									●		●				
Calcareous Talus or Historic/Raised Beach	A183Tl		●				●											●	●		●							●								
Calcareous Talus or Historic/Raised Beach	B183Tl		●				●											●	●		●							●								
Calcareous Talus or Historic/Raised Beach	G183Tl		●				●											●	●		●							●								
Calcareous Talus or Historic/Raised Beach	S183Tl		●				●											●	●		●							●								
Calcareous Talus or Historic/Raised Beach	B183Tt	●					●											●	●		●					●										
Calcareous Talus or Historic/Raised Beach	G183Tt	●					●											●	●		●					●										
Calcareous Talus or Historic/Raised Beach	S183Tt	●					●											●	●		●					●										
Calcareous Open Talus or Historic/Raised	A184N				●		●											●	●		●													●	●	
Calcareous Open Talus or Historic/Raised	B184N				●		●											●	●		●													●	●	
Calcareous Open Talus or Historic/Raised	G184N				●		●											●	●		●													●	●	
Calcareous Open Talus or Historic/Raised	S184N				●		●											●	●		●													●	●	

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Calcareous Anthropogenic Coarse Shoreline	A185X					●																													●
Calcareous Anthropogenic Coarse Shoreline	B185X					●																													●
Calcareous Anthropogenic Coarse Shoreline	G185X					●																													●
Calcareous Anthropogenic Coarse Shoreline	S185X					●																													●
Calcareous Active Coarse Shoreline	A186X					●	●											●	●		●															●
Calcareous Active Coarse Shoreline	B186X					●	●											●	●		●															●
Calcareous Active Coarse Shoreline	G186X					●	●											●	●		●															●
Calcareous Active Coarse Shoreline	S186X					●	●											●	●		●															●
Calcareous Coarse Shoreline	A187S			●			●											●	●		●									●		●				
Calcareous Coarse Shoreline	B187S			●			●											●	●		●									●		●				
Calcareous Coarse Shoreline	G187S			●			●											●	●		●									●		●				
Calcareous Coarse Shoreline	S187S			●			●											●	●		●									●		●				
Calcareous Coarse Shoreline	A187Tl		●				●											●	●		●							●								
Calcareous Coarse Shoreline	B187Tl		●				●											●	●		●							●								
Calcareous Coarse Shoreline	G187Tl		●				●											●	●		●							●								
Calcareous Coarse Shoreline	S187Tl		●				●											●	●		●							●								
Calcareous Coarse Shoreline	A187Tt	●					●											●	●		●					●										
Calcareous Coarse Shoreline	B187Tt	●					●											●	●		●					●										
Calcareous Coarse Shoreline	G187Tt	●					●											●	●		●					●										
Calcareous Coarse Shoreline	S187Tt	●					●											●	●		●					●										
Calcareous Open Coarse Shoreline	A188N				●		●											●	●		●													●	●	
Calcareous Open Coarse Shoreline	B188N				●		●											●	●		●													●	●	
Calcareous Open Coarse Shoreline	G188N				●		●											●	●		●													●	●	
Calcareous Open Coarse Shoreline	S188N				●		●											●	●		●													●	●	
Constructed Vertical Surface	A189X					●																														●
Constructed Vertical Surface	B189X					●																														●
Constructed Vertical Surface	G189X					●																														●
Constructed Vertical Surface	S189X					●																														●
Industrial Waste	A190X					●																														●
Industrial Waste	B190X					●																														●
Industrial Waste	G190X					●																														●

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Industrial Waste	S190X					●																													●
Active Waste Disposal/Landfill	A191X					●																													●
Active Waste Disposal/Landfill	B191X					●																													●
Active Waste Disposal/Landfill	G191X					●																													●
Active Waste Disposal/Landfill	S191X					●																													●
Waste Disposal/Landfill	A192N				●																												●	●	●	
Waste Disposal/Landfill	B192N				●																												●	●	●	
Waste Disposal/Landfill	G192N				●																												●	●	●	
Waste Disposal/Landfill	S192N				●																												●	●	●	
Waste Disposal/Landfill	A192S			●																									●	●	●	●				
Waste Disposal/Landfill	B192S			●																									●	●	●	●				
Waste Disposal/Landfill	G192S			●																									●	●	●	●				
Waste Disposal/Landfill	S192S			●																									●	●	●	●				
Waste Disposal/Landfill	B192Tl		●																								●	●							
Waste Disposal/Landfill	G192Tl		●																								●	●							
Waste Disposal/Landfill	S192Tl		●																								●	●							
Waste Disposal/Landfill	B192Tt	●																						●	●	●									
Waste Disposal/Landfill	G192Tt	●																						●	●	●									
Waste Disposal/Landfill	S192Tt	●																						●	●	●									
Active Coarse Clean Fill	A193X					●																													●
Active Coarse Clean Fill	B193X					●																													●
Active Coarse Clean Fill	G193X					●																													●
Active Coarse Clean Fill	S193X					●																													●
Coarse Clean Fill	A194N				●																												●	●	●	
Coarse Clean Fill	B194N				●																												●	●	●	
Coarse Clean Fill	G194N				●																												●	●	●	
Coarse Clean Fill	S194N				●																												●	●	●	
Coarse Clean Fill	A194S			●																									●	●	●	●				
Coarse Clean Fill	B194S			●																									●	●	●	●				
Coarse Clean Fill	G194S			●																									●	●	●	●				
Coarse Clean Fill	S194S			●																									●	●	●	●				

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class											
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Coarse Clean Fill	B194Tl		●																								●	●								
Coarse Clean Fill	G194Tl		●																								●	●								
Coarse Clean Fill	S194Tl		●																								●	●								
Coarse Clean Fill	B194Tt	●																						●	●	●										
Coarse Clean Fill	G194Tt	●																						●	●	●										
Coarse Clean Fill	S194Tt	●																						●	●	●										
Active Fine Clean Fill	A195X					●																														●
Active Fine Clean Fill	B195X					●																														●
Active Fine Clean Fill	G195X					●																														●
Active Fine Clean Fill	S195X					●																														●
Fine Clean Fill	A196N				●																												●	●	●	
Fine Clean Fill	B196N				●																												●	●	●	
Fine Clean Fill	G196N				●																												●	●	●	
Fine Clean Fill	S196N				●																												●	●	●	
Fine Clean Fill	A196S			●																									●	●	●	●				
Fine Clean Fill	B196S			●																									●	●	●	●				
Fine Clean Fill	G196S			●																									●	●	●	●				
Fine Clean Fill	S196S			●																									●	●	●	●				
Fine Clean Fill	B196Tl		●																								●	●								
Fine Clean Fill	G196Tl		●																								●	●								
Fine Clean Fill	S196Tl		●																								●	●								
Fine Clean Fill	B196Tt	●																						●	●	●										
Fine Clean Fill	G196Tt	●																						●	●	●										
Fine Clean Fill	S196Tt	●																						●	●	●										
Pavement/Concrete	A197X					●																														●
Pavement/Concrete	B197X					●																														●
Pavement/Concrete	G197X					●																														●
Pavement/Concrete	S197X					●																														●
Compact Gravelled Surface	A198X					●																														●
Compact Gravelled Surface	B198X					●																														●
Compact Gravelled Surface	G198X					●																														●

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Compact Gravelled Surface	S198X					●																														●
Compact Mineral Surface	A199X					●																														●
Compact Mineral Surface	B199X					●																														●
Compact Mineral Surface	G199X					●																														●
Compact Mineral Surface	S199X					●																														●
Other Materials	A200X					●																														●
Other Materials	B200X					●																														●
Other Materials	G200X					●																														●
Other Materials	S200X					●																														●
Active Coastal Cliff	A201X					●	●											●	●				●													●
Open Coastal Cliff	A202N				●		●											●	●				●										●	●	●	
Coastal Cliff	A203S			●			●											●	●				●						●	●	●	●				
Active Coastal Bedrock shoreline	A204X					●	●											●	●				●													●
Open Coastal Bedrock Shoreline	A205N				●		●											●	●				●										●	●	●	
Coastal Bedrock Shoreline	A206S			●			●											●	●				●						●	●	●	●				
Active Coastal Coarse Shoreline	A207X					●	●											●	●				●													●
Active Coastal Coarse Shoreline	A207X					●	●											●	●				●													●
Open Coastal Coarse Shoreline	A208N				●		●											●	●				●										●	●	●	
Coastal Coarse Shoreline	A209S			●			●											●	●				●						●	●	●	●				
Active Coastal Bluff	A210X					●													●	●			●													●
Open Coastal Bluff	A211N				●														●	●			●										●	●	●	
Coastal Bluff	A212S			●															●	●			●						●	●	●	●				
Active Coastal Mineral Shoreline	A213X					●			●	●	●	●							●	●			●													●
Active Coastal Sand Dune	A214X					●			●	●	●	●							●	●			●													●
Coasta Mineral Barren	A215N				●				●	●	●	●							●	●			●										●	●	●	
Coastal Mineral Barren	A215S			●					●	●	●	●							●	●			●						●	●	●	●				
Salt Thicket Swamp	A216S			●					●	●	●	●				●	●		●	●			●						●		●					
Salt Poor Fen	A217N			●	●							●					●		●	●			●									●	●	●	●	
Open Salt Fen	A218N			●	●							●					●		●	●			●									●	●	●	●	
Salt Meadow Marsh	A219N				●																		●										●	●	●	
Salt Marsh	A220N				●																		●										●	●	●	
Open Salt Marsh	A221N				●																		●										●	●	●	

Ecosite Name	Ecosite	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
	Code	Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Mineral Poor Conifer Swamp	A222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	A222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	A222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	A222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	A222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	A222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	A222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	A222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	A223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	A223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	A223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	A223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	A223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	A223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	A223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	A223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	A224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	A224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	A224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	A224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	A224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	A224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	A224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	A224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	B222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	B222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	B222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	B222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	B222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	B222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	B222Tt	●							●	●	●	●				●					●	●		●	●											

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Mineral Poor Conifer Swamp	B222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	B223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	B223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	B223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	B223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	B223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	B223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	B223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	B223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	B224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	B224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	B224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	B224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	B224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	B224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	B224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	B224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	G222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	G222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	G222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	G222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	G222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	G222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	G222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	G222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	G223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	G223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	G223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	G223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	G223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	G223Tt	●							●	●	●	●				●					●	●		●	●											

Ecosite Name	Ecosite	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
	Code	Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Mineral Intermediate Conifer Swamp	G223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	G223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	G224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	G224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	G224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	G224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	G224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	G224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	G224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	G224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	S222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	S222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	S222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	S222Tl		●						●	●	●	●				●					●	●					●									
Mineral Poor Conifer Swamp	S222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	S222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	S222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Poor Conifer Swamp	S222Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	S223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	S223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	S223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	S223Tl		●						●	●	●	●				●					●	●					●									
Mineral Intermediate Conifer Swamp	S223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	S223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	S223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Intermediate Conifer Swamp	S223Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	S224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	S224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	S224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	S224Tl		●						●	●	●	●				●					●	●					●									
Mineral Rich Conifer Swamp	S224Tt	●							●	●	●	●				●					●	●		●	●											

Ecosite Name	Ecosite Code	Vegetation Cover					Depth						Moisture								Chemistry			Vegetation Cover Class												
		Tt	Tl	S	N	X	R	VS	S	M	MD	D	d	f	m	v	w	x	h	s	k	n	z	cTt	oTt	sTt	Tis	Tl	St	sSt	Sl	sSl	H	sH	Nv	X
Mineral Rich Conifer Swamp	S224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	S224Tt	●							●	●	●	●				●					●	●		●	●											
Mineral Rich Conifer Swamp	S224Tt	●							●	●	●	●				●					●	●		●	●											

Boreal Ecosite Factsheets

March, 2014

As we approach the final review stage of these borealecosite factsheets, we request that you submit your comments to:

Peter Uhlig
Ontario Ministry of Natural Resources
1235 Queen Street East
Sault Ste. Marie, ON
P6A 2E5
phone: (705) 946-7478
e-mail: peter.uhlig@ontario.ca

***Current list of sub-species, varieties and abbreviations NOTacknowledged on species lists within individual factsheets**

These genus, species, sub-species and variety were documented within the dynamic vegetation tracking mechanism FOIBIS maintained by botanists at the University of Guelph in Ontario

Please note that within the species lists, when 2 or more genus have been listed consecutively, the genus will be abbreviated. For example, *Populous tremuloides,Populous grandidentata* will be listed as *Populous tremuloides, P. grandidentata*.

Acer saccharum = Acer saccharum ssp. s*accharum Achillea millefolium = Achillea millefolium* ssp. m*illefoliumAlnus incana = Alnus incana* ssp*. rugosa*
Alnus viridis = Alnus viridis ssp. *crispa*
Andromeda polifolia = Andromeda polifolia ssp*. glaucophylla*
Anthoxanthum nitens = Anthoxanthum nitens ssp*. nitens Anthoxanthum odoratum = Anthoxanthum odoratum* ssp*. doratum*
Apocynum androsaemifolium = Apocynum androsaemifolium ssp*. androsaemifolium*
Artemisia campestris = Artemisia campestris ssp*. caudata*
Asplenium trichomanes = Asplenium trichomanes ssp*. trichomanesBetula pumila = Betula pumila* var. *pumila*
Calamagrostis canadensis = Calamagrostis canadensis var*. canadensisCampylium stellatum = Campylium stellatum* var*. stellatum*
Carex aquatilis = Carex aquatilis var*. aquatilis*
Carex lasiocarpa = Carex lasiocarpa ssp*. americanaCarex magellanica = Carex magellanica* ssp*. Irrigua*
Ceratodon purpureus = Ceratodon purpureus var*. purpureus Chimaphila umbellata = Chimaphila umbellata* ssp*. cisatlantica Chamerion angustifolium = Chamerion angustifolium* ssp*. angustifoliumCicuta maculata = Cicuta maculata* var. *maculata*
Cladina stellaris = Cladina stellaris var*. stellaris*
Corylus cornuta = Corylus cornuta ssp*. cornuta*
Deschampsia cespitosa = Deschampsia cespitosa ssp*. cespitos Dulichium arundianceum = Dulichium arundianceum* var. *arundinaceumElymus canadensis = Elymus canadensis* var*. canadensis*
Elymus lanceolatus = Elymus lanceolatus ssp. p*sammophilus Elymus trachycaulus = Elymus trachycaulus* ssp*. trachycaulus Empetrum nigrum = Empetrum nigrum* ssp*. hermaphroditum Eriophorum vaginatum = Eriophorum vaginatum* ssp*. spissum Eutrochium maculatum = Eutrochium maculatum* var*. maculatumFragaria virginiana = Fragaria virginiana* ssp*. virginiana*
Galium trifidum = Galium trifidum ssp*. trifidum*
Kalmia angustifolia = Kalmia angustifolia var*. angustifolia*
Leymus mollis = Leymus mollis ssp*. mollis*
Linnaea borealis = Linnaea borealis ssp*. longiflora Lonicera involucrata = Lonicera involucrata* var*. involucrata*

***Current list of sub-species, varieties and abbreviations NOTacknowledged on species lists within individual factsheets**

These genus, species, sub-species and variety were documented within the dynamic vegetation tracking mechanism FOIBIS maintained by botanists at the University of Guelph in Ontario

Please note that within the species lists, when 2 or more genus have been listed consecutively, the genus will be abbreviated. For example, *Populous tremuloides, Populous grandidentata* will be listed as *Populous tremuloides, P. grandidentata*.

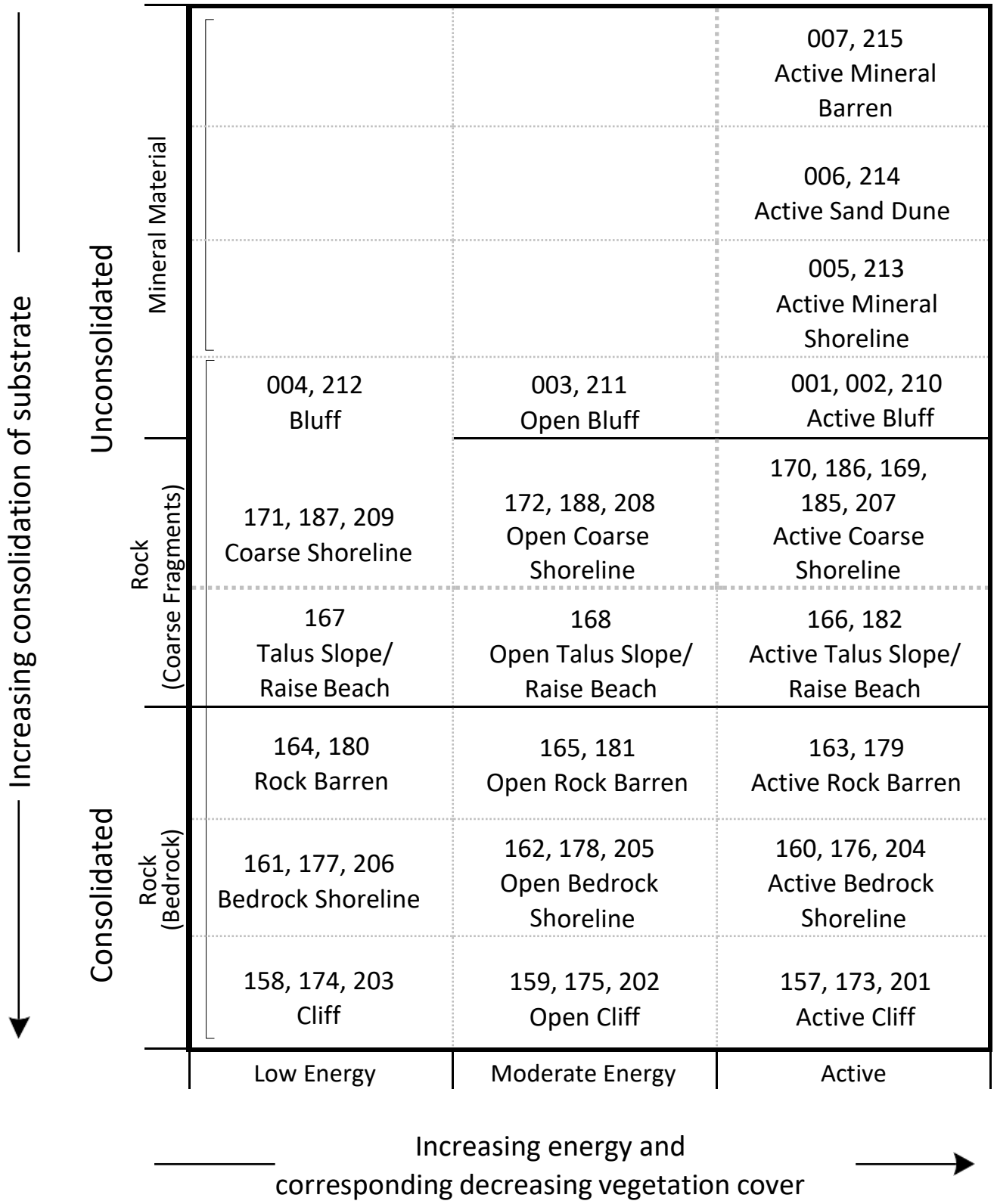
Maianthemum canadense = Maianthemum canadense ssp*. canadense*
Medicago sativa = Medicago sativa ssp*. sativa*
Mentha arvensis = Mentha arvensis ssp*. borealis*
Mimulus ringens = Mimulus ringens var*. ringens*
Nymphaea odorata = Nymphaea odorata ssp*. odorata*
Persicaria amphibia = Persicaria amphibia var*. emersa*
Phleum pratense = Phleum pratense ssp*. pratense*
Phragmites australis = Phragmites australis ssp*. australis*
Poa pratensis = Poa pratensis ssp. p*ratensis*
Polytrichum commune = Polytrichum commune var*. commune*
Populus balsamifera = Populus balsamifera ssp. *balsamifera*
Potentilla norvegica = Potentilla norvegica ssp*. norvegica*
Prunus virginiana = Prunus virginiana var*. virginiana*
Prunus pumila = Prunus pumila var*. pumila*
Pteridium aquilinum = Pteridium aquilinum var*.*
latiusculumRanunculus aquatilis = Ranunculus aquatilis
var*. diffusus Rhus radicans = Rhus radicans* ssp. n*egundo*
Rosa acicularis = Rosa acicularis ssp*. sayi Rubus*
idaeus = Rubus idaeus ssp*. melanolasiusRubus*
idaeus = Rubus idaeus ssp*. strigosus*
Rumex acetosella = Rumex acetosella ssp*. acetosella Sambucus*
racemosa = Sambucus racemosa ssp*. pubens Sarracenia*
purpurea = Sarracenia purpurea ssp*. purpurea Schoenoplectus*
acutus = Schoenoplectus acutus var*. acutus Scutellaria*
galericulata = Scutellaria galericulata var*. pubescensSpiraea*
alba = Spiraea alba var*. alba*
Symphoricarpos albus = Symphoricarpos albus var. albus
Symphyotrichum lanceolatum = Symphyotrichum lanceolatum ssp*. lanceolatum*
Trientalis borealis = Trientalis borealis ssp*. borealis*
Viola adunca = Viola adunca var*. adunca*
Viburnum opulus = Viburnum opulus var*. americanum*
Zizania palustris = Zizania palustris var*. palustris*

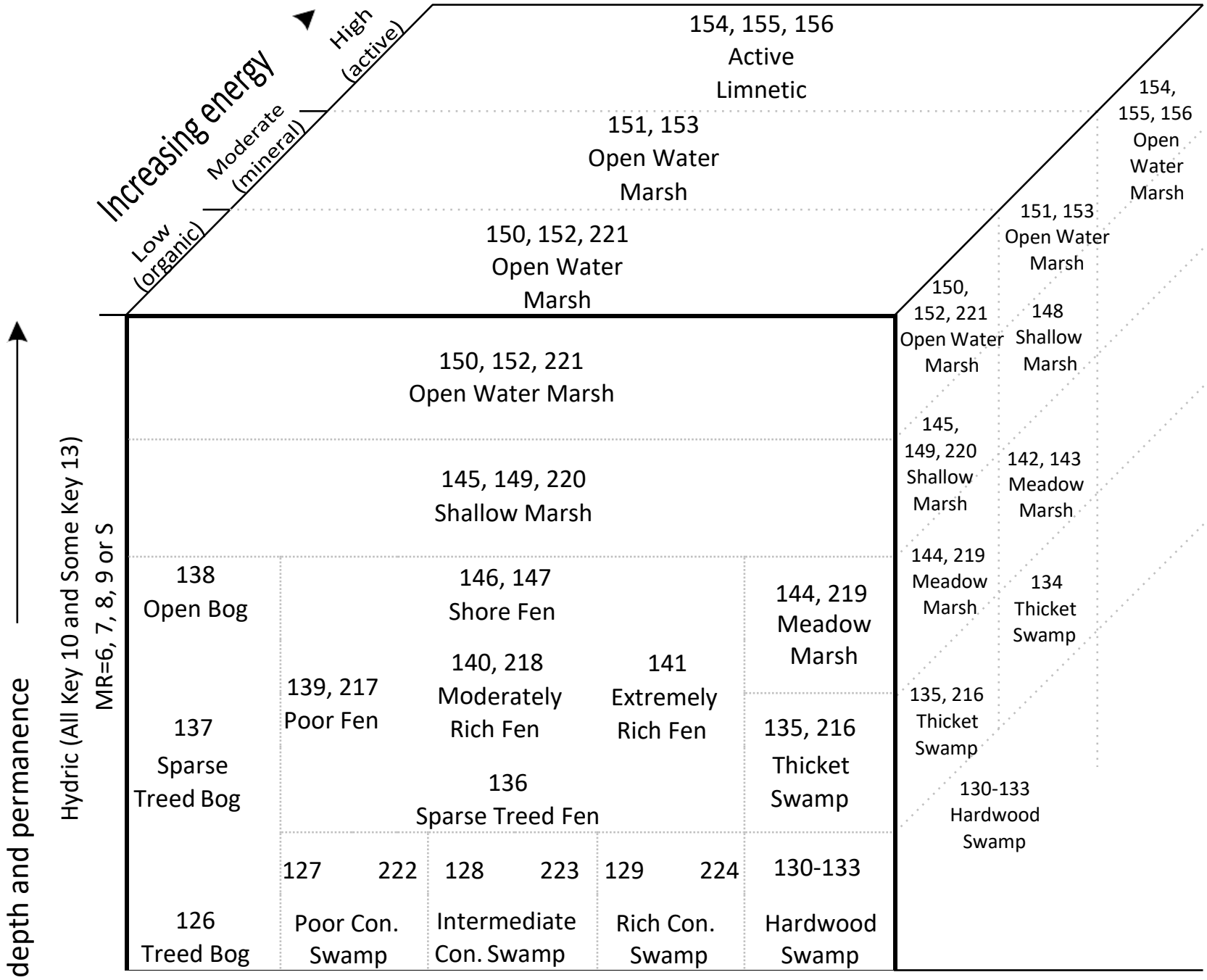
Edatope

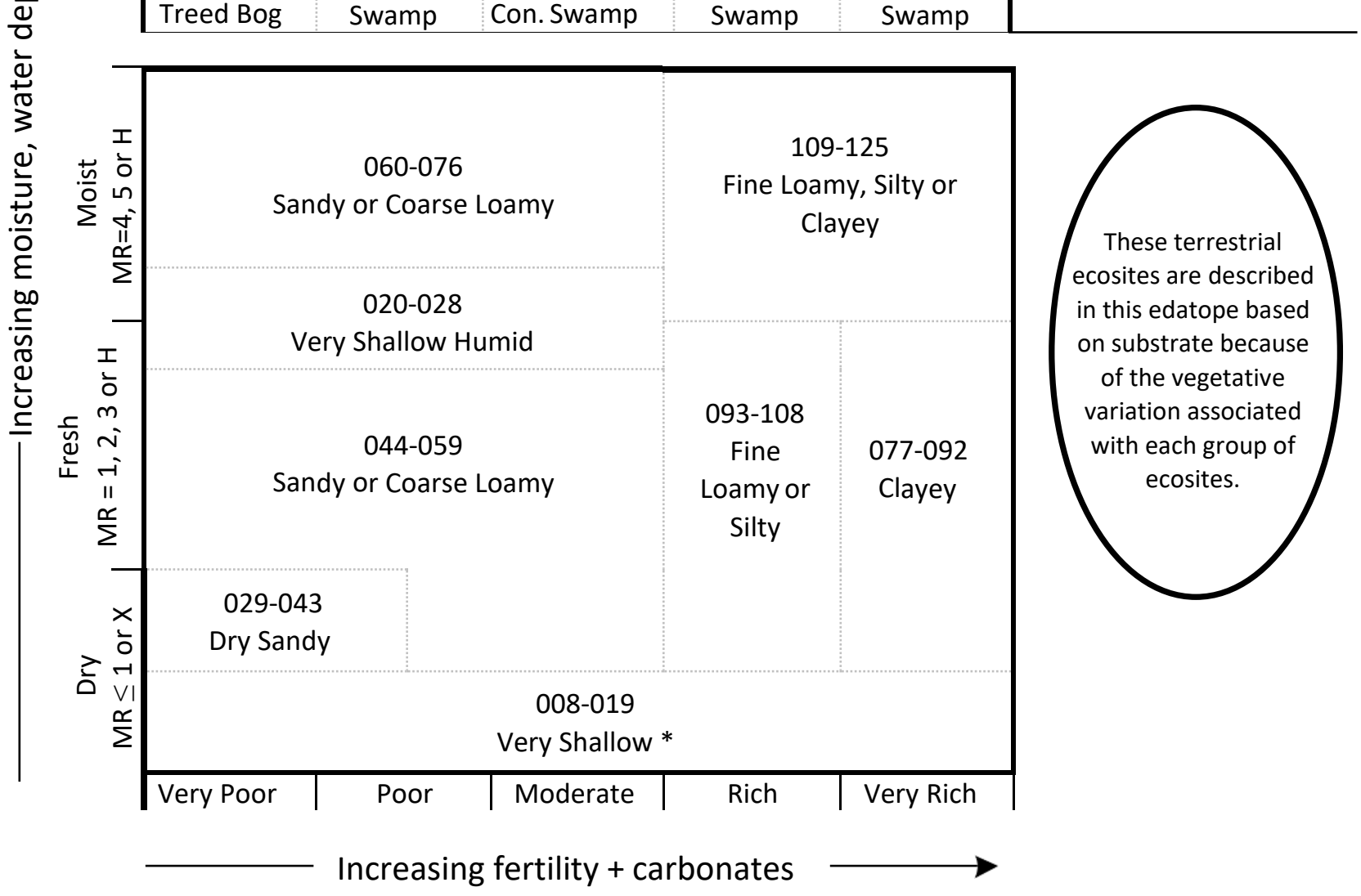
After conducting any amount of field work utilizing this classification or any other, one realizesvery quickly that there are no hard lines in nature and that all components (i.e., substrate texture, moisture, cover) can be evaluated on a sliding scale or gradient. The provision of the following two edatopes are not to help the user force ecology into one of these boxes, but to understand where the sampled site would mostly likely fit in relation to other sampled sites.

As such, the edatopes aid in the implementation of the provincial ecosite classification by utilizing fertility capacity (indicated by substrate texture and presence of carbonates), moistureregime and energy exertion on the site. By using these edatopes, the ecosite keys provided earlier in this manual and verification on the factsheets, the user can feel confident in the overall description of the site.

Within each box on the second edatope, there is a general gradient from bottom to top to capture moisture variability. From left to right, the range within substrate richness (and inherently the vegetation) is identified. That is to say that on the left, carbonates may be absent and within the same box, the right will exhibit the qualities of a nutrient rich site (generally indicated by the presence of carbonates).

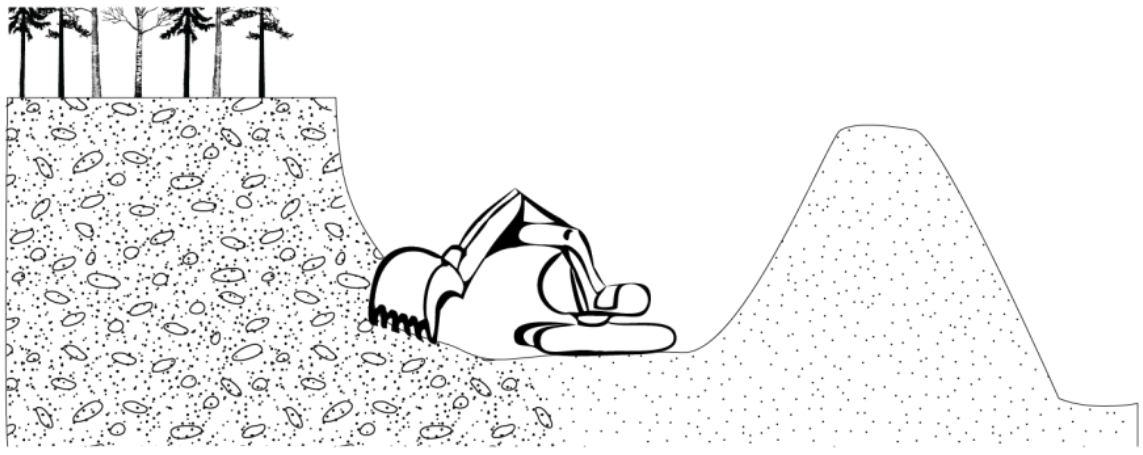






* The very shallow ecosites are highly variable, depth is critical to determination of the ecosite andregardless of texture. Productivity of these sites are strongly enhanced by fewer coarse fragmentsand exposed bedrock, presence of carbonates, increased moisture and greater substrate depth.

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Exposed vertical mineral material communities associated with ongoing sand or gravel extraction. These communities support limited vascular vegetation, bryophytesand lichens (foliose, fruticose) due to ongoing human activity. Substrate texture typically sandy, may be stony. Mostly deep and xeric or humid.

Substrate Description

Substrate Series	V2 V3													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Chemistry	k					n			z					

Vegetation Description

Due to ongoing human activity plant communities are extremely limited. Vascular vegetation ≤ 2%. Bryophyte and lichen cover (fruticose, foliose) ≤ 10%. Communitieson vertical surfaces (> 60° or 173%, minimum height of 3 m). Crustose lichen cover unlimited. Highly variable species composition. Trees and shrubs relatively absent, when present *Rubus* species (i.e. raspberry) may occur. Herbaceous species when present dominated by opportunistic weed species and may include goldenrods, common mullein, and vipers bugloss. Mosses may include haircap mosses.

Shrubs	*Rubus* spp., **Alnus viridis*
Vascular Herbaceous	*Solidago* spp., *Verbascum thapsus, Echium vulgare, *Chamerion angustifolium, Danthonia spicata, Poa compressa, Oenothera biennis, Anaphalis margaritacea, Leucanthemum vulgare, Equisetum arvense*
Non-vascular	*Polytrichum* spp.

Excavated Bluff

Ecology

Active substrate excavation limits establishment of plant communities. Due to slope steepness, instability may be present, resulting in slumping and erosion. In the absence of disturbance, opportunistic species found in nearby plant communities willinhabit the area.

Ecoregional Variability

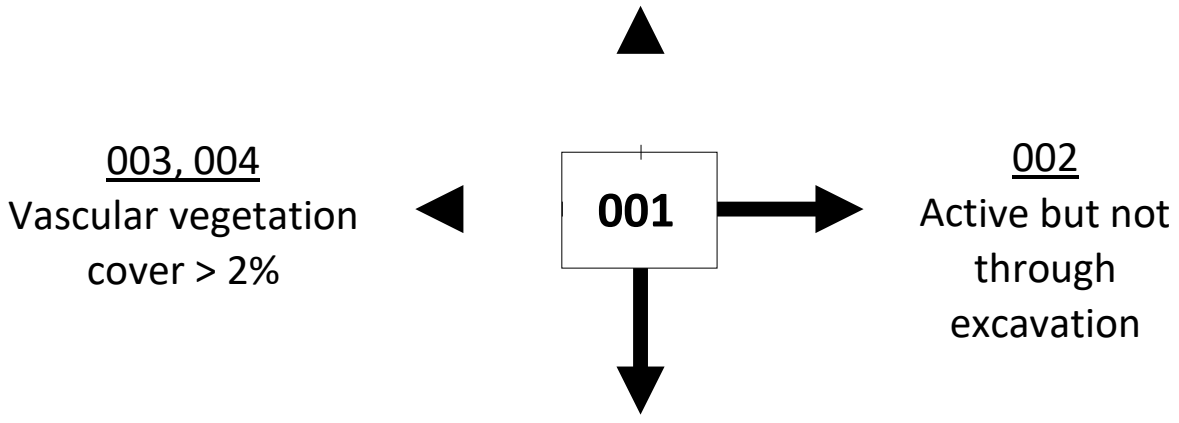
Widespread and common across the boreal, concentrated in areas of deep coarse materials typically associated with glaciofluvial, but may be glaciolacustrine (beach or delta) or ice contact morainal (kame moraine) deposits.

Edaphic Variability

Variable in texture and moisture. Typically deep. Substrate generally skeletal. Often on upper or middle slope positions. Exposed bedrock or bedrock inclusions likely withkame moraines. Vegetation when present consists of disturbance/drought tolerant species.

Related Ecosites

N/A

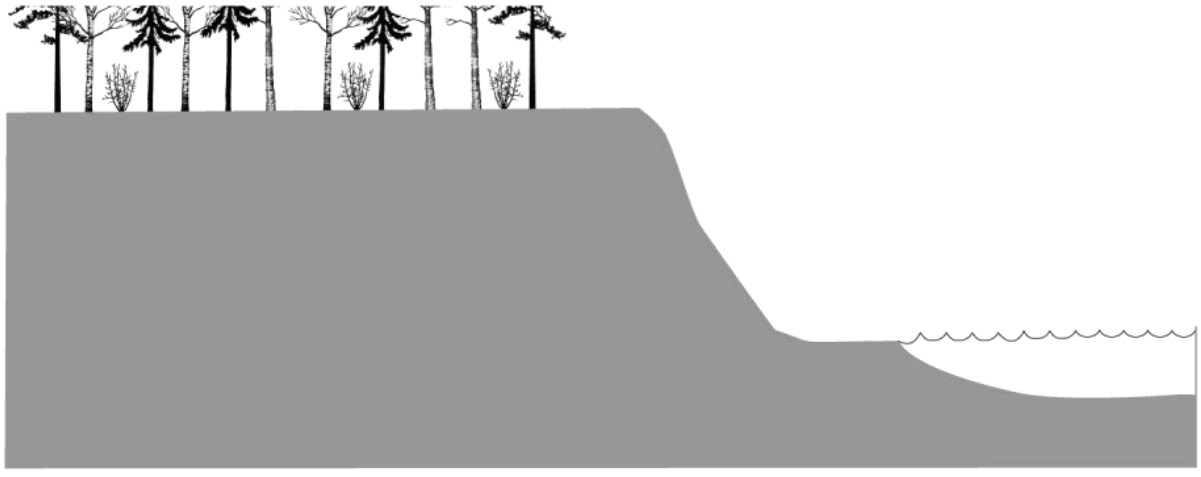


N/A

Active Bluff

L M H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Exposed vertical mineral material often resulting from riverbank slumping, erosion, or slope failure associated with rivers and lakeshores. These communities support limited vascular vegetation, bryophytes, and lichens (foliose, fruticose). Substrate texture variable. Mostly deep and xeric or humid.

Substrate Description

Substrate Series	A4 A5													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Chemistry	k					n			z					

Vegetation Description

Not vegetated. Vascular vegetation ≤ 2%. Bryophyte and lichen cover (fruticose, foliose) ≤10% while crustose lichen cover unlimited. Communities on vertical surfaces(> 60° or 173%, minimum height of 3 m). Composition highly variable consisting of species adapted to exposed and highly disturbed materials. Suite of species often reflective of adjacent opportunistic vegetation communities. Shrubs may include willows, *Rubus* species and alders. Common herbaceous plants may include goldenrods, large-leaved aster and fireweed. Moss and lichen coverage limited.

Shrubs	*Salix* spp., *Rubus* spp., *Alnus* spp.
Vascular Herbaceous	*Solidago* spp., *Eurybia macrophyllus, *Chamerion angustifolium, *Calamagrostis canadensis, *Pteridium aquilinum, Equisetum arvense*

Active Bluff

Ecology

Substrate instability limits permanent establishment of plant communities. Often foundon upper portions of steep riverbanks prone to collapse following undercutting by river currents or other cumulative events such as wind erosion, frost-heave or saturation from groundwater seepage. Ecosite maintained by disturbance. In the absence of disturbance, early successional species may be replaced and the ecosite will likely succeed to a meadow or shrub community.

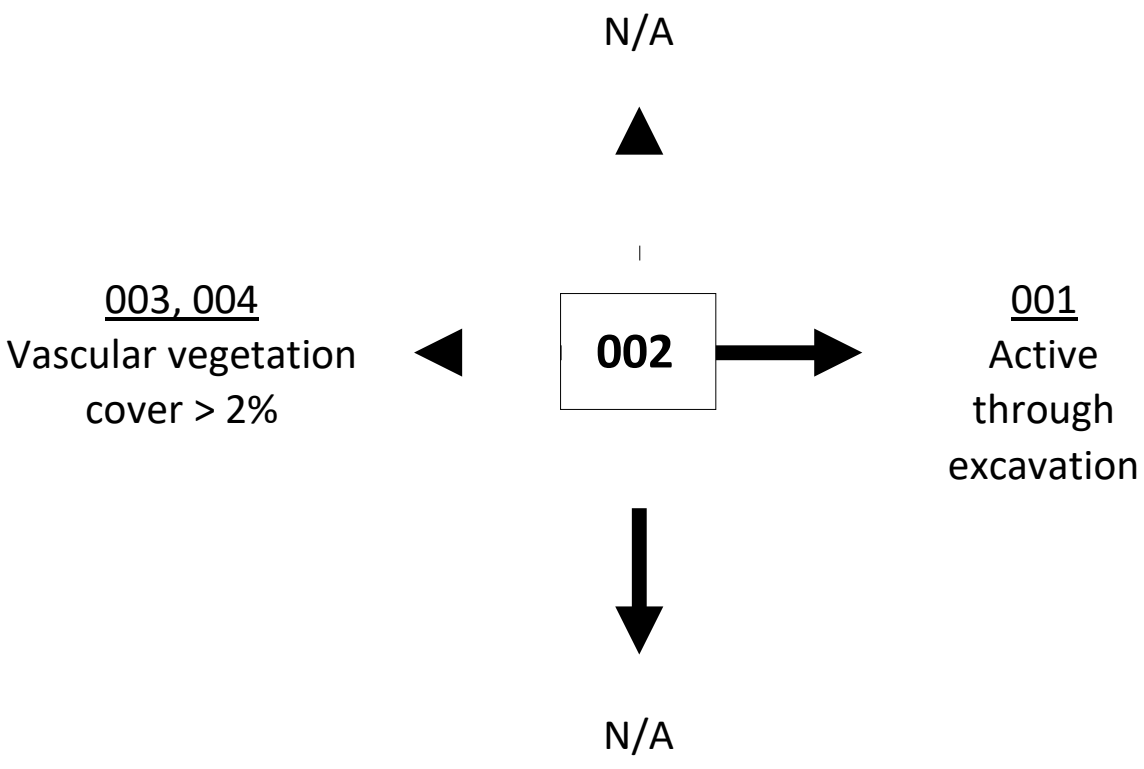
Ecoregional Variability

Widespread and common across the boreal. Associated with large river systems, lakeshores, and areas with unstable substrates of glaciofluvial or glaciolacustrineorigin.

Edaphic Variability

Highly variable in texture and moisture. Often on upper or middle slope positions. Substrate may be sandy but more commonly found along large river channels wherefiner textured silts and clays are found occasionally with evidence of varving. Steep slope faces susceptible to failure, even when vegetated and appear stable.

Related Ecosites

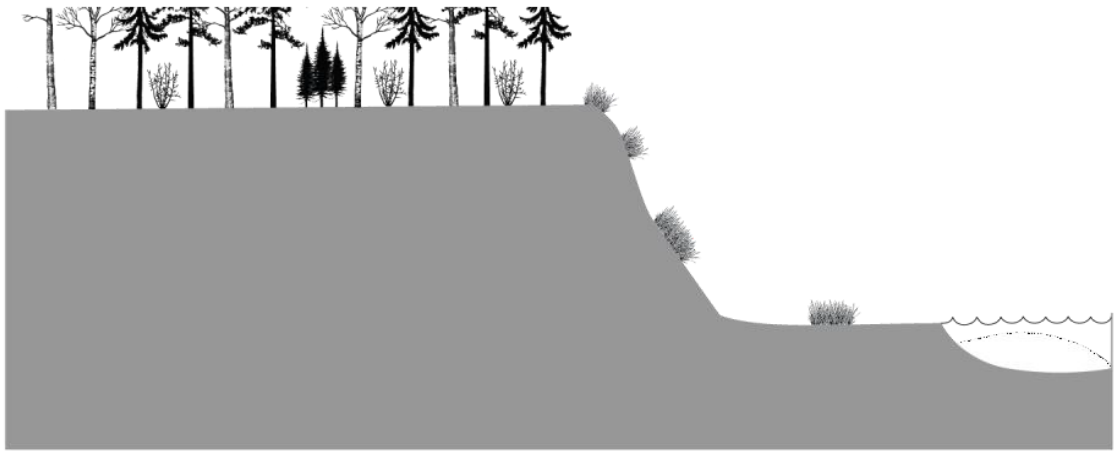


Open Bluff

B003N

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous vegetation community on exposed vertical mineral material often associated with slumping embankments along rivers and lakeshores. Can be a diverse mix of herbaceous species. Tree and herb moderately poor. Ground surface mostly exposed mineral material. Substrate texture variable. Mostly deep and xeric orhumid.

Substrate Description

Substrate Series	V2 V3												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Chemistry	k					n						z		

Vegetation Description

Herbaceous, lichen, or bryophyte dominated community. Absolute vegetation cover ≤25%. Few scattered, small, open-grown trees and shrubs present with absolute coverof ≤ 10%. Communities on vertical surfaces (> 60° or 173%, minimum height of 3 m). Continuous vegetation more likely on slopes where disturbance is not recent, but mayappear patchy. Variable species composition, consisting of species adapted to exposed and highly disturbed materials, and often reflective of adjacent community. Common trees and shrubs include white birch, poplars, pin cherry, willows, *Rubus* species and alders. Common herbaceous plants include large-leaved aster, fireweedand Canada blue-joint. Moss and lichen coverage limited.

Trees	*Betula papyrifera, Populus* spp*., Prunus pensylvanica, Picea* spp*.*
Shrubs	*Salix* spp*., Rubus* spp*., Alnus* spp*.*
Vascular Herbaceous	*Eurybia macrophyllus, *Chamerion angustifolium, *Calamagrostis canadensis, *Pteridium aquilinum, Equisetum arvense, Danthonia spicata, Equisetum laevigatum*

Open Bluff

Ecology

Substrate instability limits permanent establishment of plant communities. Time sincelast disturbance permitted development of a plant community. Often found on upper parts of steep riverbanks prone to collapse following undercutting by river currents orother cumulative events such as wind erosion, frost-heave or saturation from groundwater seepage. May be linear or patchy in shape. Ecosite maintained by disturbance (slumping). In the absence of disturbance, ecosite will likely succeed to ameadow or shrub community.

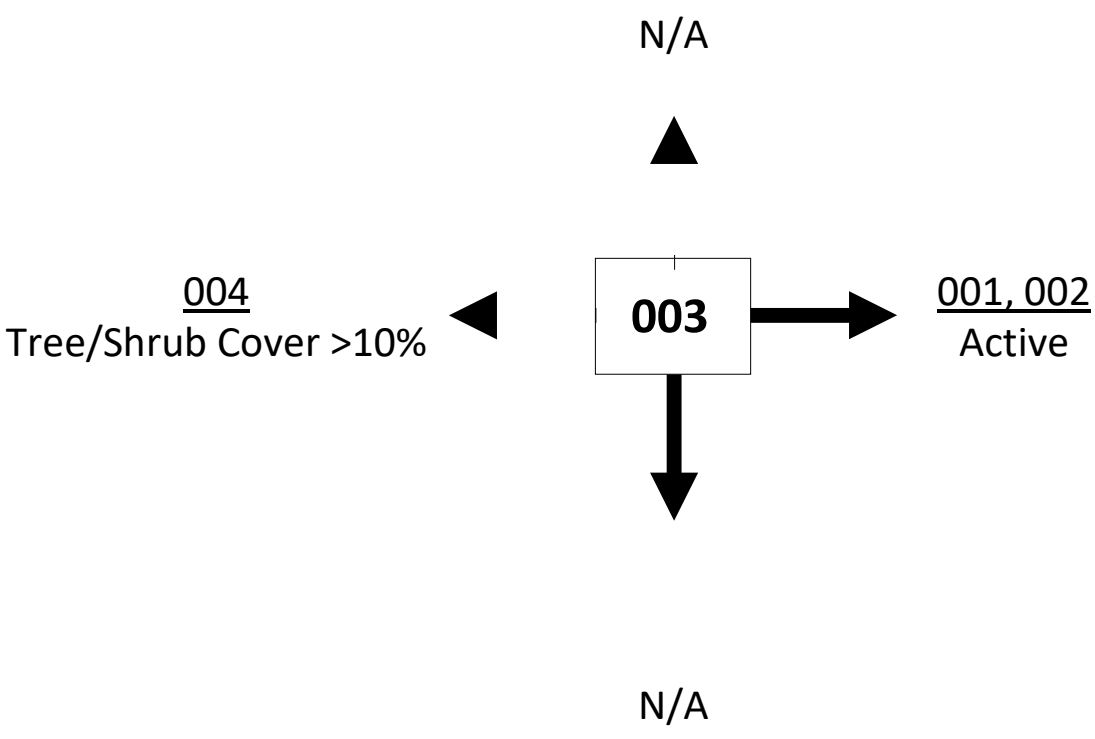
Ecoregional Variability

Widespread and common across the boreal. Associated with large river systems, lakeshores, and areas with unstable substrates of glaciofluvial or glaciolacustrine origins.

Edaphic Variability

Highly variable in texture and moisture. Often on upper or middle slope positions. Substrate may be sandy but more commonly found along large river channels wherefiner textured silts and clays are found occasionally with evidence of varving.
Vegetation composition variable, containing a patchy mosaic of active areas with sparsely vegetated areas. Steep slope faces susceptible to failure, even when vegetated and appear stable.

Related Ecosites

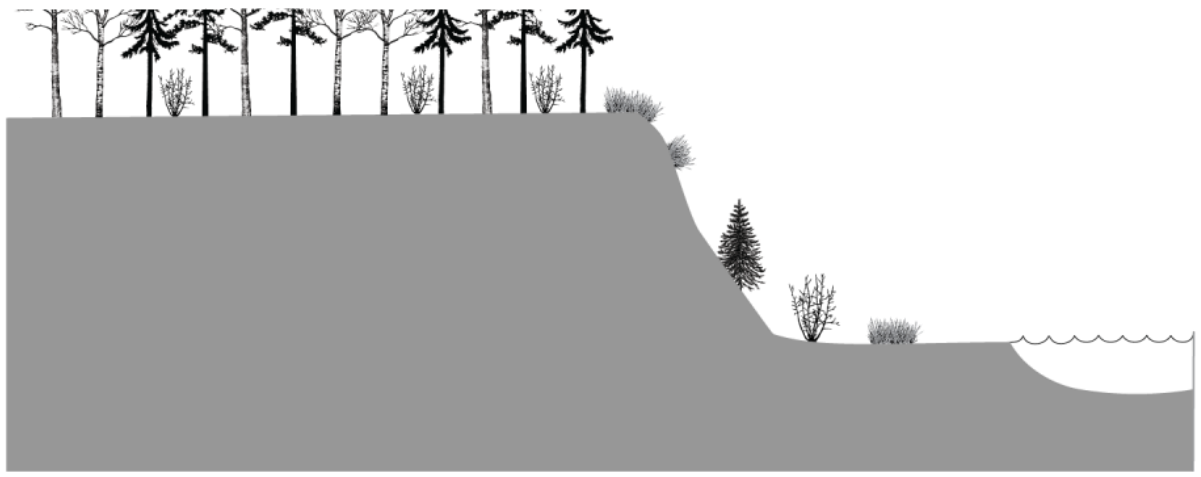


Bluff

B004Tt/Tl/S

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Sparsely vegetated tree or shrub community on exposed vertical mineral material often associated with slumping embankments along rivers and lakeshores. Wide variety of woody species may occur but in limited quantities. Vegetation variable in cover. Tree and herb moderately poor. Ground surface mostly exposed mineral material. Substrate texture variable. Mostly deep and xeric or humid.

Substrate Description

Substrate Series	V2 V3												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Chemistry	k					n			z					

Vegetation Description

Tree or shrub closure sparse. Absolute vegetation cover ≤ 25%. Scattered small, open-grown trees and shrubs often present. Communities on vertical surfaces (> 60° or 173%, minimum height of 3 m). Continuous vegetation more likely on slopes wheredisturbance is not recent, but may be patchy. Highly variable species composition, consisting of species adapted to exposed and highly disturbed materials. Suite of species often reflective of adjacent communities. Common trees and shrubs include white birch, poplars, willows, raspberries, alders and cherries. Common herbaceous plants include large-leaved aster, fireweed and Canada blue-joint. Limited moss and lichen cover.

