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## Appendix 1. Plant Species List

For the reader's convenience, the following plant species list is sorted by both scientific and common name. Vascular plant scientific and common names follow *NWT Species 2006-2010* (Working Group on General Status of NWT Species (2006)); scientific names are based on the *Flora of North America*<sup>10</sup>. Non-vascular plant names follow those given in *Alberta Plants and Fungi – Master Species List and Species Group Checklists* (Alberta Environmental Protection 1993). Some unusual plants of the Taiga Plains Ecoregion are shown below.



The northern groundcone, *Boschniakia rossica*, has no chlorophyll and is a parasite of alders and willows. It is uncommon in the southern Taiga Plains, but frequently occurs under white spruce – alder – willow stands on the Mackenzie Delta. This specimen is about 10 cm tall.  
*Photo: R. Decker*



Insectivorous plants are found on wetlands throughout the Taiga Plains. The English sundew (*Drosera anglica*) catches insects on modified leaves with glue-tipped hairs (inset) that fold over and trap the victim; the leaf surface secretes digestive enzymes. Individual plants are only a few centimeters across.  
*Photo: D. Downing*



The northern pitcher plant, *Sarracenia purpurea*, is another insectivorous plant of wetlands. It has thick, leathery leaves (at the base of the flower stalk) that form a container holding water and digestive enzymes. Insects crawl onto the leaves searching for nectar, but cannot escape because of downward-facing hairs on the inner leaf surface (inset) and eventually drown in the pool of water below. The flowering stalks are about 30 cm high; the leaves are about 10cm long.  
*Photo: D. Downing*



Red glasswort (*Salicornia rubra*) is an uncommon plant with a fleshy stem and rudimentary leaves (inset) that grows on saline meadows of the Slave Lowland MB Ecoregion in the southeast Taiga Plains and occasionally on saline soils elsewhere. Individual plants are less than 10 cm tall and have a spreading growth form. *Photo: R. Decker*

<sup>10</sup> <http://hua.huh.harvard.edu/FNA/>. Information on vascular plant nomenclature sources provided by Suzanne Carrière, Government of the Northwest Territories, February 2007.

<p>Alaska paper birch  <b>Alnus viridis</b> (Chaix.) DC.  alpine bilberry, bilberry  <b>Aralia nudicaulis</b> L.  <b>Arctostaphylos rubra</b> (Rehd. &amp; Wils.) Fern  <b>Arctostaphylos uva-ursi</b> (L.) Spreng.  awned sedge  balsam poplar  <b>Betula glandulosa</b> Michx.  <b>Betula neoalaskana</b> Michx.  <b>Betula papyrifera</b> Marsh.  black crowberry  black spruce  <b>Boschniakia rossica</b> (Cham. &amp; Schlecht.) Fedtsch.  bunchberry, dwarf dogwood  <b>Calamagrostis canadensis</b> (Michx.) Beauv.  <b>Carex atherodes</b> Spreng.  <b>Carex</b> spp.  <b>Cassiope tetragona</b> (L.) D. Don  <b>Chamaedaphne calyculata</b> (L.) Moench  <b>Chamerion angustifolium</b> (L.) Holub  <b>Cladina mitis</b> (Sandst.) Hale &amp; W. Culb.  <b>Cladonia</b> spp., <b>Cladina</b> spp.  cloudberry, baked-apple  common bearberry  common