Trees	*Betula* spp., *Populus* spp., *Picea* spp., *Thuja occidentalis*
Shrubs	*Salix* spp., *Rubus* spp., *Alnus* spp., *Prunus* spp.
Vascular Herbaceous	*Eurybia macrophyllus, *Chamerion angustifolium, *Calamagrostis canadensis, *Pteridium aquilinum, Maianthemum stellatum, Equisetum arvense*

Ecology

Substrate instability limits permanent establishment of plant communities. Often foundon upper parts of steep riverbanks prone to collapse following undercutting by river currents or other cumulative events such as wind erosion, frost-heave or saturation from groundwater seepage. Ecosite maintained by disturbance (slumping). In the absence of disturbance, vegetative cover may increase and ecosite will likely succeedto a meadow or shrub system.

Ecoregional Variability

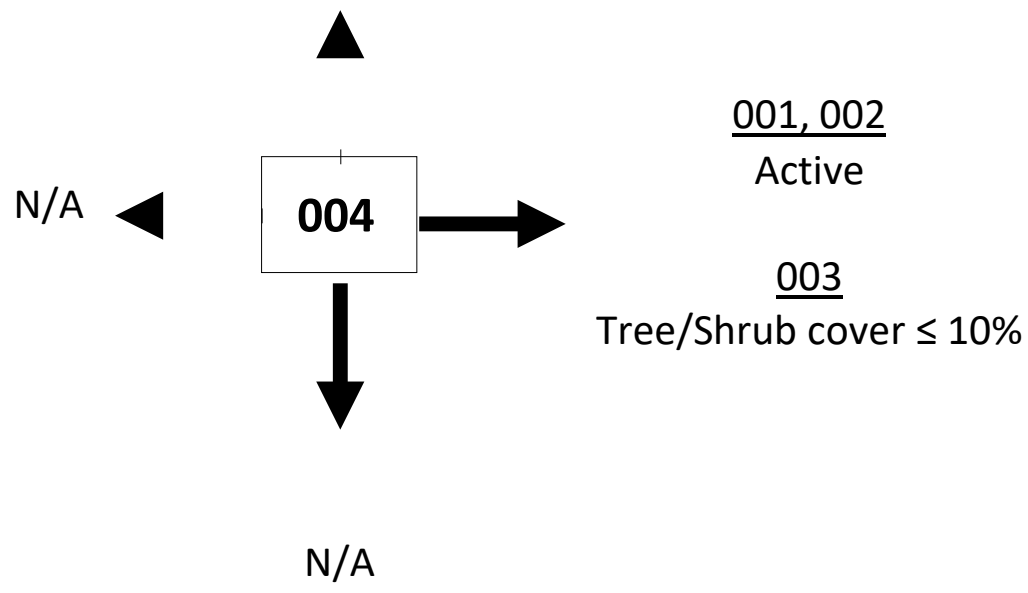
Widespread and common across the boreal. Associated with large river systems, lakeshores, and areas with unstable substrates of glaciofluvial or glaciolacustrine origins.

Edaphic Variability

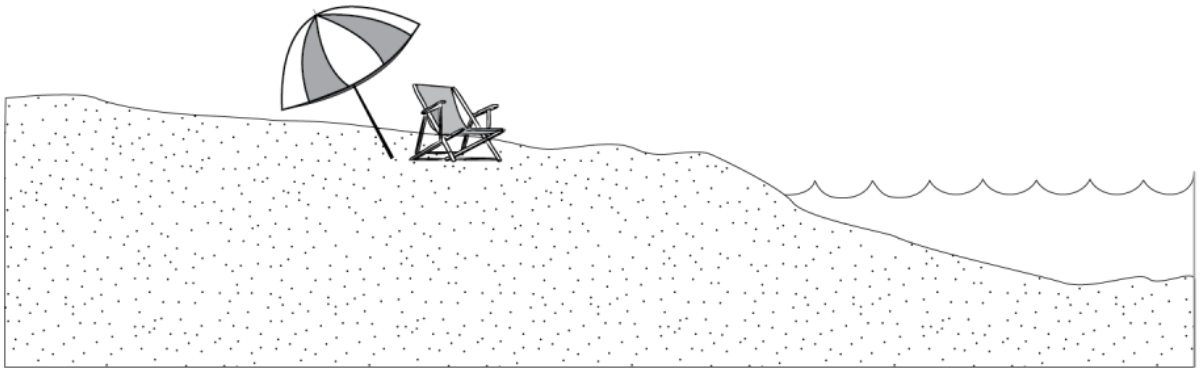
Highly variable in texture and moisture. Often on upper or middle slope positions. Substrate may be sandy but more commonly found along large river channels wherefiner textured silts and clays are found occasionally with evidence of varving. Steep slope faces susceptible to failure, even when vegetated and stable.

Related Ecosites

N/A



Profile/Slope Sequence



Approximately 50m

Ecosite Description

Exposed mineral material communities associated with the shorelines of large lakes, rivers, streams, and ponds. These communities support limited vascular vegetation, bryophytes, andlichen (foliose, fruticose) due to shoreline processes such as waves, currents, periodic flooding, ice scour, and high winds. Substrate texture sandy to coarse loamy, typically consisting of well drained, wave-washed sands and mostly deep. Moisture variable (≤MR6).

Substrate Description

Substrate Series	A6 A7													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Chemistry	k					n						z		

Vegetation Description

Vegetation cover limited and seasonally variable. Absolute vegetation cover ≤ 25%. Vascular vegetation ≤ 2%. Bryophyte and lichen cover (fruticose, foliose) ≤ 10%. Conditions favour annual plants and perennials that develop from roots, rhizomes, or vegetative fragments. Forbs and graminoids may be present including beach pea andsea lyme-grass. Moss and lichen cover limited.

Shrubs	*Salix pellita, Cornus stolonifera, *Spiraea alba, Myrica gale, Rosa* spp.*, *Alnusincana, Amelanchier* spp.
Vascular Herbaceous	*Lathyrus japonicus, *Leymus mollis, Carex* spp.*, Juncus* spp.*, Solidago* spp.*, *Chamerion angustifolium, *Apocynum androsaemifolium, Equisetum* spp.*, *Anthoxanthum odoratum*

Active Mineral Shoreline

Ecology

Shoreline processes such as ice, currents, periodic flooding, waves, and high winds have significant impact, limiting the distribution and abundance of vegetation. These ecosites are dynamic; growing, shrinking, shifting, or disappearing as water levels change. In the absence of disturbance, grass and shrub dominated areas will develop.

Ecoregional Variability

Widespread and common across the boreal, located along the shorelines of lakes, rivers, streams and ponds. Scattered locations on Lake Superior and exposed shorelines of larger inland lakes. Associated with lacustrine deposits.

Edaphic Variability

Shoreline communities produce characteristic zonal patterns depending on the strength and frequency of wave, currents, periodic flooding, ice and wind influences.Active mineral shorelines are often found in narrow bands nearest the water where activity is constant. May be adjacent to other shoreline processes (i.e. active eolian sand) or non-active ecosites such as meadows or sparse shrub systems.

Related Ecosites

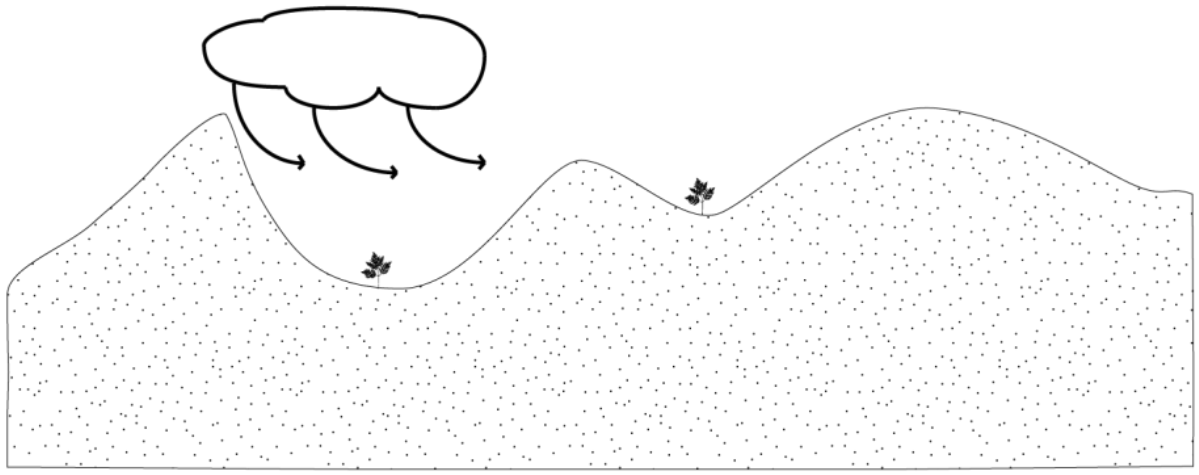
Edatope is not applicable for B005, B006 and B007.

Active Eolian Sand

B006X

L M H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Exposed mineral material communities often associated with lakeshores or exposed inland mineral material. These communities support limited vascular vegetation, bryophytes, and lichens (foliose, fruticose) due to eolian (wind) processes. Substrate texture sandy to coarse loamy, mostly deep and dry to very moist (MR ≤ 5).

Substrate Description

Substrate Series	V2 V3												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Chemistry	k					n			z					

Vegetation Description

Vegetation cover limited and varies seasonally. Absolute vegetation cover ≤ 25%. Vascular vegetation ≤ 2%. Bryophyte and lichen cover (fruticose, foliose) ≤ 10%. Conditions favour plants that develop quickly from roots, rhizomes, or vegetative fragments, and are adapted to withstand burial from wind blown sands. Forbs and graminoids may be present including beach pea, beach wormwood, bracken fern andGreat Lakes wheat grass.

Trees	*Betula papyrifera, Populus* spp.*, Pinus resinosa*
Shrubs	*Salix* spp.*, Rubus* spp.*, Alnus* spp. *Vaccinium angustifolium*
Vascular Herbaceous	*Lathyrus japonicus, *Artemisia campestris, *Pteridium aquilinum, *Elymus lanceolatus, Ammophila breviligulata, *Anthoxanthum nitens, Carex pellita,Drymocallis arguta*
Non-vascular	*Cladina mitis, Polytrichum juniperinum*

Active Eolian Sand

Ecology

Eolian (wind) processes have significant impact, limiting the distribution and abundance of vegetation. These ecosites are dynamic; growing, shrinking, shifting, or disappearing with wind events. May be dunal in shape when associated with shorelines or undulating when found inland. Ecosite may follow a wide variety of disturbances including fire, forestry and agricultural practices, that remove the vegetative mat stabilizing the substrate (i.e., silty or sandy materials) and can persist for many years. In the absence of disturbance, grass and shrub dominated areas will develop.

Ecoregional Variability

Widespread and uncommon across the boreal, and located along the shorelines of large lakes or inland areas of exposed mineral material. False heather may be foundalong the eastern shore of Lake Superior.

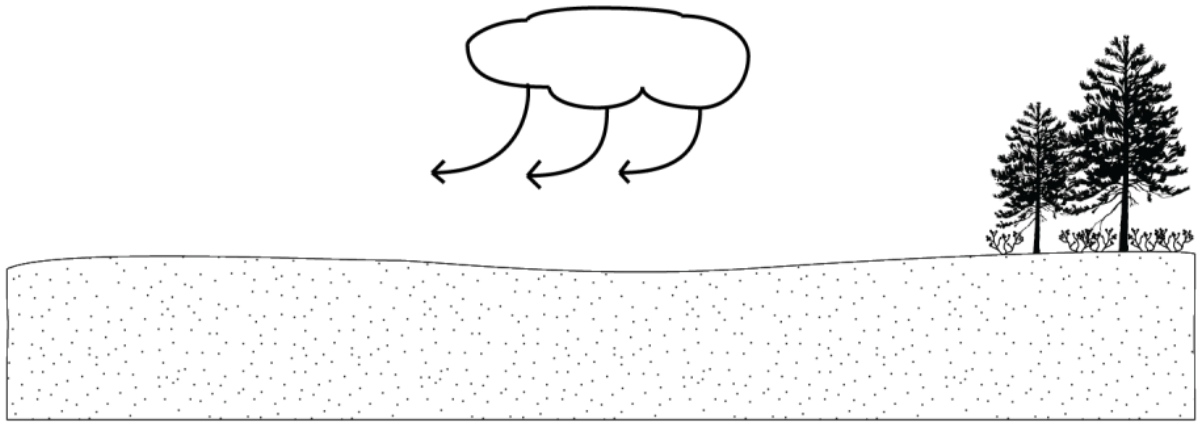
Edaphic Variability

Eolian communities produce characteristic zonal patterns based on the strength and frequency of wind events. Often found adjacent to active mineral shorelines. Vegetation composition variable, containing a patchy mosaic of active areas with no vegetation and inclusions of stable habitats with grasses, herbs and shrubs.

Related Ecosites

Edatope is not applicable for B005, B006 and B007.

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Exposed mineral material communities associated with seasonal water erosion events or other large scale vegetation removal process. These communities supportlimited vascular vegetation, bryophytes, and lichens (foliose, fruticose) due to activeprocesses. Substrate texture variable. Mostly deep and dry to very moist (MR ≤ 5).

Substrate Description

Substrate Series	A6 A7												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Chemistry	k					n			z					

Vegetation Description

Vegetation cover limited. Absolute vegetative cover ≤ 25%. Vascular cover ≤ 2%. Bryophyte and lichen cover (fruticose, foliose) ≤ 10%. Conditions favour plants that develop quickly from roots, rhizomes, or vegetative fragments, and are adapted to disturbance. Minimal tree and shrub cover. Forbs and graminoids may be present with may including large-leaved aster, goldenrods and sedges.

Trees	*Populous tremuloides, Abies balsamifera, Betula papyrifera, Prunus pensylvanica*
Shrubs	**Rubus idaeus, Salix* spp.*, Arctostaphylus uva-ursi*
Vascular Herbaceous	*Eurybia macrophyllus, Solidago spp, Carex* spp.*, *Fragaria virginiana, *Poapratensis, Bromus inermis*
Non-vascular	*Polytrichum* spp., **Ceratodon purpureus, Cladina rangiferina*

Ecology

Activity limits nutrient and moisture availability. Often found on gravelly or sandy side slopes which do not meet vertical criteria. These ecosites are dynamic; growing, shrinking, shifting, or disappearing. Ecosite may follow a wide variety of disturbancesincluding fire, forestry and agricultural practices, that remove the vegetative mat stabilizing the substrate (i.e., silty or sandy materials) and can persist for many years.In the absence of disturbance, will succeed to meadow or shrub system.

Ecoregional Variability

Widespread and uncommon across the boreal, associated with prospecting claims, forestry, road construction, and undercutting by some streams, small rivers, and lakes.

Edaphic Variability

Active mineral barrens produce characteristic zonal patterns based on the process (gravity, water etc) resulting in vegetation prohibition not addressed within B005 and B006. Vegetation composition variable, containing a patchy mosaic of active areas with no vegetation and inclusions of stable habitats consisting of herbs, graminoids and shrubs. Rock outcrops common.

Related Ecosites

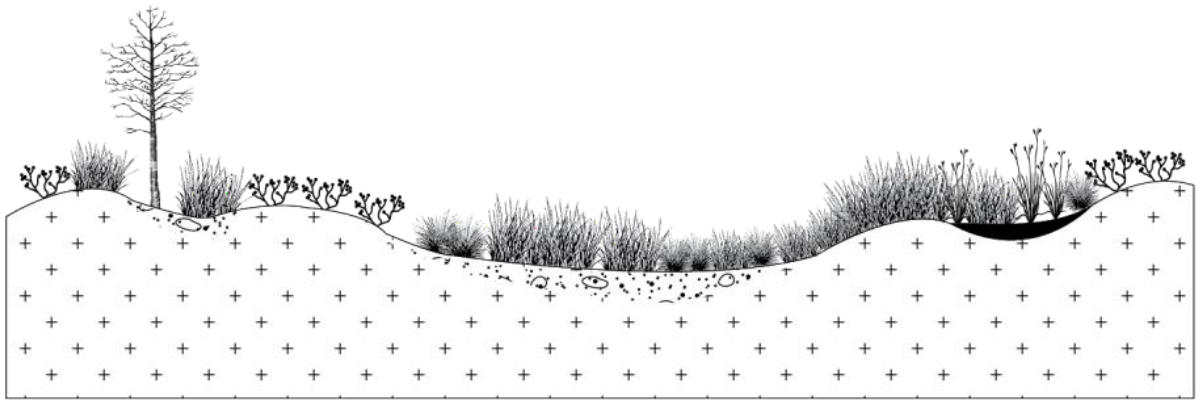
Edatope is not applicable for B005, B006 and B007.

Very Shallow, Dry to Fresh: Meadow

B008N

L | M | H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous, lichen, and/or bryophyte vegetation community. Trees and shrubs fewor absent. Ground surface mostly lichen, feathermoss, and exposed bedrock. Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor			
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n			z						

Vegetation Description

Herbaceous, lichen and/or bryophyte dominated community. Vegetation highly variable, consisting of opportunistic, drought tolerant species generally restricted to crevices and areas of shallow substrates. Characteristic suite of xeric species present. Scattered trees and shrubs often present, but ≤ 10% absolute cover and mayinclude jack pine, white birch, bristly wild rose and choke cherry. Herbaceous plants include common yarrow, bluegrasses and fireweed. Lichen and moss cover often highand includes reindeer and coral lichens.

Trees	*Pinus banksiana, Betula papyrifera, Prunus pensylvanica*
Shrubs	**Rosa acicularis, Salix bebbiana, *Prunus virginiana, *Rubus idaeus,Amelanchier* spp.
Vascular Herbaceous	**Achillea millefolium, Poa* spp.*, *Chamerion angustifolium, Allium stellatum, Galium boreale, Antennaria* spp.*, Agrostis scabra, Danthonia spicata, Potentilla*spp.*, Solidago* spp.*, Lathyrus* spp.*, *Calamagrostis canadensis*
Non-vascular	*Cladina rangiferina, *C. stellaris, Polytrichum* spp.*, Dicranum polysetum, Cladonia* spp.

Very Shallow, Dry to Fresh: Meadow

Ecology

Very shallow substrate restricts rooting zone, moisture, and nutrient availability inhibiting tree growth. May originate from agriculture (i.e., pasture) abandonment, silvicultural practices, fire, or vegetation control (i.e., hydro or gas corridors). Variable-sized patches of exposed bedrock may result in sparse vegetative cover, notably lichen while uniform veneers may support more consistent vegetative cover. Ecosite maintained by low to moderate disturbance (i.e., fire, grazing, vegetation control). In the absence of disturbance can succeed to a shrub or treed system.

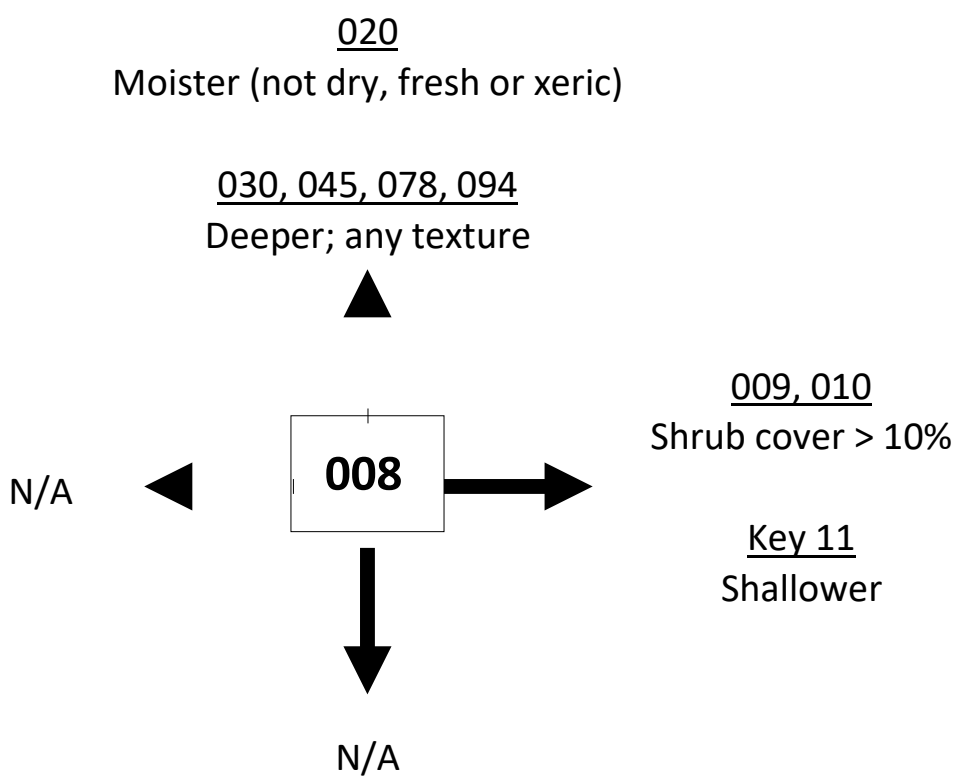
Ecoregional Variability

Uncommon across the boreal. More common in 3W, 4W, and 4S. Often associated with coarse textured morainal veneer overlaying the Canadian Shield. Typically non- calcareous. Calcareous veneers or fine-textured substrates may increase plant diversity and growth, especially in 3E, 4S-1, 4S-6. Species diversity greater in 4S, 5S,4W compared to eastern boreal.

Edaphic Variability

Typically very shallow and variable in stoniness, depth, texture, and moisture especially with morainal deposits over bedrock. Underlying bedrock topography results in exposed bedrock outcrops, variation in substrate depth, and inclusions of bedrock controlled wetlands. Often very shallow combined with rock barren and deeper substrate systems and on crest, upper or level slope positions. Deeper and finer materials likely on lower and toe slope positions or base-rich bedrock indicatedby higher species diversity and abundance. Alder and sphagnum likely in poorly drained depressions where pockets of deep peat or wet mineral material may occur.Ephemeral pools may be present containing narrow-leaved meadowsweet and fowl bluegrass.

Related Ecosites

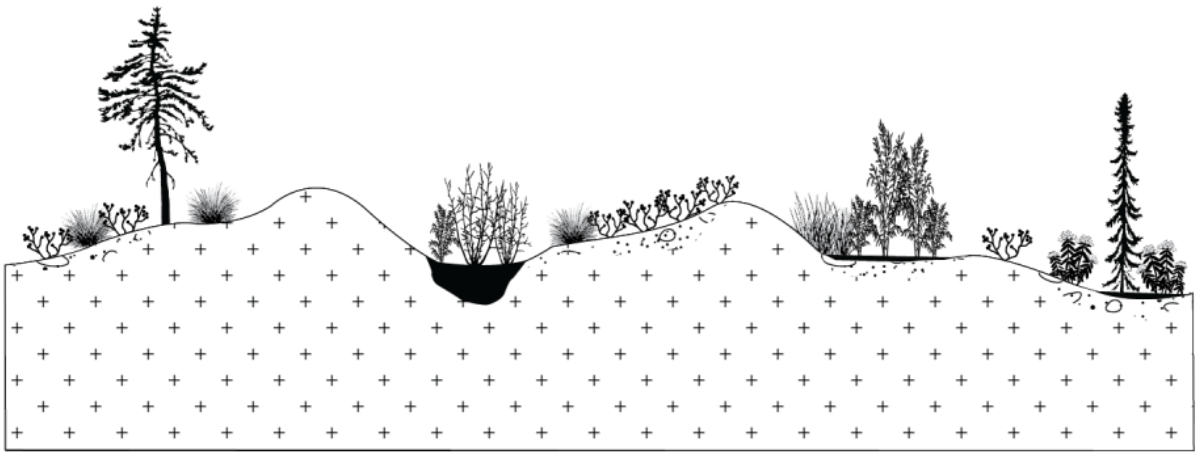


Very Shallow, Dry to Fresh: Sparse Shrub

B009S

L | M | H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Scattered tall and/or short shrub community. Tree and herb poor. Ground surface mostly broadleaf and grass litter, lichen, mosses, and exposed bedrock. Substrate texture variable, very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n			z					

Vegetation Description

Shrub and herb dominated community with 10 - 25% shrub coverage. Scattered, open-grown trees often present, but ≤ 10% absolute cover. Vegetation highly variable,consisting of opportunistic, drought tolerant species and species typical of dry sites.
Vascular plants sparse and restricted to crevices and areas of shallow substrates. Common trees include white spruce and white birch. Common shrubs include common juniper and low sweet blueberry. Common herbaceous plants include roughcinquefoil, fireweed and Richardson's alumroot. Lichen and moss cover often high and includes reindeer lichen, coral lichen and haircap mosses.

Trees	*Picea glauca, Betula papyrifera, Prunus pensylvanica, Populus tremuloides*
Shrubs	*Juniperus communis, Vaccinium angustifolium, Amelanchier* spp.*, Rosa* spp.*, Arctostaphylos uva-ursi, *Symphoricarpos albus, Salix* spp.
Vascular Herbaceous	**Potentilla norvegica, *Chamerion angustifolium, Heuchera richardsonii, Danthonia spicata, Deschampsia flexuosa, Capnoides sempervirens, Agrostisscabra, Galium boreale, *Fragaria virginiana, *Calamagrostis canadensis*
Non-vascular	*Cladina rangiferina, Cladina mitis, Polytrichum* spp.*, Cladonia* spp.

Very Shallow, Dry to Fresh: Sparse Shrub

Ecology

Very shallow substrate restricts rooting zone, moisture, and nutrient availability inhibiting tree growth. May originate from agriculture (i.e., crop or pasture) abandonment, silvicultural practices, fire, or vegetation management (i.e., hydro or gas corridors). Lichen abundance increases with more open conditions. Generally very shallow, with variation in substrate depth due to underlying bedrock topography.While predominantly coarse textured, increased vegetation diversity and abundance can be expected with finer textures. Maintenance of structure and composition associated with low to moderate disturbance (i.e., fire, grazing, vegetation control). Inthe absence of fire ecosite will succeed to a treed system.

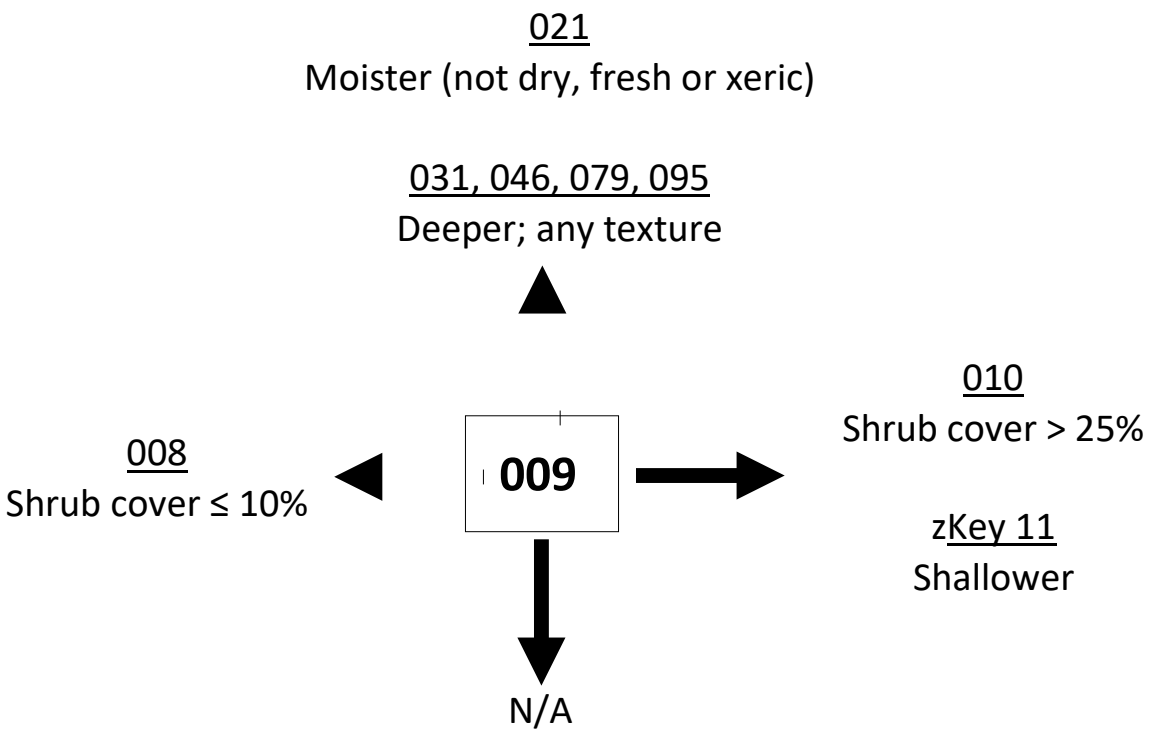
Ecoregional Variability

Uncommon across the boreal. More common in 3W, 4W, and 4S. Often associated with coarse textured morainal veneer overlaying the Canadian Shield. Typically non-calcareous. Calcareous veneers or fine-textured substrates may increase plant diversity and growth, especially in 3E, 4S-1, 4S-6. Species diversity greater in 4S, 5S,4W compared to eastern boreal.

Edaphic Variability

Typically very shallow and variable in stoniness, depth, texture, and moisture especially with morainal deposits over bedrock. Underlying bedrock topography results in exposed bedrock outcrops, variation in substrate depth, and inclusions of bedrock controlled wetlands. Often very shallow combined with rock barren and deeper substrate systems and on crest, upper or level slope positions. Deeper and finer materials likely on lower and toe slope positions or base-rich bedrock indicatedby higher species diversity and abundance. Alder and sphagnum likely in poorly drained depressions where pockets of deep peat or wet mineral material may occur.Ephemeral pools may be present containing narrow-leaved meadowsweet and fowl bluegrass.

Related Ecosites

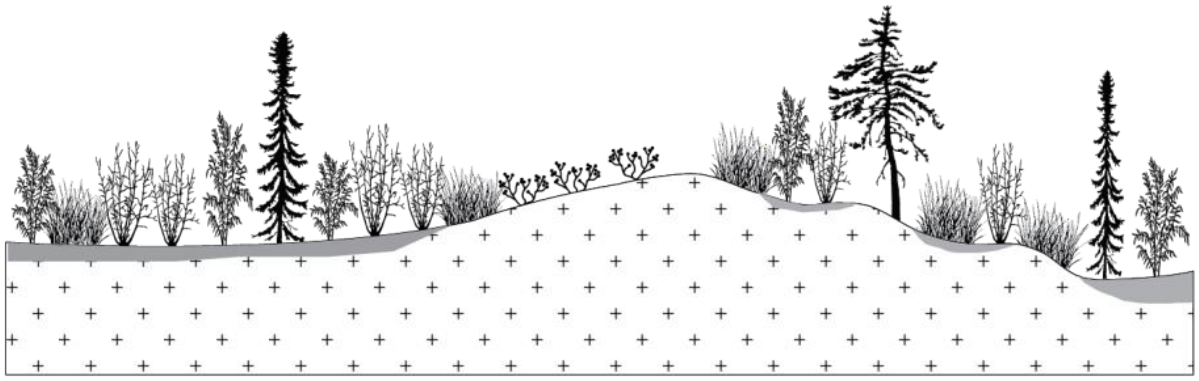


Very Shallow, Dry to Fresh: Shrub

B010S

L M H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Tall and/or short shrub community. Tree and herb poor. Ground surface mostly broadleaf litter, lichen, feathermoss, and exposed bedrock. Substrate texture variable,very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor			
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Shrub coverage > 25%. Community appearance will vary from scattered shrubs with grass and herb understorey to dense thickets of tall and/or low shrubs. Scattered treesoften present, but ≤ 10% absolute cover. Vegetation highly variable, consisting of opportunistic, drought tolerant species and species typical of dry sites. Trees include white birch and pin cherry. Shrubs may include common juniper, low sweet blueberry and bearberry. Common herbaceous plants include Canada mayflower, poverty oat grass, three-tooth cinquefoil and yarrow. Lichen and moss cover often high and includes reindeer, yellow-green and coral lichens.

Trees	*Betula papyrifera, Pinus banksiana, Picea glauca, Prunus pensylvanica,*
Shrubs	*Juniperus communis, Vaccinium angustifolium, Arctostaphylos uva-ursi, Amelanchier* spp.*, Rhus glabra, Vaccinium myrtilloides, Diervilla lonicera, *Alnus viridis, Dasiphora fruticosa, *Symphoricarpos albus*
Vascular Herbaceous	**Maianthemum canadense, Danthonia spicata, Sibbaldiopsis tridentata, *Achillea millefolium, Carex* spp.*, Cypripedium acaule, *Fragaria virginiana, Melampyrum lineare, Polypodium virginiana, Woodsia ilvensis, Agrostis scabra*
Non-vascular	*Cladina rangiferina, C. mitis, C. stellaris* var*. stellaris, Pleurozium schreberi*

Ecology

Very shallow substrates restricts rooting zone, moisture, and nutrient availability inhibiting tree growth. May originate from agriculture (i.e., crop or pasture) abandonment, silvicultural practices, fire, or vegetation management (i.e., hydro or gas corridors). Lichen abundance increases with more open conditions. Generally very shallow, with variation in substrate depth due to underlying bedrock topography.While predominantly coarse textured, increased vegetation diversity and abundance can be expected with finer textures. Maintenance of structure and composition associated with low to moderate disturbance (i.e., fire, grazing, vegetation control). Inthe absence of fire ecosite will succeed to a treed system.

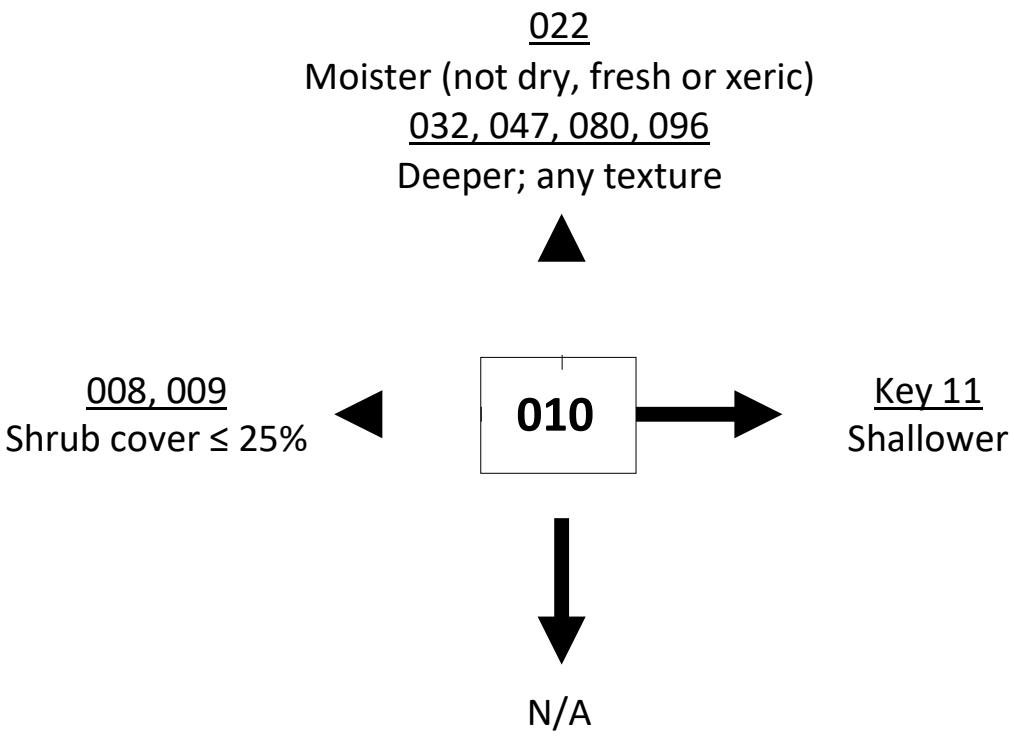
Ecoregional Variability

Uncommon across the boreal. More common in 3W, 4W, and 4S. Often associated with coarse textured morainal veneer overlaying the Canadian Shield. Typically non- calcareous. Calcareous veneers or fine-textured substrates may increase plant diversity and growth, especially in 3E, 4S-1, 4S-6. Species diversity greater in 4S, 5S,4W compared to eastern boreal.

Edaphic Variability

Typically very shallow and variable in stoniness, depth, texture, and moisture especially with morainal deposits over bedrock. Underlying bedrock topography results in exposed bedrock outcrops, variation in substrate depth, and inclusions of bedrock controlled wetlands. Often very shallow combined with rock barren and deeper substrate systems and on crest, upper or level slope positions. Deeper and finer materials likely on lower and toe slope positions or base-rich bedrock indicatedby higher species diversity and abundance. Alder and sphagnum likely in poorly drained depressions where pockets of deep peat or wet mineral material may occur.Ephemeral pools may be present containing narrow-leaved meadowsweet and fowl bluegrass.

Related Ecosites

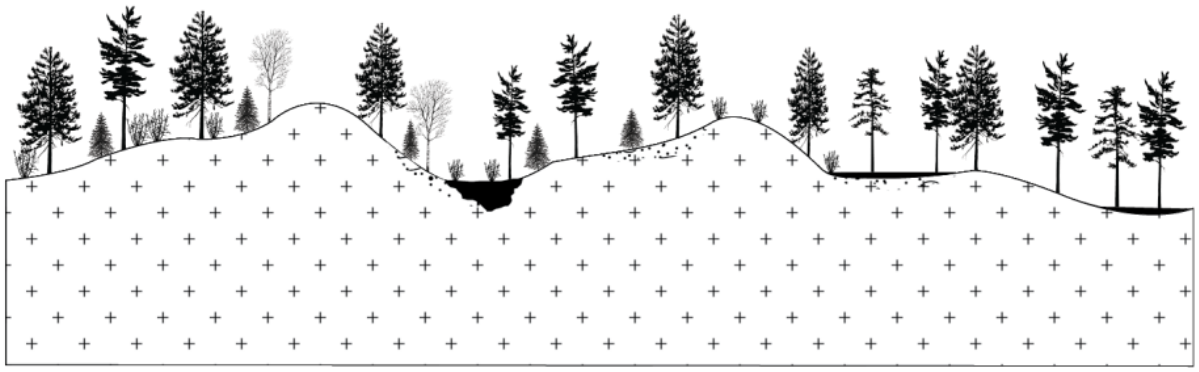


Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer

B011Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of eastern white pine and red pine (≥ 20% absolute cover) in mixed or pure condition and often interspersed with jack pine. Additionally, balsam fir, eastern white cedar and red maple may also be found in the understory. Shrub and herb poor. Ground surface conifer litter, moss, lichen, exposed bedrock, woody debris,and stone. Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	**VS1 VS2 O1** O2 R3 **R4** R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n			z						

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) ecosites common. Canopy closure highly variable, generally open where substrate depth limited. Low treed condition often indicative of younger trees or very limited substrate depth. Common understory vegetation includes bush honeysuckle, prickly rose, low sweet blueberry, wild lily-of- the-valley, wild sarsaparilla, rock polypody fern, Shreber's moss, and reindeer lichen.

Trees	*Pinus strobus, P. resinosa, P. banksiana, Picea glauca, Populus grandidentata, P. tremuloides*
Shrubs	*Diervilla lonicera, *Rosa acicularis, Vaccinium angustifolium, V. myrtilloides, Amelanchier sanguinea, Juniperus communis, *Linnaea borealis, *Rubus idaeus*
Vascular Herbaceous	**Maianthemum canadense, Aralia nudicaulis, Polypodium virginianum,Oryzopsis asperifolia*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum, Cladina rangiferina*

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniform veneers may support a closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Under red pine dominated stands, shrub and herb sparse with abundant conifer litter. Associated with disturbance regimes, such as low to moderate intensity fire, to maintain red pine and eastern white pine composition. Without the influence of a disturbance regime, balsam fir and other borealtree species may increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

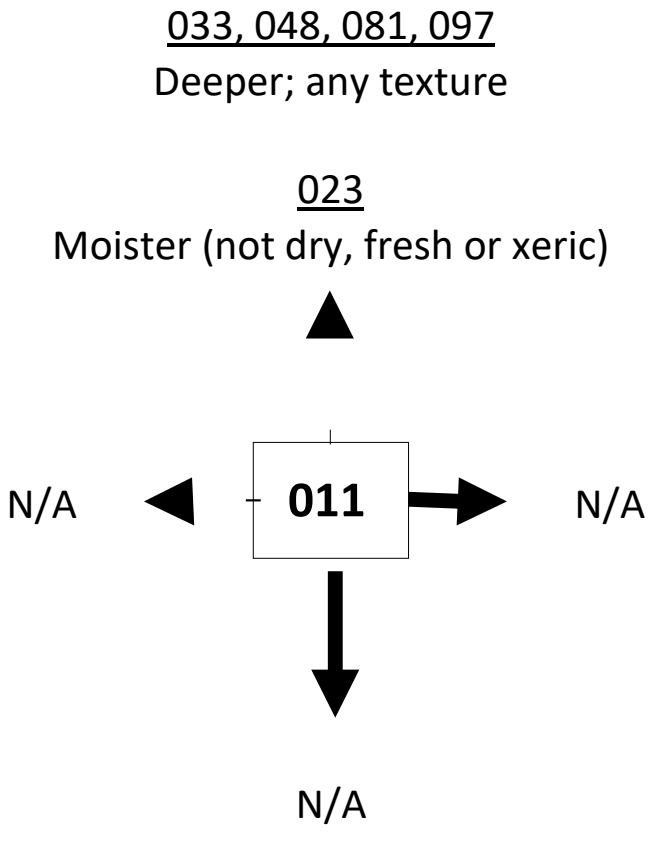
Ecoregional Variability

Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portionof 3E. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 3E, 4S-1, and 4S-6.
Eastern hemlock may occur in 3E-5. Yellow birch, red maple, American basswood,and red oak may occur in 4S, 4W, 5S, and southern portion of 3E.

Edaphic Variability

Substrate depth highly variable but typically very shallow. Often on crest, upper slopeor level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder,and sphagnum may occur in poorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral substrates or over base-rich bedrock.

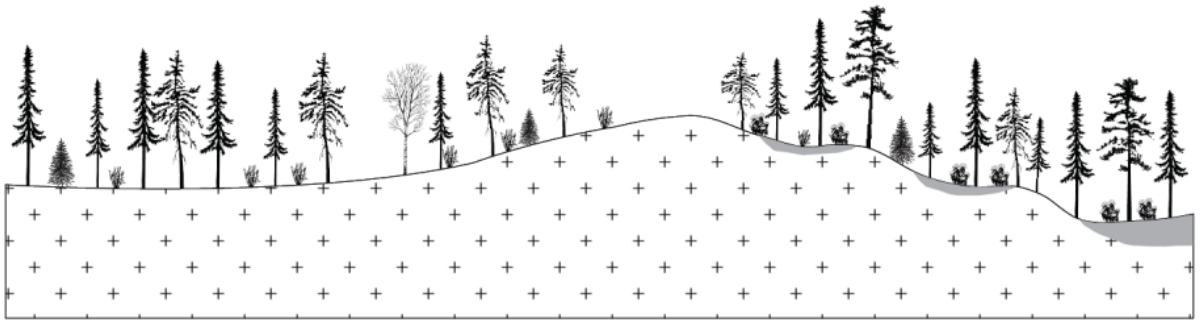
Related Ecosites



Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer

B012Tt/Tl
L M H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of black spruce and/or jack pine (> 50% cover of conifer species). May be mixed with balsam fir and white birch. Shrub and herb poor. Ground surface mostly moss with woody debris, conifer litter, lichen, exposed bedrockand broadleaf litter. Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	**VS1 VS2 O1 O2** R3 **R4** R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes velvet-leaf blueberry, low sweet blueberry, creeping snowberry, wild lily-of-the-valley, bunchberry, bluebead-lily, feathermoss, and foliose lichen.

Trees	*Picea mariana, Pinus banksiana, Abies balsamea, Betula papyrifera, Sorbusdecora*
Shrubs	*Vaccinium myrtilloides, V. angustifolium, Gaultheria hispidula*
Vascular Herbaceous	**Maianthemum canadense, Cornus canadensis, Clintonia borealis*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum, Cladina rangiferina , *C. stellaris, C. mitis, Ptilium crista-castrensis, Ptilidium cilare*

Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniform veneers as well as stands dominated by shallow rooting black spruce more likely to have closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Fire produces young, stands dominated by jack pine. With age, jack pine may remain dominant or becomes predominantly black spruce with variable components of white birch and balsam fir.

Ecoregional Variability

Widespread across the boreal range. More common in 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth andvigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. Eastern white pine and red pine (< 20% absolute cover for both pine species) and red maple may occur in4S, 4W, 5S, and southern portion of 3E and 3W. Tendency towards black spruce in 2E, 2W, 3E, and eastern half of 3W. Tendency towards jack pine and white birch
(≤ 50% of the conifer cover) in 4S and 3S.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur inpoorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral substrates or over base-rich bedrock. Jack pine likely to occur on fractured/creviced bedrock.

Related Ecosites

035, 050, 083, 099
Deeper; any texture

034, 049, 082, 098
Pure Sb and Pj condition; deeper; any texture

024
Moister (not dry, fresh or xeric)

N/A ◄ **012** ► N/A

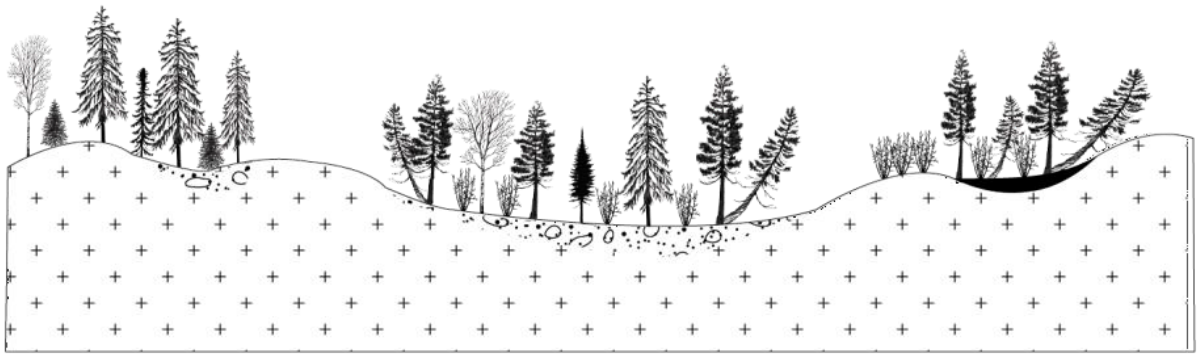
▼

Very Shallow, Dry to Fresh: Cedar (Hemlock) Conifer

B013Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of eastern white cedar and/or eastern hemlock (> 50% cover of conifer species). Eastern hemlock rare. May be mixed with white spruce, black spruce, balsam fir, and white birch. Understory tree species consisting of balsam fir and eastern white cedar. Varies from shrub and herb poor to moderately rich. Ground surface mostly conifer litter with woody debris, broadleaf litter, moss, and exposed bedrock. Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	**VS1** VS2 O1 O2 R3 **R4** R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy	Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes mountain maple, speckled alder, red raspberry, star-flower, kidney-leaved violet, bunchberry, and feathermoss.

Trees	*Thuja occidentalis, Picea glauca, P. mariana, Abies balsamea, Betula papyrifera, Sorbus decora*
Shrubs	*Acer spicatum, *Alnus incana, Rubus pubescens, Gaultheria hispidula, *Linnaea borealis, Lonicera canadensis, Rhododendron groenlandicum, Cornus stolonifera, *Rosa acicularis*
Vascular Herbaceous	**Trientalis borealis, Viola renifolia, Cornus canadensis, Coptis trifolia, Mitella nuda, Aralia nudicaulis, *Maianthemum canadense, Galium triflorum,Maianthemum stellatum, Streptopus roseus*
Non-vascular	*Pleurozium schreberi, Hylocomium splendens, Rhytidiadelphus triquetrus, Ptilium crista-castrensis, Dicranum polysetum*

Very Shallow, Dry to Fresh: Cedar (Hemlock) Conifer

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Uniform veneers may support uniform, closed canopy. Variable sized patches of exposed bedrock as well as variable species composition may result in a patchy canopy. Shruband herb poor when canopy closed. Ground cover increases as canopy becomes more open. Eastern white cedar often late successional. Associated with islands or rock knobs which are isolated from continuous fuel pathways. Fire results in more uniform species composition and age structure.

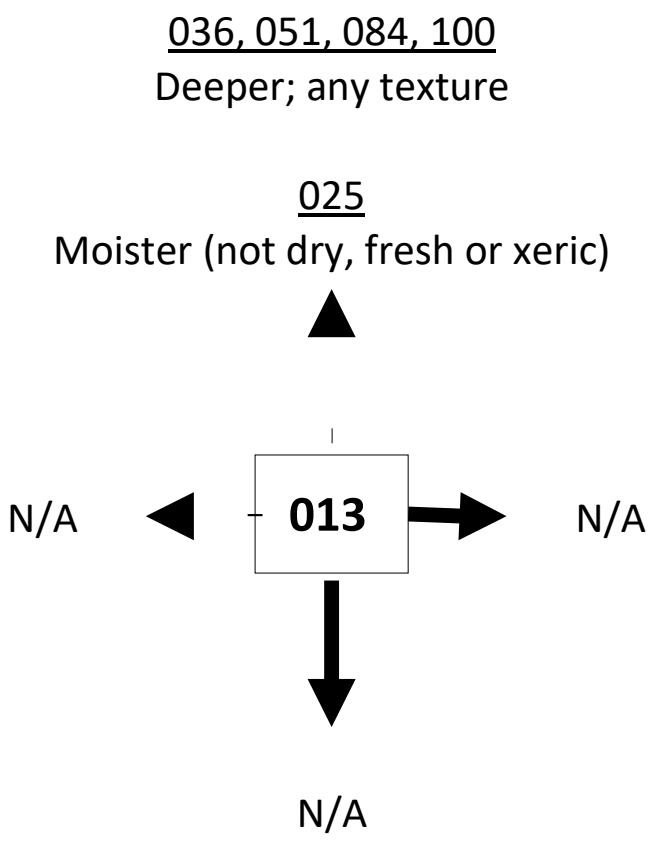
Ecoregional Variability

Widespread across the boreal range. More common in 3S, 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. Eastern hemlock is restricted to 3E-5.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur inpoorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur on deep mineral substrate or over base-rich bedrock.

Related Ecosites

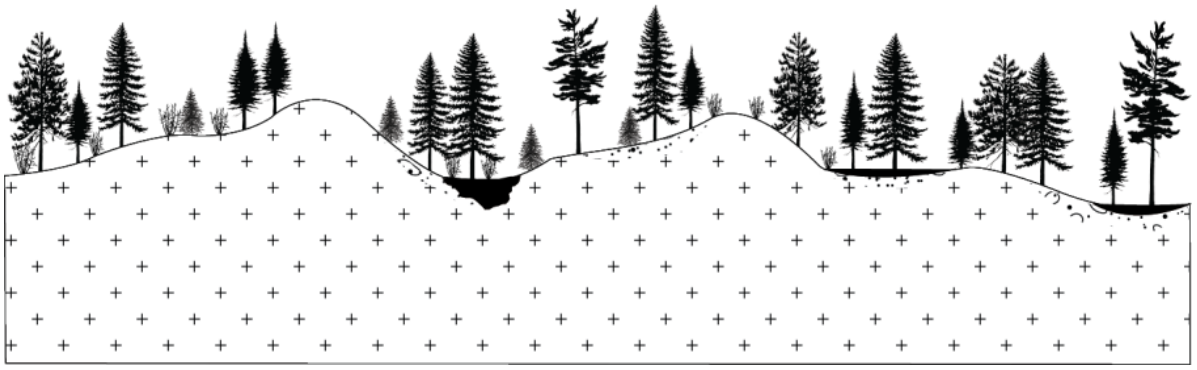


Very Shallow, Dry to Fresh: Conifer

B014Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of balsam fir, white spruce and/or a mixture of other coniferous species. May be mixed with white birch and trembling aspen. Understorytree species consisting of balsam fir, black spruce, and trembling aspen. Shrub andherb poor. Ground surface mostly conifer litter with woody debris, broadleaf litter, moss, exposed bedrock and stones present. Substrate texture variable. Mostly veryshallow (≤15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	**VS1 VS2** O1 O2 R3 **R4** R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n			z					

Vegetation Description

Tall tree (> 10 m) closure variable, not sparse (> 25% cover). Low treed (≤ 10 m) canopy sparse (> 10% and ≤ 25%). Common understory vegetation includes dwarfraspberry, showy mountain-ash, mountain maple, bunchberry, bluebead-lily, wild sarsaparilla, and feathermoss.

Trees	*Picea mariana, Abies balsamea, Betula papyrifera, Picea glauca, Populus tremuloides, Pinus banksiana Thuja occidentalis, Larix laricina*
Shrubs	*Rubus pubescens, Sorbus decora, Acer spicatum, *Corylus cornuta, Diervilla lonicera, *Linnaea borealis, *Rosa acicularis, Vaccinium myrtilloides*
Vascular Herbaceous	*Cornus canadensis, Clintonia borealis, Aralia nudicaulis, *Maianthemum canadense, Streptopus roseus, *Trientalis borealis, Eurybia macrophylla, Mitella nuda, Anemone quinquefolia, Viola renifolia, Coptis trifolia*
Non-vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Rhytidiadelphus triquetrus, Dicranum polysetum*

Very Shallow, Dry to Fresh: Conifer

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock as well as variable species composition may result in a patchy canopy. Uniform veneers may support uniform, closed canopy. Shrub and herbpoor when canopy closed. Ground cover increases as canopy becomes more open.
Often results from succession or non-fire disturbance events, such as windthrow, disease or logging, and may persist in uneven age structure. Fire results in more uniform species composition and age structure.

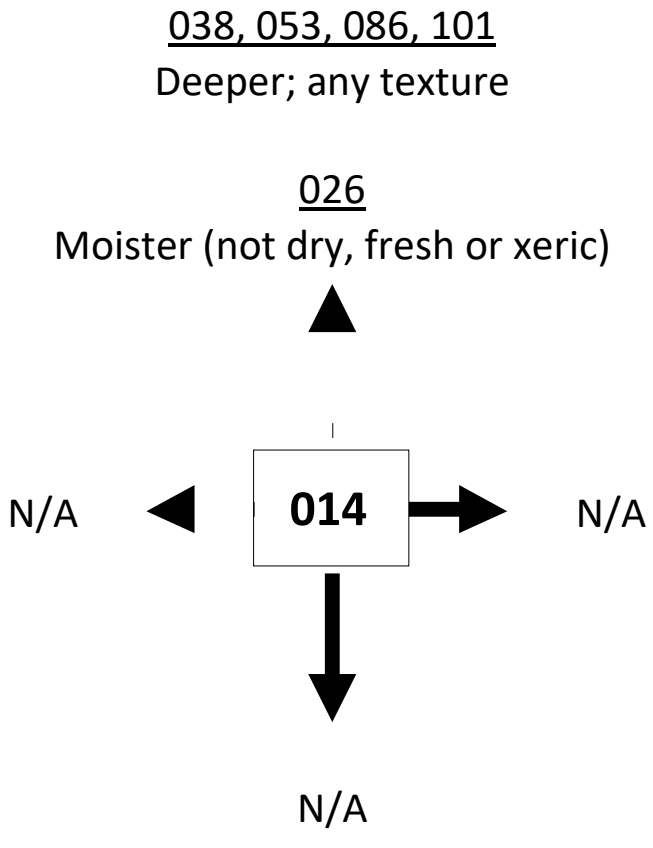
Ecoregional Variability

Widespread across the boreal range. More common in 3W, 4W and 4S. Often associated with coarser textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth andvigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. White pine, red pine, and red maple may occur in 4S, 4W, 5S, and southern portion of 3E and 3W. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur inpoorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur on deep mineral substrate or over base-rich bedrock. Jack pine likely to occur on fractured/creviced bedrock.

Related Ecosites

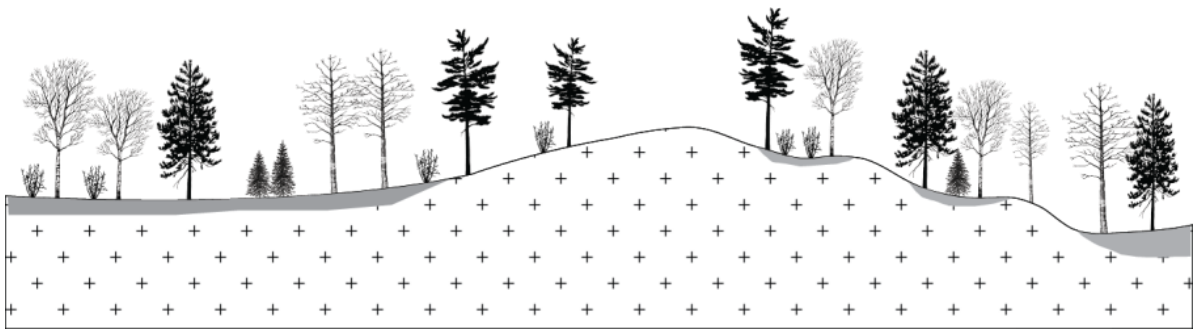


Very Shallow, Dry to Fresh: Red Pine - White Pine Mixedwood

B015Tt/Tl

L M H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of red pine and/or eastern white pine (≥ 20% absolute cover). Substantial components of white birch and trembling aspen (> 50% cover) mayoccur. May also be mixed with balsam fir, black spruce, jack pine, and red maple.
Understory tree species consisting of balsam fir and trembling aspen. Shrub and herbrich.
Ground surface mostly broadleaf litter with conifer litter and exposed bedrock.
Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy	Coarse Loamy	Silty	Fine Loamy	Clayey	Peat	Folic							
Humus Form	Mull	Moder	Fibrimor	Humimor	Peatymor	Anmoor								
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R	VS	S	M	MD	D								
Chemistry	k	n	z											

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes beaked hazel, bush honeysuckle, mountain maple, wild sarsaparilla, wild lily-of-the-valley, and bunchberry

Trees	*Pinus resinosa, P. strobus, Betula papyrifera, Populus tremuloides, Abiesbalsamea, Picea mariana, Pinus banksiana, Picea glauca, Acer rubrum*
Shrubs	**Corylus cornuta, Diervilla lonicera, Acer spicatum, Vaccinium angustifolium, *Linnaea borealis, Lonicera canadensis, Vaccinium myrtilloides*
Vascular Herbaceous	*Aralia nudicaulis, *Maianthemum canadense, Cornus canadensis, Clintonia borealis, Eurybia macrophylla, *Trientalis borealis, Streptopus roseus,Oryzopsis asperifolia*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum*

Very Shallow, Dry to Fresh: Red Pine - White Pine Mixedwood

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock as well as variable species composition may result in a patchy canopy. Shrub and herb poor when canopy closed. Ground cover increases ascanopy becomes more open. Associated with disturbance regimes such as low to moderate intensity fire to maintain the red pine and eastern white pine composition.
Without the influence of a disturbance regime, balsam fir and other boreal tree specieswill increase and replace the occurrences of red pine and western white pine causing succession to another ecosite.

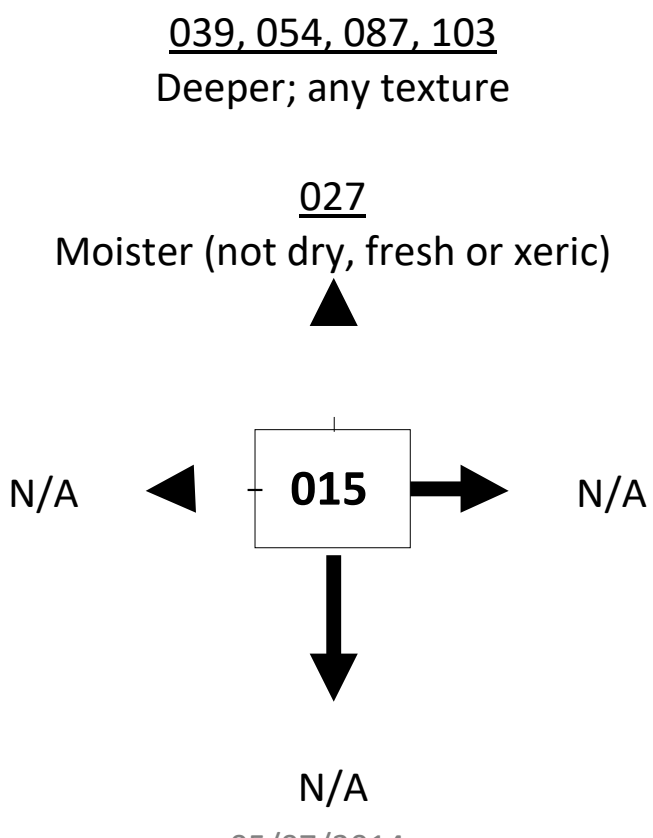
Ecoregional Variability

Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portionof 3E. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 3E, 4S-1, and 4S-6.
Eastern hemlock may occur in 3E-5. Yellow birch, American basswood, and red oakmay occur in 4S, 4W, 5S, and southern portion of 3E.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur inpoorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur on deep mineral substrates or over base-rich bedrock. Jack pine, red pine, and trembling aspen more abundant on fractured/creviced bedrock.

Related Ecosites

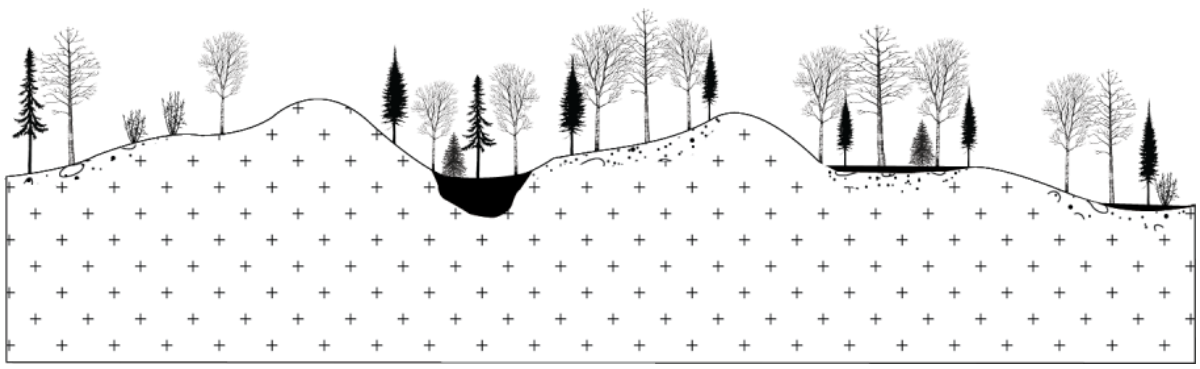


Very Shallow, Dry to Fresh: Aspen - Birch Hardwood

B016Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of birch and/or aspen species (> 50% cover of hardwood species). Often mixed with black spruce, white spruce, and balsam fir. Understory tree species consisting of balsam fir, black spruce, white birch, and white spruce. Varies from shrub and herb poor to moderately rich. Ground surface mostly broadleaf litter with moss, woody debris, exposed bedrock and stones present. Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy	Coarse Loamy			Silty		Fine Loamy		Clayey	Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor	Anmoor			
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD	D				
Chemistry	k				n				z					

Vegetation Description

Canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10% and ≤ 25%). Common understory vegetation includes low sweet blueberry, showy mountain-ash, velvet-leaf blueberry, bluebead-lily, bunchberry, wild lily-of-the-valley, club-moss, andSchreber's moss.

Trees	*Betula papyrifera, Picea mariana, P. glauca, Populus tremuloides, Abies balsamea*
Shrubs	*Vaccinium angustifolium, Sorbus decora, Vaccinium myrtilloides, *Alnus viridis, Diervilla lonicera*
Vascular Herbaceous	*Clintonia borealis, Cornus canadensis, *Maianthemum canadense, Aralia nudicaulis*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum*

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniform veneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. White birch likely to be found.

Trembling aspen may be abundant but generally anthropogenic or on fine textured substrate overlying bedrock. Exhibits very poor growth and ages prematurely. Withoutfire, may accumulate organic material and become increasingly complex causing succession to another ecosite. Species present may be result of a disturbance or evidence of a late successional forest.

Ecoregional Variability

Widespread across the boreal range. More common in 3S, 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. In 2W and 3W and west, white birch may be abundant. Within 2E and 3E, trembling aspen often predominates. Yellow birch and large-tooth aspen may replace white birch and trembling aspen in 4S, 4W, 5S and southern portion of 3E. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. In 2W and 3S, mountain maple, low sweetblueberry and wild sarsaparilla uncommon and green alder replaces beaked hazel andlarge-leaved aster.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur inpoorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral materialor over base-rich bedrock. Jack pine, red pine, and trembling aspen more abundant onfractured/creviced bedrock.

Related Ecosites

040, 055, 088, 104
Deeper; any texture

028
Moister (not dry, fresh or xeric)

N/A — **016** — N/A

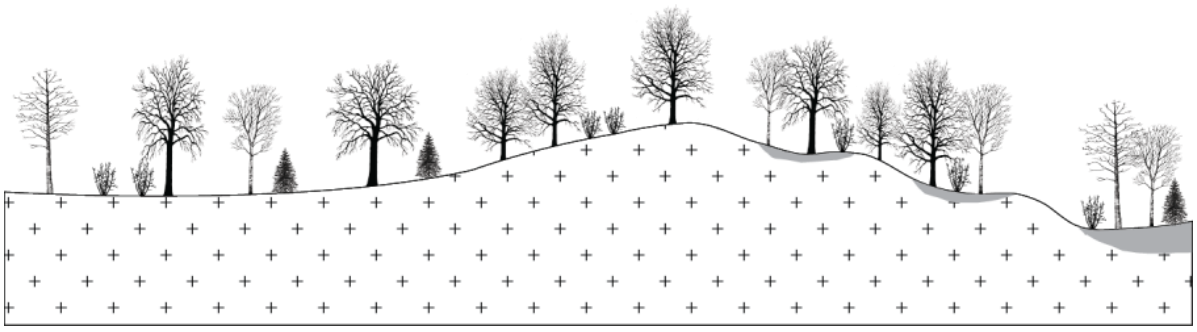
N/A

Very Shallow, Dry to Fresh: Oak Hardwood

B017Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting mostly of bur oak and/or red oak (> 50% cover of hardwood species). May be mixed with trembling aspen, large-tooth aspen, white birch, and balsam fir. Varies from shrub and herb poor to moderately rich. Ground surface mostly broadleaf litter with conifer litter and exposed bedrock. Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy	Coarse Loamy			Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes choke cherry, beaked hazel, poison-ivy, wild sarsaparilla, wild lily-of-the-valley, and violet species.

Trees	*Quercus macrocarpa, Populus tremuloides, P. grandidentata, Betula papyrifera,Abies balsamea*
Shrubs	**Prunus virginiana, *Corylus cornuta, *Rhus radicans, Rubus pubescens,Viburnum rafinesquianum, Lonicera canadensis*
Vascular Herbaceous	*Aralia nudicaulis, *Maianthemum canadense, Viola* spp.*, Anemone quinquefolia, Carex* spp.*, *Fragaria virginiana*
Non-vascular	*Plagiomnium cuspidatum*

Very Shallow, Dry to Fresh: Oak Hardwood

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Uniform veneers may support uniform, closed canopy. Variable sized patches of exposed bedrock may result in sparse canopy. Shrub and herb poor when canopy closed.
Ground cover increases as canopy becomes more open. Without fire, may accumulate organic material and become increasingly complex causing succession to another ecosite.

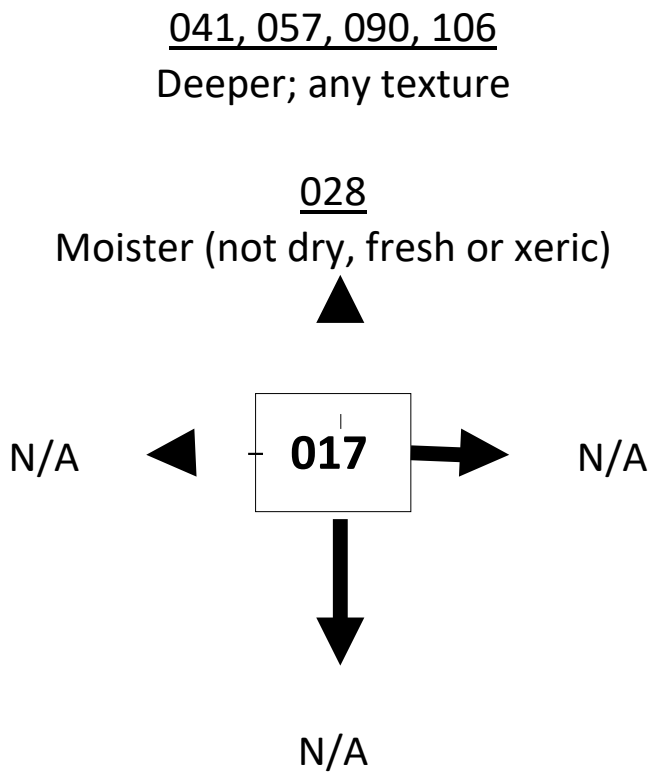
Ecoregional Variability

Uncommon across the boreal range. Restricted to 4S, 4W, 5S and southern portion of3E. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 3E, 4S-1, and 4S-6. Bur oak most common in 5S-2 and 4S-6. Red oak most common in 3E-5. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur inpoorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral materialor over base-rich bedrock. Jack pine, red pine, and trembling aspen more abundant onfractured/creviced bedrock.

Related Ecosites

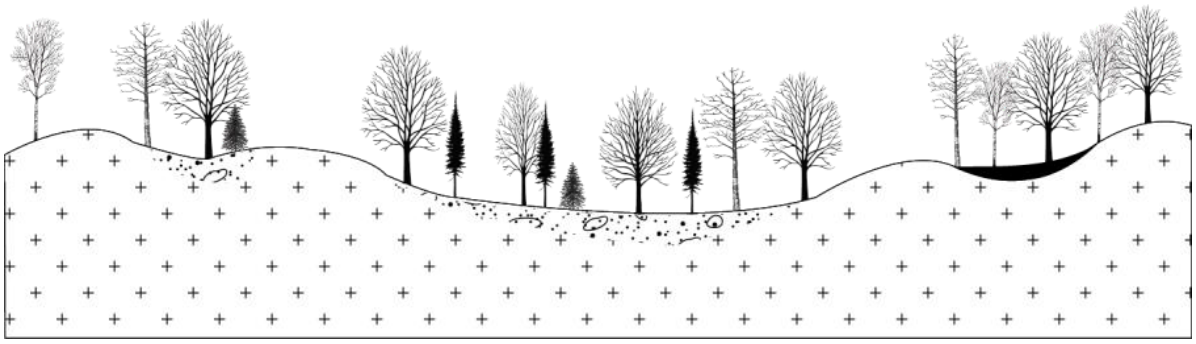


Very Shallow, Dry to Fresh: Maple Hardwood

B018Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting mostly of maple species (> 50% cover of hardwood species). May be mixed with white birch, trembling aspen, white spruce, yellow birch,balsam fir, and eastern white cedar. Varies from shrub and herb poor to moderately rich. Ground surface mostly broadleaf litter with conifer litter and exposed bedrock.
Substrate texture variable. Mostly very shallow (≤ 15 cm) and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes mountain maple, beaked hazel, dwarf raspberry, large-leaved aster, wild sarsaparilla, and wild lily-of-the-valley. ften contains NE v-types V3, V4 or NW v-type V3.1.

Trees	*Acer rubrum, *A. saccharum, Betula papyrifera, Populus tremuloides, Piceaglauca, Betula alleghaniensis, Abies balsamea, Thuja occidentalis*
Shrubs	*Acer spicatum, *Corylus cornuta, Rubus pubescens, Diervilla lonicera, Loniceracanadensis*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, *Maianthemum canadense, Clintonia borealis, *Trientalis borealis, Streptopus roseus, Viola* spp.*, Cornus canadensis,Lycopodium obscurum, Galium triflorum*
Non- vascular	*Pleurozium schreberi*

Very Shallow, Dry to Fresh: Maple Hardwood

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniform veneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Without fire, may accumulate organicmaterial and become increasingly complex causing succession to another ecosite.

Ecoregional Variability

Uncommon across the boreal range. Restricted to 4W, 5S, and southern portion of 3E,3W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 3E, 4S-1, and 4S-6.
Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur inpoorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral materialor over base-rich bedrock. Jack pine, red pine, and trembling aspen more abundant onfractured/creviced bedrock.

Related Ecosites

042, 058, 091, 107
Deeper; any texture

028
Moister (not dry, fresh or xeric)

N/A | **018** | N/A

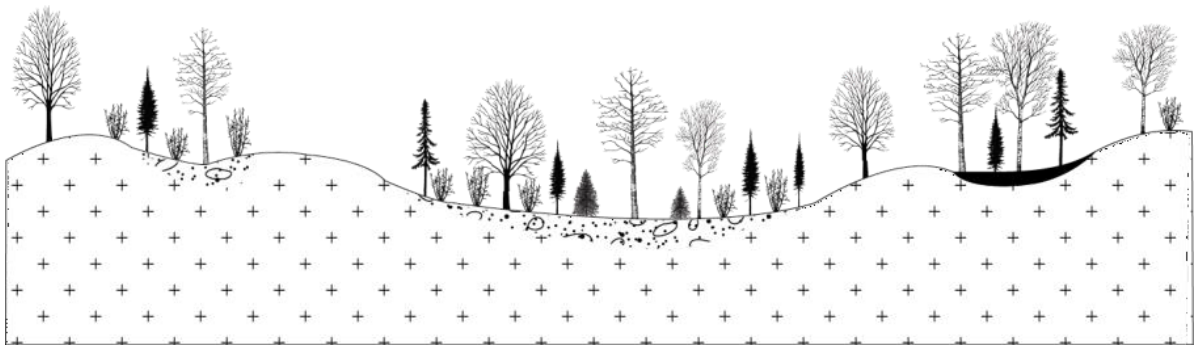
N/A

Very Shallow, Dry to Fresh: Mixedwood

B019Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of a mixture of birch, aspen, maple, and/or oak species. No domianant hardwood species. Varies from shrub and herb poor to moderately rich. Understory tree species consisting of red ash, white elm, black ash, and white spruce. Ground surface mostly broadleaf litter with occurances of conifer litter, exposed bedrock and stones present. Substrate texture variable. Mostly very shallow (≤ 15 cm)and dry to fresh (MR ≤ 3) or xeric.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes choke cherry, beaked hazel, poison-ivy, wild sarsaparilla, wild lily-of-the-valley, and violet species.

Trees	*Betula papyrifera, Populus tremuloides, Acer rubrum, Quercus macrocarpa, Fraxinus pennsylvanica, F. nigra, Tilia americana, Ulmus americana*
Shrubs	**Prunus virginiana, *Corylus cornuta, *Rhus radicans, Rubus pubescens, Viburnum rafinesquianum, Lonicera canadensis*
Vascular Herbaceous	*Aralia nudicaulis, *Maianthemum canadense, Viola* spp.*, Anemone quinquefolia, Carex* spp.*, *Fragaria virginiana*
Non-vascular	*Plagiomnium cuspidatum*

Very Shallow, Dry to Fresh: Mixedwood

Ecology

Substrate depth and stoniness restricts rooting zone, moisture, and nutrient availability resulting in limited plant growth potential and increasing windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniform veneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Maintained by fire regime typical of the boreal forest. Without fire, organic material may accumulate and become increasingly complex with many layers of trees causing succession to another ecosite.

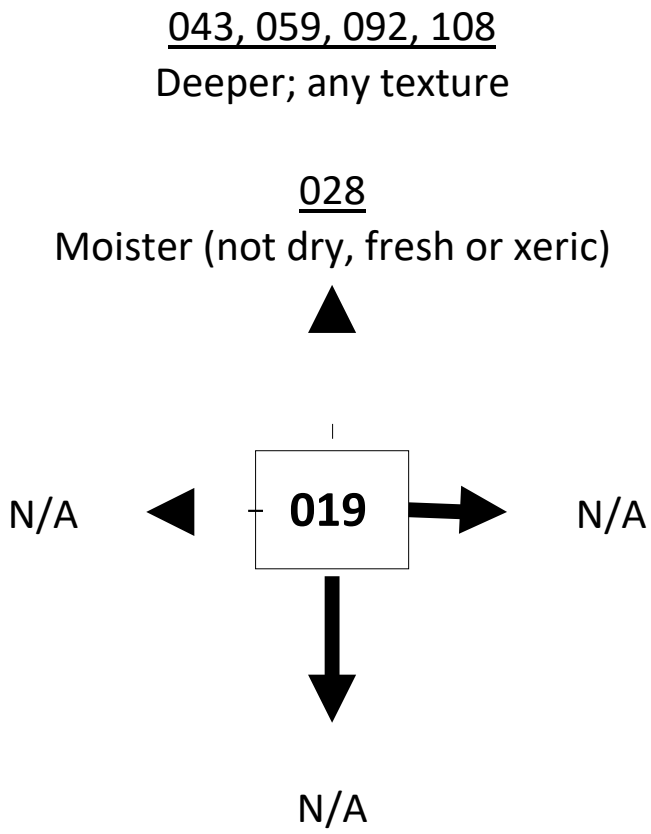
Ecoregional Variability

Widespread across the boreal range. More common in 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth andvigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. Yellow birch, red maple, bur oak, American basswood, red oak and white elm may occur in 4S, 4W, 5S,and southern portion of 3E and 4W. Norway spruce and red spruce may occur in 3W- 5, 3E-4, and 3E-5. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth highly variable. Often on crest, upper slope or level slope positions. May occur on lower and toe slopes when adjacent to large water body. Substrate may be mineral or folic organic. Black spruce, tamarack, alder, and sphagnum may occur in poorly drained depressions. Eastern white cedar, tamarack, aspen as well asincreased shrub and herb diversity and abundance may occur in deep mineral material or over base-rich bedrock. Shallow rooting species, such as white birch and black spruce, likely to occur. Jack pine and trembling aspen may occur on creviced/ fractured bedrock.

Related Ecosites

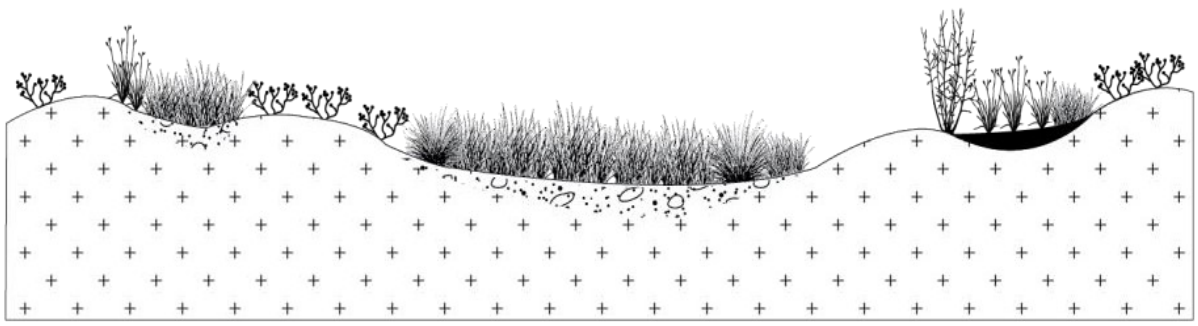


Very Shallow, Humid: Meadow

B020N

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous, lichen, and/or bryophyte vegetation community. Tree and shrub poor. Ground surface mostly lichen, feathermoss, and exposed bedrock. Substrate texture variable. Mostly very shallow (≤ 15 cm) and humid (MR = h).

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Herbaceous, lichen, and/or bryophyte dominated community. Vegetation highly variable, consisting of opportunistic, moisture tolerant species. Scattered small, open-grown trees and shrubs often present, but do not exceed 10% cover of either. Trees and shrubs when present may include black spruce, tamarack, white birch, poplars, speckled alder and ericaceous shrubs. Common herbaceous plants include sedges and Canada blue-joint. Lichen and moss cover often high and includes reindeer lichen, sphagnums and haircap mosses.

Trees	*Picea mariana, Larix laricina, Betula papyrifera, Populus tremuloides, *P. balsamifera*
Shrubs	**Alnus incana, Vaccinium angustifolium, Chamaedaphne calyculata, Rhododendron groenlandicum*
Vascular Herbaceous	*Carex* spp.*, *Calamagrostis canadensis*
Non- vascular	*Cladina rangiferina, Sphagnum* spp.*, Polytrichum* spp.

Very Shallow, Humid: Meadow

Ecology

Limited plant growth potential due to shallow substrates restricting rooting zone, moisture and nutrient availability. May originate from agriculture (i.e., pasture) abandonment, silvicultural practices, fire, or vegetation control (i.e., hydro or gas corridors). Variable sized patches of exposed bedrock may result in sparse vegetativecover. Uniform veneers may support uniform, closed vegetative cover. Ground cover, notably lichen, increases as vascular cover becomes more open. Maintenance of structure and composition associated with low to moderate disturbance (i.e., fire, grazing, vegetation control). In absence of disturbance can transition to a shrub or treed system.

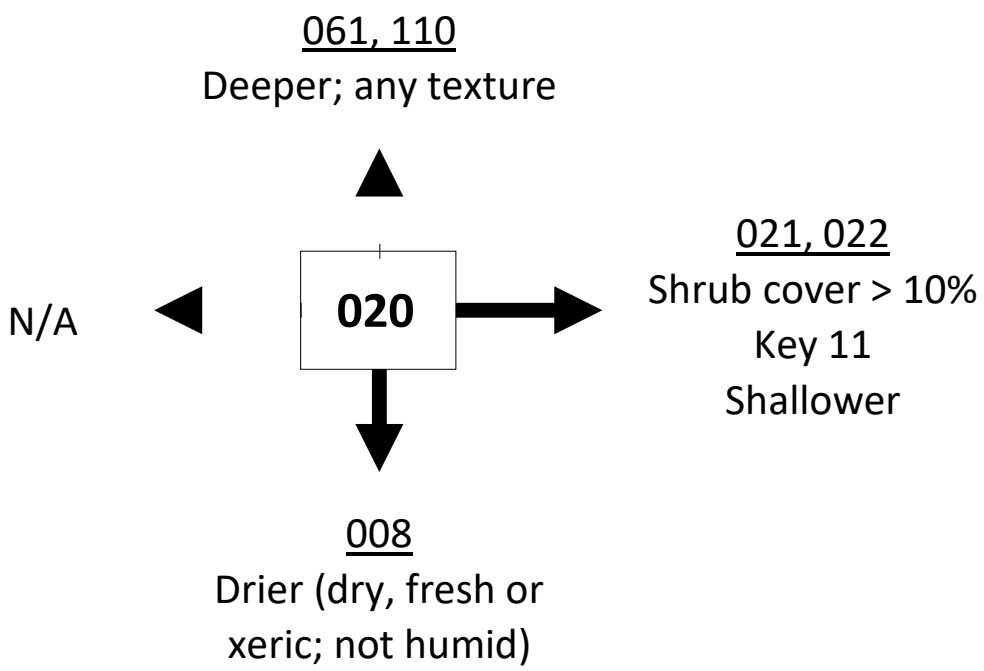
Ecoregional Variability

Widespread but uncommon across the boreal. More common in 3W, 4W, and 4S. Often associated with coarse textured morainal veneer overlaying the Canadian Shield. Typically non-calcareous. Calcareous veneers or fine-textured substrates mayincrease plant diversity and growth, especially in 3E, 4S-1, 4S-6. Species diversity greater in 4S, 5S, 4W compared to eastern boreal.

Edaphic Variability

Substrate humid folic/peaty material and typically very shallow with variable stoniness. Underlying bedrock topography results in exposed bedrock outcrops, variation in substrate depth, and inclusions of bedrock controlled wetlands. Black spruce, tamarack, eastern white cedar, black ash, alder, and sphagnum likely in poorly drained depressions where pockets of deep peat or wet mineral material mayalso occur. Ephemeral pools may be present containing narrow-leaved meadowsweet, fowl bluegrass, bog goldenrod, and broom sedge.

Related Ecosites

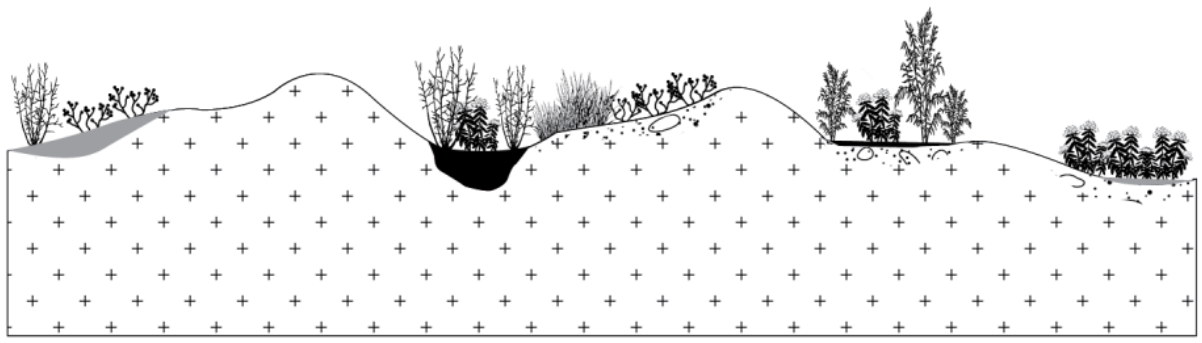


Very Shallow, Humid: Sparse Shrub

B021S

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Scattered tall and/or short shrub community. Tree and herb poor. Ground surface mostly sphagnum and feathermosses with lichens and exposed bedrock. Substrate texture variable, very shallow (≤ 15 cm) and humid (MR = h).

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor			
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Meadow with absolute shrub coverage between 10 and 25%. Scattered, open-grown trees often present, but ≤ 10% absolute cover. Vegetation highly variable, consisting ofmoisture tolerant species. Common trees include black spruce, tamarack and white birch. Common shrubs include speckled alder, low sweet blueberry, leatherleaf and Labrador-tea. Common herbaceous plants include sedges, Canada blue-joint and bulrushes. High sphagnum cover with reindeer lichen patches.

Trees	*Picea mariana, Larix laricina, Betula papyrifera, Populus tremuloides, *P.balsamifera*
Shrubs	**Alnus incana, Vaccinium angustifolium, Chamaedaphne calyculata,Rhododendron groenlandicum, Salix* spp.
Vascular Herbaceous	*Carex* spp., **Calamagrostis canadensis, Scirpus* spp., *Eleocharis* spp.
Non- vascular	*Sphagnum* spp., *Cladina rangiferina, Polytrichum* spp.

Very Shallow, Humid: Sparse Shrub

Ecology

Limited plant growth potential due to shallow substrates restricting rooting zone, moisture, and nutrient availability. May originate from agriculture (i.e., crop or pasture) abandonment, silvicultural practices, fire, or vegetation management (i.e., hydro or gas corridors). Variable sized patches of exposed bedrock may result in sparse vegetative cover. Uniform veneers may support uniform, closed vegetative cover.
Ground cover, notably lichen, increases as vascular cover becomes more open.
Maintenance of structure and composition associated with low to moderate disturbance (i.e., fire, grazing, vegetation control). In the absence of disturbances, willtransition to a shrub or treed system.

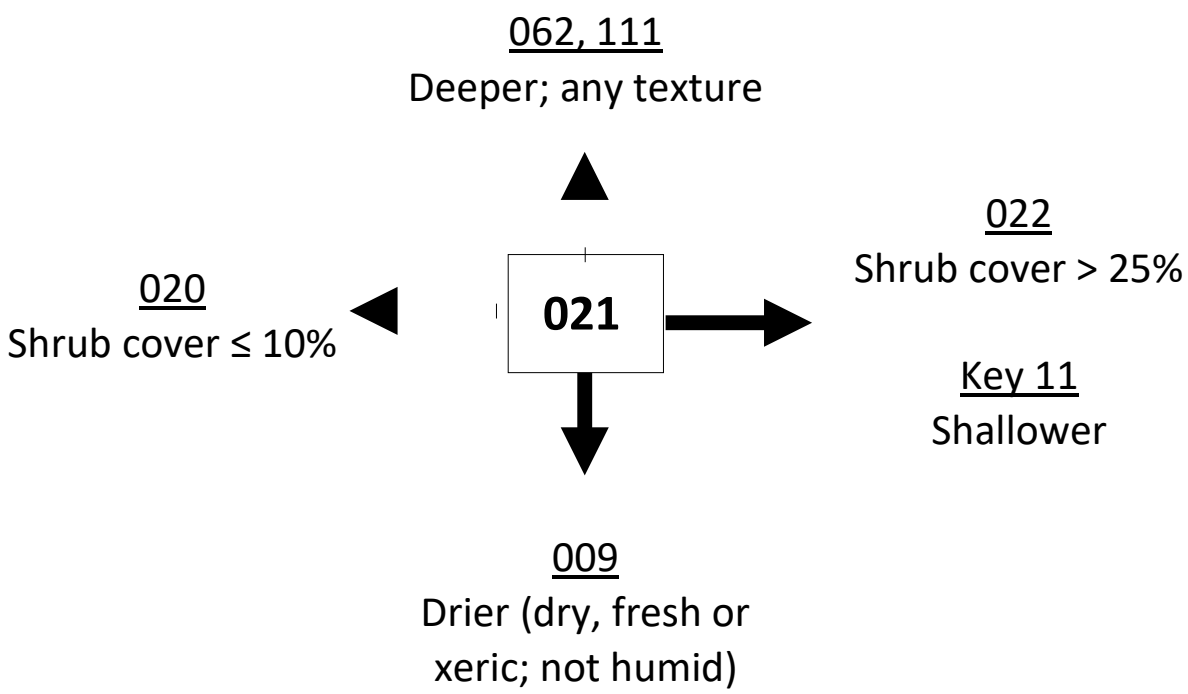
Ecoregional Variability

Widespread but uncommon across the boreal. More common in 3W, 4W, and 4S. Often associated with coarse textured morainal veneer overlaying the Canadian Shield. Typically non-calcareous. Calcareous veneers or fine-textured substrates mayincrease plant diversity and growth, especially in 3E, 4S-1, 4S-6. Species diversity greater in 4S, 5S, 4W compared to eastern boreal.

Edaphic Variability

Substrate humid folic/peaty material and typically very shallow with variable stoniness. Underlying bedrock topography results in exposed bedrock outcrops, variation in substrate depth, and inclusions of bedrock controlled wetlands. Black spruce, tamarack, eastern white cedar, black ash, alder, and sphagnum likely in poorly drained depressions where pockets of deep peat or wet mineral material mayalso occur. Ephemeral pools may be present containing narrow-leaved meadowsweet, fowl bluegrass, bog goldenrod, and broom sedge.

Related Ecosites

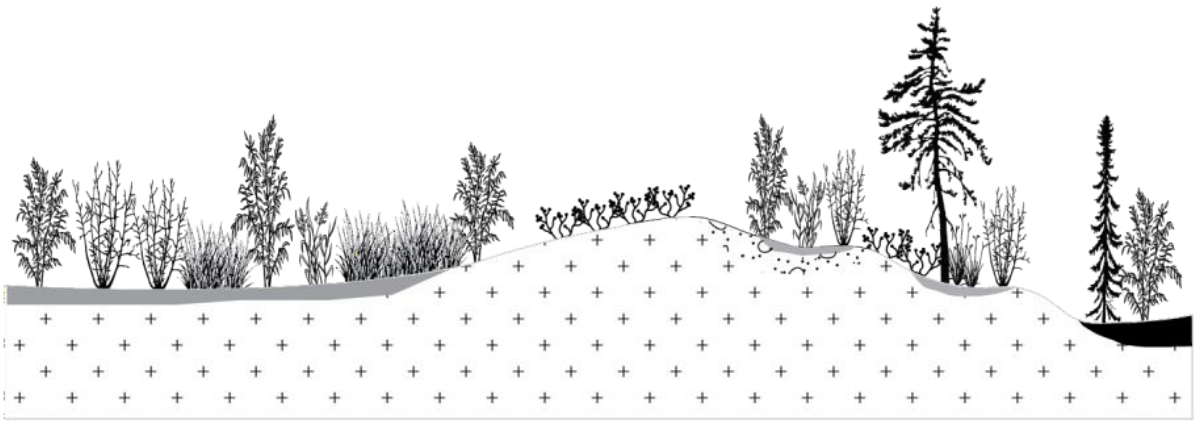


Very Shallow, Humid: Shrub

B022S

L M H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Tall and/or short shrub community. Tree and herb poor. Ground surface mostly sphagnum and feathermosses with lichens and exposed bedrock. Substrate texture variable, very shallow (≤ 15 cm) and humid (MR = h).

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Shrub coverage > 25%. Community appearance will vary from scattered shrubs withgrass and herbaceous understorey to dense thickets of low and/or tall shrubs.
Scattered trees often present, but ≤ 10% absolute cover. Common trees include black spruce, tamarack and white birch. Common shrubs include speckled alder, low sweet blueberry, Labrador tea and willows. Common herbaceous plants include sedges, Canada blue-joint and spike rushes. High sphagnum and feathermoss cover with reindeer lichen patches.

Trees	*Picea mariana, Larix laricina, Betula papyrifera, Populus tremuloides, *P. balsamifera, Picea glauca, Sorbus decora*
Shrubs	**Alnus incana, Vaccinium angustifolium, Rhododendron groenlandicum, Chamaedaphne calyculata, Salix* spp.*, Acer spicatum, Viburnum edule*
Vascular Herbaceous	*Carex* spp.*, *Calamagrostis canadensis, Eleocharis* spp.*, Scirpus* spp.*, Phegopteris connectilis, Dryopteris carthusiana, Gymnocarpium dryopteris, Woodsia ilvensis, Polypodium virginiana*
Non-vascular	*Sphagnum* spp.*, Pleurozium schreberi, Cladina rangiferina, Polytrichum* spp.*, Cladina mitis*

Ecology

Limited plant growth potential due to shallow substrates restricting rooting zone, drainage, and nutrient availability. May originate from agriculture (i.e., crop or pasture) abandonment, silvicultural practices, fire, or vegetation management (i.e., hydro or gas corridors). Variable sized patches of exposed bedrock may result in sparse vegetative cover. Uniform veneers may support uniform, closed vegetative cover.
Ground cover, notably lichen, increases as vascular cover becomes more open.
Maintenance of structure and composition associated with low to moderate intensity disturbance. In the absence of disturbance can transition to a treed system.

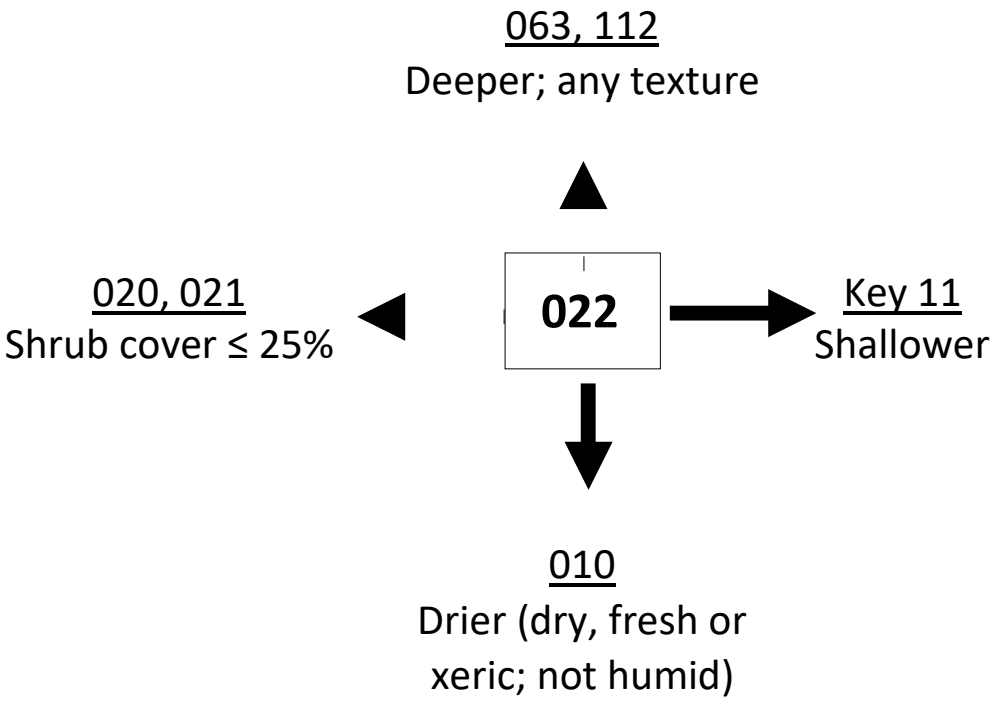
Ecoregional Variability

Widespread but uncommon across the boreal. More common in 3W, 4W, and 4S. Often associated with coarse textured morainal veneer overlaying the Canadian Shield. Typically non-calcareous. Calcareous veneers or fine-textured substrates mayincrease plant diversity and growth, especially in 3E, 4S-1, 4S-6. Species diversity greater in 4S, 5S, 4W compared to eastern boreal.

Edaphic Variability

Substrate humid folic/peaty material and typically very shallow with variable stoniness. Underlying bedrock topography results in exposed bedrock outcrops, variation in substrate depth, and inclusions of bedrock controlled wetlands. Black spruce, tamarack, eastern white cedar, black ash, alder, and sphagnum likely in poorly drained depressions where pockets of deep peat or wet mineral material mayalso occur. Ephemeral pools may be present containing narrow-leaved meadowsweet, fowl bluegrass, bog goldenrod, and broom sedge.

Related Ecosites

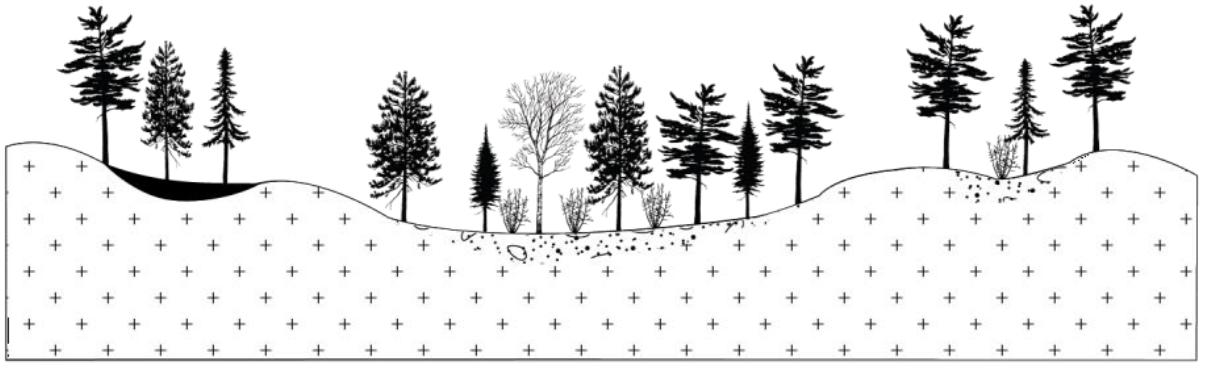


Very Shallow, Humid: Red Pine - White Pine Conifer

B023Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of red pine and/or white pine (≥ 20% absolute cover). Maybe a near pure stand of red pine or eastern red pine. Often mixed with white birch, trembling aspen, balsam fir, white spruce, and large-tooth aspen. Understory tree species consisting of balsam fir and trembling aspen. Shrub and herb poor. Ground surface conifer litter, woody debris, broadleaf litter, moss, and exposed bedrock.
Substrate texture variable. Minimal mineral material, mostly very shallow (≤ 15 cm) and humid.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy	Coarse Loamy			Silty		Fine Loamy		Clayey	Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor	Anmoor			
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n					z				

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes beaked hazel, mountain maple, low sweet blueberry, wild sarsaparilla, wild lily-of-the-valley, and large-leaved aster.

Trees	*Pinus resinosa, P. strobus, Betula papyrifera, Populus tremuloides, Abies balsamea, Picea glauca, Populus grandidentata*
Shrubs	**Corylus cornuta, Acer spicatum, Vaccinium angustifolium, V. myrtilloides, *Linnaea borealis, Amelanchier spp., Diervilla lonicera*
Vascular Herbaceous	*Aralia nudicaulis, *Maianthemum canadense, Eurybia macrophylla, Cornus canadensis, *Trientalis borealis, Clintonia borealis, Streptopus roseus,Oryzopsis asperifolia*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum*

Very Shallow, Humid: Red Pine - White Pine Conifer

Ecology

Substrate stoniness and depth restricts rooting zone resulting in increased windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniformveneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Under red pine dominated stands, shrub and herb sparse with abundant conifer litter. Associated withdisturbance regimes such as low to moderate intensity fire to maintain red pine and eastern white pine composition. Without the influence of a disturbance regime, balsamfir and other boreal tree species will increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

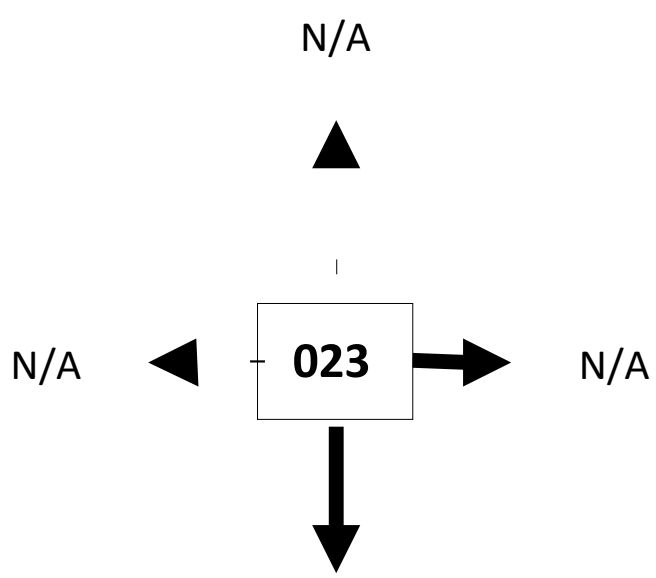
Ecoregional Variability

Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portion of3E. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 3E, 4S-1, and 4S-6. Eastern hemlockmay occur in 3E-5. Yellow birch, red maple, American basswood, and red oak may occur in 4S, 4W, 5S, and southern portion of 3E.

Edaphic Variability

Substrate depth typically variable. Often on lower slope, toe position, or level slope position. Substrate may be humid folic or peaty organic. Black spruce, tamarack, alder,and sphagnum may occur in poorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral material or over base-rich bedrock.

Related Ecosites



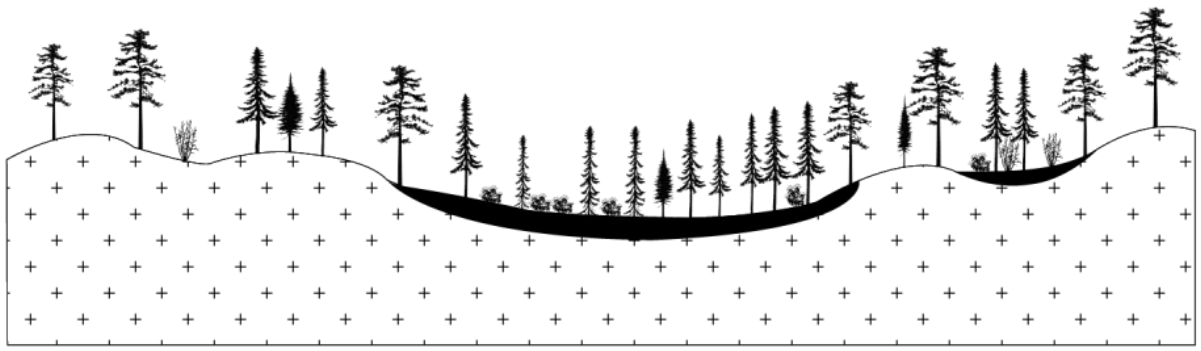
011
Drier (dry, fresh or xeric: not humid)

Very Shallow, Humid: Black Spruce - Pine Conifer

B024Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of black spruce and/or jack pine (> 50% cover of conifer species). Often mixed with balsam fir, eastern white cedar, and tamarack. Understory tree species consisting of black spruce and balsam fir. Shrub and herbpoor. Ground surface moss, conifer litter, broadleaf litter, and exposed bedrock.
Substrate texture variable. Minimal mineral material, mostly very shallow (≤ 15 cm) and humid.

Substrate Description

Substrate Series	VS1 VS2 **O1 O2** R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n			z						

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes black spruce, velvet-leaf blueberry, low sweet blueberry, common bearberry, wild sarsaparilla, bunchberry, wildlily-of-the-valley, sphagnum, and feathermoss.

Trees	*Picea mariana, Pinus banksiana, Abies balsamea, Thuja occidentalis, Larix laricina, Populus tremuloides, Betula papyrifera*
Shrubs	*Vaccinium myrtilloides, V. angustifolium, Arctostaphylos uva-ursi, *Rosa acicularis, *Linnaea borealis, Rhododendron groenlandicum, Gaultheria hispidula, Chamaedaphne calyculata*
Vascular Herbaceous	*Aralia nudicaulis, Cornus canadensis, *Maianthemum canadense, Eurybia macrophylla, Melampyrum lineare, Maianthemum stellatum, Carex trisperma, Equisetum sylvaticum*
Non- vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis, Sphagnum capillifolium, S. girgensohnii, S. magellanicum, S. angustifolium*

Very Shallow, Humid: Black Spruce - Pine Conifer

Ecology

Substrate depth restricts rooting zone resulting in increased windthrow risk. Uniform veneers as well as stands dominated by shallow rooting black spruce more likely to have closed (> 60%) canopy. Variable sized patches of exposed bedrock may result insparse canopy. Shrub and herb poor when canopy closed. Ground cover increases ascanopy becomes more open. Fire produces young stands dominated by jack pine.
With age, jack pine may remain dominant or becomes predominantly black spruce with variable components of white birch and balsam fir.

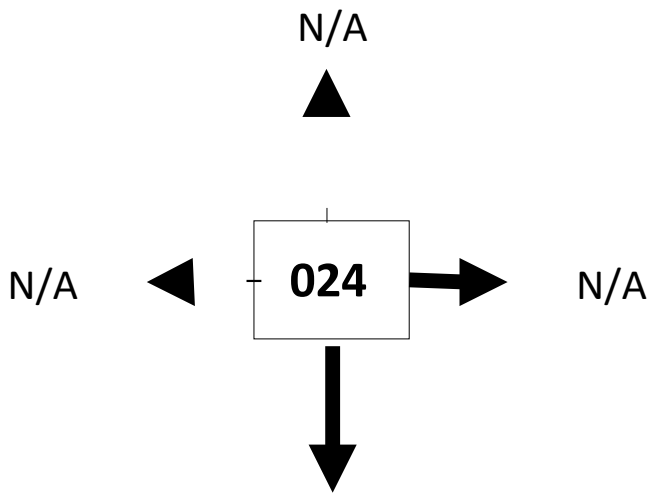
Ecoregional Variability

Widespread across the boreal range. More common in 3S, 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. Tendency towards black spruce in 2E, 2W, 3E, and eastern half of 3W. Tendency towards jack pine and white birch (≤ 50%) in 4S and 3S. Eastern white pine and red pine (< 20% absolute cover) and red maple may occur in 4S, 4W, 5S, and southern portion of 3E and 3W. In2W and 3S low sweet blueberry and wild sarsaparilla uncommon.

Edaphic Variability

Substrate depth typically variable. Often on lower slope, toe position, or level slope position. Substrate may be humid folic or peaty organic. Black spruce, tamarack, alder,and sphagnum may occur in poorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral substrates or over base-rich bedrock. Jack pine likely to occur on fractured/creviced bedrock.

Related Ecosites

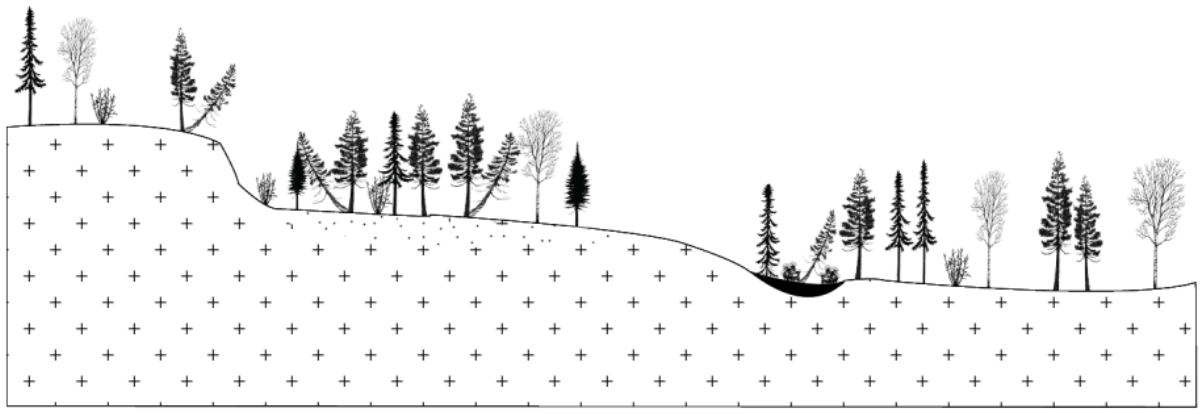


Very Shallow, Humid: Cedar (Hemlock) Conifer

B025Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of eastern white cedar and/or eastern hemlock (> 50% cover of conifer species). Eastern hemlock rare. May be mixed with black spruce and white birch. Understory tree species consisting of balsam fir, eastern white cedar, and black spruce. Varies from shrub and herb poor to moderately rich. Ground surface conifer litter, woody debris, broadleaf litter, feathermoss, and exposed bedrock. Substrate texture variable. Minimal mineral material, mostly very shallow (≤ 15 cm) and humid.

Substrate Description

Substrate Series	VS1 VS2 O1 **O2** R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n					z				

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes mountain maple, speckled alder, dwarf raspberry, star-flower, kidney-leaved violet, and bunchberry.

Trees	*Thuja occidentalis, Picea mariana, Betula papyrifera, Sorbus decora*
Shrubs	*Acer spicatum, *Alnus incana, Rubus pubescens, Gaultheria hispidula, *Linnaea borealis, Lonicera canadensis, Rhododendron groenlandicum, Cornusstolonifera, *Rosa acicularis*
Vascular Herbaceous	**Trientalis borealis, Viola renifolia, Cornus canadensis, Coptis trifolia, Mitella nuda, Aralia nudicaulis, *Maianthemum canadense, Galium triflorum,Maianthemum stellatum, Streptopus roseus*
Non- vascular	*Pleurozium schreberi, Hylocomium splendens, Rhytidiadelphus triquetrus,Ptilium crista-castrensis, Dicranum polysetum*

Very Shallow, Humid: Cedar (Hemlock) Conifer

Ecology

Substrate stoniness and depth restricts rooting zone resulting in increased windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniform veneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Eastern white cedar often late successional. Associated with islands or rock knobs which are isolated from continuous fuel pathways. Without fire, organic material accumulates and site becomesincreasingly complex. Fire event will likely require re-classification of ecosite.

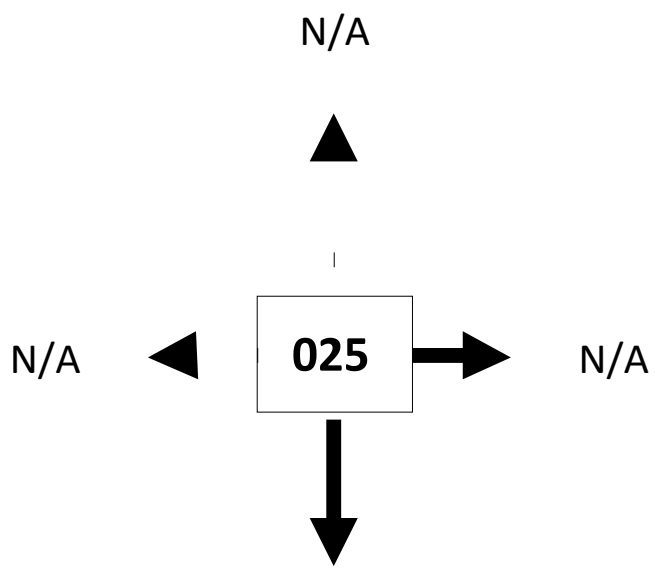
Ecoregional Variability

Widespread across the boreal range. More common in 3S, 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. Eastern hemlock is restricted to 3E-5.

Edaphic Variability

Substrate depth typically variable. Often on lower slope, toe position, or level slope position. Substrate may be humid folic or peaty organic. Black spruce, tamarack, alder,and sphagnum may occur in poorly drained depressions. Eastern white cedar, tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral materials or over base-rich bedrock. Jack pine, red pine, and trembling aspen more abundant on fractured/creviced bedrock.

Related Ecosites



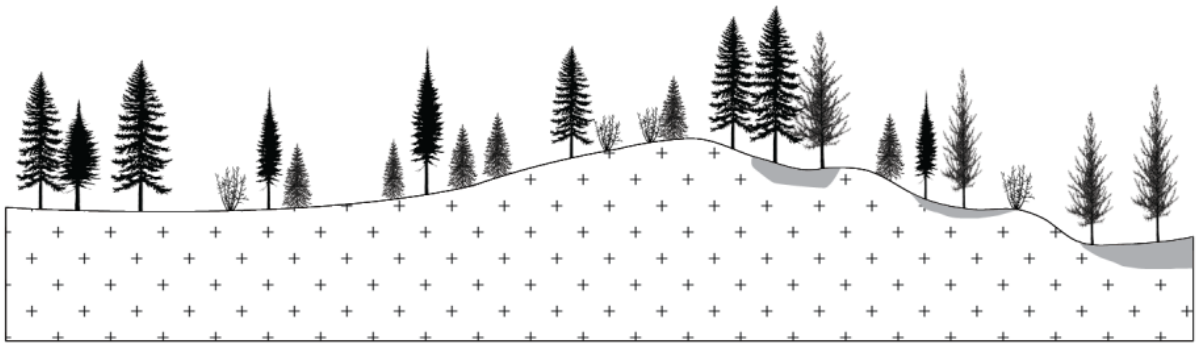
013
Drier (dry, fresh or xeric: not humid)

Very Shallow, Humid: Conifer

B026Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of balsam fir, white spruce, tamarack and/or a mix of other coniferous species. May be a near pure stand of balsam fir or white spruce. Shrub andherb poor. Ground surface conifer litter, woody debris, broadleaf litter, moss, and exposed bedrock. Substrate texture variable. Minimal mineral material, mostly very shallow (≤ 15 cm) and humid.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8													
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN	
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor			
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes dwarf raspberry, juneberry, showy mountain-ash, bunchberry, bluebead-lily, wild sarsaparilla and feathermoss.

Trees	*Abies balsamea, Picea glauca, Larix laricina, Picea mariana, Pinus banksiana, Betula papyrifera, Populus tremuloides, Thuja occidentalis, Sorbus decora*
Shrubs	*Rubus pubescens, Amelanchier* spp.*, Acer spicatum, *Corylus cornuta, Diervilla lonicera, *Linnaea borealis, *Rosa acicularis, Vaccinium myrtilloides*
Vascular Herbaceous	*Cornus canadensis, Clintonia borealis, Aralia nudicaulis, *Maianthemum canadense, Streptopus roseus, *Trientalis borealis, Eurybia macrophylla, Mitella nuda, Anemone quinquefolia, Viola renifolia, Coptis trifolia*
Non- vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Rhytidiadelphus triquetrus, Dicranum polysetum*

Very Shallow, Humid: Conifer

Ecology

Substrate stoniness and depth restricts rooting zone resulting in increased windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniformveneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. As a result of a longer fire cycle, successional species such as balsam fir, white spruce, and eastern white cedar may occur. Fire event will likely require re-classification of ecosite.

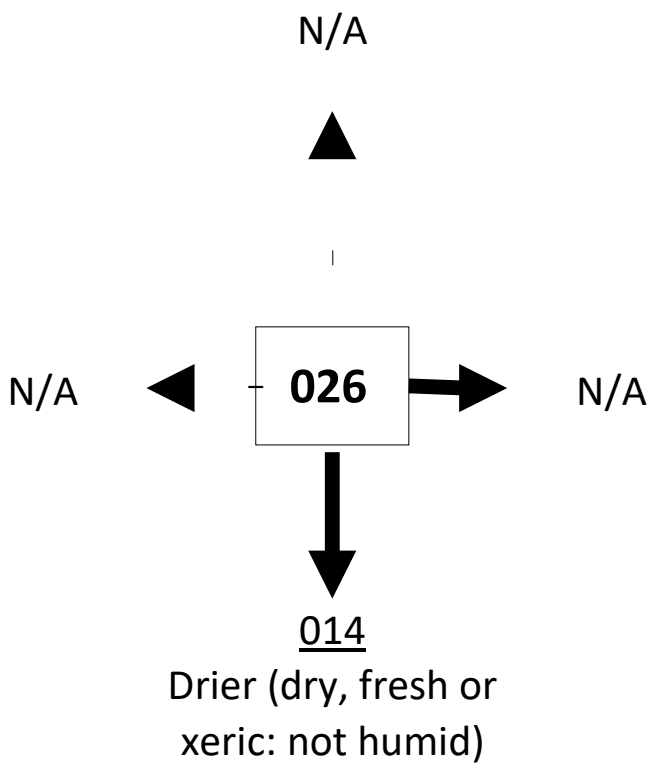
Ecoregional Variability

Widespread across the boreal range. More common in 3S, 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. Eastern white pine and red pine (< 20% absolute cover) and red maple may occur in 4S, 4W, 5S, and southern portion of 3E and 3W. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically variable. Often on lower slope, toe position, or level slope position. Substrate may be humid folic or peaty organic. Black spruce, tamarack, alder, and sphagnum may occur in poorly drained depressions. Eastern white cedar, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral material or over base-rich bedrock. Shallow rooting species, such as white birch and black spruce, likely to occur. Jack pine and trembling aspen may occuron creviced/fractured bedrock.

Related Ecosites

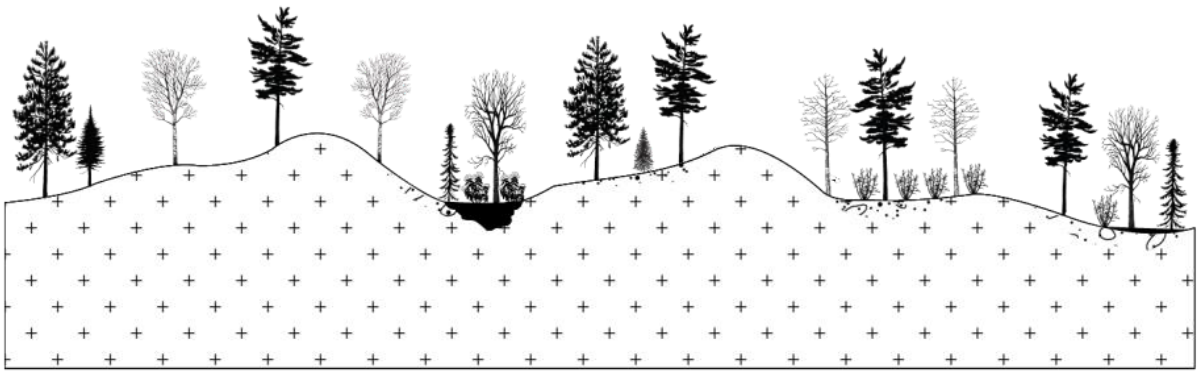


Very Shallow, Humid: Red Pine - White Pine Mixedwood

B027Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of red pine and eastern white pine (≥ 20 absolute cover). Substantial components of white birch and trembling aspen (> 50% cover) may occur. May also be mixed with balsam fir, black spruce, and jack pine. Understory tree species consisting of balsam fir and trembling aspen. Shrub and herb moderately poor to rich. Ground surface mostly broadleaf litter with conifer litter and exposed bedrock. Substrate texture variable. Minimal mineral material, mostly very shallow (≤ 15 cm) andhumid.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8											
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy	Coarse Loamy			Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes beaked hazel, mountain maple, low sweet blueberry, wild sarsaparilla, wild lily-of-the-valley, and large-leaved aster.

Trees	*Pinus resinosa, P. strobus, Betula papyrifera, Populus tremuloides, Abiesbalsamea, Picea mariana, Pinus banksiana*
Shrubs	**Corylus cornuta, Acer spicatum, Vaccinium angustifolium, V. myrtilloides, *Linnaea borealis, Amelanchier spp., Diervilla lonicera*
Vascular Herbaceous	*Aralia nudicaulis, *Maianthemum canadense, Eurybia macrophylla, Cornus canadensis, *Trientalis borealis, Clintonia borealis, Streptopus roseus,Oryzopsis asperifolia*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum*

Very Shallow, Humid: Red Pine - White Pine Mixedwood

Ecology

Substrate stoniness and depth restricts rooting zone resulting in increased windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniformveneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Associated with disturbance regimes such as low to moderate intensity fire to maintain red pine and eastern white pine composition. Without the influence of a disturbance regime, balsam fir and other boreal tree species may increase and replace the occurrences ofred pine and eastern white pine causing succession to another ecosite.

Ecoregional Variability

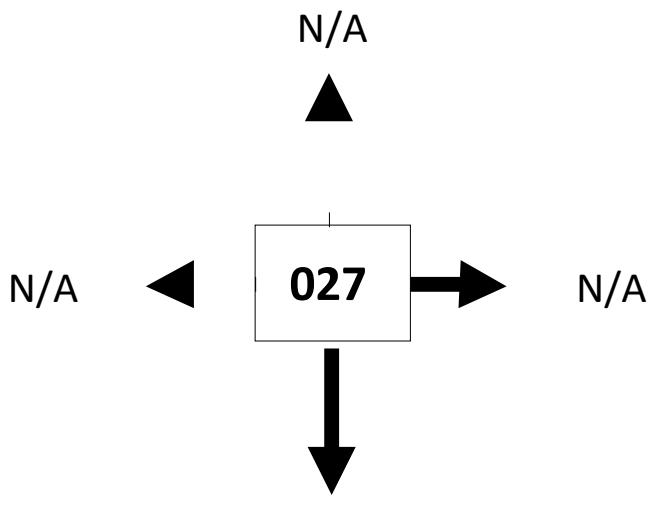
Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portionof 3E. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 3E, 4S-1, and 4S-6.

Eastern hemlock may occur in 3E-5. Yellow birch, red maple, American basswood,and red oak may occur in 4S, 4W, 5S, and southern portion of 3E.

Edaphic Variability

Substrate depth typically variable. Often on lower slope, toe position, or level slope position. Substrate may be humid folic or peaty organic. Black spruce, tamarack, alder, and sphagnum may occur in poorly drained depressions. Eastern white cedar,tamarack, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral material or over base-rich bedrock. Jack pine, red pine, and trembling aspen more abundant on fractured/creviced bedrock.

Related Ecosites



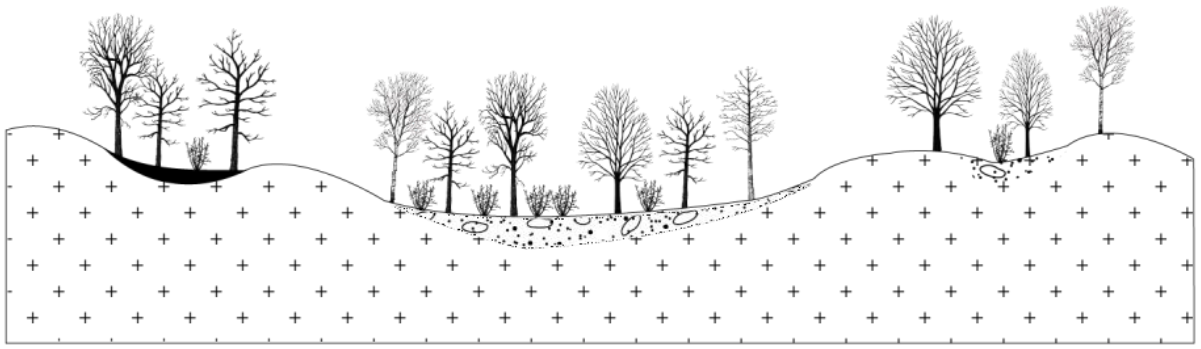
015
Drier (dry, fresh or xeric: not humid)

Very Shallow, Humid: Mixedwood

B028Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of a mixture of birch, aspen, ash, maple, and oak species. Varies from shrub and herb poor to moderately rich. Ground surface mostlybroadleaf litter with conifer litter and exposed bedrock. Substrate texture variable.
Minimal mineral material, mostly very shallow (≤ 15 cm) and humid.

Substrate Description

Substrate Series	VS1 VS2 O1 O2 R3 R4 R5 R6 R7 R8												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy sparse (> 10%and ≤ 25%). Common understory vegetation includes mountain maple, beaked hazel, bush honeysuckle, bunchberry, wild lily-of-the-valley, wild sarsaparilla and feathermoss.

Trees	*Betula papyrifera, Populus tremuloides, P. grandidentata, *P. balsamifera, Fraxinus nigra, Acer rubrum, Quercus macrocarpa, Abies balsamea, Picea glauca, Betula alleghaniensis, Picea mariana, Sorbus decora*
Shrubs	*Acer spicatum, *Corylus cornuta, Diervilla lonicera, Rubus pubescens, *Linnaea borealis, *Rosa acicularis, Vaccinium myrtilloides, V. angustifolium, Amelanchier* spp.
Vascular Herbaceous	*Cornus canadensis, *Maianthemum canadense, Aralia nudicaulis, Streptopus roseus, Eurybia macrophylla, Clintonia borealis, *Trientalis borealis, Violarenifolia, Galium triflorum*
Non-vascular	*Pleurozium schreberi, Rhytidiadelphus triquetrus, Plagiomnium cuspidatum,Ptilium crista-castrensis, Dicranum polysetum, Cladina rangiferina*

Very Shallow, Humid: Mixedwood

Ecology

Substrate stoniness and depth restricts rooting zone resulting in increased windthrow risk. Variable sized patches of exposed bedrock may result in sparse canopy. Uniformveneers may support uniform, closed canopy. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Maintained by fire regime typical of the boreal forest. Without fire, organic material may accumulate and become increasingly complex with many layers of trees causing succession to anotherecosite.

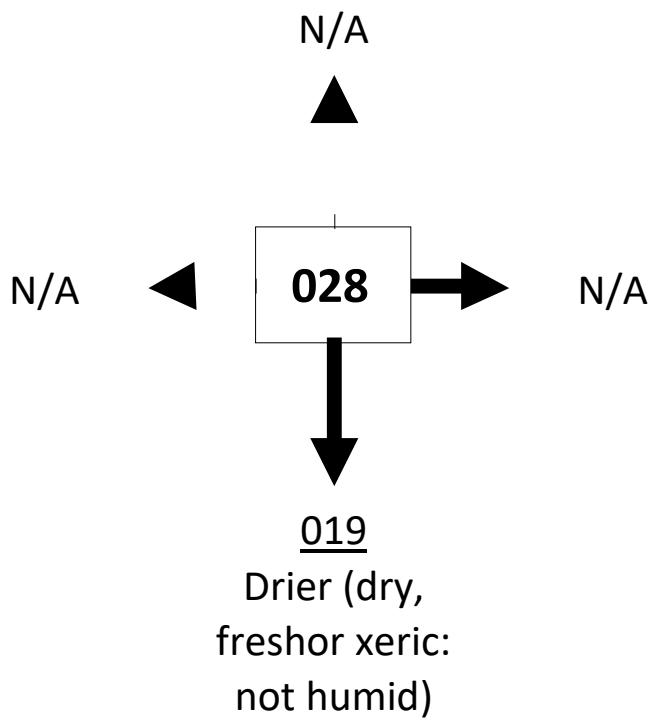
Ecoregional Variability

Widespread across the boreal range. More common in 3S, 3W, 4W and 4S. Often associated with coarse textured morainal deposits overlaying the Canadian Shield. Calcareous veneers or fine textured substrates over bedrock may increase growth and vigour of the understory, especially in 2E, 2W, 3E, 4S-1, and 4S-6. American basswood and red oak may occur in 4S, 4W, 5S, and southern portion of 3E. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically variable. Often on lower slope, toe position, or level slope position. Substrate may be humid folic or peaty organic. Black spruce, tamarack, alder,and sphagnum may occur in poorly drained depressions. Eastern white cedar, aspen as well as increased shrub and herb diversity and abundance may occur in deep mineral materials or over base-rich bedrock. Shallow rooting species, such as white birch and black spruce, likely to occur. Jack pine and trembling aspen may occur on creviced/fractured bedrock.

Related Ecosites

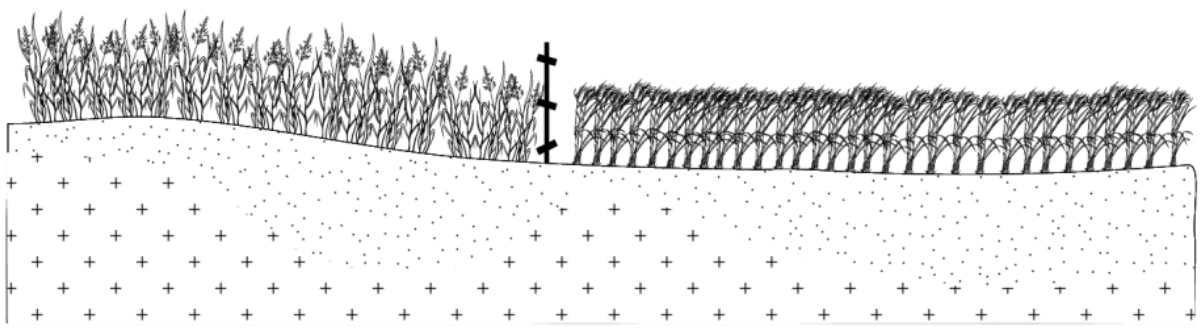


Dry, Sandy: Field

B029N

L | M | H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous vegetation community maintained by continuous human alteration. Treesand shrubs generally absent. Ground surface mostly herbaceous litter and mineral material. Substrate texture Sandy, mostly > 15 cm and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 D2												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n				z					

Vegetation Description

Herbaceous or graminoid dominated community. Ecosite may be dominated by one species or have a variable composition depending on the land use. Scattered open- grown trees and shrubs may be present, but ≤ 10% absolute cover of either. Shrubs when present include willows and common juniper. Common graminoids include quack grass, common hairgrass, poverty oat grass and Kentucky bluegrass. Commoncrops include rye, oats, barley and potatoes.

Shrubs	*Salix* spp., *Juniperus communis, Vaccinium angustifolium*
Vascular Herbaceous	*Elymus repens, Deschampsia flexuosa, Danthonia spicata, *Poa pratensis, *Calamagrostis canadensis, Solidago* spp., *Antennaria* spp., *Trifolium* spp.,*Hieracium* spp., *Secale cerale, Avena sativa, Hordeum vulgare, Solanum tuberosum, Taraxacum officinale, Dactylis glomerata, *Phleum pratense*

Dry, Sandy: Field

Ecology

Substrate has a low nutrient and moisture holding capacity. Frequently maintained asa hayfield or pasture rather than a cultivated field due to substrate limitations. A soil plough layer (Ap) may be present on sites that have been ploughed; absent or less well developed on other sites. Texture facilitates very rapid to rapid drainage and maylimit species diversity, abundance, and growth potential. Susceptible to drought.
Maintenance of structure and composition through regular agricultural activities (i.e. ploughing, heavy grazing, haying). In the absence of disturbance this ecosite will succeed to a meadow (B030).

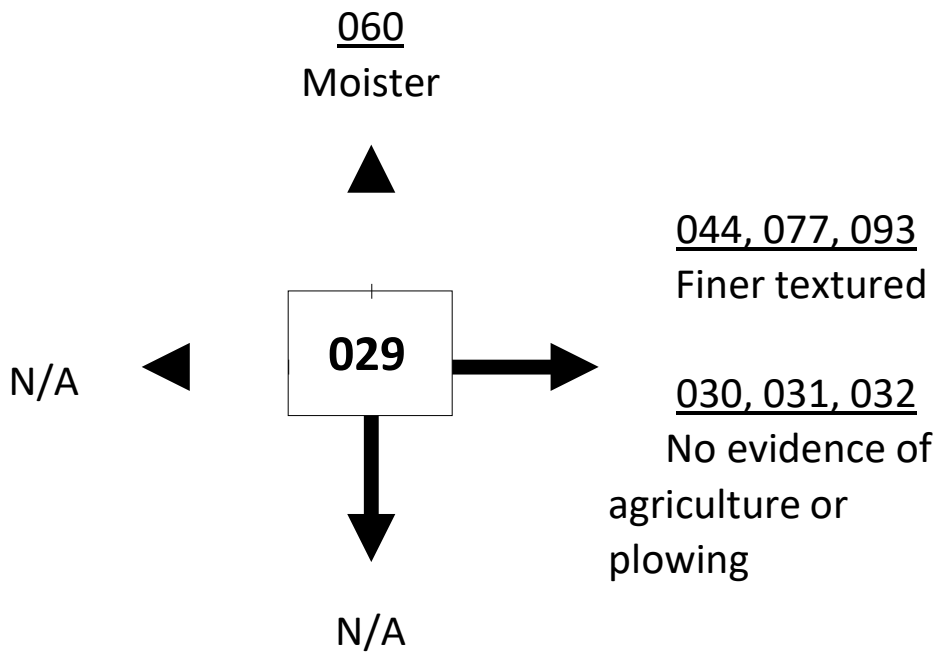
Ecoregional Variability

Uncommon across the boreal, and limited to agricultural areas near communities withthis substrate. Generally associated with flat to rolling outwash plains. Can also occuron morainal, glaciolacustrine, lacustrine, fluvial, or eolian deposits. Typically non- calcareous.

Edaphic Variability

Typically low in nutrient and moisture availability. Moderately deep to deep substrates. Depth of coarse material deposits variable. Often on middle, lower, or level slope positions. Trees and shrubs often restricted to moister areas. Increased species diversity may occur over base-rich bedrock or inclusions of fresh, moist and finer textured substrates in depressions or lower slope positions. Vegetation adaptedto xeric conditions as well as decreased herb diversity may occur on shallow to moderately deep substrates and very coarse sands. Areas of bare sands likely in eolian deposits. Microtopography generally smooth where plowing has occurred.
Heavily grazed fields may contain trampling and bare patches as well as areas of unpalatable species (i.e. bracken fern, wool grass). Can grade into forest, shrub or wetlands from this ecosystem.

Related Ecosites

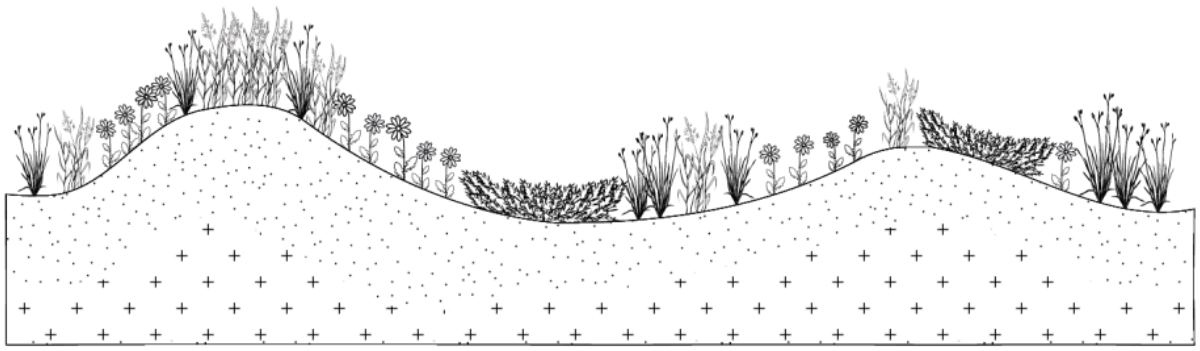


Dry, Sandy: Meadow

B030N

L M H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous, forb, and/or graminoid vegetation community. Trees and shrubs few or absent. Ground surface mostly lichen, feathermoss, and herbaceous litter. Substrate texture sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 D2												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Herbaceous or graminoid dominated community. Vegetation highly variable, consisting of drought tolerant species. Scattered trees and shrubs may be present, but ≤ 10% absolute cover of either. Trees and shrubs when present include tremblingaspen, pin cherry, common juniper and bearberry. Common herbaceous plants include sedges, yarrow, common strawberry and ox-eye daisy. Lichen and moss cover often high and includes haircap mosses, fire moss and reindeer lichen.

Trees	*Populus tremuloides, Picea glauca, Betula papyrifera, Prunus pensylvanica*
Shrubs	*Juniperus communis, Arctostaphylos uva-ursi, *Rosa acicularis, *Alnus viridis,Vaccinium* spp.*, Salix* spp.
Vascular Herbaceous	*Carex* spp.*, *Achillea millefolium, *Fragaria virginiana, Leucanthemumvulgare, Geranium bicknelli, Elymus repens, Anaphalis margaritacea, *Potentilla norvegica, Sibbaldiopsis tridentata, Deschampsia flexuosa,Danthonia spicata, Bromus inermis, *Calamagrostis canadensis*
Non-vascular	*Polytrichum* spp.*, *Ceratodon purpureus, Cladina rangiferina*

Dry, Sandy: Meadow

Ecology

Substrate has a low nutrient and moisture holding capacity. Texture facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Ecosite susceptible to drought. May originate from agriculture (i.e., crop or pasture) abandonment, silvicultural practices, fire, or selective removal of woody material (i.e., hydro or gas corridors). Species origin may be native or introduced depending on time from abandonment. Grasses that typically dominate newly abandoned fields are replaced by forbs as the meadow ages. A distinctive plough layer (Ap) may be present. Maintenance of structure and composition associated withlow to moderate disturbance (i.e. fire, grazing, vegetation control). In the absence of disturbance this ecosite will succeed to a treed system.

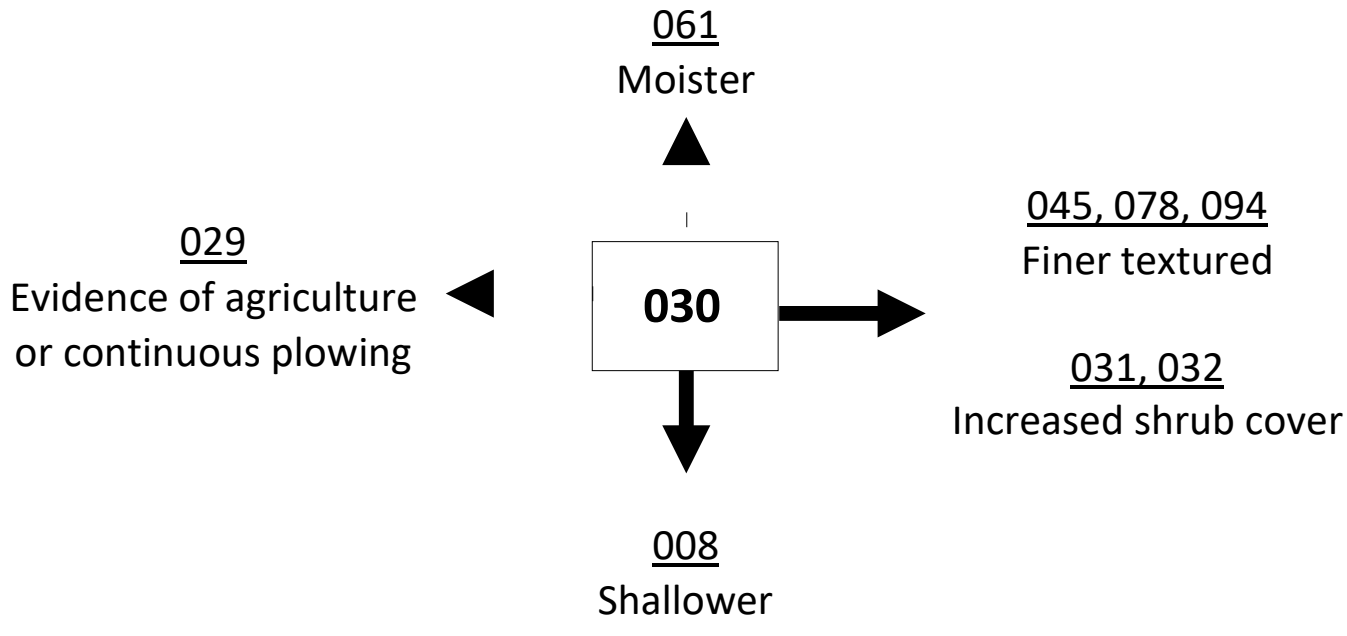
Ecoregional Variability

Widespread and uncommon across the boreal. More common on the landscape near settlements. Generally associated with flat to rolling glaciofluvial material, but can also occur on fluvial, morainal, glaciolacustrine, lacustrine, or eolian deposits. Typically non-calcareous. Prairie species more often found in the western part of the boreal, especially in 3S, 4S, 5S. Higher diversity of grape ferns is found along the shore of Lake Superior due to high relative humidity.

Edaphic Variability

Typically low in nutrient and moisture availability. Moderately deep to deep substrates. Depth of coarse material deposits variable. Often on level, low, and middle slopes. Trees and shrubs often restricted to moister areas. Increased speciesdiversity may occur over base-rich bedrock or inclusions of fresh, moist and finer textured substrates in depressions or lower slope positions. Vegetation adapted to xeric conditions as well as decreased herb diversity may occur on shallow to moderately deep substrates and very coarse sands. Areas of bare sand may occur ineolian deposits. Can grade into forest, shrub or wetlands from this ecosystem.Microtopography generally smooth where ploughing has occurred.

Related Ecosites

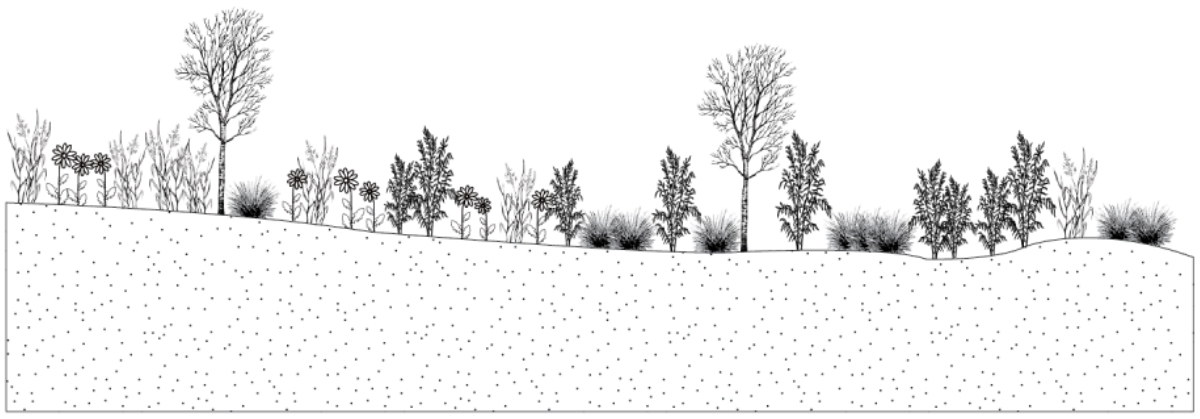


Dry, Sandy: Sparse Shrub

B031S

L M H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Scattered tall and/or short shrub community. Tree poor, and herb moderately poor. Ground surface mostly broadleaf litter, lichen, and feathermoss. Substrate texture sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 D2												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Meadow with shrub coverage from 10 - 25%. Scattered, open-grown trees often present, but ≤ 10% absolute cover. Common trees include trembling aspen and whitebirch. Common shrubs include bearberry, bristly wild rose, common juniper, silverberry and soapberry. Herbaceous plants common and intermixed with grasses. Vegetation highly variable, consisting of opportunistic, drought tolerant native and non-native species. Common herbaceous plants include common hairgrass, poverty oat grass and American dune grass. Mosses and lichens can include haircap mosses,fire moss and reindeer lichen.

Trees	*Populus tremuloides, Betula papyrifera, Picea glauca, Prunus pensylvanica*
Shrubs	*Arctostaphylos uva-ursi, *Rosa acicularis, Elaeagnus commutata, Shepherdia canadensis, Cornus stolonifera, Salix* spp.*, Amelanchier* spp.
Vascular Herbaceous	*Deschampsia flexuosa, Danthonia spicata, *Leymus mollis, *Achillea millefolium, Anaphalis margaritacea, Bromus inermis, *Artemisia campestris, *Calamagrostis canadensis, *Chamerion angustifolium, Equisetum* spp.
Non-vascular	*Polytrichum* spp.*, *Ceratodon purpureus, Cladina rangiferina, Cladina mitis*

Ecology

Substrate has a low nutrient and moisture holding capacity. Substrate texture facilitates very rapid to rapid drainage and can limit species diversity, abundance andgrowth potential. Susceptible to drought. Sites are typically disturbed areas such as former farmlands, burns, gas/hydro corridors or logged areas. Maintenance of structure and composition associated with low to moderate disturbance (i.e. fire, grazing, vegetation control). In the absence of disturbance this ecosite will succeed toa more dense shrub (B032) or treed system.

Ecoregional Variability

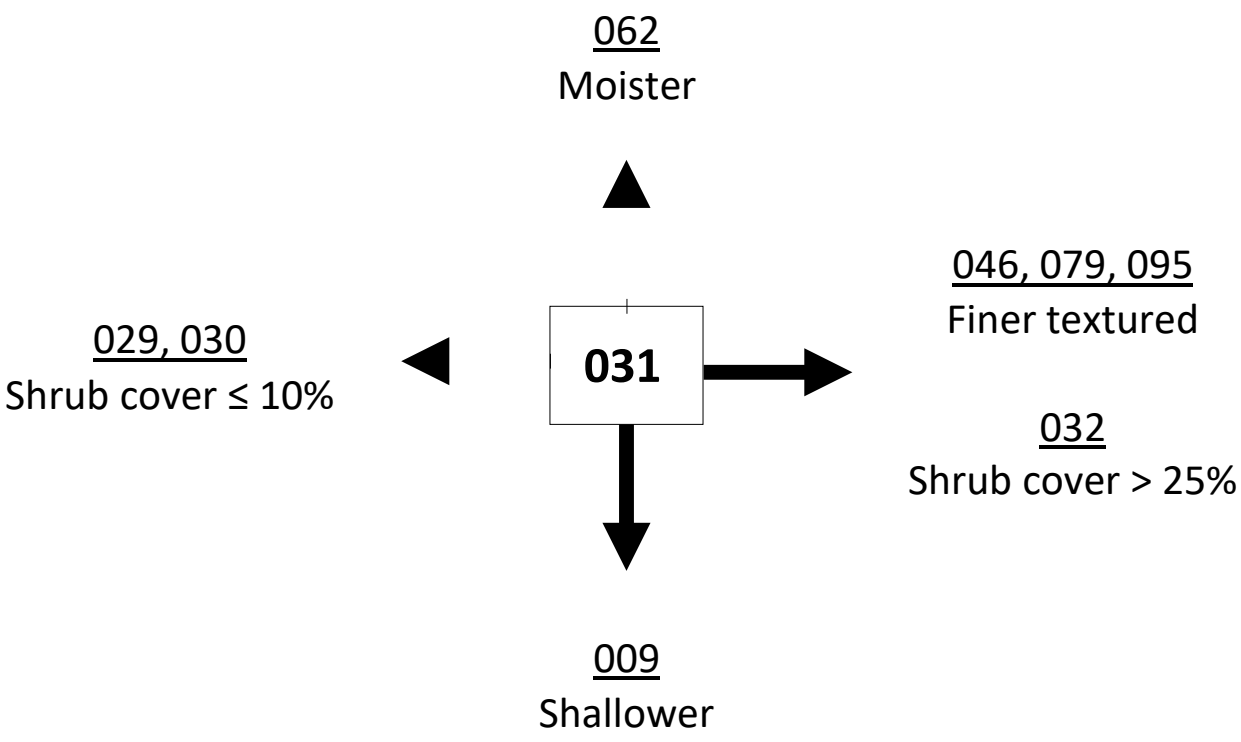
Widespread and common across the boreal, and usually associated with abandoned farmlands and other disturbed areas. Generally associated with flat to rolling glaciofluvial material. Can also occur on morainal, glaciolacustrine, lacustrine, fluvial,or eolian deposits. Typically non-calcareous. Prairie species more often found in the western part of the boreal, especially in 3S, 4S, 5S.

Edaphic Variability

Typically moderately deep to deep substrates, and low in nutrient and moisture availability. Depth of coarse material deposits variable. Often on level, middle, or lower slope positions. Increased species diversity may occur over inclusions of fresh,moist and finer textured substrates in depressions or lower slope positions.

Vegetation adapted to xeric conditions as well as decreased herb diversity may occuron shallow to moderately deep substrates and very coarse sands.

Related Ecosites

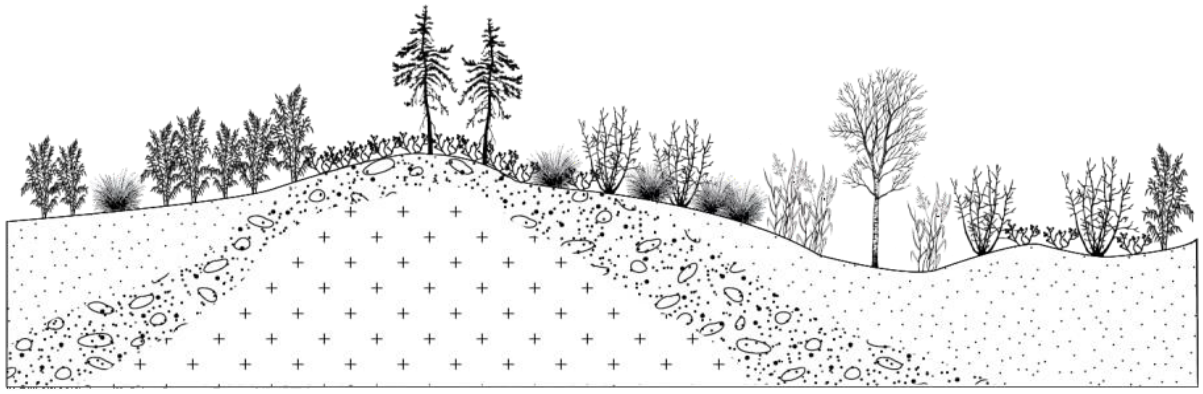


Dry, Sandy: Shrub

B032S

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Tall and/or short shrub community. Few trees, and moderately herb-rich. Ground surface mostly broadleaf litter and lichen. Substrate texture sandy. Mostly > 15 cm deep and dry (MR ≤ 1)

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 D2												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n			z						

Vegetation Description

Shrub coverage > 25%. Community appearance ranges from scattered shrubs withgrass and herbaceous understorey to dense thickets of tall and/or low shrubs.
Vegetation highly variable, consisting of opportunistic, drought tolerant species. Scattered, open-grown trees such as white spruce and white birch often present, but less than 10% absolute cover. Common shrubs include low sweet blueberry, serviceberries and bearberry. Herbaceous plants common and intermixed with grasses. Common herbaceous plants include fireweed, meadow-rues, cow-wheat andhawkweeds. Lichen and moss cover often high and includes reindeer lichen.

Trees	*Picea glauca, Populus tremuloides, P. balsamifera, Prunus pensylvanica*
Shrubs	*Vaccinium angustifolium, Amelanchier* spp*., Arctostaphylos uva-ursi, Rosa* spp*., Diervilla lonicera, Cornus stolonifera, Salix* spp*., *Alnus incana, *Rubusidaeus, Vaccinium myrtilloides, Juniperus* spp*.*
Vascular Herbaceous	*Thalictrum spp., Melampyrum lineare, Hieracium* spp*., Carex* spp*., Anaphalis margaritacea, *Apocynum androsaemifolium, Artemisia* spp*., *Leymus mollis,Poa* spp*., Equisetum* spp*., Deschampsia flexuosa, Anthoxanthum* spp*.*
Non-vascular	*Cladina rangiferina, Cladina mitis, Polytrichum* spp*., Cladonia coniocraea*

Dry, Sandy: Shrub

Ecology

Substrate has a low moisture and nutrient holding capacity with very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Susceptible to drought. Sites are typically disturbed areas such as former farmlands, burns, gas/hydro corridors or logged areas. Maintenance of structure and compositionassociated with low to moderate disturbance (i.e. fire, grazing, vegetation control). In the absence of disturbance this ecosite will succeed to a shrub or treed system.

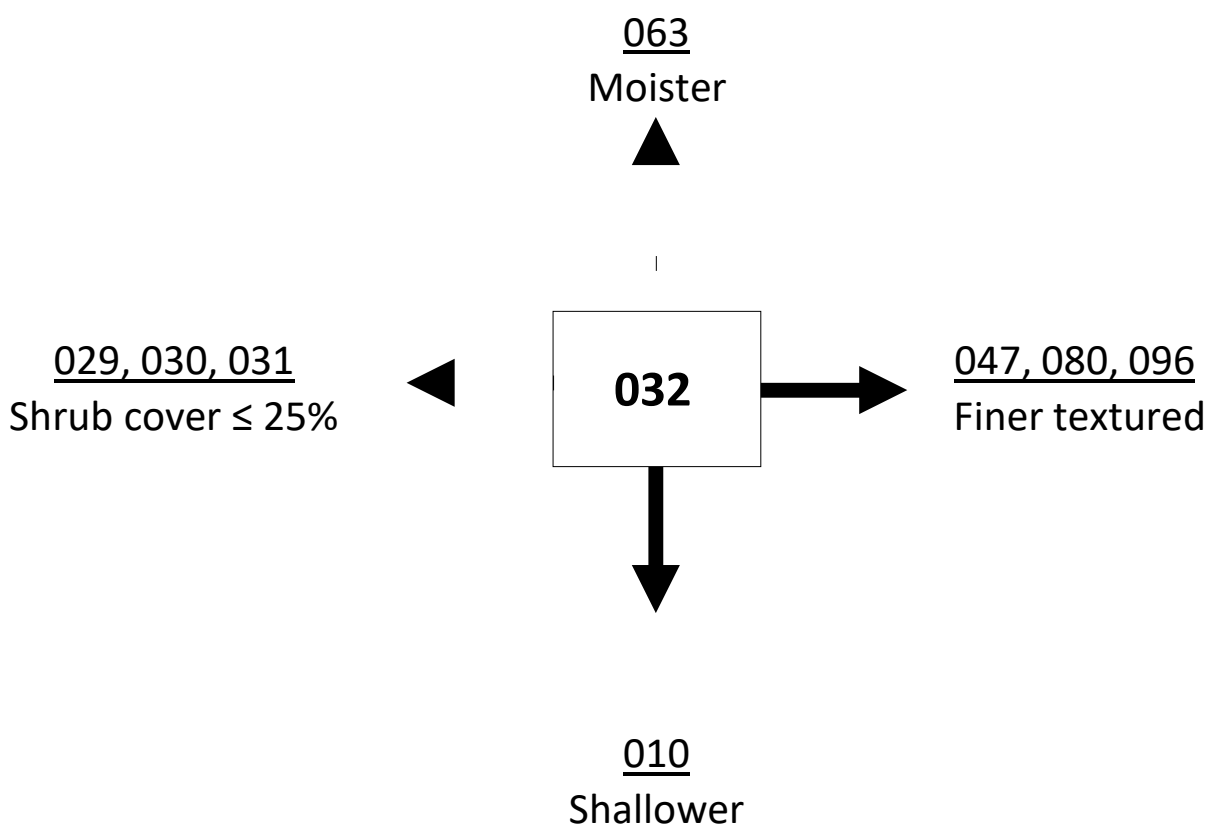
Ecoregional Variability

Widespread and common across the boreal, and usually associated with abandoned farmlands, sawmill yards, and other disturbed areas. Generally associated with flat to rolling glaciofluvial material. Can also occur on morainal, glaciolacustrine, lacustrine, fluvial, or eolian deposits. Typically non-calcareous. Prairie species more often foundin the western part of the boreal, especially in 3S, 4S, 5S.

Edaphic Variability

Typically moderately deep to deep substrates, low in nutrient and moisture availability. Often on middle, lower, or level slope positions. Increased species diversity may occur over base-rich bedrock or inclusions of fresh, moist and finer textured substrates in depressions or lower slope positions. Xeric vegetation as well as decreased herb diversity may occur on shallow to moderately deep substrates andvery coarse sands.

Related Ecosites

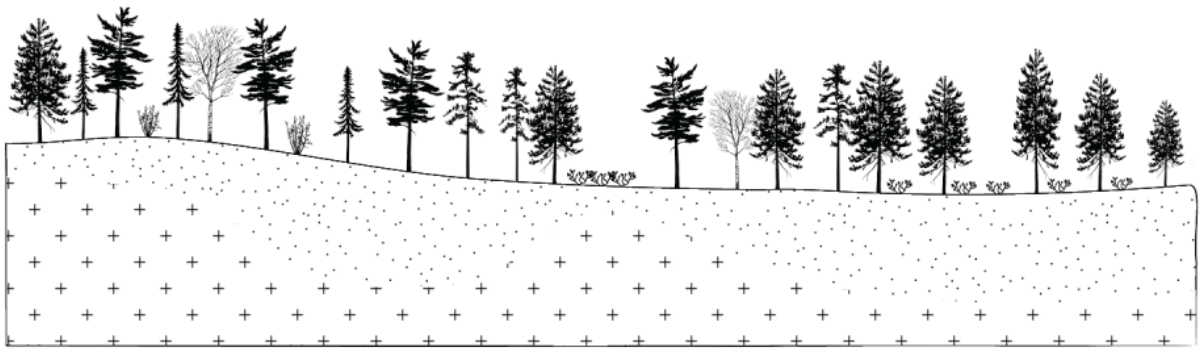


Dry, Sandy: Red Pine- White Pine Conifer

B033Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of red pine and/or eastern white pine (≥ 20% absolute cover). May be a near pure stand of red pine or eastern white pine. Often mixed with white birch, jack pine, black spruce, and balsam fir. Understory tree species consistingof balsam fir, white birch, black spruce, eastern white pine, and trembling aspen. Abundant ericaceous shrubs. Herb poor. Ground surface moss, conifer litter, woody debris, broadleaf litter, and variable stones. Substrate sandy. Mostly > 15 cm deep anddry (MR ≤ 1).

Substrate Description

Substrate Series	**S1 M1** M2 **MD1 MD2 D1 D2**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n			z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes bush honeysuckle, twinflower, velvet-leaf blueberry, wild lily-of-the-valley, wild sarsaparilla, bunchberry, and Schreber's moss.

Trees	*Pinus resinosa, Betula papyrifera, Pinus banksiana, P. strobus, Picea mariana, Abies balsamea, Picea glauca, Populus tremuloides*
Shrubs	*Diervilla lonicera, *Linnaea borealis, Vaccinium myrtilloides, V. angustifolium, *Corylus cornuta, Acer spicatum, *Chimaphila umbellata*
Vascular Herbaceous	**Maianthemum canadense, Aralia nudicaulis, Cornus canadensis, Clintonia borealis*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum*

Dry, Sandy: Red Pine- White Pine Conifer

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Feathermoss and conifer litter increases with canopyclosure. Species diversity and lichen abundance increases as canopy becomes more open. Under red pine dominated stands, shrub and herb sparse with abundant conifer litter. Susceptible to drought. Associated with disturbance regimes such as low to moderate intensity fire to maintain red pine and eastern white pine composition. Without the influence of a disturbance regime, balsam fir and other boreal tree speciesmay increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

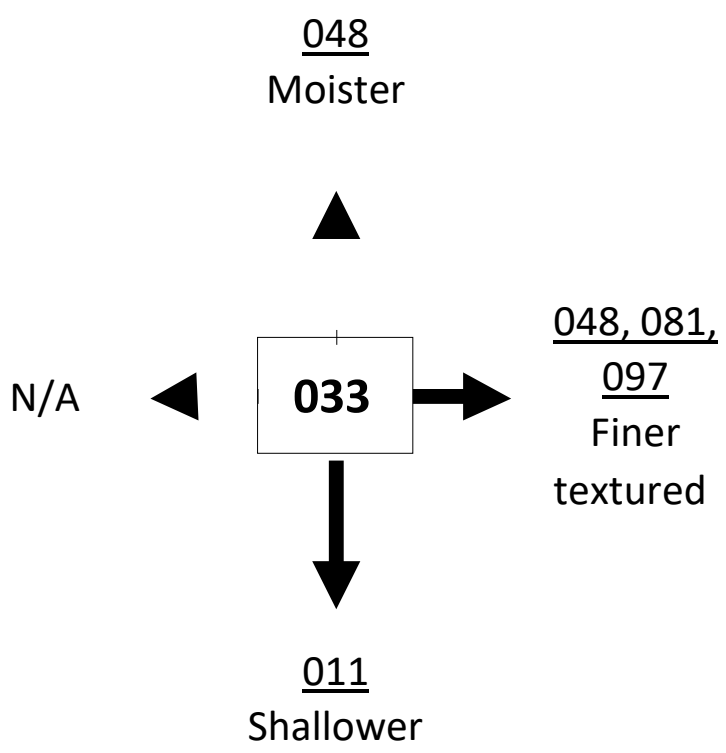
Ecoregional Variability

Although occurs in southern portion of 3E, it is uncommon across the boreal range. Occurs in 4S, 4W, and 5S. Associated with flat to rolling topography resulting from glaciofluvial, eolian, glaciolacustrine, or morainal deposits over bedrock. Yellow birch, eastern white cedar, red maple, American basswood, and red oak may occur in 4S, 4W, 5S, and southern portion of 3E.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen, pin cherry, and prairie willow, may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareoussubstrates, or over base-rich bedrock.

Related Ecosites

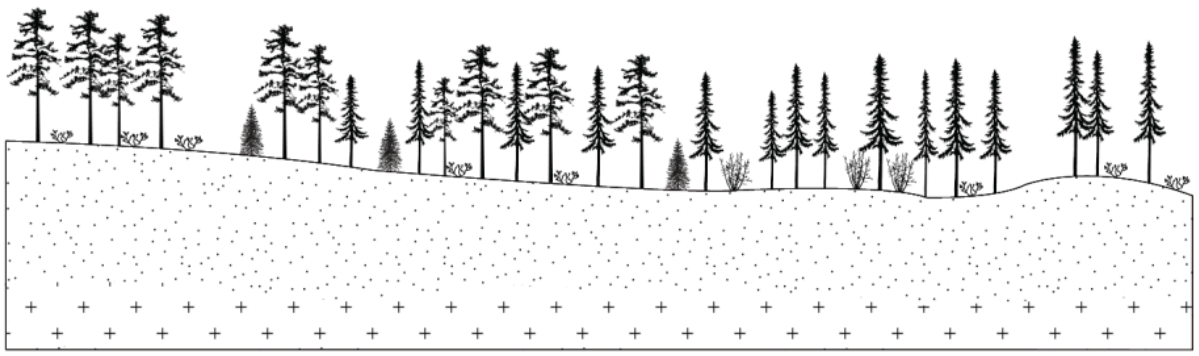


Dry, Sandy: Jack Pine – Black Spruce Dominated

B034Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of jack pine and/or black spruce (> 80% cover of the total tree species with white birch limited to ≤ 20%). May be a near pure stand of jack pineor black spruce. Understory tree species consisting of black spruce, white birch, and balsam fir. Abundant ericaceous shrub. Herb poor. Ground surface mostly moss withconifer litter, woody debris, broadleaf litter, and lichen. Substrate sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	**S1 M1** M2 **MD1 MD2 D1 D2**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes velvet-leaf blueberry, twinflower, low sweet blueberry, wild lily-of-the-valley, bunchberry, wild sarsaparilla, and feathermoss.

Trees	*Pinus banksiana, Picea mariana, Betula papyrifera*
Shrubs	*Vaccinium myrtilloides, *Linnaea borealis, Vaccinium angustifolium, Epigaearepens, Gaultheria hispidula, Diervilla lonicera, *Rosa acicularis*
Vascular Herbaceous	**Maianthemum canadense, Cornus canadensis , Aralia nudicaulis*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis, Cladinarangiferina*

Dry, Sandy: Jack Pine – Black Spruce Dominated

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Conifer litter and feathermoss abundance increaseswith canopy closure. Species diversity and lichen abundance increases as canopy becomes more open. Susceptible to drought. Even-aged condition maintained by fire regime. Fire produces young stands dominated by jack pine. With age, jack pine may remain dominant or becomes predominantly black spruce with variable components ofwhite birch and balsam fir causing succession to another ecosite.

Ecoregional Variability

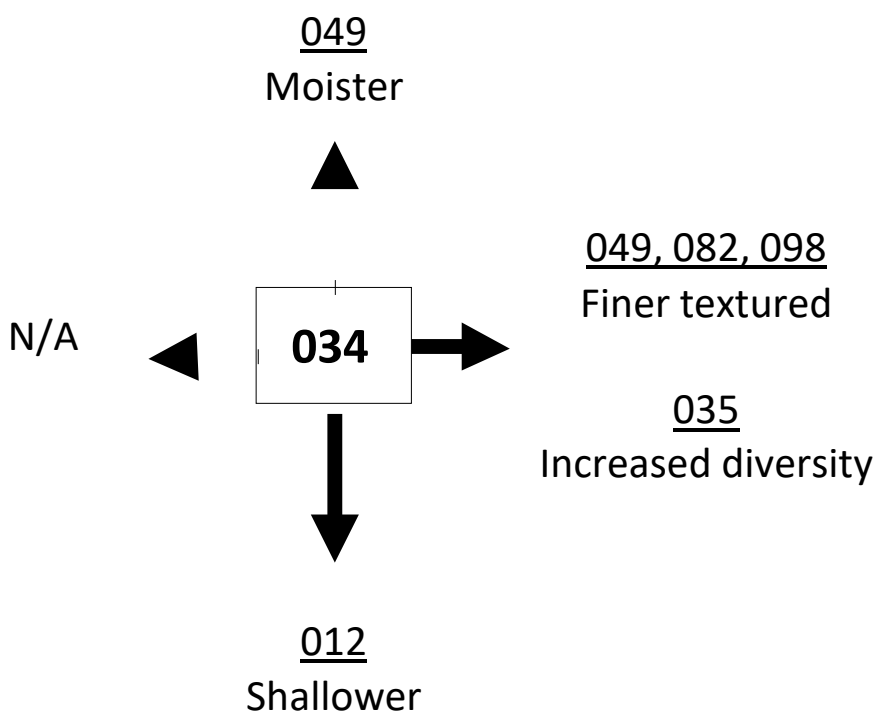
Widespread across the boreal range. More common in northwest. Associated with flatto rolling topography resulting from glaciofluvial, eolian, glaciolacustrine, or morainal deposits over bedrock common to 3S, 4S and 3W. Tendency towards black spruce in2E, 2W, 3E, and eastern half of 3W. Tendency towards jack pine and white birch

(≤ 20%) in 4S and 3S. Eastern white pine and red pine (< 10% absolute cover) mayoccur in 5S and 4W. White spruce (≤10%) may occur in 3E. Trailing arbutus and lowsweet blueberry not common in 2W and 3S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as pin cherry and prairie willow, may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareous substrates, or over base-rich bedrock.

Related Ecosites

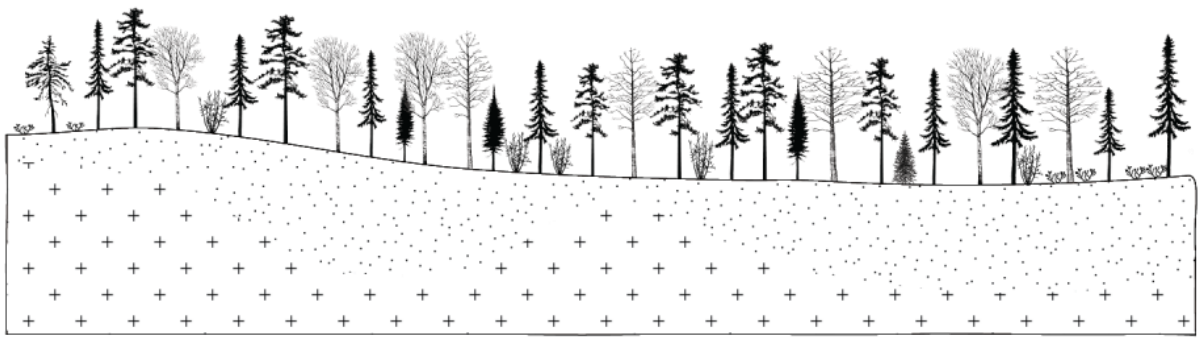


Dry, Sandy: Pine - Black Spruce Conifer

B035Tt/Tl

L M H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of jack pine and/or black spruce (> 50% cover of conifer species). Often mixed with trembling aspen, white birch, and balsam fir. Understory tree species consisting of black spruce, balsam fir, white birch, and trembling aspen. Varies from shrub and herb poor to moderately rich. Ground surface moss with conifer litter, broadleaf litter, and woody debris. Substrate sandy. Mostly > 15 cm deep and dry(MR ≤ 1).

Substrate Description

Substrate Series	**S1 M1 M2 MD1 MD2 D1 D2**											
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes twinflower, velvet-leaf blueberry, bush honeysuckle, wild lily-of-the-valley, bunchberry, wild sarsaparilla, and feathermoss.

Trees	*Pinus banksiana, Picea mariana, Populus tremuloides, Betula papyrifera, Abiesbalsamea, Picea glauca*
Shrubs	**Linnaea borealis, Vaccinium myrtilloides, Diervilla lonicera, Vaccinium angustifolium, Gaultheria hispidula*
Vascular Herbaceous	**Maianthemum canadense, Cornus canadensis, Aralia nudicaulis, Clintoniaborealis*
Non- vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista castrensis,Hylocomium splendens*

Dry, Sandy: Pine - Black Spruce Conifer

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Variable shrub diversity and abundance and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Susceptible to drought. Even-aged condition maintained by fire regime. Fire producesyoung stands dominated by jack pine. Black spruce abundance varies but increases with age. Without fire, organic material accumulates and site becomes increasingly complex causing succession to another ecosite.

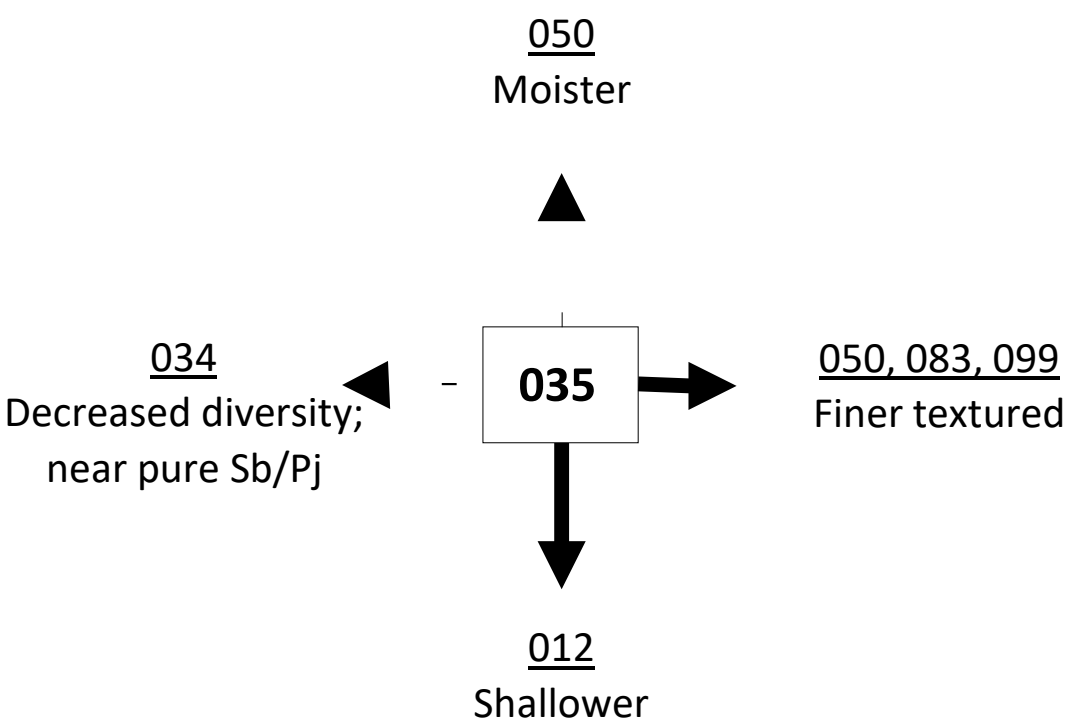
Ecoregional Variability

Widespread across the boreal range. More common in northwest. Associated with flatto rolling topography resulting from glaciofluvial, eolian, glaciolacustrine, or morainal deposits over the bedrock common to 3S, 4S and 3W. Red pine, eastern white pine, and red maple may occur in 4S, 4W, 5S, and southern portion of 3E and 3W. Tendency towards black spruce in 2E, 2W, 3E, and eastern half of 3W. Tendency towards jack pine and white birch (≤50%) in 4S and 3S. In 2W and 3S, low sweet blueberry and wild sarsaparilla uncommon.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen, pin cherry and prairie willow, may occur on crest slope positions, south aspects,exposed bedrock, or on shallow and moderately deep substrates. Increased shrub andherb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates or over base-rich bedrock.

Related Ecosites

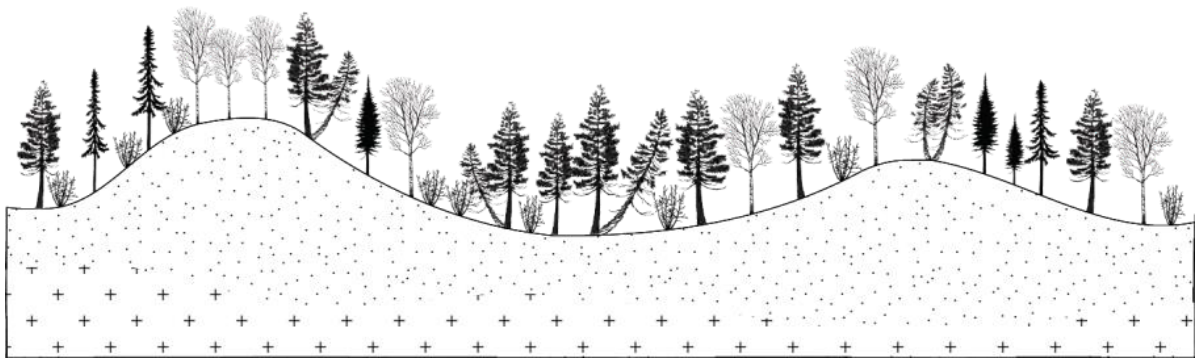


Dry, Sandy: Cedar (Hemlock) Conifer

B036Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of eastern white cedar and/or eastern hemlock(> 50% cover of conifer species). Eastern hemlock rare. Often mixed with white spruce, white birch and balsam fir. Understory tree species consisting of balsam fir, eastern white cedar, and black spruce. Varies from shrub and herb poor to moderatelyrich. Ground surface moss, conifer litter, and broadleaf litter. Substrate sandy. Mostly >15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 **D2**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes mountain maple, dwarf raspberry, creeping snowberry, star-flower, kidney-leaved violet, bunchberry, and feathermoss.

Trees	*Thuja occidentalis, Picea glauca, Betula papyrifera, Abies balsamea, Populus tremuloides, Sorbus decora,*
Shrubs	*Acer spicatum, Rubus pubescens, Gaultheria hispidula, *Linnaea borealis, Lonicera canadensis, Rhododendron groenlandicum, Cornus stolonifera, *Rosaacicularis*
Vascular Herbaceous	**Trientalis borealis, Viola renifolia, Cornus canadensis, Coptis trifolia, Mitella nuda, Aralia nudicaulis, *Maianthemum canadense, Galium triflorum,Maianthemum stellatum, Streptopus roseus*
Non- vascular	*Pleurozium schreberi, Hylocomium splendens, Rhytidiadelphus triquetrus,Ptilium crista-castrensis, Dicranum polysetum*

Dry, Sandy: Cedar (Hemlock) Conifer

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance and growth potential. Variable shrub diversity and abundance and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Susceptible to drought. Eastern white cedar often late successional. Associated with islands or rock knobs which are isolated from continuous fuel pathways. Without fire, organic material accumulates and site becomes increasingly complex. Fire event will likely require re-classified of ecosite.

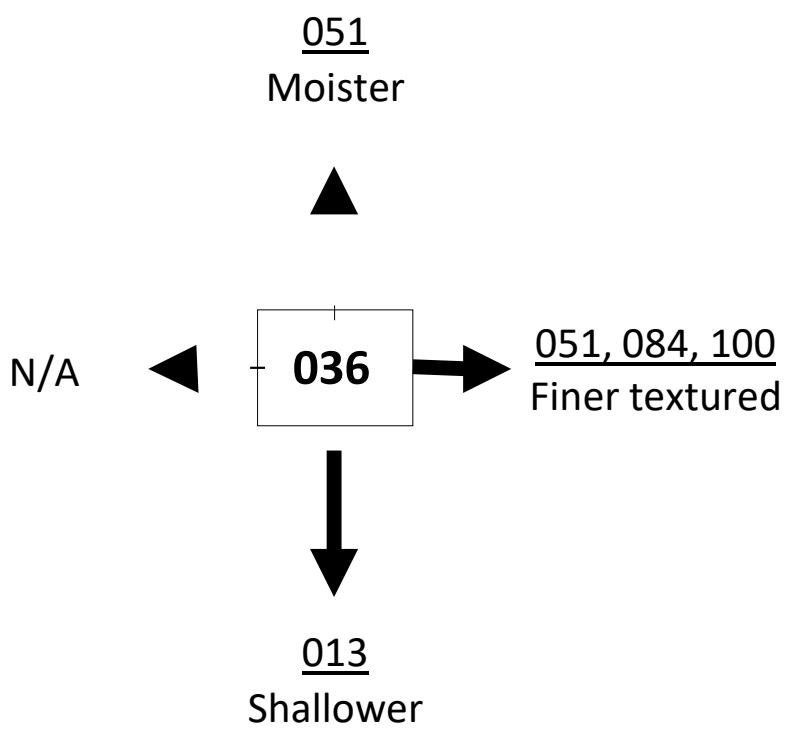
Ecoregional Variability

Widespread across the boreal range. More common in northwest. Associated with flat to rolling topography resulting from eolian, glaciolacustrine, glaciofluvial, or morainal deposits over the bedrock common to 3S, 4S and 3W. Eastern hemlock is restricted to3E-5.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen, pin cherry and upland willow, may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist and finer textured substrates, calcareoussubstrates, or over base-rich bedrock.

Related Ecosites

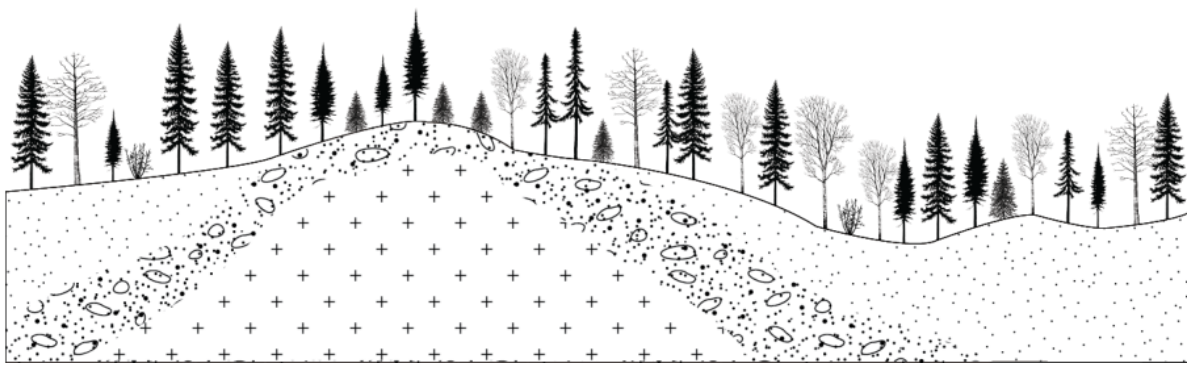


Dry, Sandy: Spruce - Fir Conifer

B037Tt/Tl

L | **M** | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of balsam fir and/or white spruce (> 50% cover of conifer species). Often mixed with white birch, trembling aspen, and black spruce. Understory tree species consisting of balsam fir, white birch, trembling aspen, black spruce, and white spruce. Varies from shrub and herb poor to moderately rich. Ground surface moss, conifer litter, broadleaf litter, and woody debris. Substrate sandy. Mostly > 15 cmdeep and dry (MR ≤ 1).

Substrate Description

Substrate Series	**S1 M1** M2 **MD1 MD2 D1 D2**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall tree (> 10 m) and low treed (≤ 10 m) canopy variable, rarely sparse (> 25% cover).Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes twinflower, bush honeysuckle, mountain maple, bunchberry, wild lily-of-the- valley, wild sarsaparilla, and feathermoss.

Trees	*Abies balsamea, Picea glauca, Betula papyrifera, Populus tremuloides, Piceamariana, Pinus banksiana, Sorbus decora*
Shrubs	**Linnaea borealis, Diervilla lonicera, Acer spicatum, Vaccinium angustifolium, V.myrtilloides, Rubus pubescens*
Vascular Herbaceous	*Cornus canadensis, *Maianthemum canadense, Aralia nudicaulis , Clintoniaborealis, *Trientalis borealis*
Non-vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Hylocomium splendens, Dicranum polysetum, Rhytidiadelphus triquetrus*

Dry, Sandy: Spruce - Fir Conifer

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Feathermoss abundance increases with canopy closure and black spruce composition. Species diversity and abundance increases ascanopy becomes more open. Susceptible to drought. Resulting from succession or non-fire disturbance, such as windthrow, disease or logging, this site may persist for long periods in an uneven-age structure with abundant woody debris. Certain age classes rare or absent due to spruce budworm cycles. Balsam fir common residual species after harvest. Fire event will likely require re-classification of ecosite.

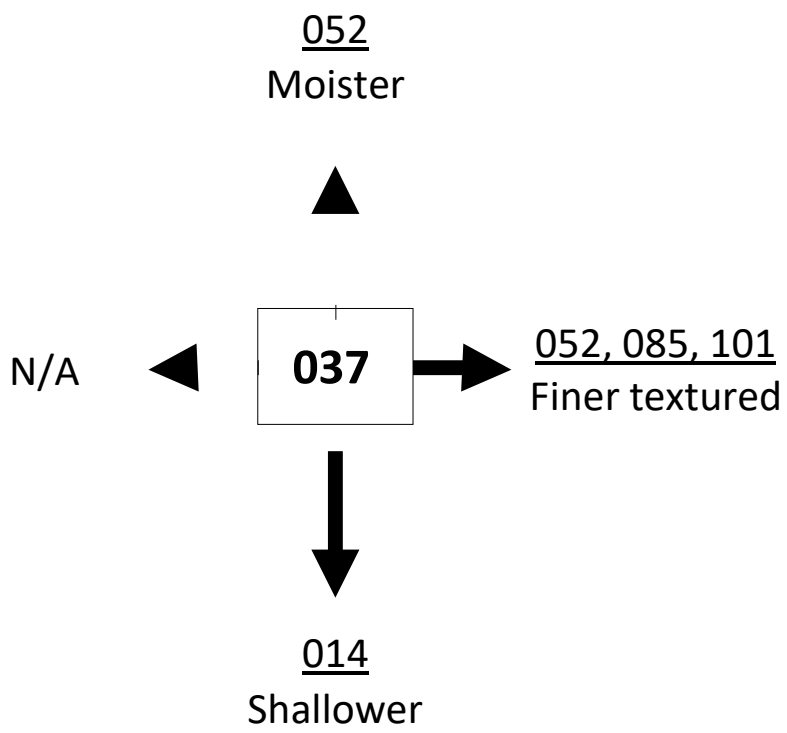
Ecoregional Variability

Widespread but uncommon across the boreal range. Associated with flat to rolling topography resulting from morainal, eolian, glaciolacustrine, or glaciofluvial deposits over bedrock common to 3S, 4S and 3W. Norway spruce and red spruce may occur in3W-5, 3E-4, and 3E-5. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen, pin cherry, and prairie willow, may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrtaes. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareoussubstrates, or over base-rich bedrock.

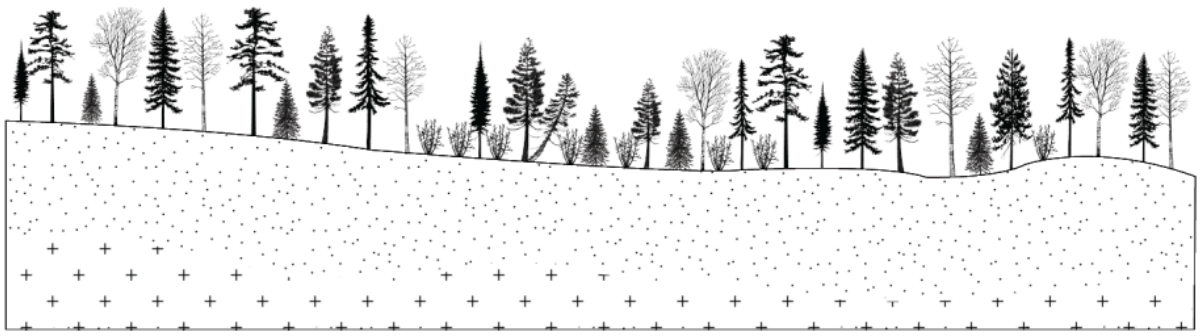
Related Ecosites



Dry, Sandy: Conifer

B038Tt/Tl
L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of a mixture of coniferous species (> 50% of conifer species). Varies from shrub and herb poor to moderately rich. Ground surface conifer litter, broadleaf litter, and feathermoss. Substrate sandy. Mostly > 15 cm deep and dry(MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 **D2**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes dwarf raspberry, juneberry, showy mountain-ash, bunchberry, blue-bead-lily, and wild sarsaparilla.

Trees	*Picea glauca, P. mariana, Abies balsamea, Pinus strobus, Betula papyrifera,Populus tremuloides, Thuja occidentalis*
Shrubs	*Rubus pubescens, Amelanchier* spp.*, Sorbus decora, Acer spicatum, *Corylus cornuta, Diervilla lonicera, *Linnaea borealis, *Rosa acicularis, Vacciniummyrtilloides*
Vascular Herbaceous	*Cornus canadensis, Clintonia borealis, Aralia nudicaulis, *Maianthemum canadense, Streptopus roseus, *Trientalis borealis, Eurybia macrophylla,Mitella nuda, Anemone quinquefolia, Viola renifolia, Coptis trifolia*
Non- vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Rhytidiadelphus triquetrus,Dicranum polysetum*

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Species diversity increases as canopy becomes more open. Susceptible to drought. Without fire, organic material accumulates and becomes increasingly complex causing succession to another ecosite. Mixed speciescomposition associated with non-stand replacing disturbances, such as wind and insect damage.

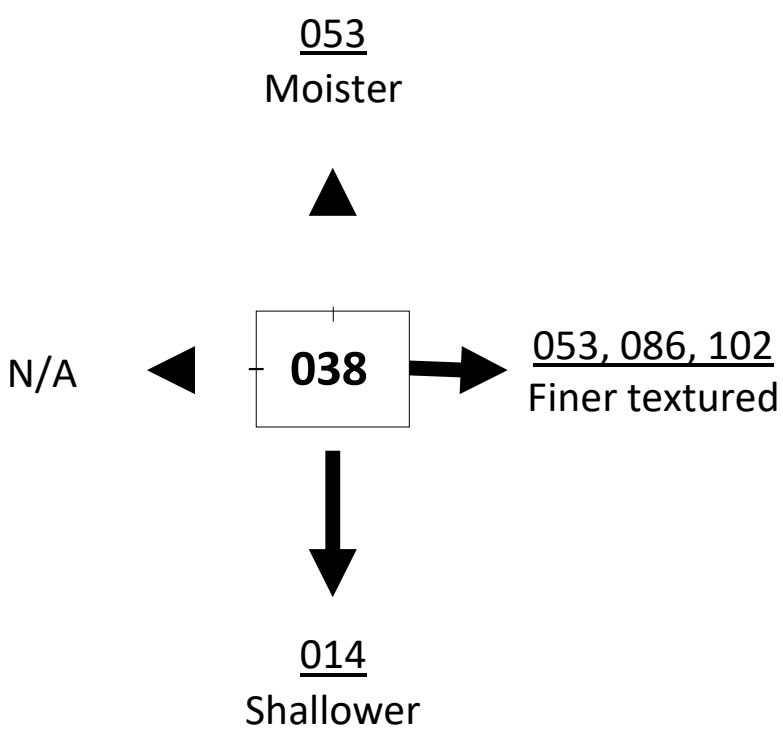
Ecoregional Variability

Widespread but uncommon across the boreal range. Associated with flat to rolling topography resulting from eolian, glaciolacustrine, glaciofluvial or morainal deposits over bedrock common to 3S, 4S and 3W. Red pine and red maple may occur in 4S,4W, 5S, and southern portion of 3E and 3W. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. In 2W and 3S, mountain maple and wild sarsaparillauncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation such as reindeer lichen, pin cherry, and prairie willow may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareoussubstrates, or over base-rich bedrock.

Related Ecosites

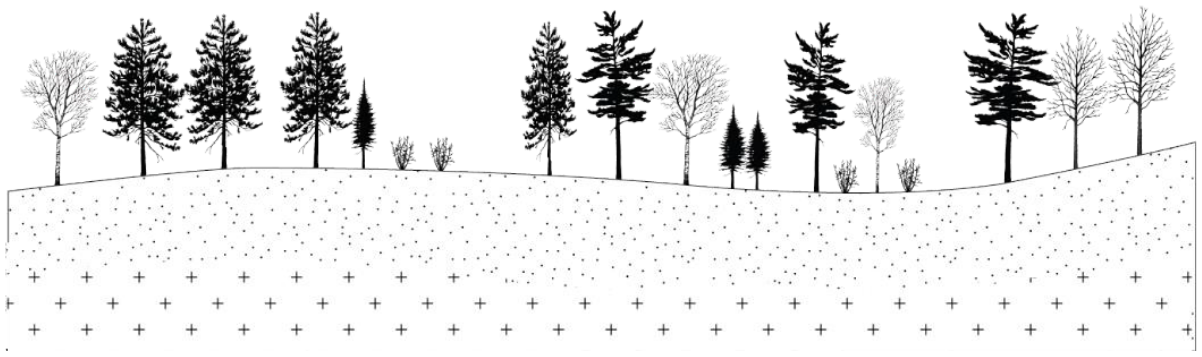


Dry, Sandy: Red Pine - White Pine Mixedwood

B039Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of eastern white pine and/or red pine (≥ 20% absolute cover). Substantial components of trembling aspen, white birch, jack pine, balsam fir,and black spruce. Understory tree species consisting of balsam fir and trembling aspen. Shrub and herb moderately rich. Ground surface mostly broadleaf litter with conifer litter and moss. Substrate sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 **MD1** MD2 **D1 D2**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes beaked hazel, bush honeysuckle, mountain maple, wild sarsaparilla, wild lily-of-the-valley, bunchberry, and Shreber's moss.

Trees	*Populus tremuloides, Pinus strobus, Betula papyrifera, Pinus resinosa, P. banksiana, Abies balsamea, Picea mariana*
Shrubs	**Corylus cornuta, Diervilla lonicera, Acer spicatum, Vaccinium angustifolium, *Linnaea borealis, Amelanchier* spp.*, Lonicera canadensis, Vacciniummyrtilloides*
Vascular Herbaceous	*Aralia nudicaulis, *Maianthemum canadense, Cornus canadensis, Clintonia borealis, Eurybia macrophylla, *Trientalis borealis, Streptopus roseus,Oryzopsis asperifolia*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum*

Dry, Sandy: Red Pine - White Pine Mixedwood

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Shrub and herb poor when canopy predominantly closed. Ground cover increases as canopy becomes more open. Susceptible to drought. Associated with disturbance regimes such as low to moderate intensity fire tomaintain the red pine and eastern white pine composition. Without the influence of a disturbance regime, balsam fir and other boreal tree species may increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

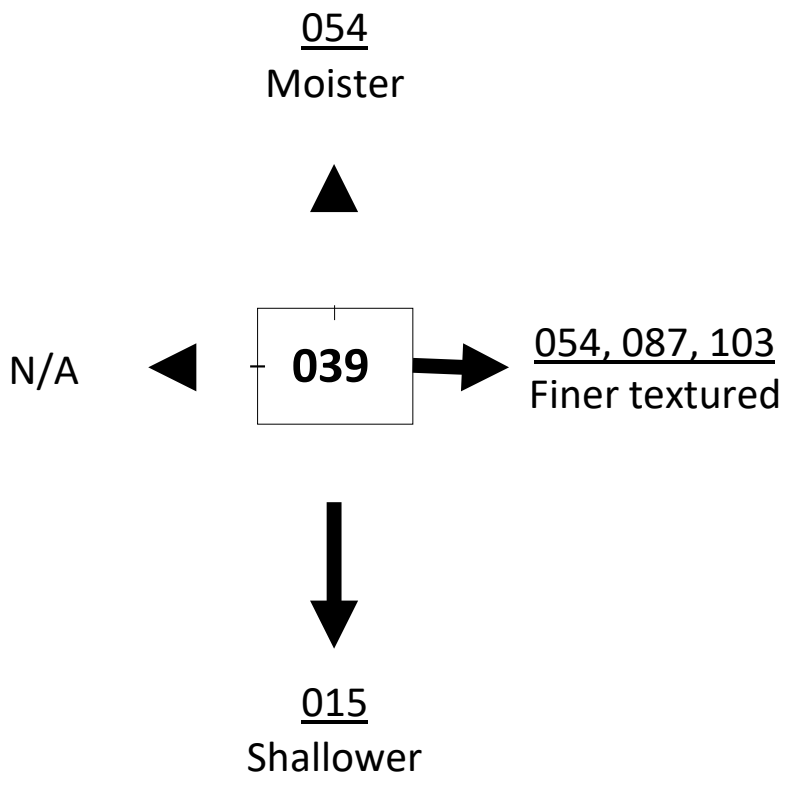
Ecoregional Variability

Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portionof 3E. Associated with flat to rolling topography resulting from morainal deposits, glaciofluvia, eolian, or glaciolacustrine over bedrock common to 3S, 4S and 3W. Eastern white cedar, yellow birch, red maple, American basswood, and red oak mayoccur in 4S, 4W, 5S, and southern portion of 3E.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen, pin cherry, and prairie willow, may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareoussubstrates, or over base-rich bedrock.

Related Ecosites

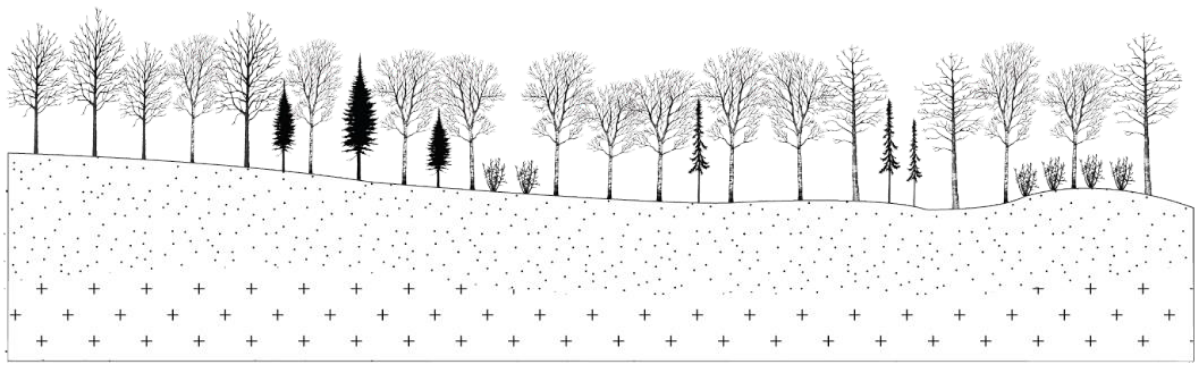


Dry, Sandy: Aspen – Birch Hardwood

B040Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy comprised mostly of trembling aspen and white birch (> 50% coverof hardwood species). Often mixed with jack pine, black spruce, balsam fir, and whitespruce. Understory tree species consisting of balsam fir, trembling aspen, black spruce, white birch, and white spruce. Shrub and herb moderately rich. Ground surface mostly broadleaf litter with moss, conifer litter, and woody debris. Substrate sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	**S1 M1 M2 MD1 MD2 D1 D2**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n			z						

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes twinflower, bush honeysuckle, velvet-leaf blueberry, wild lily-of-the-valley, wild sarsaparilla, bunchberry,and feathermoss.

Trees	*Populus tremuloides, Betula papyrifera, Pinus banksiana, Picea mariana, Abiesbalsamea, Picea glauca*
Shrubs	**Linnaea borealis, Diervilla lonicera, Vaccinium myrtilloides, *Alnus viridis, Rubus pubescens, Vaccinium angustifolium, *Corylus cornuta, Acer spicatum*
Vascular Herbaceous	**Maianthemum canadense, Aralia nudicaulis,, Cornus canadensis, Clintoniaborealis, Streptopus roseus , Lycopodium obscurum, *Trientalis borealis*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis, Dicranum fuscescens*

Dry, Sandy: Aspen – Birch Hardwood

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Shrub and herb poor when canopy predominantly closed. Ground cover increases as canopy becomes more open. Susceptible to drought. White birch likely to occur. Trembling aspen rare and generally anthropogenic. May succeed to another ecosite in the absence of a disturbance regime.

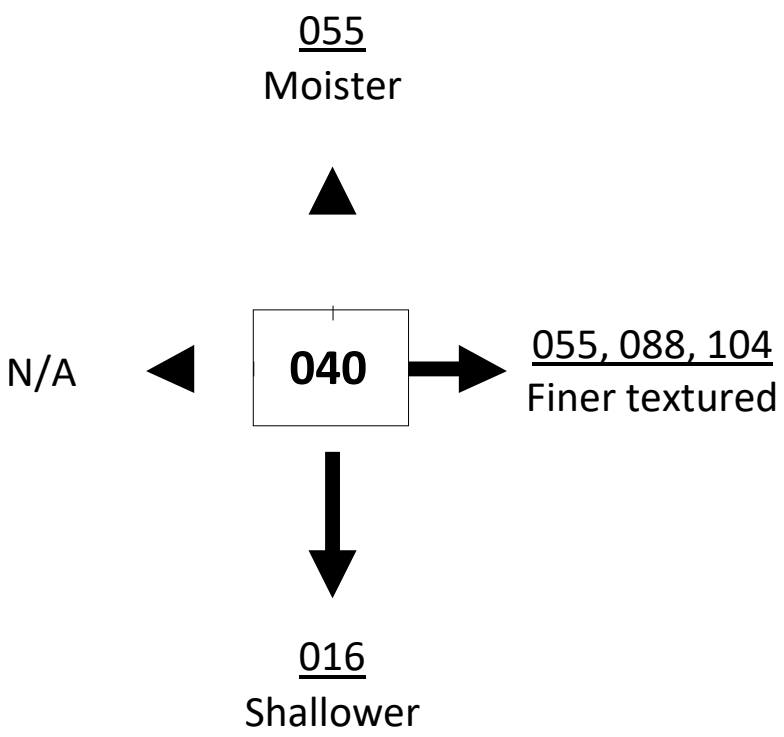
Ecoregional Variability

Widespread across the boreal range. More common in 3S, 3W, 4W and 4S. Associated with flat to rolling topography resulting from glaciofluvial, morainal, eolian,and glaciolacustrine deposits over bedrock common to 4S and 3W. In 2W, 3W and west, white birch may be more abundant. Within 2E and 3E, trembling aspen often predominates. Yellow birch and large-tooth aspen may replace white birch and trembling aspen in 4S, 4W, 5S and southern portion of 3E. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen, pin cherry, and prairie willow, may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareoussubstrates, or over base-rich bedrock.

Related Ecosites

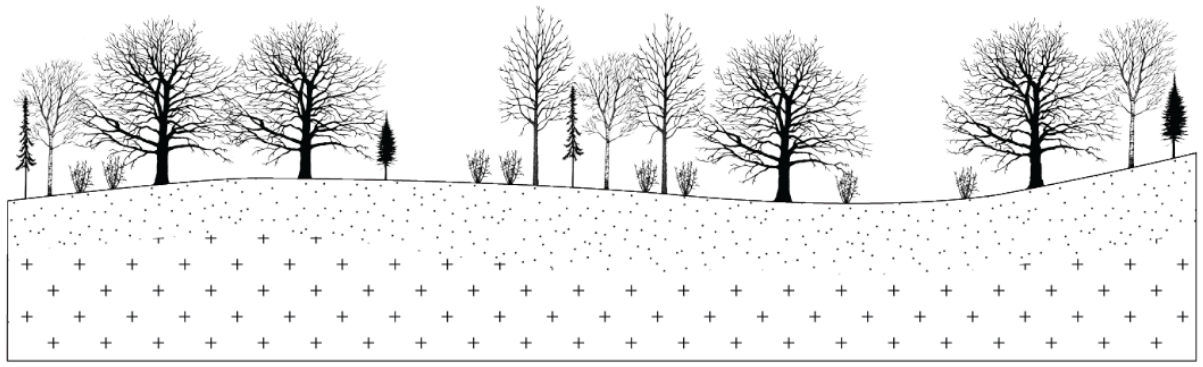


Dry, Sandy: Oak Hardwood

B041Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting mostly of bur oak and/or red oak (> 50% cover of hardwood species). May be mixed with trembling aspen, white birch, large-tooth aspen, and balsam fir. Understory tree species consisting of bur oak, white elm, red ash, and black ash. Shrub and herb moderately rich. Ground surface mostly broadleaflitter with conifer litter and woody debris. Substrate sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 D2												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes choke cherry, prickly rose, downy arrow-wood, northern bedstraw, yarrow, and ciliolate aster.

Trees	*Quercus macrocarpa, Q. rubra, Populus tremuloides, Betula papyrifera,Populus grandidentata, Abies balsamea*
Shrubs	**Prunus virginiana, *Rosa acicularis, Viburnum rafinesquianum, Amelanchieralnifolia, Diervilla lonicera, *Rhus radicans, Symphoricarpos albus*
Vascular Herbaceous	*Galium boreale, *Achillea millefolium, Aster ciliolatus, Campanula rotundifolia, *Fragaria virginiana, *Maianthemum canadense, Oryzopsis asperifolia, Viciaamericana*
Non- vascular	*Cladonia chlorophaea, Hedwigia ciliata*

Dry, Sandy: Oak Hardwood

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Shrub and herb rich where canopy sparse.

Susceptible to drought. Maintained by frequent low intensity ground fires. May succeed to another ecosite in the absence of a disturbance regime.

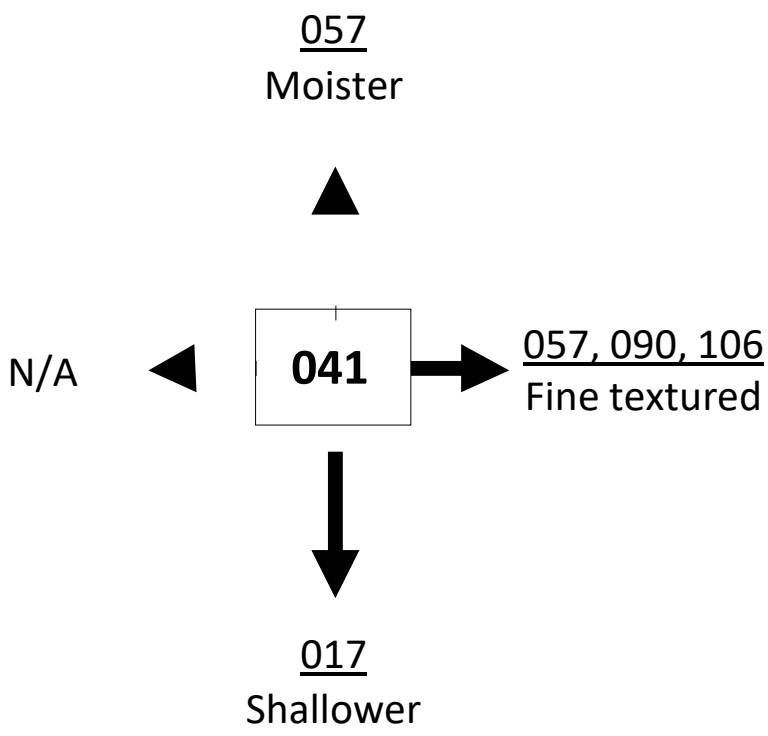
Ecoregional Variability

Uncommon across the boreal range. Restricted to 4S, 4W, 5S and southern portion of3E. May be found if accompanied by warmer than average microclimate. Associated with flat to rolling topography resulting from eolian, glaciolacustrine, glaciofluvial or morainal deposits over bedrock common to 4S. Bur oak most common in 5S-2 and 4S-6. Red oak most common in 3E-5. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen and prairie willow, may occur on crest slope positions, south aspects, exposedbedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareous substrates, or overbase-rich bedrock.

Related Ecosites

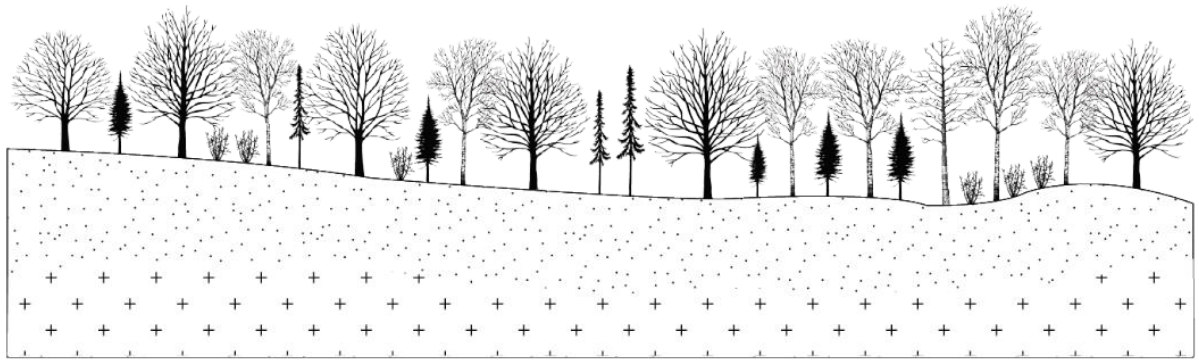


Dry, Sandy: Maple Hardwood

B042Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting mostly of sugar maple and/or red maple (> 50% cover of hardwood species). May be mixed with white birch, trembling aspen, white spruce, yellow birch, balsam fir, and eastern white cedar. Shrub and herb moderately poor to rich. Ground surface mostly broadleaf litter with conifer litter and woody debris. Substrate sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 **MD2** D1 D2												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy	Coarse Loamy			Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes mountain maple, beaked hazel, dwarf raspberry, large-leaved aster, wild sarsaparilla, wild lily-of-the valley, and bluebead-lily.

Trees	**Acer saccharum, A. rubrum, Betula papyrifera, Populus tremuloides, Piceaglauca, Betula alleghaniensis, Abies balsamea, Thuja occidentalis*
Shrubs	*Acer spicatum, *Corylus cornuta, Rubus pubescens, Diervilla lonicera, Loniceracanadensis*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, *Maianthemum canadense, Clintonia borealis, *Trientalis borealis, Streptopus roseus, Viola* spp.*, Cornus canadensis,Lycopodium obscurum, Galium triflorum*
Non-vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis*

Dry, Sandy: Maple Hardwood

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Shrub and herb poor when canopy predominantly closed. Ground cover increases as canopy becomes more open. Susceptible to drought. Over time, may become increasingly complex with many layers of trees andunderstory vegetation. Unlikely to succeed to another ecosite with significant disturbance event.

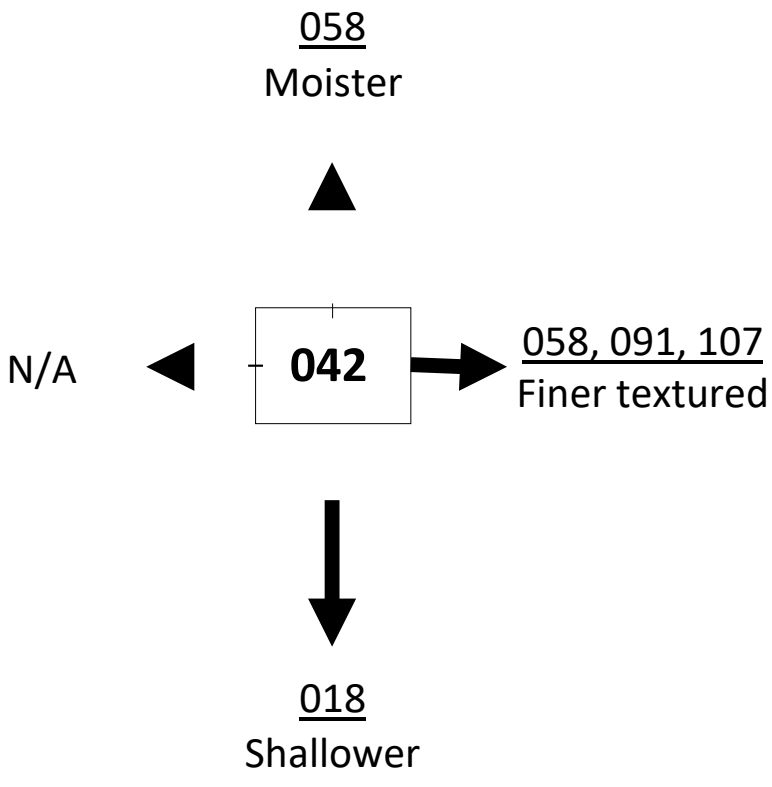
Ecoregional Variability

Uncommon across the boreal range. Restricted to 4W, 5S, and southern portion of3E, 3W and 4S. Associated with flat to rolling topography resulting from eolian, glaciolacustrine, glaciofluvial or morainal deposits over the bedrock common to 4Sand 3W.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen, pin cherry, and prairie willow, may occur on crest slope positions, south aspects, exposed bedrock, or on shallow and moderately deep substrates. Increasedshrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareous substrates, or over base-rich bedrock.

Related Ecosites

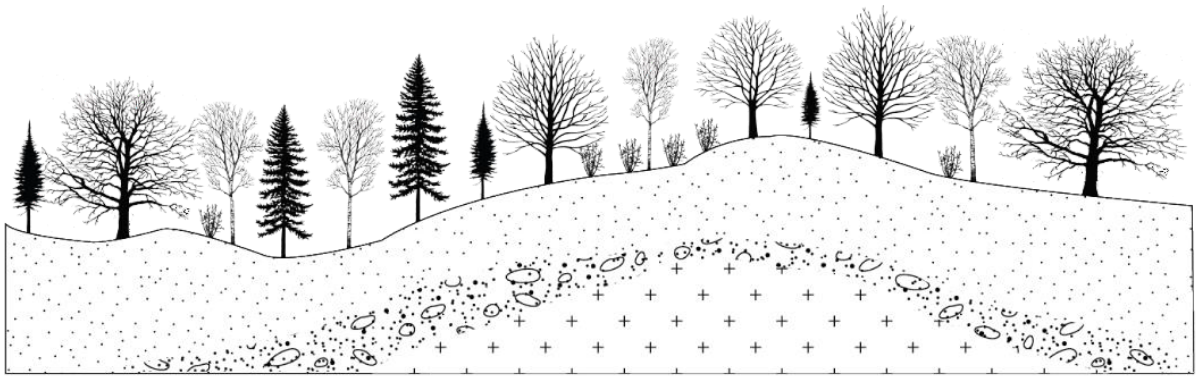


Dry, Sandy: Mixedwood

B043Tt/Tl

L M H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of a mixture of birch, aspen, maple, and/or oak species.No single hardwood species is dominant. May be mixed with black spruce, white spruce, balsam fir, and jack pine. Shrub and herb moderately rich. Ground surface mostly broadleaf litter with conifer litter and woody debris. Substrate sandy. Mostly > 15 cm deep and dry (MR ≤ 1).

Substrate Description

Substrate Series	S1 M1 M2 MD1 MD2 D1 D2												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes choke cherry, mountain maple, bush honeysuckle, large-leaved aster, wild lily-of-the-valley, and wild sarsaparilla.

Trees	*Betula papyrifera, Populus tremuloides, Acer rubrum, Quercus rubra, Picea mariana, P. glauca, Abies balsamea, Pinus banksiana, Sorbus decora, Ulmusamericana, Tilia americana*
Shrubs	**Prunus virginiana, Acer spicatum, Diervilla lonicera, *Rhus radicans, *Coryluscornuta*
Vascular Herbaceous	*Eurybia macrophylla, *Maianthemum canadensis, Cornus canadensis, Aralia nudicaulis, Clintonia borealis, Viola* spp.*, *Trientalis borealis, *Pteridiumaquilinum*
Non- vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis*

Dry, Sandy: Mixedwood

Ecology

Substrate facilitates very rapid to rapid drainage and may limit species diversity, abundance, and growth potential. Shrub and herb poor when canopy predominantly closed. Ground cover increases as canopy becomes more open. Susceptible to drought. Maintained by fire regime typical of the boreal forest. Without fire, organic material accumulates and site becomes increasingly complex causing succession toanother ecosite.

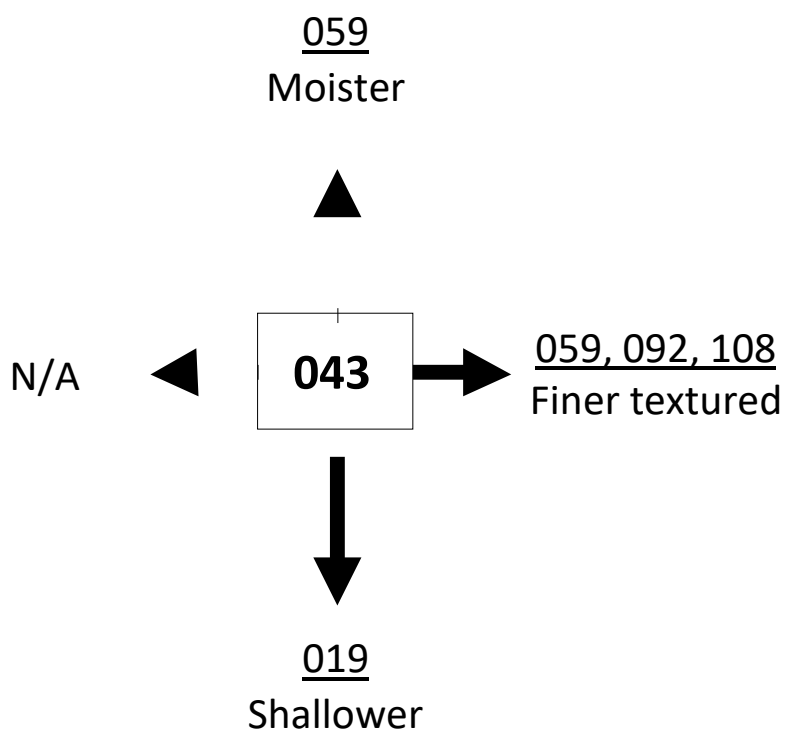
Ecoregional Variability

Widespread across the boreal range. Associated with flat to rolling topography resulting from eolian, glaciolacustrine, glaciofluvial or morainal deposits over the bedrock common to 3S, 4S and 3W. Yellow birch, red maple, bur oak, red oak, white elm and American basswood may occur in 4S, 4W, 5S, and southern portion of 3E and4W. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beakedhazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on level, low, and middle slopes of rolling terrain. Xeric vegetation, such as reindeer lichen and prairie willow, may occur on crest slope positions, south aspects, exposedbedrock, or on shallow and moderately deep substrates. Increased shrub and herb diversity and abundance and tree growth rates may occur in depressions and toe slopes with fresh, moist, and finer textured substrates, calcareous substrates, or overbase-rich bedrock.

Related Ecosites

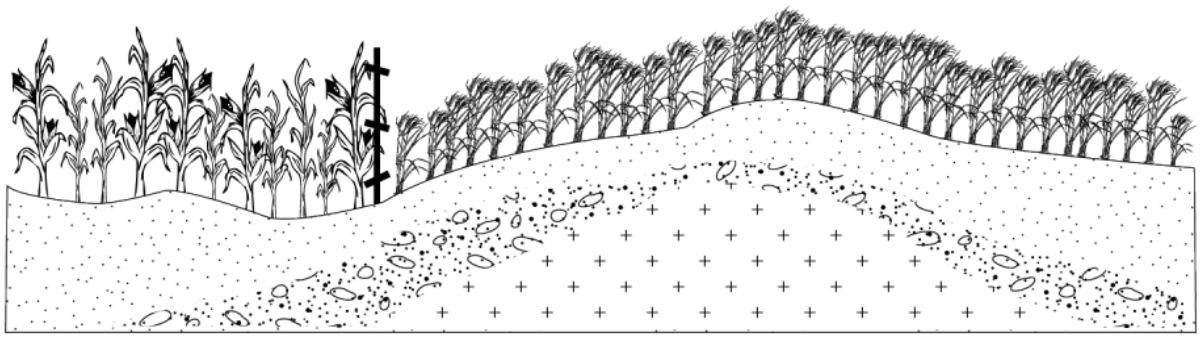


Dry to Fresh, Coarse: Field

B044N

L | M | H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous vegetation community maintained by continuous human alteration. Treesand shrubs generally absent. Ground surface mostly herbaceous litter and mineral material. Substrate sandy to coarse loamy. Mostly deep (> 15 cm) and dry to fresh (MR = 2 or 3 if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 MD4 D2 D4												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n					z				

Vegetation Description

Herbaceous or graminoid dominated community. Ecosite may be dominated by one species or have a variable composition depending on the land use. Scattered open- grown trees and shrubs may be present, but ≤ 10% absolute cover of either. Shrubs when present include willows and low sweet blueberry. Common pasture and hayfieldplants can include quack grass, clovers, alfalfa, common hairgrass and poverty oat grass. Common agricultural plants include rye, barley and potatoes. Due to continuous human alteration of the site lichens and mosses are limited.

Shrubs	*Salix* spp., *Vaccinium angustifolium, Rosa* spp., *Amelanchier* spp.
Vascular Herbaceous	*Elymus repens, Trifolium* spp., **Medicago sativa, Deschampsia flexuosa, Danthonia spicata, Symphyotrichum* spp., *Solidago* spp., *Hieracium* spp, *Antennaria* spp. *Poa compressa, Hordeum vulgare, Secale cereale, Solanum tuberosum, *Calamagrostis canadensis, Leucanthemum vulgare*

Ecology

Sites are typically farmlands that are crop fields, heavily grazed pastures or hayfields. Substrate has a low nutrient and moisture holding capacity. A distinctive plough layer (Ap) may be present, absent or less well developed on other sites. Texture facilitates rapid to moderately well drainage and may limit species diversity, abundance, and growth potential. Susceptible to drought. Maintenance of structure and composition through regular agricultural activities. If abandoned, ecosite will succeed to a meadow(B045).

Ecoregional Variability

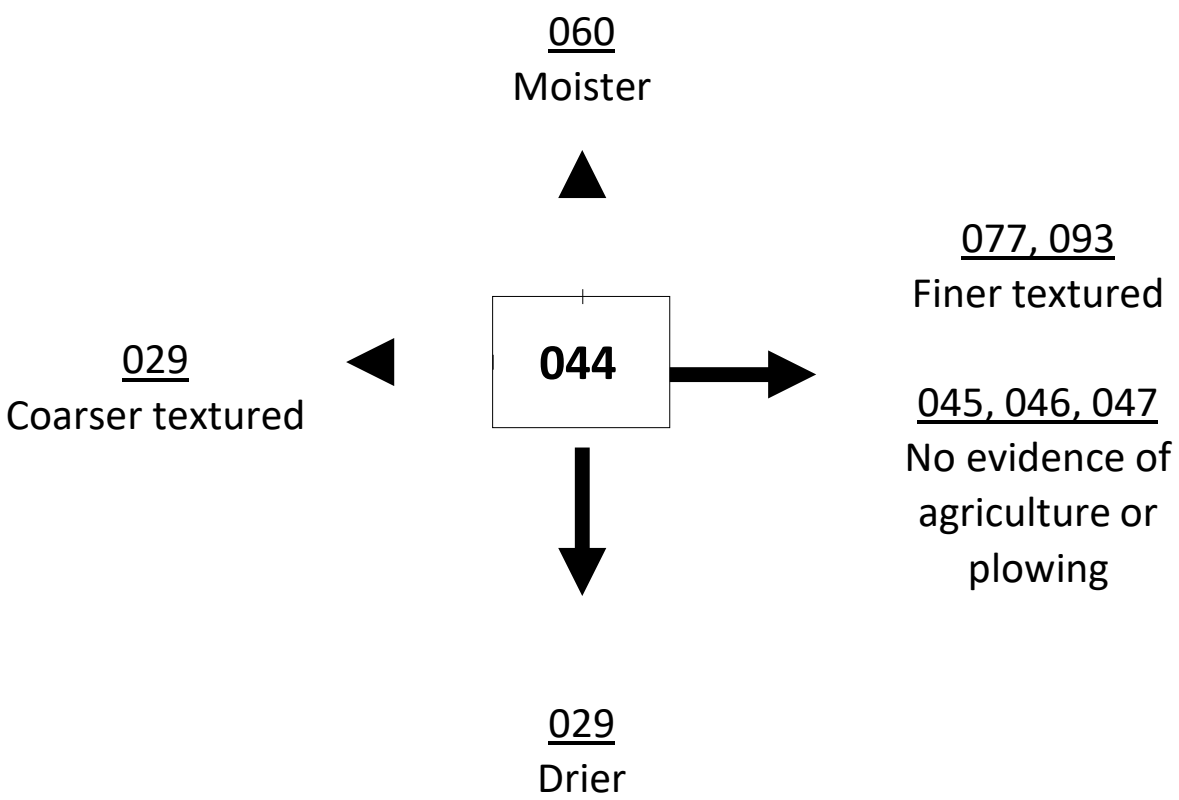
Uncommon across the boreal, and limited to agricultural areas near communities. Generally flat to rolling morainal deposits with occurrences of glaciofluvial material. Could have prairie species in hayfields or pastures within ecoregions 4S and 5S.

Edaphic Variability

Typically uniform in nutrient availability with variable moisture due to inconsistency of substrate depth over bedrock. Generally moderately deep to deep substrate. Depth of coarse morainal deposits variable which may result in bedrock controlled wetlands.

Abundant stoniness in morainal deposits is common. Often on upper, middle, or level slopes positions. Increased species diversity likely over base-rich bedrock or inclusions of fine textured or moister materials. Microtopography generally smooth where ploughing has occurred. Trampling and bare patches may occur in heavily grazed fields as well as areas of unpalatable species (i.e. bracken fern, wool grass) may be present.

Related Ecosites

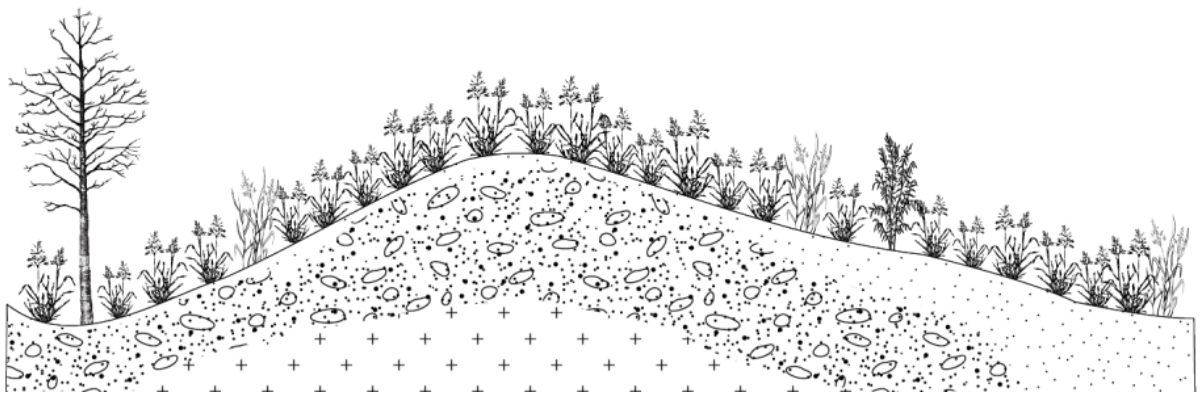


Dry to Fresh, Coarse: Meadow

B045N

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous (forb and/or graminoid) vegetation community. Trees and shrubs few or absent. Ground surface mostly herbaceous litter and mineral material. Substrate sandy to coarse loamy. Mostly deep (> 15 cm) and dry to fresh (MR = 2 or 3 if sandy;MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 MD4 D2 D4												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n			z					

Vegetation Description

Herbaceous or graminoid dominated community. Vegetation highly variable, consisting of a mix of native and introduced species. Scattered, open-grown trees andshrubs may be present but ≤ 10% cover of either. Trees and shrubs when present include poplars, willows and/or raspberries. Herbaceous plants can include Kentucky bluegrass, awnless brome grass, meadow-rues, clovers, sedges and cow vetch. Lichen and moss cover usually low, and can include haircap mosses and fire moss.

Trees	**Populus balsamifera, P. tremuloides, Prunus pensylvanica*
Shrubs	**Rubus idaeus, Salix* spp.*, Rosa* spp. *Ribes hirtellum*
Vascular Herbaceous	**Poa pratensis, Bromus inermis, Thalictrum* spp.*, Trifolium* spp.*, Vicia cracca,* **Chamerion angustifolium, *Calamagrostis canadensis, Danthonia spicata,Cirsium arvense, Solidago* spp.*, *Achillea millefolium, Agrimonia striata, Anemone canadensis, Antennaria* spp.*, Elymus repens, Carex* spp.
Non-vascular	*Polytrichum* spp.*, *Ceratodon purpureus, Cladina rangiferina,*

Dry to Fresh, Coarse: Meadow

Ecology

Substrate has low nutrient and moisture holding capacity. Texture facilitates rapid to moderately well drainage and may limit species diversity, abundance, and growth potential. Sites are typically abandoned farmlands, active pastures, gas and hydro corridors, old burns or cutovers. Characteristic species include native and introduced species (early abandonment) or predominately native species (later abandonment) depending on time since disturbance. Grasses that typically dominate newly abandoned fields are replaced by forbs over time. A distinctive plough layer (Ap) maybe present. In ecoregions 5S and 4S, these ecosites are usually prairie outliers. Maintenance of structure and composition associated with low to moderate intensitydisturbance (i.e. fire, grazing, vegetation control). In the absence of fire, this ecositecan succeed to a sparse shrub (B046) ecosite.

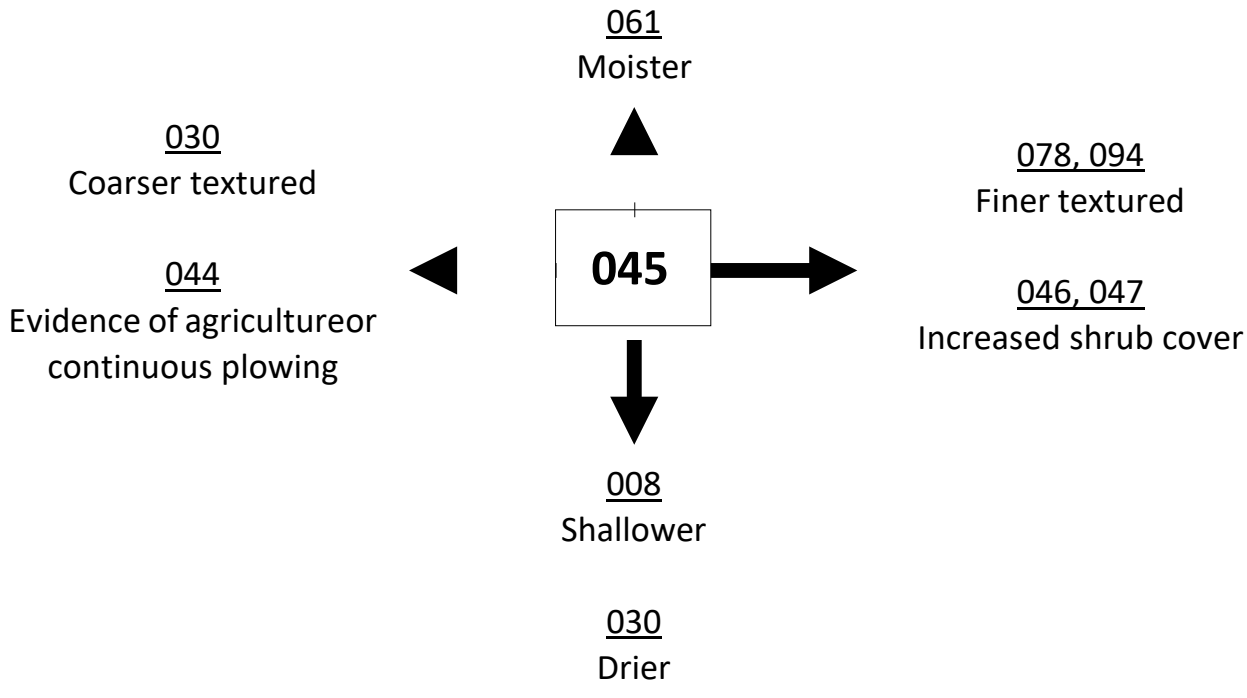
Ecoregional Variability

Widespread and uncommon across the boreal, and usually associated with abandoned farmlands, sawmill yards, and other disturbed areas. Can also occur onthe prairie fringe in the western part of the boreal, where frequent disturbances limittree regeneration. Generally flat to rolling morainal deposits with occurrences of glaciofluvial material. Typically non-calcareous. Sites within ecoregions 4S and 5S can have prairie species not found farther east. Abandoned farmlands can have a high coverage of introduced species, such as timothy, quack grass and dandelion.

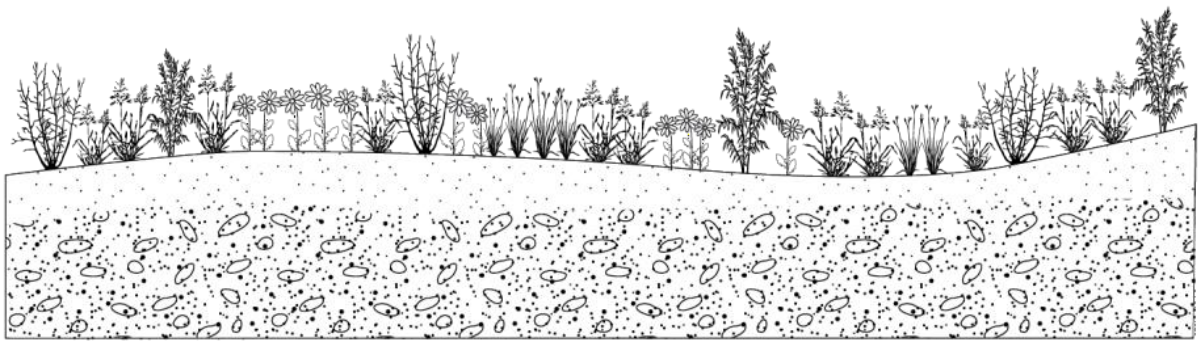
Edaphic Variability

Typically uniform in nutrient availability with variable moisture due to variation in substrate depth over bedrock. Generally moderately deep to deep substrate. Depth of coarse morainal deposits variable which may result in bedrock controlled wetlands. Abundant stoniness in morainal deposits common. Increased diversity likely over base-rich bedrock or inclusions of fine textured or moister materials. Often on upper,middle, or level slope positions.

Related Ecosites



Profile/Slope Sequence



Approximately 50m

Ecosite Description

Scattered tall and/or short shrub community. Tree poor. Herb moderately poor. Ground surface mostly herbaceous litter and mineral material. Substrate sandy to coarse loamy, > 15 cm deep, and dry to fresh (MR = 2 or 3 if sandy; MR ≤ 3, if coarseloamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 MD4 D2 D4												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Meadow with 10 - 25% shrub cover. Scattered, open-grown trees often present, but ≤10% absolute cover. Trees and shrubs when present include poplars, green alder, red-osier dogwood, willows and soapberry. Common herbaceous plants include Canada wild rye, bluegrasses, vetches, asters, goldenrods, ox-eye daisy and sedges.Lichen and moss cover may include haircap mosses and fire moss.

Trees	**Populus balsamifera, P. tremuloides*
Shrubs	**Alnus viridis, Cornus stolonifera, Salix* spp.*, Rosa* spp.*, Viburnum* spp.*, Shepherdia canadensis, Amelanchier* spp.
Vascular Herbaceous	**Leymus mollis, *Elymus canadensis, Poa* spp.*, Vicia cracca, Symphyotrichum* spp.*, Solidago* spp.*, Leucanthemum vulgare, Carex* spp.*, Equisetum* spp.*, Hieracium* spp.*, *Achillea millefolium, Ranunculus acris, *Rumex acetosella*
Non-vascular	*Polytrichum* spp.*, *Ceratodon purpureus*

Dry to Fresh, Coarse: Sparse Shrub

Ecology

Substrate can have low moisture and nutrient holding capacity with rapid to moderately well drained conditions that may limit species diversity, abundance, and growth potential. Sites are typically abandoned farmlands, active pastures, burns, logged areas, gas and hydro corridors, and other clearings that are gradually being invaded by shrubs. Ecosite is susceptible to drought. In ecoregions 5S and 4S, these sites can also be prairie outliers maintained by low intensity grass fires. Maintenance of structure and composition associated with low to moderate intensity disturbance. Inthe absence of disturbance, ecosite will succeed to a shrub (B047) or treed system.

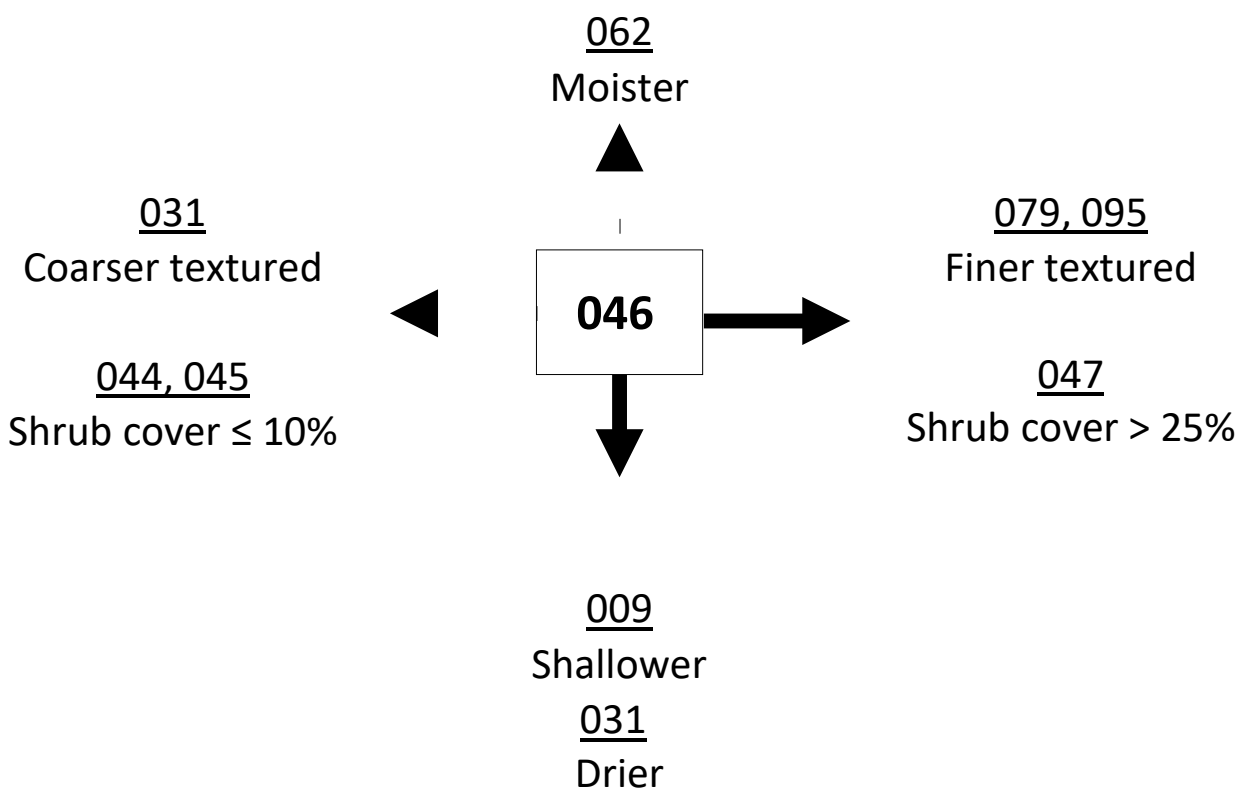
Ecoregional Variability

Widespread and uncommon across the boreal, and usually associated with abandoned farmlands, sawmill yards, and other disturbed areas. Can also occur on the prairie fringe in the western part of the boreal, where tree regeneration is limited due to a lack of seed sources or frequent, low intensity fires. Generally flat to rolling morainal deposits with occurrences of glaciofluvial material found in large river valleysthroughout the range. Typically non-calcareous. Sites within ecoregions 4S and 5S can have prairie species not found farther east. Abandoned farmlands can have a high coverage of exotic species, such as timothy, quackgrass and dandelion.

Edaphic Variability

Typically uniform in nutrient availability with variable moisture due to inconsistency of substrate depth over bedrock. Generally, moderately deep to deep substrates. Can be stony, especially on morainal deposits. Depth of coarse morainal deposits variable which may result in bedrock controlled wetlands. Often on upper, middle or level slope positions. Increased species diversity likely over base-rich bedrock or inclusionsof fine textured or moister materials.

Related Ecosites

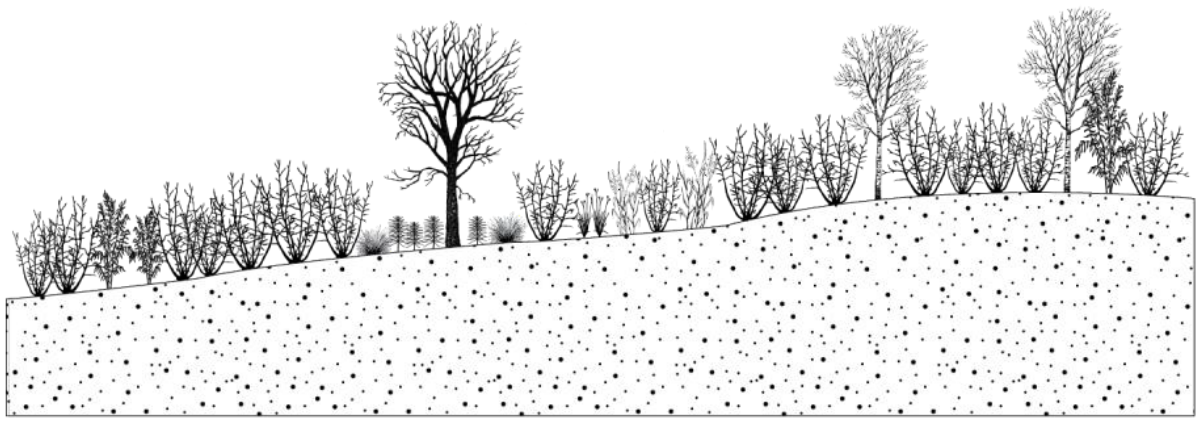


Dry to Fresh, Coarse: Shrub

B047S

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Tall and/or short shrub community. Tree poor. Herb moderately poor. Ground surface mostly broadleaf litter. Substrate sandy to coarse loamy. Mostly deep (> 15 cm) and dry to fresh (MR = 2 or 3 if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 MD4 D2 D4												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Shrub coverage ≥ 25%. Community structure ranges from scattered shrubs with grassand herbaceous understorey to dense thickets of tall and/or low shrubs. Vegetation highly variable, consisting of opportunistic, drought tolerant native and introduced species. Scattered, open-grown trees such as balsam poplar and white birch often present, but ≤ 10% absolute cover. Shrubs include green alder, roses, red-osier dogwood, willows and wild roses. Herbaceous plants common and intermixed with grasses. Can include American dune grass, wild ryes, Canada blue-joint and field horsetail. Lichen and moss cover usually low.

Trees	**Populus balsamifera, Betula papyrifera*
Shrubs	**Alnus viridis, Cornus stolonifera, Salix* spp.*, Rosa* spp.*, Viburnum* spp.*, Shepherdia canadensis, *Alnus incana, Vaccinium* spp.
Vascular Herbaceous	**Leymus mollis, Elymus* spp.*, *Calamagrostis canadensis, Equisetum arvense, Equisetum pratense, Apocynum* spp.*, Juncus* spp.*, Lathyrus japonicus*
Non- vascular	*Polytrichum* spp.*, *Ceratodon purpureus, Cladina rangiferina*

Ecology

Substrate has a low nutrient and moisture holding capacity and can be droughty. Texture facilitates rapid to moderately well drainage and may limit species diversity, abundance, and growth potential. Sites are typically abandoned farmlands, burns, logged areas, gas and hydro corridors, and other clearings that have not been invaded by tree regeneration. In ecoregions 5S and 4S, sites can be prairie outliersmaintained by low intensity grass fires. Persistent in current state for extended periods of time or in the absence of disturbance will succeed to a treed system.

Ecoregional Variability

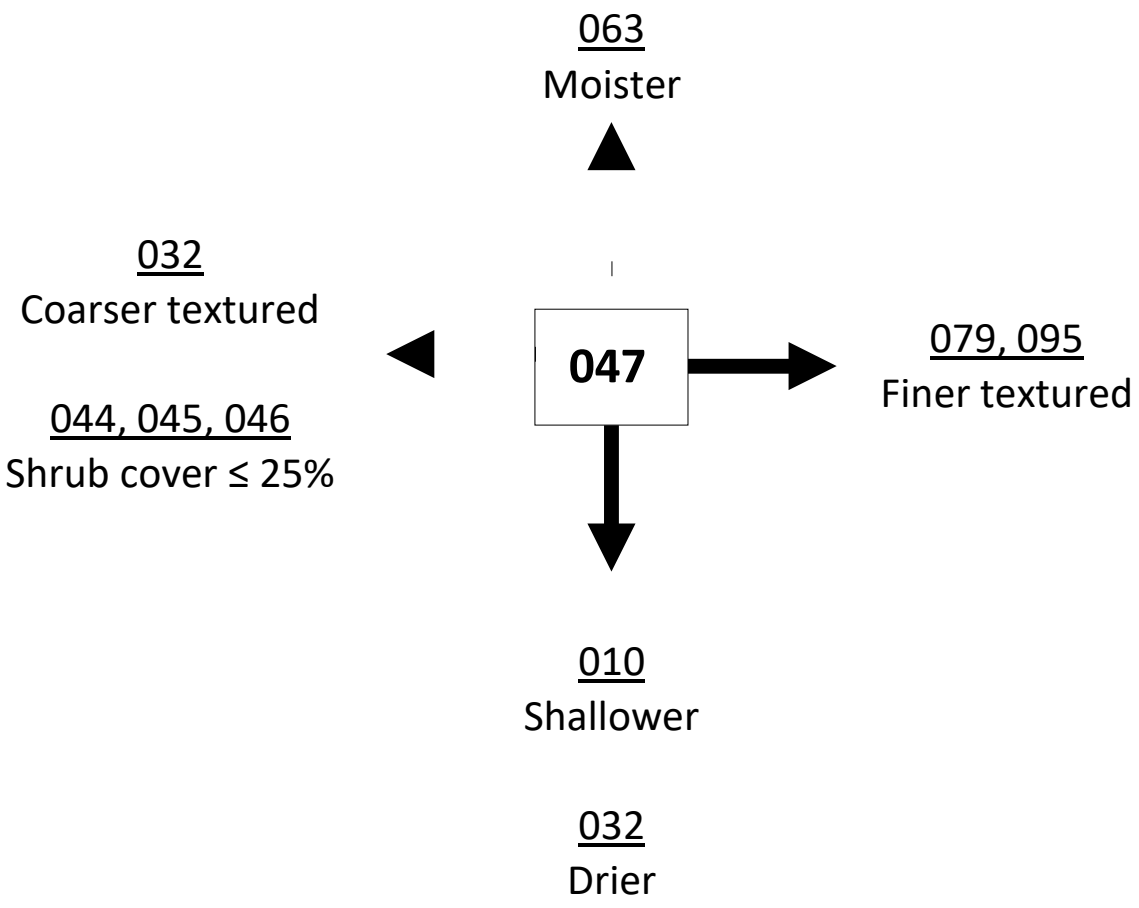
Widespread and common across the boreal, and usually associated with abandoned farmlands, sawmill yards, and other disturbed areas. Generally flat to rolling morainal deposits with occurrences of glaciofluvial material. Sites within ecoregions 4S and 5Scan have a high proportion of prairie species not found in the rest of the boreal zone. Typically non-calcareous.

Edaphic Variability

Typically uniform in nutrient availability with variable moisture due to variation in substrate depth over bedrock. Generally moderately deep to deep substrate. Depth of coarse morainal deposits variable which may result in bedrock controlled wetlands.

Abundant stoniness in morainal deposits common. Often on upper, middle, or level slopes positions. Higher diversity likely over base-rich bedrock or inclusions of fine textured or moister materials.

Related Ecosites

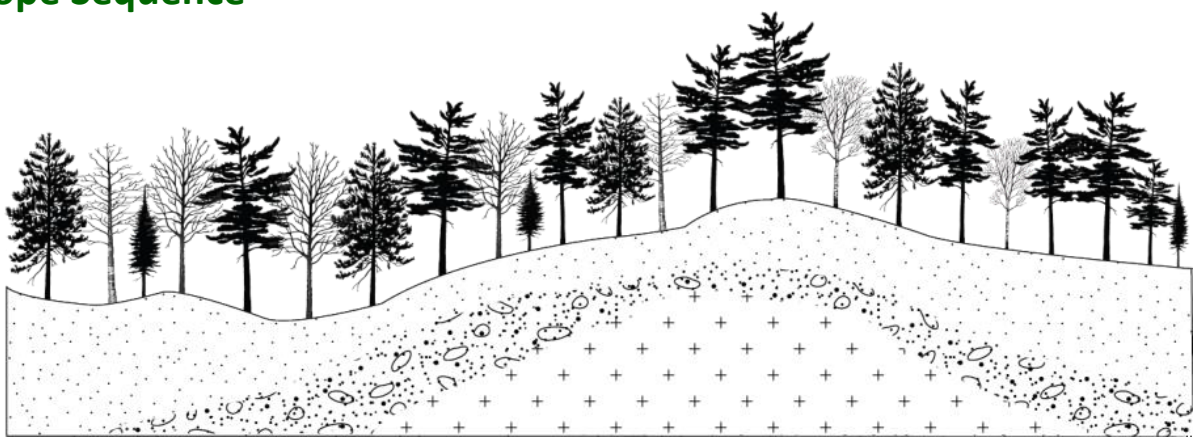


Dry to Fresh, Coarse: Red Pine - White Pine Conifer

B048Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of red pine and/or eastern white pine (≥ 20% absolute cover). May be a near pure stand of red pine or eastern white pine. Often mixed with white birch, balsam fir, and trembling aspen. Understory tree species consisting of balsam fir, white birch, eastern white pine, black spruce, trembling aspen,and red pine. Varies from shrub and herb poor to rich. Ground surface mostly conifer litter with moss, woody debris, and broadleaf litter. Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	**S1** M2 **M4 MD2 MD4 D2 D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n			z						

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes twinflower, bush honeysuckle, velvet-leaf blueberry, wild lily-of-the-valley, wild sarsaparilla, bunchberry,and Shreber's moss.

Trees	*Pinus resinosa, P. strobus, Betula papyrifera, Abies balsamea, Populustremuloides, Picea mariana, Pinus banksiana, Picea glauca*
Shrubs	**Linnaea borealis, Diervilla lonicera, Vaccinium myrtilloides, Acer spicatum, *Chimaphila umbellata, Vaccinium angustifolium, *Corylus cornuta*
Vascular Herbaceous	**Maianthemum canadense, Aralia nudicaulis, Cornus canadensis, Clintoniaborealis*
Non- vascular	*Pleurozium schreberi, Dicranum polysetum*

Dry to Fresh, Coarse: Red Pine - White Pine Conifer

Ecology

Substrate material restricts nutrient availability resulting in moderate tree growth rates and low vegetation diversity. High concentrations of coarse fragments from morainal deposits may also limit tree growth through reduction in rooting zone and moisture availability. Conifer litter and feathermoss abundant under closed canopy. Species diversity and lichen abundance increases as canopy becomes more open. Under red pine dominated stands, shrub and herb sparse with abundant conifer litter. Without theinfluence of a disturbance regime, balsam fir and other boreal tree species may increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

Ecoregional Variability

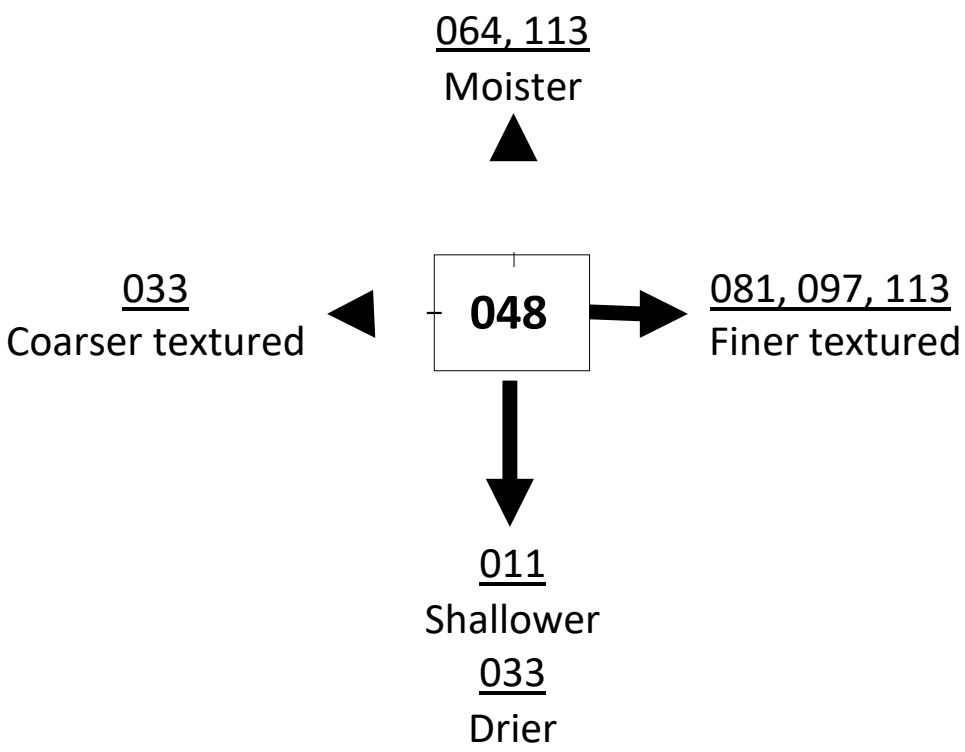
Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portion of 3E. Typically non-calcareous in 4S and 4W. May be calcareous in 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Eastern white cedar, yellow birch, red maple, American basswood, and red oak may occur in 4S, 4W, 5S, and southern portion of 3E. Reduced growth and shrub and herbdiversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 3S and 4S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates.

Increased species diversity and abundance may occur over base-rich bedrock or inclusions of fine textured materials. Speckled alder, large-leaved aster, sphagnum,and sedges may occur in moist shallow and moderately deep substrates.

Related Ecosites

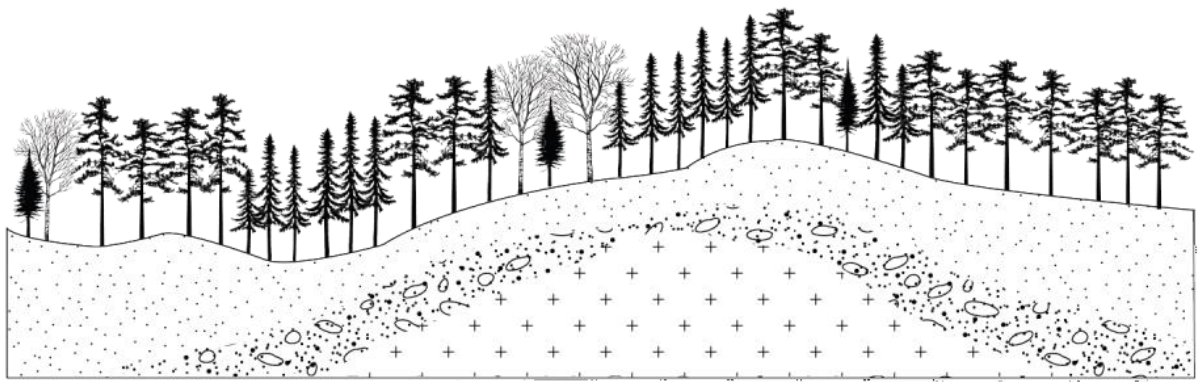


Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated

B049Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of jack pine and/or black spruce (> 90% cover of total tree species with white birch limited to ≤ 20%). May be a near pure stand of jack pine or black spruce. Understory tree species consisting of black spruce, balsam fir, and whitebirch. Shrub and herb poor. Ground surface mostly moss with conifer litter, woody debris, broadleaf litter, and lichen. Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	**S1 M2 M4 MD2 MD4 D2 D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees with closed canopy (> 60%). Common understory vegetation includes velvet-leafblueberry, low sweet blueberry, creeping snowberry, bunchberry, wild lily-of-the-valley,feathermoss, and foliose lichen.

Trees	*Pinus banksiana, Picea mariana, Betula papyrifera*
Shrubs	*Vaccinium myrtilloides, V. angustifolium, Gaultheria hispidula, *Linnaea borealis, Rhododendron groenlandicum, Diervilla lonicera, Epigaea repens*
Vascular Herbaceous	*Cornus canadensis, *Maianthemum canadense*
Non- vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis, Cladinarangiferina, Dicranum fuscescens, Hylocomium splendens*

Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated

Ecology

Substrate material restricts nutrient availability resulting in moderate tree growth rates and low vegetation diversity. High concentrations of coarse fragments of morainal deposits may also limit tree growth through reduction in rooting zone and moisture availability. Feathermoss abundance increases with canopy closure and black spruce composition. Increased proportion of hardwoods as well as shrub, herb, and lichen abundance increase with canopy openings. Even-aged condition maintained by fire regime. Black spruce and Labrador-tea abundance varies but increases with age succeeding towards uneven-aged, open black spruce/Labrador-tea uplands.

Ecoregional Variability

Widespread and floristically consistent across the boreal range. Often associated withdeep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and 4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation.

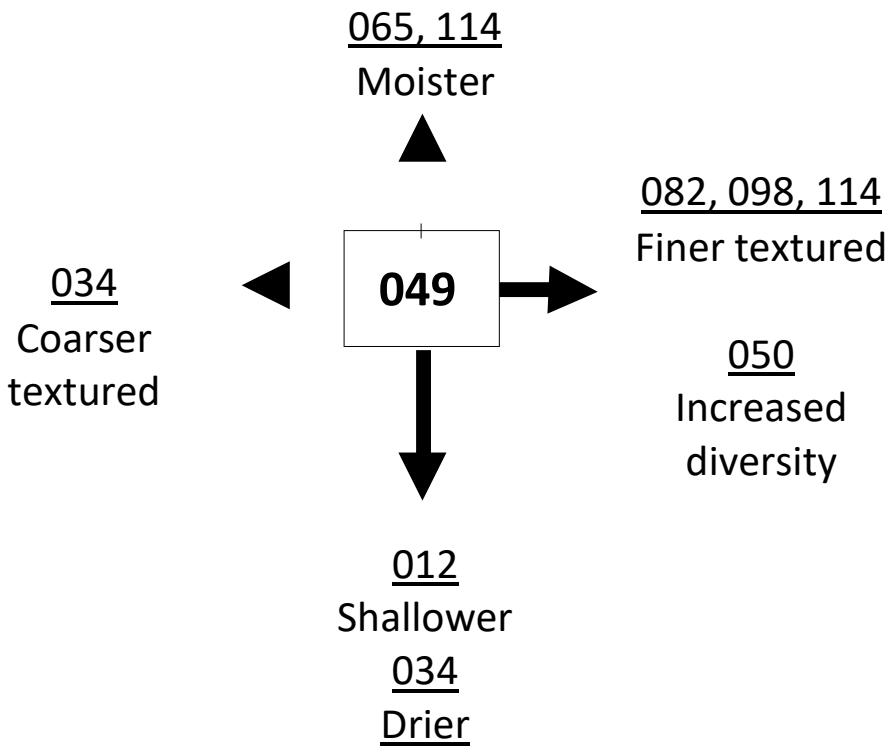
Tendency towards black spruce in 2E, 2W, 3E, and eastern half of 3W. Tendency towards jack pine and white birch (≤20%) in 4S and 3S. Eastern white pine and red pine (≤ 10% cover) may occur in 5S and 4W. White spruce (≤ 10%) may occur in 3E. Trailing arbutus and low sweet blueberry not common in 2W and 3S. Reduced growth,shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 3S and 4S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates.

Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Beaked hazel, mountain maple, speckled alder, large-leaved aster, sphagnum, and sedges may occur in moist shallow and moderatelydeep substrates.

Related Ecosites

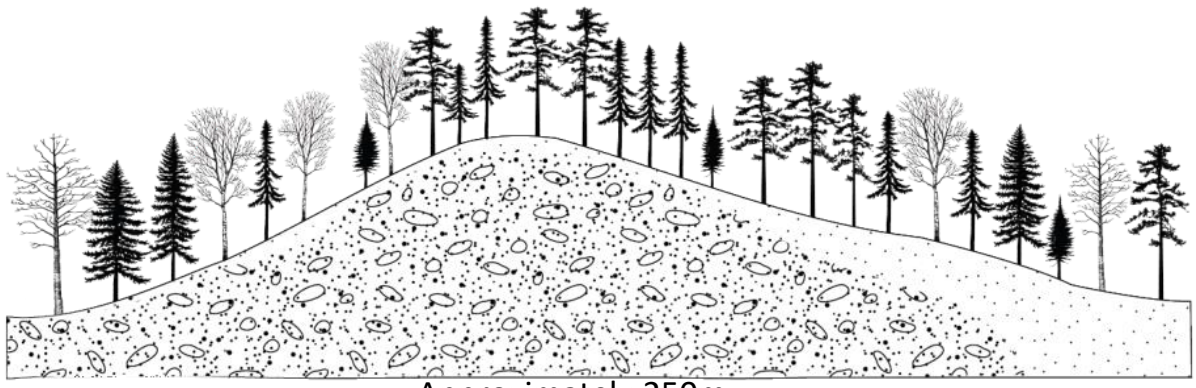


Dry to Fresh, Coarse: Pine - Black Spruce Conifer

B050Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of black spruce and/or jack pine (> 50% cover of conifer species). Often mixed with trembling aspen, white birch, balsam fir, and white spruce. Understory tree species consisting of black spruce, balsam fir, white birch, and trembling aspen. Shrub and herb poor. Ground surface moss, woody debris, conifer litter, and broadleaf litter. Substrate sandy to coarse loamy. Mostly > 15 cm deep anddry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	**S1** M2 **M4 MD2 MD4 D2 D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees or coarse textured sites. Common understory vegetation includes velvet-leaf blueberry, twinflower, bush honeysuckle, bunchberry, wild lily-of- the-valley, wild sarsaparilla, and feathermoss.

Trees	*Picea mariana, Pinus banksiana, Populus tremuloides, Betula papyrifera, Abies balsamea, Picea glauca, Thuja occidentalis*
Shrubs	*Vaccinium myrtilloides, *Linnaea borealis, Diervilla lonicera, Gaultheria hispidula, Vaccinium angustifolium*
Vascular Herbaceous	*Cornus canadensis, *Maianthemum canadense, Aralia nudicaulis, Clintoniaborealis, *Trientalis borealis, Coptis trifolia*
Non- vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis,Hylocomium splendens, Dicranum fuscescens, Cladina rangiferina*

Ecology

Substrate material restricts nutrient availability resulting in moderate tree growth rates and low vegetation diversity. High concentrations of coarse fragments from morainal deposits may also limit tree growth through reduction in rooting zone and moisture availability. Shrub and herb poor and abundant feathermoss under closed canopy. Shrub and herb diversity increases with hardwood canopy or canopy openings. Maintained by fire regime typical of the boreal forest. With age, uneven-aged black spruce, balsam fir, white spruce, and aspen may establish in the understory causing succession to aspen mixedwood.

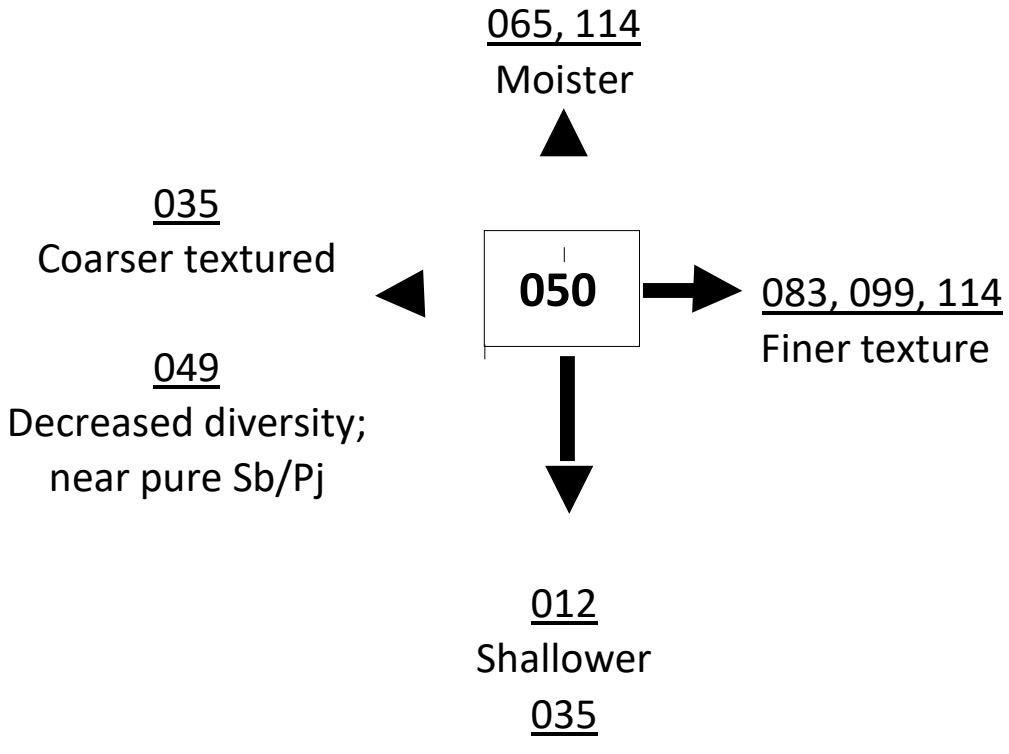
Ecoregional Variability

Widespread across the boreal range. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Tendency towards black spruce in 2E,2W, 3E, and eastern half of 3W. Tendency towards jack pine and white birch (≤ 50%) in 4S and 3S. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 3S and 4S. In 2W and 3S, low sweet blueberry and wild sarsaparilla uncommon.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates.
Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Beaked hazel, mountain maple, speckled alder, large-leaved aster, sphagnum, and sedges may occur in moist shallow and moderatelydeep substrates.

Related Ecosites

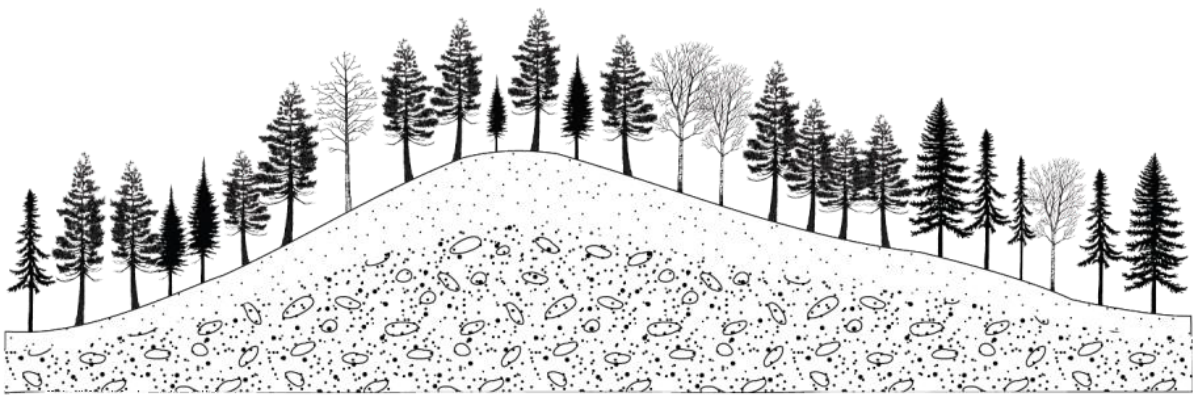


Dry to Fresh, Coarse: Cedar (Hemlock) Conifer

B051Tt/Tl

L | **M** | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of eastern white cedar and/or eastern hemlock (> 50% cover of conifer species). Eastern hemlock rare. May be mixed with whitebirch, white spruce, balsam fir, black spruce, trembling aspen, and white pine. Understory tree species consisting of balsam fir and eastern white cedar. Shrub andherb abundant. Ground surface mostly moss with conifer litter and broadleaf litter. Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3,if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	**S1** M2 **M4** MD2 **MD4 D2 D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy closed with dense, younger trees and abundant feathermoss. Common understory vegetation includes mountain maple, dwarf raspberry, creeping snowberry, star-flower, kidney-leaved violet, bunchberry, and feathermoss.

Trees	*Thuja occidentalis, Betula papyrifera, Picea glauca, Abies balsamea, Picea mariana, Populus tremuloides, Pinus strobus, P. banksiana, Acer rubrum,Pinus resinosa, *Populus balsamifera, P. grandidentata, Sorbus decora,*
Shrubs	*Acer spicatum, Rubus pubescens, Gaultheria hispidula, *Linnaea borealis, Lonicera canadensis, Rhododendron groenlandicum, Cornus stolonifera, *Rosaacicularis*
Vascular Herbaceous	**Trientalis borealis, Viola renifolia, Cornus canadensis, Coptis trifolia, Mitella nuda, Aralia nudicaulis, *Maianthemum canadense, Galium triflorum, Maianthemum stellatum, Streptopus roseus*
Non- vascular	*Pleurozium schreberi, Hylocomium splendens, Rhytidiadelphus triquetrus,Ptilium crista-castrensis, Dicranum polysetum*

Dry to Fresh, Coarse: Cedar (Hemlock) Conifer

Ecology

Substrate material restricts nutrient availability resulting in moderate tree growth rates and vegetation diversity. High concentrations of coarse fragments from morainal deposits may also limit tree growth through reduction in rooting zone and moisture availability. Feathermoss abundant under closed canopy. Low shrub or lichen abundance increases under open canopy. Eastern white cedar often late successional. Associated with islands or rock knobs which are isolated from continuous fuel pathways. Fire event will likely require re-classification of ecosite.

Without fire, organic material accumulates and site becomes increasingly complex.

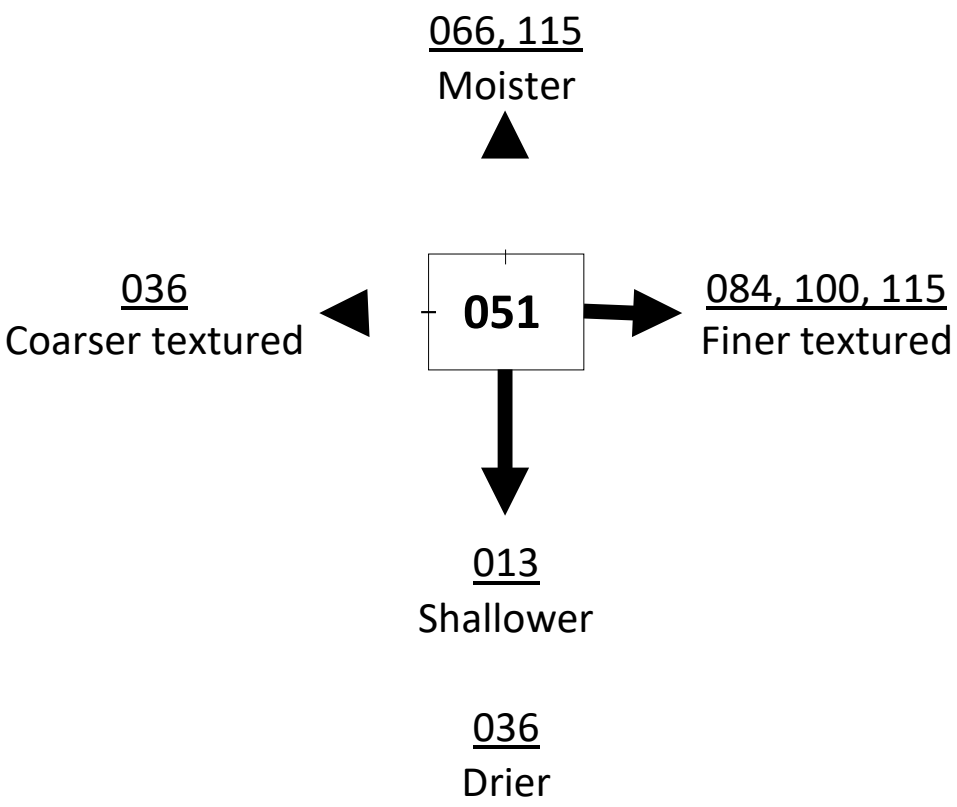
Ecoregional Variability

Widespread across the boreal range. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Red maple, large-tooth aspen and sugar maple may occur in 4S, 4W, 5S, and southern portion of 3E and 4W. Eastern hemlock is restricted to 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 3S and 4S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates. Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrates.

Related Ecosites

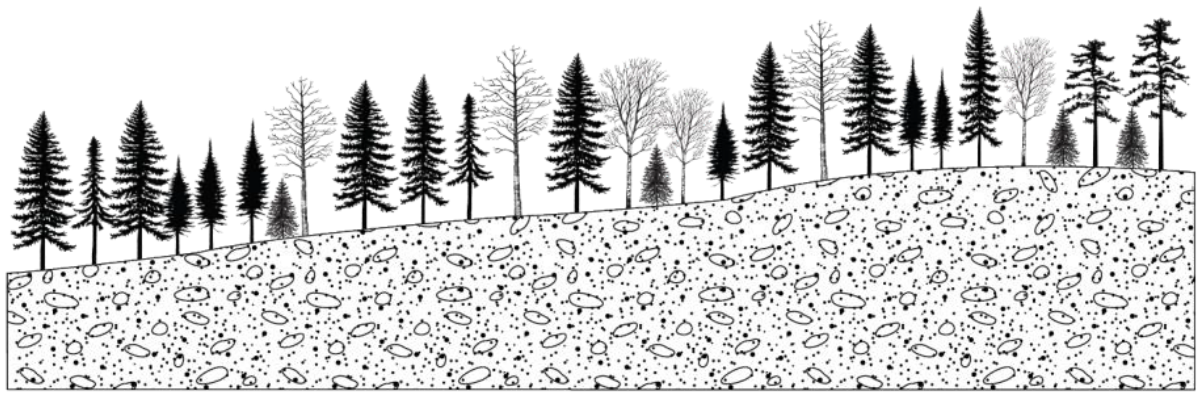


Dry to Fresh, Coarse: Spruce - Fir Conifer

B052Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy mostly comprised of balsam fir and white spruce (> 50% cover of conifer species). Often mixed with white birch, trembling aspen, and black spruce. Understory tree species consisting of balsam fir, trembling aspen, white birch, and white spruce. Shrub and herb poor. Ground surface moss, broadleaf litter, woody debris, and conifer litter. Substrate sandy to coarse loamy. Mostly > 15 cm deep anddry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	**S1** M2 **M4** MD2 **MD4 D2 D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy closed with dense, younger trees and abundant feathermoss. Common understory vegetation includes twinflower, bush honeysuckle, mountain maple, bunchberry, wild sarsaparilla,wild lily-of-the-valley, and feathermoss.

Trees	*Abies balsamea, Picea glauca, Betula papyrifera, Populus tremuloides, Piceamariana, Pinus banksiana, Sorbus decora*
Shrubs	**Linnaea borealis, Diervilla lonicera, Acer spicatum, *Corylus cornuta, Rubuspubescens*
Vascular Herbaceous	*Cornus canadensis, Aralia nudicaulis, *Maianthemum canadense, Clintonia borealis, Streptopus roseus, *Trientalis borealis, Viola renifolia, Lycopodiumobscurum, Eurybia macrophylla, Coptis trifolia*
Non-vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Hylocomium splendens, Dicranum polysetum*

Dry to Fresh, Coarse: Spruce - Fir Conifer

Ecology

Substrate material restricts nutrient availability resulting in moderate tree growth rates and low vegetation diversity. High concentrations of coarse fragments of morainal deposits may also limit tree growth through reduction in rooting zone and moisture availability. Feathermoss abundant under closed canopy. Low shrub or lichen abundance increases under open canopy. Ecosite may be associated with late succession or plantation. Most common disturbance events are outbreaks of spruce budworm. May succeed to B053 (conifer) or B055 (hardwood).

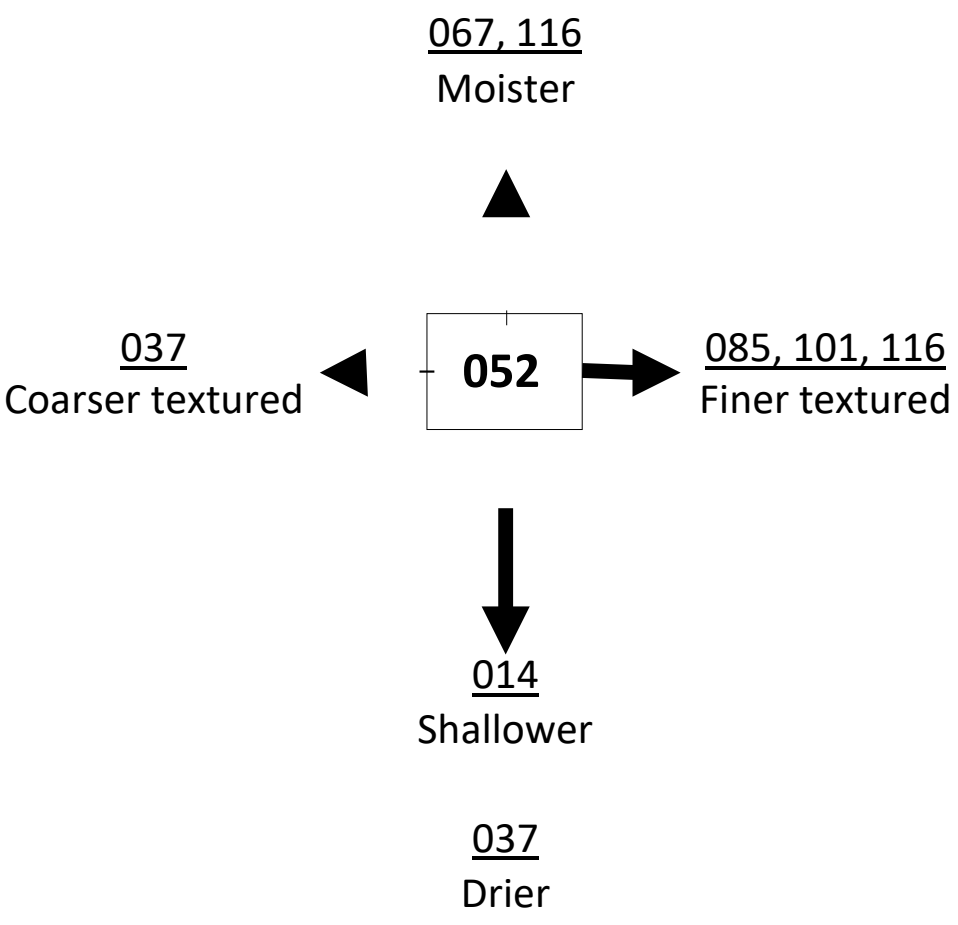
Ecoregional Variability

Widespread across the boreal range. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 3S and 4S. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤15 cm) substrates. Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrates.

Related Ecosites



Dry to Fresh, Coarse: Conifer

B053Tt/Tl

L | *M* | *H*

Profile/Slope Sequence

Approximately 250m

Ecosite Description

Conifer canopy consisting of tamarack and/or a mixture of other species. Shrub and herb poor. Ground surface mostly conifer litter with broadleaf litter and moss. Substratesandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 **M4** MD2 **MD4 D2 D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	**6**	**7**	**8**	**9**	x	h	**s**
Moisture	d		f			m		**v**		**w**		x	h	**s**
Depth	R		VS		S		M		MD		D		
Chemistry	k				n				z				

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy closed with dense, younger trees and abundant feathermoss. Common understory vegetation includes dwarf raspberry, showy mountain-ash, mountain maple, bunchberry, bluebead-lily, wild sarsaparilla, and feathermoss.

Trees	*Picea mariana, Abies balsamea, Thuja occidentalis, Picea glauca, Betula papyrifera, Populus tremuloides, Pinus banksiana, Sorbus decora, Larix laricina*
Shrubs	*Rubus pubescens, Acer spicatum, *Corylus cornuta, Diervilla lonicera, *Linnaeaborealis, *Rosa acicularis, Vaccinium myrtilloides*
Vascular Herbaceous	*Cornus canadensis, Clintonia borealis, Aralia nudicaulis, *Maianthemum canadense, Streptopus roseus, *Trientalis borealis, Eurybia macrophylla,Mitella nuda, Anemone quinquefolia, Viola renifolia, Coptis trifolia*
Non- vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Rhytidiadelphus triquetrus,Dicranum polysetum*

Dry to Fresh, Coarse: Conifer

Ecology

Substrate material restricts nutrient availability resulting in moderate tree growth rates and low vegetation diversity. High concentrations of coarse fragments of morainal deposits may also limit tree growth through reduction in rooting zone and moisture availability. Feathermoss abundant under closed canopy. Low shrub or lichen abundance increases under open canopy. Associated with non-stand replacing disturbances, such as wind and insect damage, which result in a mixed species composition. Vegetation remains stable independent of a disturbance regime.

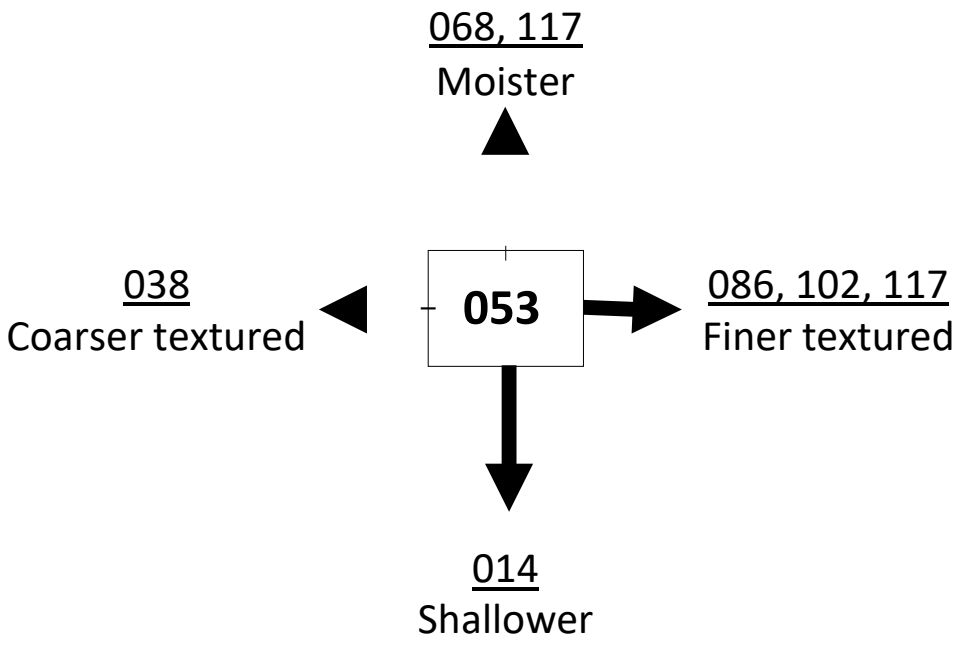
Ecoregional Variability

Widespread across the boreal forest. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Eastern white pine and red pine (< 20% absolute cover) and red maple may occur in 4S, 4W, 5S, and southern portionof 3E and 3W. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sand (MR = 2) in western portion of 3S and 4S. In2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates. Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrates.

Related Ecosites

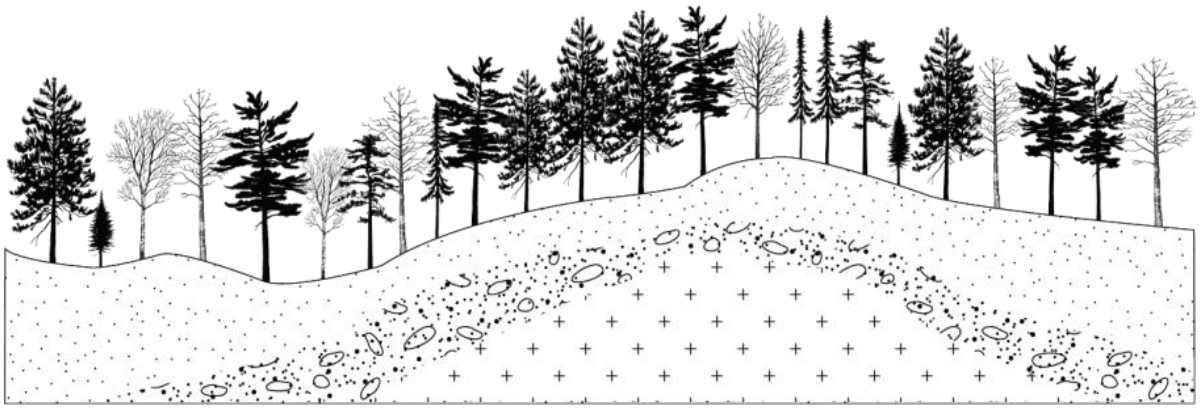


Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood

B054Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy canopy consisting of eastern white pine and red pine (≥ 20% absolute cover). Substantial components of trembling aspen and white birch (> 50% cover) may occur. Shrub and herb moderately poor. Ground surface mostly broadleaflitter with conifer litter and moss. Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 **MD4** D2 **D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) canopy closure variable. Low treed (≤ 10 m) canopy closed with dense, younger trees and abundant feathermoss. Common understory vegetation includes mountain maple, beaked hazel, low sweet blueberry, large-leaved aster, wildsarsaparilla, eastern bracken-fern, and feathermoss.

Trees	*Populus tremuloides, Pinus strobus, P. resinosa, Betula papyrifera, Pinusbanksiana, Picea glauca, Abies balsamea, *Populus balsamifera*
Shrubs	*Acer spicatum, *Corylus cornuta, Vaccinium angustifolium, Diervilla lonicera, V.myrtilloides, *Linnaea borealis, *Chimaphila umbellata*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, *Pteridium aquilinum, Streptopus roseus, Clintonia borealis, *Trientalis borealis, *Maianthemum canadense,Cornus canadensis*
Non-vascular	*Pleurozium schreberi, Hylocomium splendens, Dicranum polysetum, Cladinarangiferina*

Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood

Ecology

Substrate material restricts nutrient availability resulting in moderate tree growth rates and low vegetation diversity. High concentrations of coarse fragments from morainal deposits may also limit tree growth through reduction in rooting zone and moisture availability. Shrub and herb poor under closed canopy. Increased shrub diversity and abundance under open canopy. Associated with disturbance regimes such as low to moderate intensity fire to maintain the red pine and eastern white pine composition. Without the influence of a disturbance regime, balsam fir and other boreal tree speciesmay increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

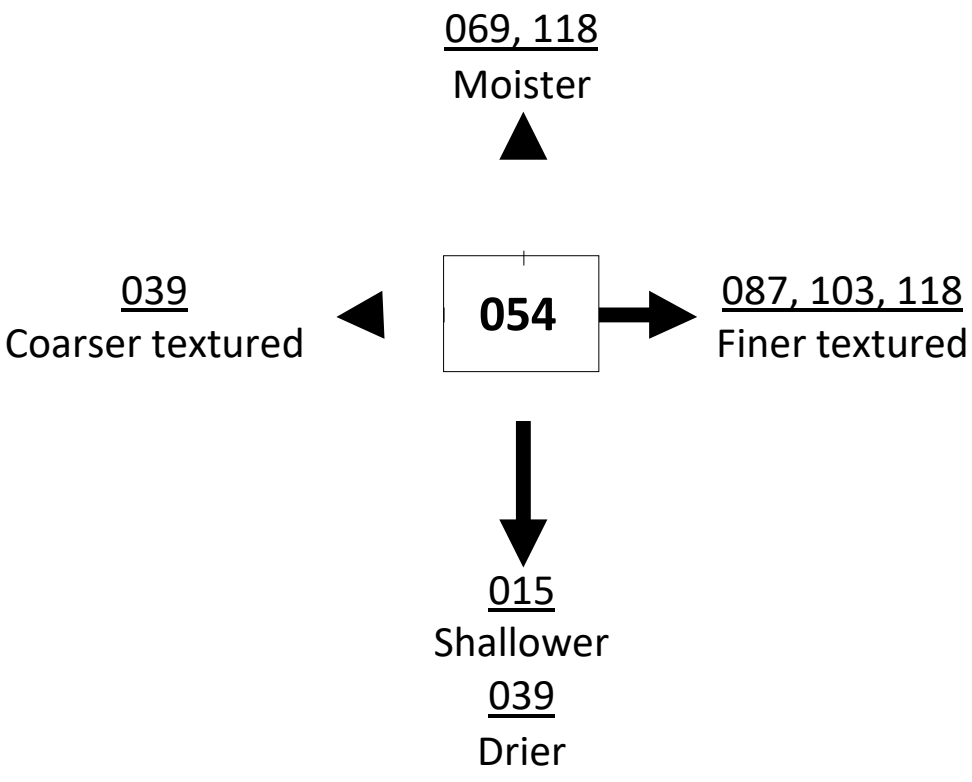
Ecoregional Variability

Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portion of 3E. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 4S and 4W. May be calcareous in 3E, 4S-1,and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Eastern white cedar, yellow birch, red maple, American basswood, and redoak may occur in 4S, 4W, 5S, and southern portion of 3E. Reduced growth, shrub andherb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 4S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates. Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrates.

Related Ecosites

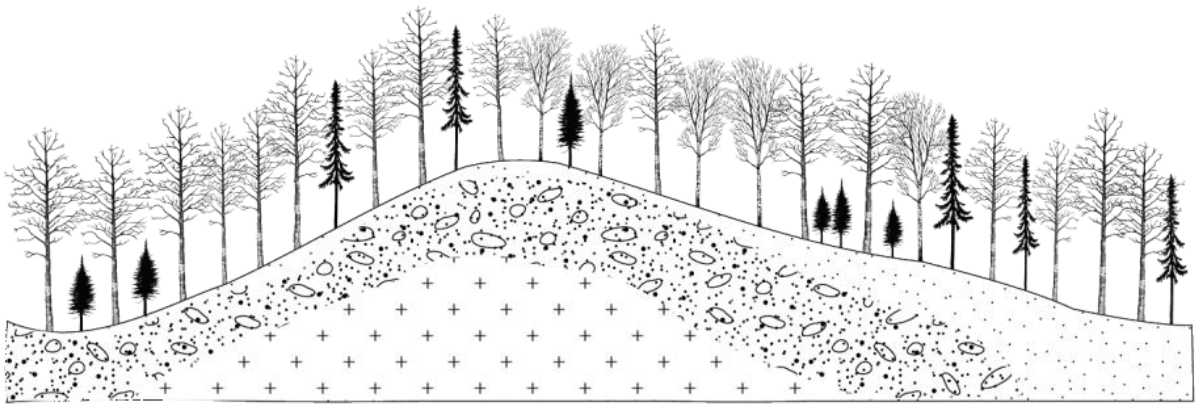


Dry to Fresh, Coarse: Aspen - Birch Hardwood

B055Tt/Tl

L | M | H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of trembling aspen and/or white birch (> 50% cover of hardwood species). May be a near pure stand of trembling aspen or white birch. Often mixed with balsam fir, black spruce, and white spruce. Understory tree species consisting of balsam fir, trembling aspen, white birch and black spruce. Shrub rich. Herb poor, increasing richness on loamy substrates. Ground surface mostly broadleaflitter with moss, woody debris, and conifer litter. Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	**S1** M2 **M4** MD2 **MD4 D2 D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (≤ 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees or coarse textured sites. Common understory vegetation includes bush honeysuckle, mountain maple, dwarf raspberry, wild lily-of-the-valley, wild sarsaparilla, bluebead-lily, ground-pine, and feathermoss.

Trees	*Populus tremuloides, Betula papyrifera, Abies balsamea, Picea mariana, P. glauca, Pinus banksiana, Sorbus decora*
Shrubs	*Diervilla lonicera, Acer spicatum, Rubus pubescens, *Linnaea borealis, *Corylus cornuta, Vaccinium angustifolium*
Vascular Herbaceous	**Maianthemum canadense, Aralia nudicaulis, Clintonia borealis, Cornus canadensis, Streptopus roseus, *Trientalis borealis, Eurybia macrophylla, Viola renifolia, Lycopodium obscurum*
Non- vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Dicranum fuscescens, Brachythecium salebrosum, Dicranum polysetum*

Dry to Fresh, Coarse: Aspen - Birch Hardwood

Ecology

Limitations to tree growth result of high concentrations of coarse fragments from morainal deposits that influence vegetation growth through reduction in rooting zone and moisture availability. Shrub rich and herb poor when canopy closed. Ground coverincreases as canopy becomes more open. Even-aged condition result of fire. May be result of budworm outbreak resulting in white birch and trembling aspen, but with age, black spruce, balsam fir, and white spruce will appear in understory leading succession to back to conifer mixedwood.

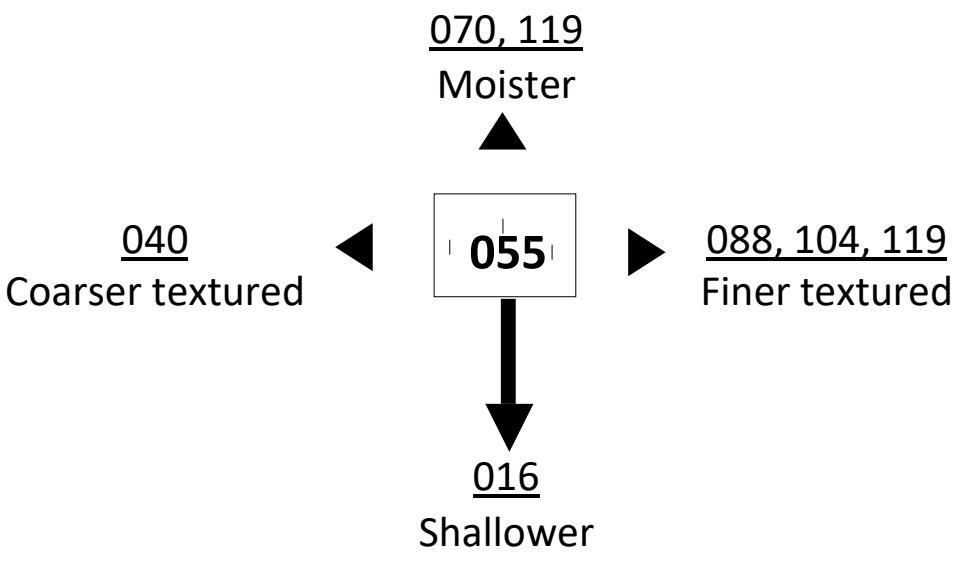
Ecoregional Variability

Widespread across the boreal range. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. White birch abundant in 2w and 3W. Within 2E and 3E, trembling aspen often predominates. Yellow birch and large-tooth aspen may replace white birch and trembling aspen in 4S, 4W, 5S and southern portion of 3E. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 3Sand 4S. In 2W and 3S, mountain maple, low sweet blueberry and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates.
Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrate inclusions.

Related Ecosites

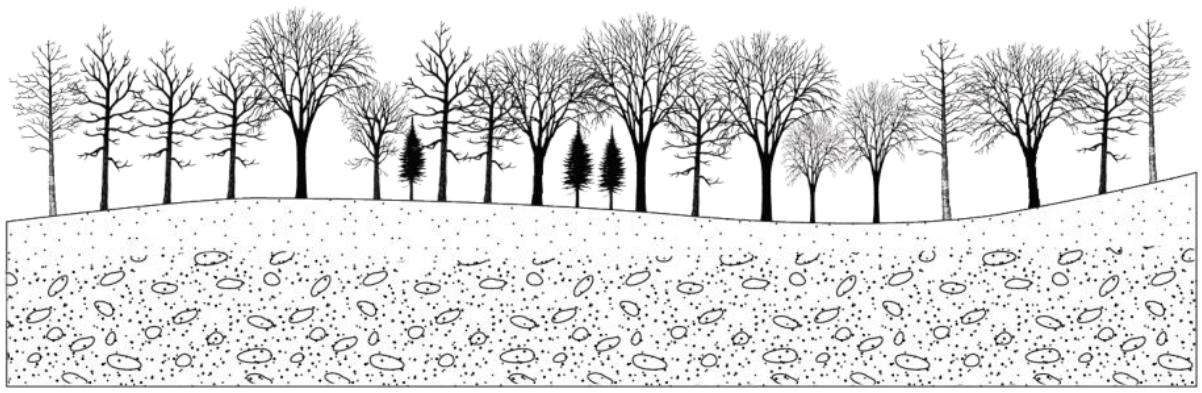


Dry to Fresh, Coarse: Elm - Ash Hardwood

B056Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting mostly of ash and/or white elm (> 50% cover of the hardwood species). May be mixed with trembling aspen, balsam fir, and balsam poplar. Shrub and herb moderately rich. Ground surface broadleaf litter, conifer litter, and woody debris. Substrate sandy to coarse loamy. Substrate sandy to coarse loamy.Mostly > 15 cm deep and dry to fresh (MR = 1, 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 **MD4** D2 D4												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (< 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees or coarse textured sites. Common understory vegetation includes mountain maple, beaked hazel, bush honeysuckle, large-leaved aster, wild sarsaparilla, and naked mitrewort.

Trees	*Fraxinus nigra, Populus tremuloides, Abies balsamea, Betula papyrifera, Fraxinus americana, Sorbus decora, Ulmus americana, Fraxinus pennsylvanica*
Shrubs	*Acer spicatum, *Corylus cornuta, Diervilla lonicera, Lonicera canadensis, Rubus pubescens, *Linnaea borealis*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, Mitella nuda, Streptopus roseus, Clintonia borealis, *Trientalis borealis, *Maianthemum canadense, Cornuscanadensis*
Non-vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Hylocomium splendens, Rhytidiadelphus triquetrus, Dicranum polysetum*

Dry to Fresh, Coarse: Elm - Ash Hardwood

Ecology

Limitations to tree growth are result of high concentrations of coarse fragments from morainal deposits that may influence vegetation growth through reduction in rooting zone and moisture availability. Shrub and herb poor when canopy closed. Ground cover increases as canopy becomes more open. Vegetation remains stable and self-perpetuating independent of a disturbance regime.

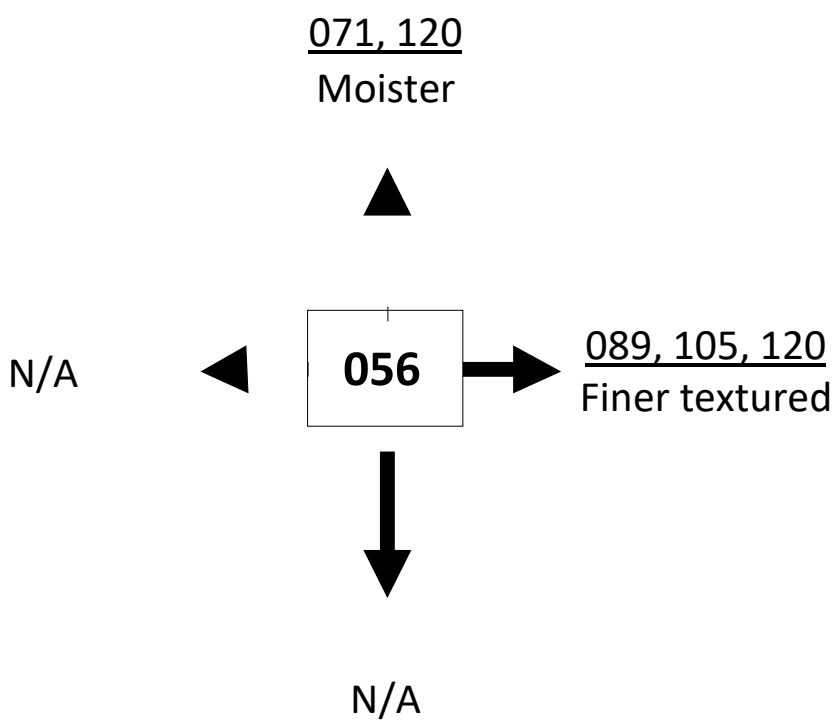
Ecoregional Variability

Uncommon across the boreal range. Restricted to 4S, 4W, 5S, and southern portion of3E and 3W. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and 4W. May be calcareous in 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Yellow birch, red maple, large-tooth aspen, and red oak may occur in 4S, 4W, 5S, and southern portion of 3E and 3W. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 4S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope positions but may also occur on toe slopes. Often associated with large river floodplains and riparian areas. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates. Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine texturedmaterials. Speckled alder, sphagnum, and sedges may occur in moist shallow and moderately deep substrates.

Related Ecosites



Dry to Fresh, Coarse: Oak Hardwood

B057Tt/Tl

L	M	H

Profile/Slope Sequence

Approximately 250m

Ecosite Description

Hardwood canopy consisting mostly of bur oak and/or red oak (> 50% cover of hardwood species). May be mixed with trembling aspen, white birch, American basswood, large-tooth aspen, and balsam fir. Shrub and herb moderately rich. Groundsurface mostly broadleaf litter with conifer litter and woody debris. Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 MD4 D2 D4												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (< 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees or coarse textured sites. Common understory vegetation includes mountain maple, beaked hazel, bush honeysuckle, large-leaved aster, wild sarsaparilla, and naked mitrewort.

Trees	*Quercus macrocarpa, Q. rubra, Populus tremuloides, Betula papyrifera, Tiliaamericana, Populus grandidentata, Abies balsamea, Sorbus decora*
Shrubs	*Acer spicatum, *Corylus cornuta, Diervilla lonicera, Lonicera canadensis, Rubuspubescens, *Linnaea borealis*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, Mitella nuda, Streptopus roseus, Clintonia borealis, *Trientalis borealis, *Maianthemum canadense, Cornuscanadensis*
Non-vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Hylocomium splendens, Rhytidiadelphus triquetrus, Dicranum polysetum*

Dry to Fresh, Coarse: Oak Hardwood

Ecology

Limitations to tree growth are result of high concentrations of coarse fragments from morainal deposits that may influence vegetation growth through reduction in rooting zone and moisture availability. Shrub and herb rich where canopy sparse. May be susceptible to drought. Maintained by frequent low intensity ground fires. Vegetation will likely succeed to another ecosite in the absence of a disturbance regime.

Ecoregional Variability

Uncommon across the boreal range. Restricted to 4S, 4W, 5S and southern portion of3E. May be found elsewhere if accompanied by warmer than average microclimate. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 4S and 4W. May be calcareous in 3E, 4S-1, and4S-6, resulting in an increase in the growth and vigour of the understory vegetation.

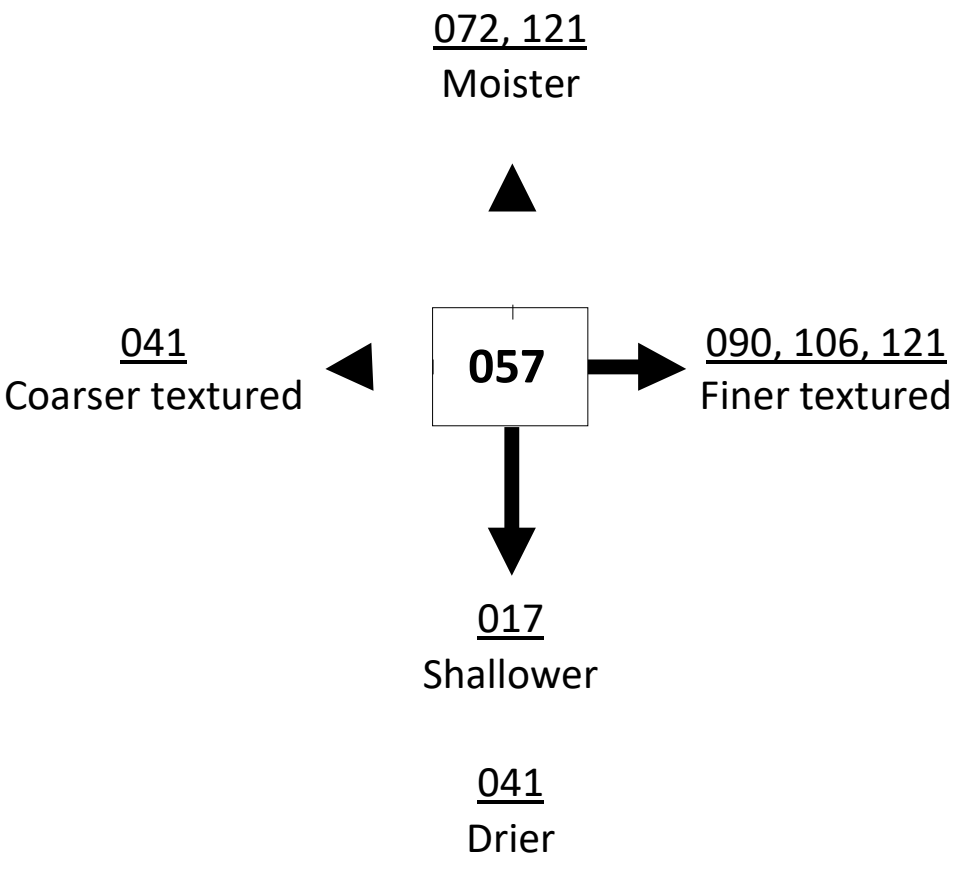
Bur oak most common in 5S-2 and 4S-6. Red oak most common in 3E-5. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occuron fresh sandy substrtaes (MR = 2) in western portion of 4S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates.

Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrates.

Related Ecosites



Dry to Fresh, Coarse: Maple Hardwood

B058Tt/Tl

L | *M* | *H*

Profile/Slope Sequence

Approximately 250m

Ecosite Description

Hardwood canopy consisting mostly of sugar maple and/or red maple (> 50% cover of the hradwood canopy). May be mixed with balsam fir, white spruce, trembling aspen, jack pine, black spruce, white birch, and large-tooth aspen. Shrub and herb moderatelyrich. Ground surface mostly broadleaf litter with conifer litter and woody debris.

Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 **M4** MD2 **MD4** D2 **D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (< 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees or coarse textured sites. Common understory vegetation includes mountain maple, beaked hazel, bush honeysuckle, large-leaved aster, wild sarsaparilla, and naked mitrewort.

Trees	**Acer saccharum, Abies balsamea, Picea glauca, Populus tremuloides, Pinus banksiana, Picea mariana, Betula papyrifera, Populus grandidentata, Acerrubrum, Sorbus decora*
Shrubs	*Acer spicatum, *Corylus cornuta, Diervilla lonicera, Lonicera canadensis, Rubus pubescens, *Linnaea borealis*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, Mitella nuda, Streptopus roseus, Clintonia borealis, *Trientalis borealis, *Maianthemum canadense, Cornuscanadensis*
Non- vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Hylocomium splendens,Rhytidiadelphus triquetrus, Dicranum polysetum*

Dry to Fresh, Coarse: Maple Hardwood

Ecology

Limitations to tree growth are result of high concentrations of coarse fragments from morainal deposits that may influence vegetation growth through reduction in rooting zone and moisture availability. Shrub and herb poor when canopy predominantly closed. Ground cover increases as canopy becomes more open. May succeed to another ecosite in the absence of a disturbance regime.

Ecoregional Variability

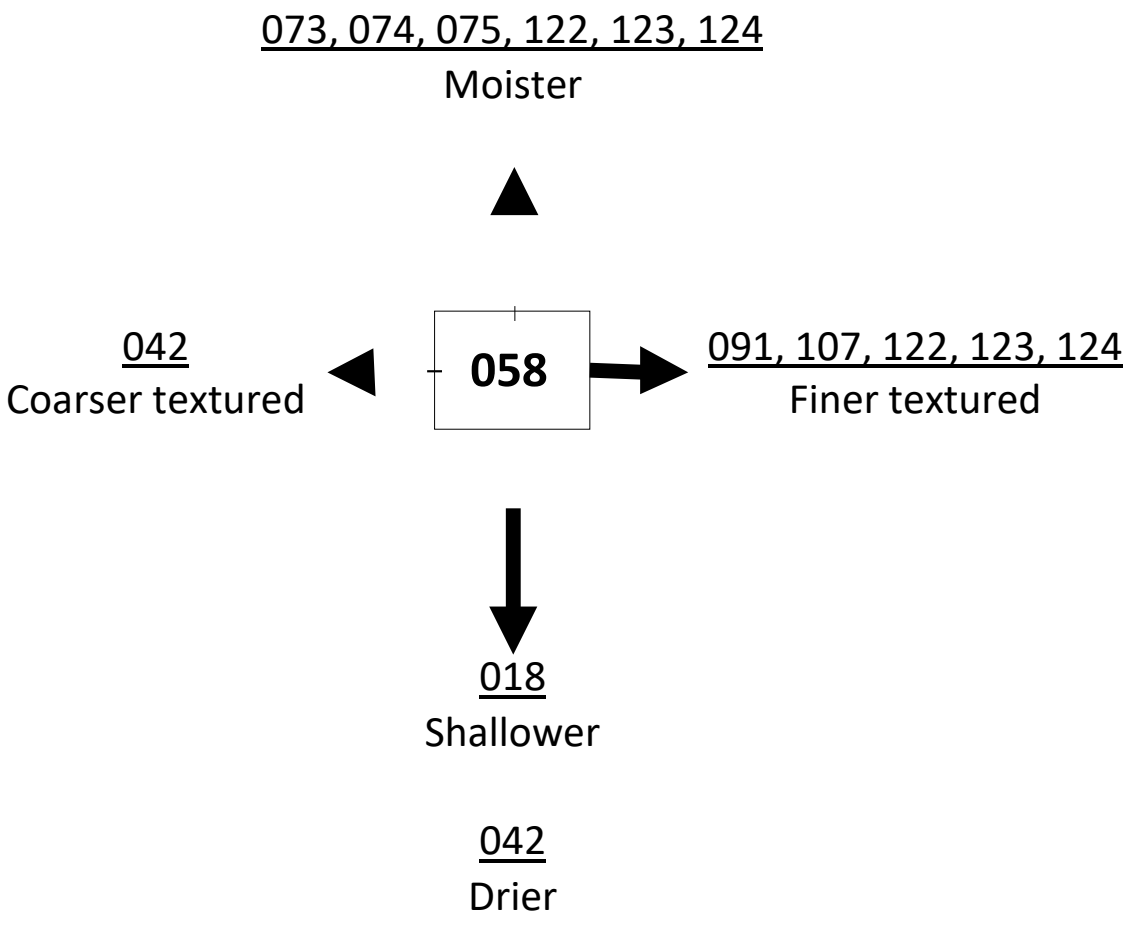
Uncommon across the boreal range. Restricted to 4W, 5S, and southern portion of 3E,3W and 4S. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and 4W. May be calcareous in 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 4S.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates.

Increased species diversity and abundance may occur over base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrates.

Related Ecosites

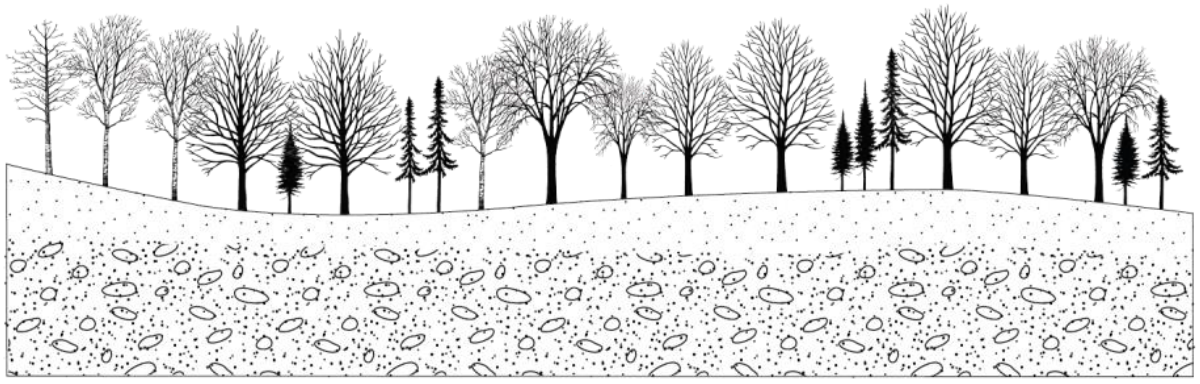


Dry to Fresh, Coarse: Mixedwood

B059Tt/Tl

L	M	H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Hardwood canopy consisting of a mixture of maple, ash, aspen, birch, elm, and/or oak species. No hardwood species is dominant. May be mixed with black spruce, balsam fir, white spruce, and jack pine. Varies from shrub and herb poor to moderately rich. Ground surface mostly broadleaf litter with conifer litter and woody debris. Substrate sandy to coarse loamy. Mostly > 15 cm deep and dry to fresh (MR = 2 or 3, if sandy;MR ≤ 3, if coarse loamy).

Substrate Description

Substrate Series	S1 M2 M4 MD2 MD4 D2 **D4**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD			D		
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (< 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees or coarse textured sites. Common understory vegetation includes mountain maple, beaked hazel, bush honeysuckle, large-leaved aster, wild sarsaparilla, naked mitrewort, and feathermoss.

Trees	**Acer saccharum, Fraxinus nigra, F. pennsylvanica, Populus tremuloides, Betula papyrifera, Picea mariana, Abies balsamea, Picea glauca, Pinusbanksiana, Ulmus americana, Quercus rubra, Sorbus decora*
Shrubs	*Acer spicatum, *Corylus cornuta, Diervilla lonicera, Lonicera canadensis, Rubuspubescens, *Linnaea borealis*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, Mitella nuda, Streptopus roseus, Clintonia borealis, *Trientalis borealis, *Maianthemum canadense, Cornuscanadensis*
Non-vascular	*Pleurozium schreberi, Ptilium crista-castrensis, Hylocomium splendens, Rhytidiadelphus triquetrus, Dicranum polysetum*

Dry to Fresh, Coarse: Mixedwood

Ecology

Limitations to tree growth are result of high concentrations of coarse fragments from morainal deposits that may influence vegetation growth through reduction in rooting zone and moisture availability. Shrub and herb poor when canopy predominantly closed. Ground cover increases as canopy becomes more open. Will likely succeed through gap phase stand replacement perpetuating an uneven-aged stand. Significantdisturbance event, such as fire, will result in even-aged stand.

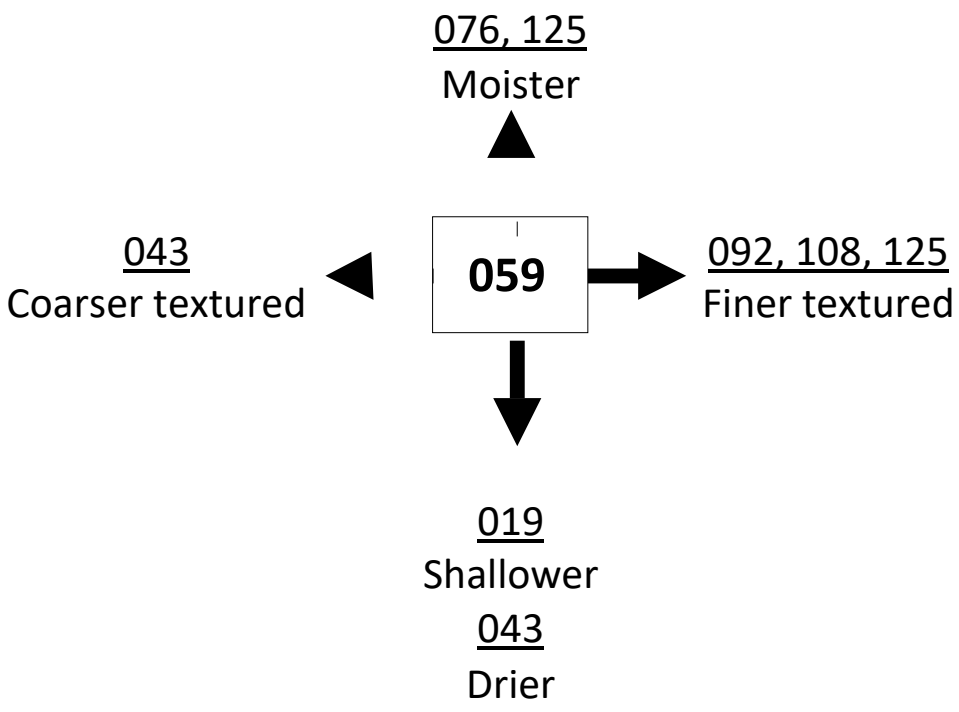
Ecoregional Variability

Widespread across the boreal range. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Sugar maple, red ash, yellow birch, American basswood, and red oak may occur in 4S, 4W, 5S, and southern portion of 3E. Norway spruce and red spruce may occur in 3W-5, 3E-4, and 3E-5. Reduced growth, shrub and herb diversity as well as abundant lichen and clubmoss ground cover may occur on fresh sandy substrates (MR = 2) in western portion of 3S and 4S. In 2W and 3S, mountain maple and wild sarsaparilla uncommon and green alder replaces beaked hazel and large-leaved aster.

Edaphic Variability

Substrate depth typically uniform. Variable with morainal deposits over rock. Often on crest, upper, and middle slope position but may also occur on toe slopes. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates. Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges mayoccur in moist shallow and moderately deep substrates

Related Ecosites

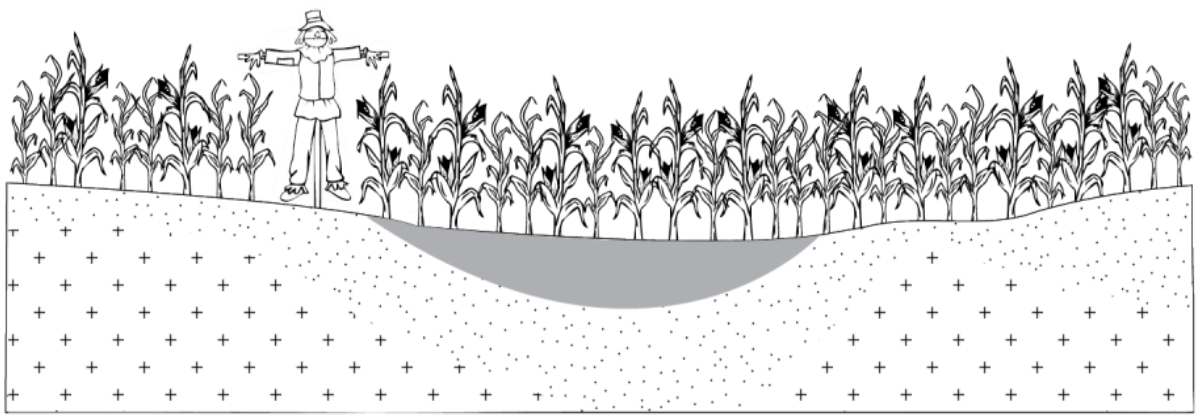


Moist, Coarse: Field

B060N

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous vegetation community maintained by continuous human alteration. Treesand shrubs generally absent. Ground surface mostly herbaceous litter and mineral material. Substrate sandy to coarse loamy. Deep (> 15 cm) and moist (MR = 4 or 5).

Substrate Description

Substrate Series	S1 M3 M5 M10 MD3 MD5 MD14 D3 D5 D14												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n			z						

Vegetation Description

Herbaceous or graminoid dominated community. Ecosite may be dominated by one species or have a variable composition depending on the land use. Scattered open-grown trees and shrubs may be present, but ≤ 10% absolute cover of either. Trees and shrubs when present include poplars, willows and alder. Common agricultural crops include wheat, rye, barley. Pastures and hayfields can include Canada blue- joint, Kentucky bluegrass, asters, quack grass, clovers, alfalfa, goldenrods and rushes. Limited lichens and mosses due to frequent human alteration of the site.

Trees	*Populus tremuloides, *P. balsamifera*
Shrubs	*Salix* spp.*, Alnus* spp.
Vascular Herbaceous	**Calamagrostis canadensis, *Poa pratensis, Symphyotrichum* spp.*, Elymus repens, Trifolium* spp.*, *Medicago sativa, Solidago* spp.*, Juncus* spp.*, Triticum aestivum, Hordeum vulgare, Secale cereale, Eurybia* spp.*, Erigeron* spp.*, *Phleum pratense, Vicia cracca, Taraxacum officinale*

Ecology

Substrate has a low nutrient holding capacity resulting in decreased growth rates andlow species diversity. Limitations to growth can also be from high coarse fragment concentrations in morainal deposits. Sites are typically croplands, heavily grazed pastures or hayfields. A distinctive plough layer (Ap) may be present, absent or less well developed on other sites. Maintenance of structure and composition through regular agricultural activities. After abandonment, ecosite will succeed to a meadow (B061).

Ecoregional Variability

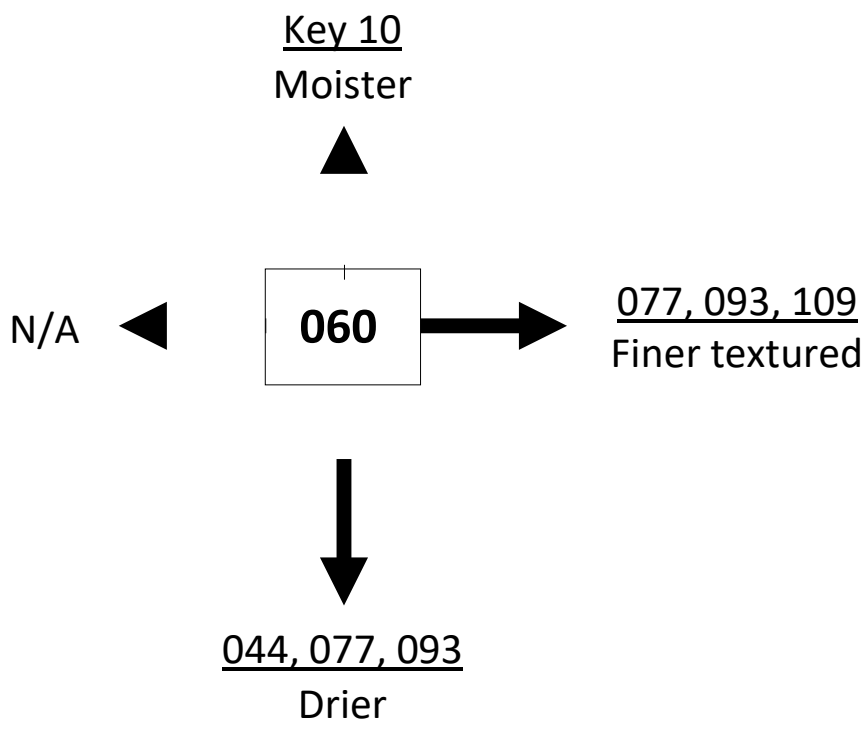
Uncommon across the boreal, and limited to agricultural areas near communities. Generally flat to rolling morainal deposits with occurrences of glaciofluvial material. Typically non-calcareous. Could have prairie species in hayfields and pastures within ecoregions 4S and 5S.

Edaphic Variability

Typically uniform in nutrient availability with variable moisture due to inconsistency of substrate depth over bedrock. Generally moderately deep to deep substrate. Depth of coarse moranial deposits variable which may result in bedrock controlled wetlands. Abundant stoniness in morainal deposits is common. Ecosite commonly on middle, lower, or level slope positions. Increased species diversity and abundance likely overbase-rich bedrock or inclusions of fine textured materials. Occasional very moist to wet inclusions may contain sedges and other species reflecting hydric conditions.

Tramping and bare patches may occur in heavily grazed fields as well as areas of unpalatable species (i.e. bracken fern, wool grass) may be present.

Related Ecosites

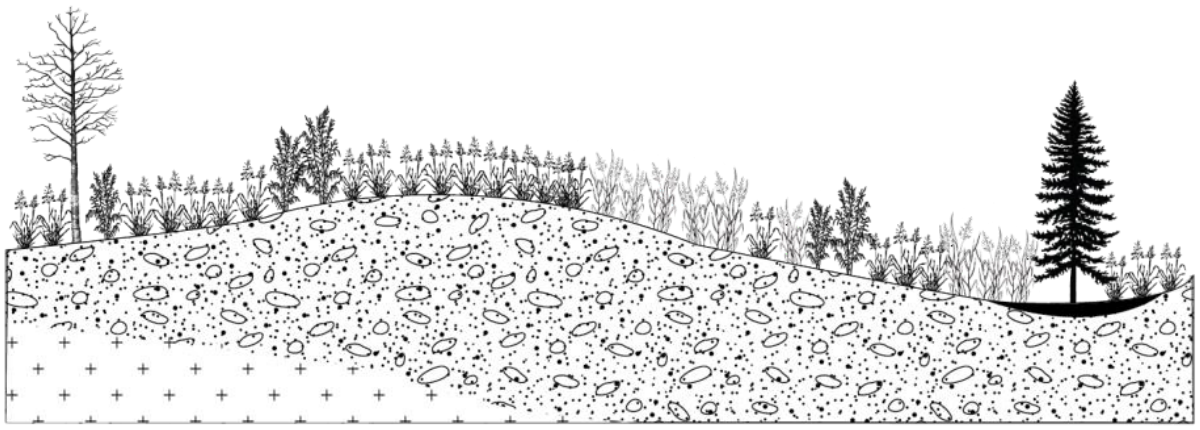


Moist, Coarse: Meadow

B061N

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Herbaceous (forb and/or graminoid) vegetation community. Trees and shrubs few or absent. Ground surface mostly herbaceous litter and mineral material. Substrate sandy to coarse loamy. Deep (> 15 cm) and moist (MR = 4 or 5).

Substrate Description

Substrate Series	S1 M3 M5 M10 MD3 MD5 MD14 D3 D5 D14											
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n			z						

Vegetation Description

Herbaceous or graminoid dominated community. Scattered, open-grown trees and shrubs may be present, but ≤ 10% absolute cover of either. Species composition variable dependant on time since abandonment. Trees and shrubs when present include trembling aspen, wild roses and willows. Herbaceous plants are abundant anddiverse may include cow vetch, Kentucky bluegrass, meadow rues and Canada anemone. Lichen and moss cover usually low and may include hair-cap mosses and fire moss.

Trees	*Populus tremuloides, Picea glauca*
Shrubs	*Rosa* spp.*, Salix* spp.
Vascular Herbaceous	*Vicia cracca, *Poa pratensis, Thalictrum* spp.*, Anemone canadensis, Calystegia sepium, Cirsium arvense, *Calamagrostis canadensis, Galium boreale, Sanicula marilandica, Spartina pectinata, Stachys palustris, Zizia aurea, Symphyotrichum*spp.*, Asclepias syriaca, Comandra umbellata, *Elymus trachycaulus, Carex* spp.
Non-vascular	*Polytrichum* spp.*, *Ceratodon purpureus*

Ecology

Substrate has a low nutrient holding capacity resulting in decreased growth rates andlow vegetation diversity. Limitations to growth can also be a result of high coarse fragment concentrations in morainal deposits. Sites are typically abandoned farmlands, active pastures, floodplains, gas and hydro corridors, and disturbed areasthat have not been invaded by woody growth. A distinctive plough layer (Ap) may be present. Characteristic species include native and introduced species (early abandonment) or predominately native species (later abandonment) depending on time since disturbance. Grasses that typically dominate newly abandoned fields are replaced by forbs as the meadow ages. In ecoregions 5S and 4S, structure and composition often maintained by low intensity grass fires or low to moderate intensitydisturbance (i.e. fire, grazing, vegetation control) in remainder of boreal. In the absence of disturbance, ecosite may succeed to a sparse shrub (B062) system.

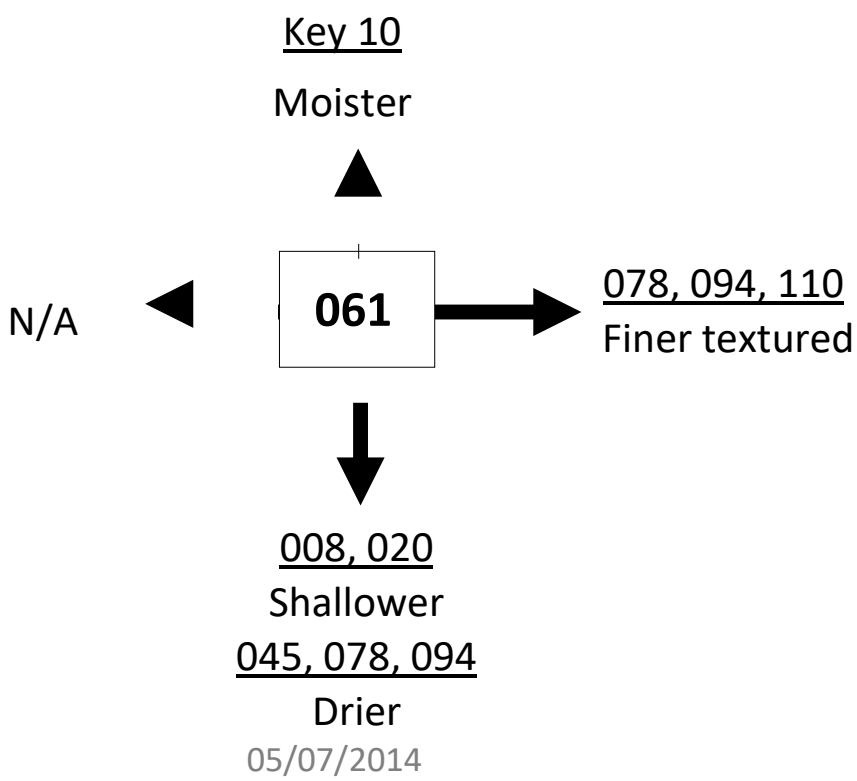
Ecoregional Variability

Widespread and uncommon across the boreal, and usually associated with abandoned farmlands and other disturbed areas. Generally flat to rolling morainal deposits with outwash deposits. Typically non-calcareous. Can also occur on the prairie fringe in the western part of the boreal. Sites within ecoregions 4S and 5S canhave a high proportion of prairie species not found in the rest of the boreal zone. Abandoned farmlands can have a high coverage of introduced species, such astimothy, quack grass and dandelion.

Edaphic Variability

Typically uniform in nutrient availability with variable moisture due to variation in substrate depth over bedrock. Generally moderately deep to deep substrate. Depth of coarse morainal deposits variable which may result in bedrock controlled wetlands. Abundant stoniness in morainal deposits common. Ecosite commonly on middle, lower, or level slope positions. Increased species diversity and abundance likely ininclusions of fine textured materials. Occasional very moist to wet inclusions may contain sedges and other herbaceous species reflecting hydric conditions.

Related Ecosites

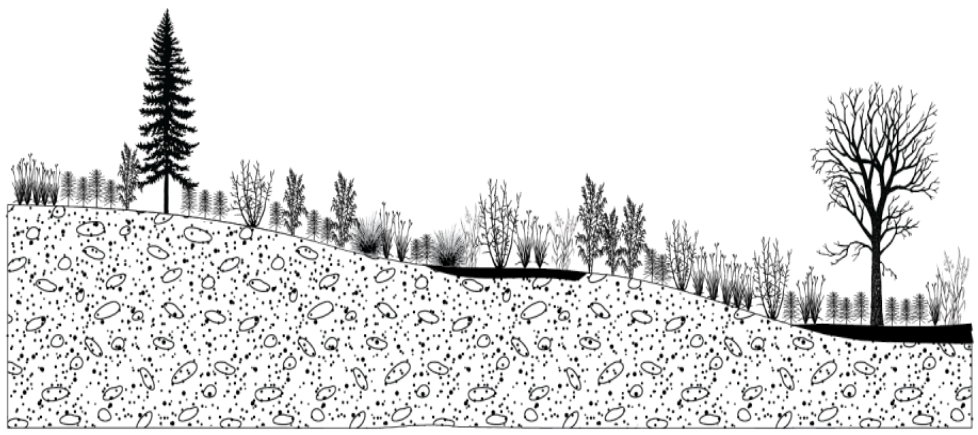


Moist, Coarse: Sparse Shrub

B062S

L	M	H

Profile/Slope Sequence



Approximately 50m

Ecosite Description

Scattered tall and/or short shrub community. Few trees, and moderately herb-rich. Ground surface mostly broadleaf litter and mineral soil. Substrate sandy to coarse loamy. Deep (> 15 cm) and moist (MR = 4 or 5).

Substrate Description

Substrate Series	S1 M3 M5 M10 MD3 MD5 MD14 D3 D5 D14												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v		w		x	h	s
Depth	R		VS		S			M		MD		D		
Chemistry	k				n					z				

Vegetation Description

Meadow with shrub coverage 10 - 25%. Scattered, open-grown trees often present with ≤ 10% absolute coverage. Trees and shrubs when present may include white spruce, poplars, willows, speckled alder and red-osier dogwood. Common herbaceous plants include sedges, field horsetail, fleabanes, bedstraws and rushes.Lichen and moss cover usually low.

Trees	*Picea glauca, *Populus balsamifera, P. tremuloides*
Shrubs	*Salix* spp., **Alnus incana, Cornus stolonifera, Myrica gale, Dasiphora fruticosa, Physocarpus opulifolius, Rhamnus alnifolia, Rosa* spp., **Spiraea alba*
Vascular Herbaceous	*Carex* spp., *Equisetum pratense, Erigeron* spp., *Galium* spp., *Juncus* spp., *Apocynum* spp., **Calamagrostis canadensis, *Cicuta maculata, *Fragaria virginiana, *Mentha arvensis, *Mimulus ringens, Onoclea sensibilis, Prenanthes racemosa, Primula mistassinica, Rubus pubescens, Stachys* spp.
Non-vascular	*Polytrichum* spp., **Ceratodon purpureus, Pleurozium schreberi*

Ecology

Substrate has a low nutrient holding capacity that can reduce growth rates and species diversity. Limitations to growth can also be a result of high coarse fragment concentrations in morainal deposits. Sites are typically abandoned farmlands and other disturbed areas that are gradually being invaded by shrubs. In ecoregions 5Sand 4S, these can also be prairie outliers maintained by low intensity grass fires.
Maintenance of structure and composition associated with low to moderate intensity disturbance (grazing, fire, vegetation control). In the absence of disturbance, ecositewill succeed to a shrub (B063) or treed system.

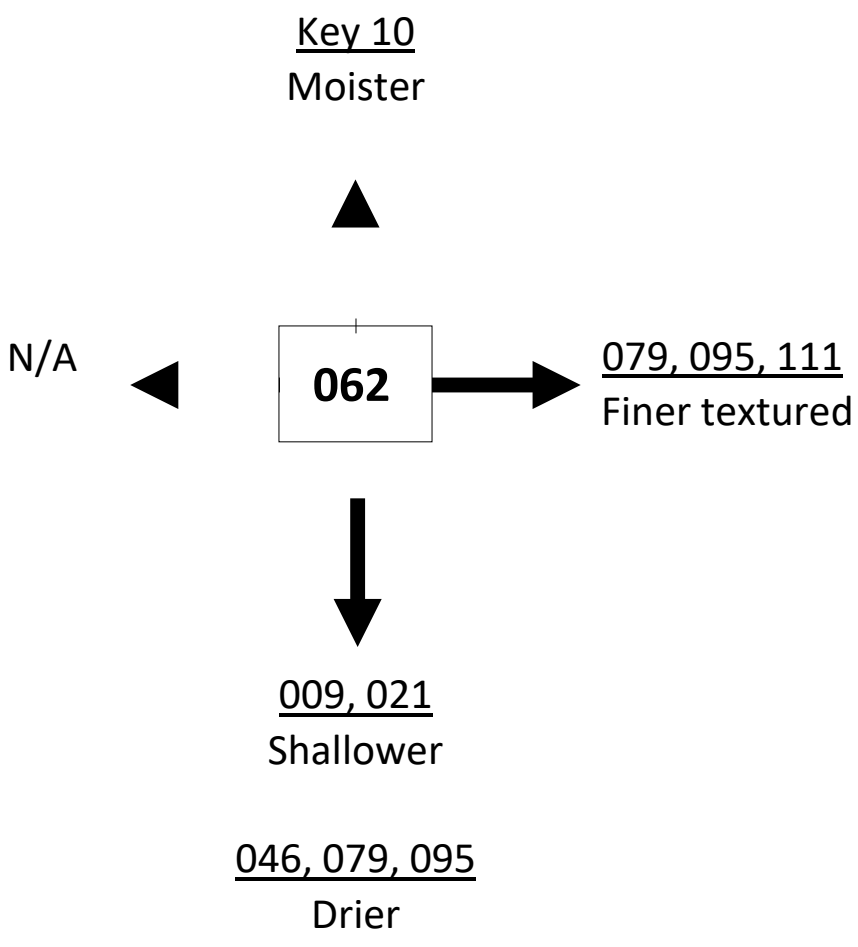
Ecoregional Variability

Widespread and uncommon across the boreal. Generally flat to rolling morainal deposits or outwash areas. Can also occur on the prairie fringe in the western part ofthe boreal. Typically non-calcareous. Sites within ecoregions 4S and 5S can have prairie species not found farther east. Abandoned farmlands can have a high coverage of exotic species, such as timothy, quackgrass and dandelion.

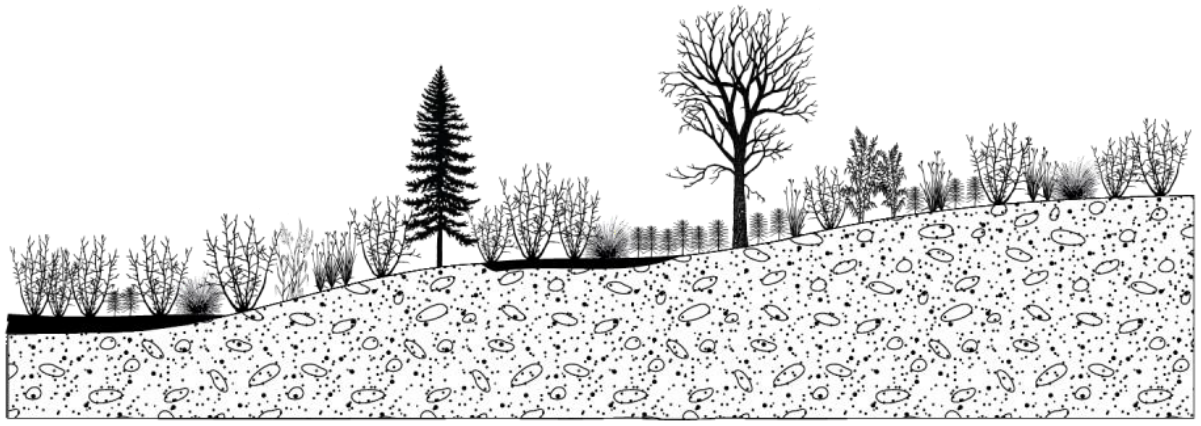
Edaphic Variability

Typically moderately deep to deep substrates, with uniform nutrient availability. Moisture can vary in bedrock controlled landscapes due to variation in soil depth. Canbe stony, especially on morainal deposits. Occasional very moist to wet inclusions may contain sedges and other herbaceous species reflecting hydric conditions. Oftenon lower, middle, or level slope positions. Increased species diversity and abundancelikely over base-rich bedrock or inclusions of fine textured materials.

Related Ecosites



Profile/Slope Sequence



Approximately 50m

Ecosite Description

Tall and/or short shrub community. Few trees, and moderately herb-rich. Ground surface mostly broadleaf litter. Substrate sandy to coarse loamy. Deep (> 15 cm) andmoist (MR = 4 or 5).

Substrate Description

Substrate Series	S1 M3 M5 M10 MD3 MD5 MD14 D3 D5 D14												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Shrub coverage ≥ 25%. Community appearance varies from scattered shrubs withgrass and herbaceous understorey to dense thickets of low and/or tall shrubs. Scattered open-grown trees often present but ≤ 10% absolute coverage. Common trees include balsam poplar and white spruce. Shrubs may include willows, speckledalder and red-osier dogwood. Herbaceous plants can include sedges, horsetails, fleabanes, bedstraws and rushes. Lichen and moss cover usually low.

Trees	**Populus balsamifera, Picea glauca*
Shrubs	*Salix* spp.*, *Alnus incana, Cornus stolonifera, Myrica gale, Dasiphora fruticosa, Physocarpus opulifolius, *Spiraea alba, Acer spicatum, *Viburnum opulus, *Rosa acicularis*
Vascular Herbaceous	*Carex* spp.*, Equisetum* spp.*, Erigeron* spp.*, Galium* spp.*, Juncus* spp.*,*Calamagrostis canadensis, *Mentha arvensis, *Fragaria virginiana, Apocynum* spp.*, Rubus pubescens, *Cicuta maculata, Prenanthes racemosa,Primula mistassinica, Stachys* spp.*, Thalictrum* spp.*, Vicia* spp.
Non-vascular	*Sphagnum* spp.*, Polytrichum* spp.*, Pleurozium schreberi*

Moist, Coarse: Shrub

Ecology

Substrate has a low nutrient holding capacity resulting in decreased growth rates andlow species diversity. Limitations to growth can also be a result of high coarse fragment concentrations in morainal deposits. Sites are typically abandoned farmlands or areas disturbed by fire or logging that have not been invaded by tree regeneration. Shrubs colonize and occupy the site first, and can limit tree regeneration for several decades due to competition. Maintenance of structure and composition associated with low to moderate intensity fire or competition. In the absence of fire or other disturbances, this ecosite may succeed to a treed system.

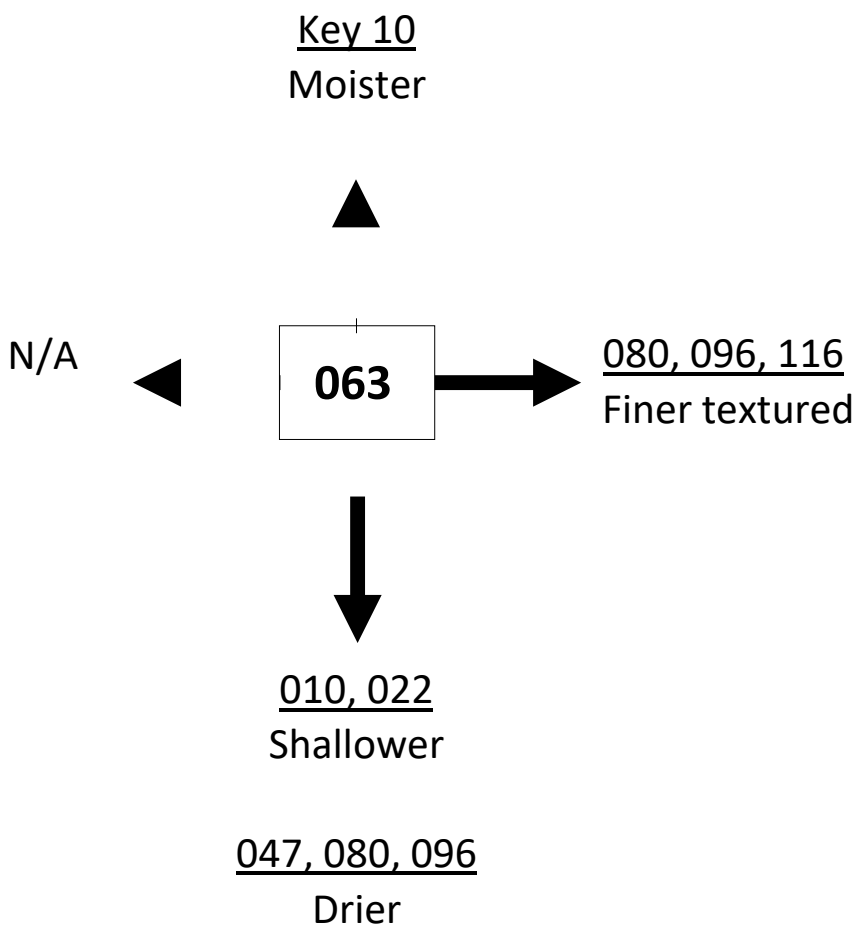
Ecoregional Variability

Widespread and common across the boreal. Associated with flat to rolling morainal deposits and outwash plains. Typically non-calcareous.

Edaphic Variability

Typically moderately deep to deep substrates, with uniform nutrient availability. Moisture can vary in bedrock controlled landscapes due to variation in soil depth. Canbe stony, especially on morainal deposits. Occasional very moist to wet inclusions may contain sedges and other herbaceous species reflecting hydric conditions. Oftenon lower, middle, or level slope positions. Increased species diversity and abundancelikely over base-rich bedrock or inclusions of fine textured materials.

Related Ecosites



Moist, Coarse: Red Pine - White Pine Conifer

B064Tt/Tl

L	M	H

Profile/Slope Sequence

Approximately 250m

Ecosite Description

Conifer canopy consisting of eastern white pine and/or red pine (≥ 20% absolute cover). May be mixed with balsam fir, trembling aspen, white birch, jack pine, whitespruce, large-tooth aspen, eastern white cedar, and black ash. Shrub and herb moderately poor. Ground surface mostly moss with conifer litter and broadleaf litter.Substrate sandy to coarse loamy. Mostly > 15 cm deep and moist (MR = 4 or 5).

Substrate Description

Substrate Series	S1 M3 M5 M10 MD3 MD5 MD14 D3 **D5** D14											
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mul l		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (< 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes mountain maple, beaked hazel, low sweet blueberry, large-leaved aster, wild sarsaparilla, and eastern bracken-fern.

Trees	*Pinus strobus, Abies balsamea, Populus tremuloides, Pinus resinosa, Betula papyrifera, Pinus banksiana, Picea glauca, Populus grandidentata, Thuja occidentalis, Fraxinus nigra*
Shrubs	*Acer spicatum, *Corylus cornuta, Vaccinium angustifolium, Diervilla lonicera, V. myrtilloides, *Linnaea borealis, *Chimaphila umbellata*
Vascular Herbaceous	*Eurybia macrophylla, Aralia nudicaulis, *Pteridium aquilinum, Streptopus roseus, Clintonia borealis, *Trientalis borealis, *Maianthemum canadense, Cornus canadensis*
Non-vascular	*Pleurozium schreberi, Hylocomium splendens, Dicranum polysetum, Cladina rangiferina*

Ecology

Limitations to tree growth are result of high concentrations of coarse fragments from morainal deposits that may influence vegetation growth through reduction in rootingzone and moisture availability. Coniferous species may form a closed canopy.
Susceptible to paludification. Associated with disturbance regimes such as low to moderate intensity fire to maintain the red pine and eastern white pine composition. Without the influence of a disturbance regime, balsam fir and other boreal tree speciesmay increase and replace the occurrences of red pine and eastern white pine causing succession to another ecosite.

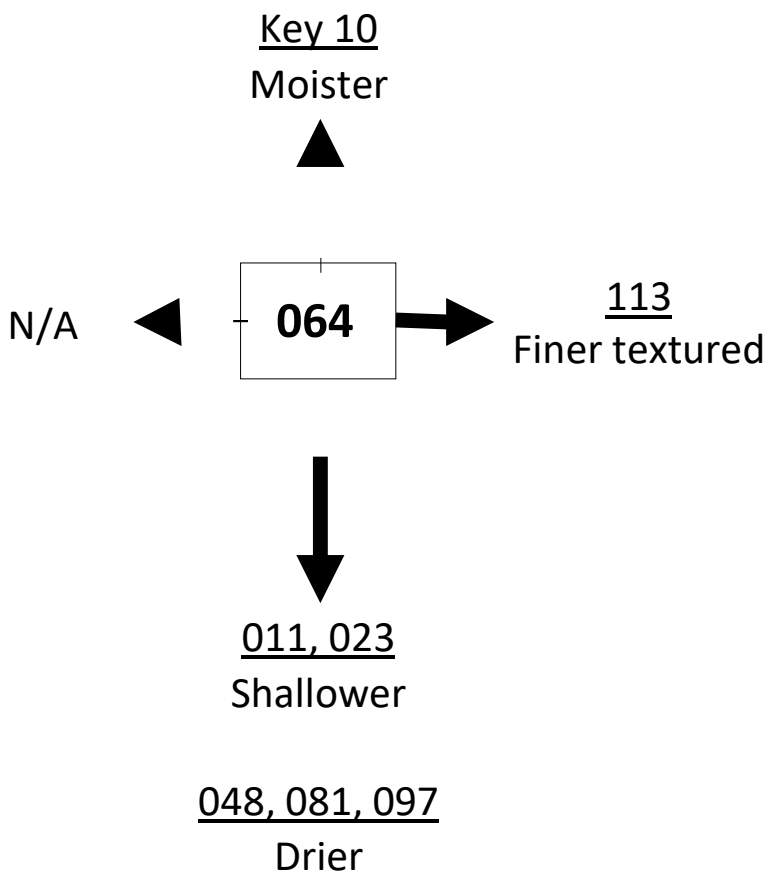
Ecoregional Variability

Uncommon across the boreal range. Occurs in 4S, 4W, and 5S and southern portion of 3E. Often associated with deep or shallow morainal or glaciofluvial parent materialsover bedrock. Typically non-calcareous in 4S and 4W. May be calcareous in 3E, 4S-1,and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Yellow birch, red maple, American basswood, and red oak may occur in 4S, 4W, 5S, and southern portion of 3E.

Edaphic Variability

Substrate depth typically variable. Occurs on wide variety of slope positions and substrate depths. Xeric vegetation, such as reindeer lichen and green alder, as well asdecreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates (MR = 0 or 1). Increased species diversity and abundance may occur on base-rich bedrock or inclusions of fine textured materials. Speckled alder, sphagnum, and sedges may occur in moist shallow and moderately deep substrates.

Related Ecosites

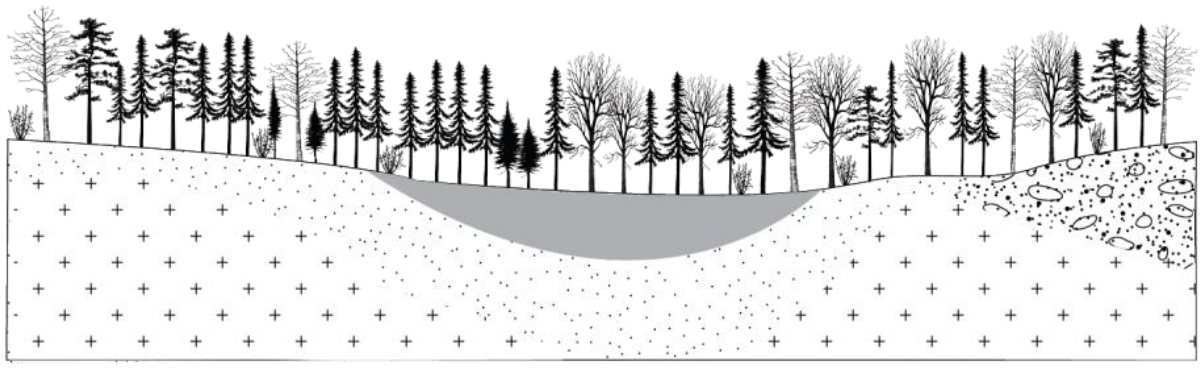


Moist, Coarse: Pine - Black Spruce Conifer

B065Tt/Tl

L | *M* | *H*

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting of black spruce and/or jack pine (> 50% cover of conifer species). Understory tree species consisting of black spruce and balsam fir. Shrub andherb moderately poor. Ground surface mostly moss with conifer litter, woody debris, and broadleaf litter. Substrate sandy to coarse loamy. Mostly > 15 cm deep and moist (MR = 4 or 5).

Substrate Description

Substrate Series	S1 **M3 M5 M10** MD3 **MD5** MD14 **D3 D5 D14**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	A N
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat		Folic
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor		Anmoor		
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n				z					

Vegetation Description

Tall treed (> 10 m) and low treed (< 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes creeping snowberry, Labrador-tea, velvet-leaf blueberry, bunchberry, wild lily-of-the-valley, goldthread, feathermoss, and *Sphagnum* spp.

Trees	*Picea mariana, Pinus banksiana, Populus tremuloides, Abies balsamea, Betulapapyrifera, Larix laricina*
Shrubs	*Gaultheria hispidula*, *Rhododendron groenlandicum, Vaccinium myrtilloides, V.angustifolium, *Linnaea borealis, Kalmia angustifolia*
Vascular Herbaceous	*Cornus canadensis, *Maianthemum canadense, Coptis trifolia, Clintonia borealis, Equisetum sylvaticum*
Non- vascular	*Pleurozium schreberi, Dicranum polysetum, Ptilium crista-castrensis,Hylocomium splendens, Cladina rangiferina, Sphagnum capillifolium*

Moist, Coarse: Black Spruce - Pine Conifer

Ecology

Limitations to tree growth are result of high concentrations of coarse fragments from morainal deposits that may influence vegetation growth through reduction in rooting zone and moisture availability. Abundant feathermoss under closed conifer canopy. Susceptible to paludification. Maintained by fire regime typical of the boreal forest. Fireregime produces young stands dominated by jack pine. With increased moisture availability, black spruce abundance varies from sparse to abundant and increases with age.

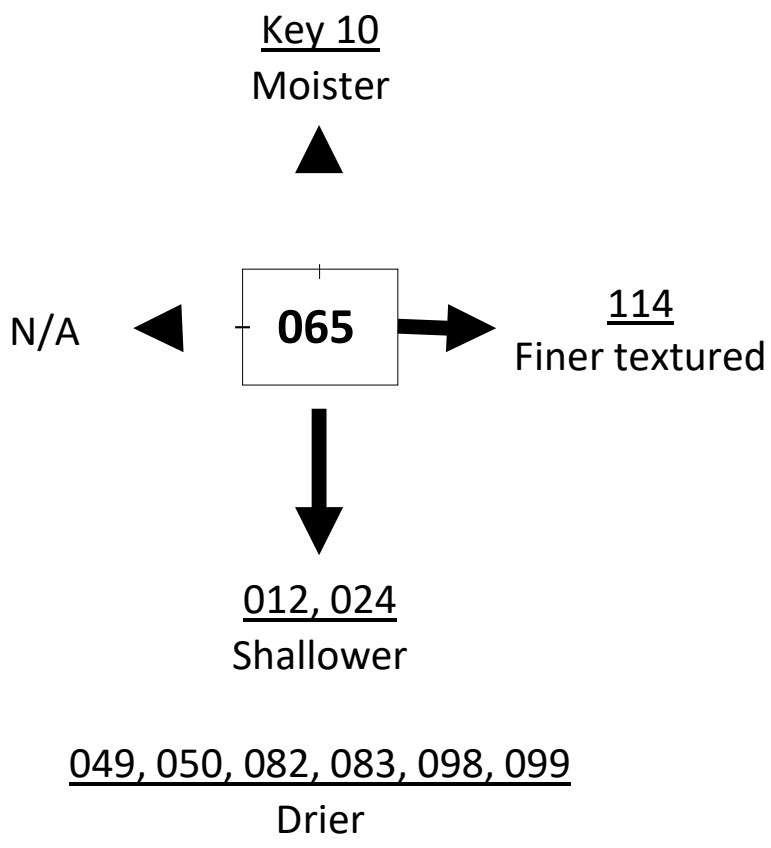
Ecoregional Variability

Widespread across the boreal range. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1 and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Eastern white pine, red pine, and red maple may occur in 4W, 5S, and southern portion of 3E, 3W, and 4S. Tendency towards black spruce in 2E, 2W, 3E, and eastern half of 3W. Tendency towards jack pine and white birch (≤ 50%) in 4S and 3S. In 2W and 3S low sweet blueberry is uncommon.

Edaphic Variability

Substrate depth variable, especially with morainal deposits over rock. Occurs on wide variety of slope positions and substrate depths. Xeric vegetation, such as reindeer lichen and green alder, as well as decreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates (MR = 0 or 1). Increased species diversity and abundance may occur on base-rich bedrock or inclusions of finetextured materials. Beaked hazel, mountain maple, speckled alder, large-leaved aster,and sedges may occur in moist shallow and moderately deep substrates.

Related Ecosites

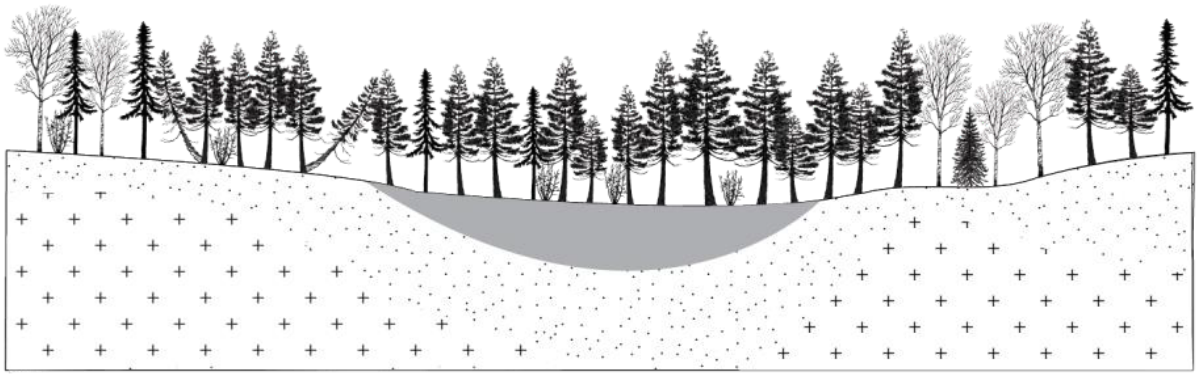


Moist, Coarse: Cedar (Hemlock) Conifer

B066Tt/Tl

L	M	H

Profile/Slope Sequence



Approximately 250m

Ecosite Description

Conifer canopy consisting mostly of eastern white cedar and/or eastern hemlock (> 50% cover of conifer species). Eastern hemlock rare. May be mixed with white birch,white spruce, balsam fir, black spruce, balsam poplar, and trembling aspen.
Understory tree species consisting of balsam fir and eastern white cedar. Shrub andherb abundant. Ground surface mostly moss with conifer litter and broadleaf litter.
Substrate sandy to coarse loamy. Mostly > 15 cm deep and moist (MR = 4 or 5).

Substrate Description

Substrate Series	S1 M3 M5 M10 MD3 **MD5 MD14** D3 **D5 D14**												
Mode of Deposition	RO	CO	MO	GF	FL	GL	LA	EO	OR	GW	WA	CX	AN
Family	Sandy		Coarse Loamy		Silty		Fine Loamy		Clayey		Peat	Folic	
Humus Form	Mull		Moder		Fibrimor		Humimor		Peatymor			Anmoor	
Moisture Regime	Θ	0	1	2	3	4	5	6	7	8	9	x	h	s
Moisture	d		f			m		v	w			x	h	s
Depth	R		VS		S		M		MD		D			
Chemistry	k				n			z						

Vegetation Description

Tall treed (> 10 m) and low treed (< 10 m) canopy closure variable. Low treed (≤ 10 m) indicative of younger trees. Common understory vegetation includes mountain maple, dwarf raspberry, creeping snowberry, star-flower, kidney-leaved violet, bunchberry, and feathermoss.

Trees	*Thuja occidentalis, Betula papyrifera, Picea glauca, Abies balsamifera, Picea mariana, *Populus balsamifera, P. tremuloides, Fraxinus nigra, Pinus strobus, Betula alleghaniensis, Sorbus decora*
Shrubs	*Acer spicatum, Rubus pubescens, Gaultheria hispidula, *Linnaea borealis, Lonicera canadensis, Rhododendron groenlandicum, Cornus stolonifera, *Rosa acicularis*
Vascular Herbaceous	**Trientalis borealis, Viola renifolia, Cornus canadensis, Coptis trifolia, Mitella nuda, Aralia nudicaulis, *Maianthemum canadense, Galium triflorum, Maianthemum stellatum, Streptopus roseus*
Non-vascular	*Pleurozium schreberi, Hylocomium splendens, Rhytidiadelphus triquetrus, Ptilium crista-castrensis, Dicranum polysetum*

Moist, Coarse: Cedar (Hemlock) Conifer

Ecology

Limitations to tree growth are result of high concentrations of coarse fragments from morainal deposits that may influence vegetation growth through reduction in rooting zone and moisture availability. Species diversity increases as canopy becomes moreopen. Susceptible to paludification. Eastern white cedar often late successional.
Associated with islands or rock knobs which are isolated from continuous fuel pathways. Without fire, organic material accumulates and site becomes increasinglycomplex. Fire event will likely require re-classification of ecosite.

Ecoregional Variability

Widespread across the boreal range. Often associated with deep or shallow morainal or glaciofluvial parent materials over bedrock. Typically non-calcareous in 3W, 4S, and4W. May be calcareous in 2E, 2W, 3E, 4S-1, and 4S-6, resulting in an increase in the growth and vigour of the understory vegetation. Eastern hemlock is restricted to 3E-5.

Edaphic Variability

Substrate depth typically variable. Occurs on wide variety of slope positions and substrate depths. Xeric vegetation, such as reindeer lichen and green alder, as well asdecreased shrub and herb diversity may occur on exposed bedrock or very shallow (≤ 15 cm) substrates (MR = 0 or 1). Increased species diversity and abundance may occur over base-rich bedrock or inclusions of fine textured materials. Beaked hazel, speckled alder, large-leaved aster, sphagnum, and sedges may occur in moist shallowand moderately deep substrates.

Related Ecosites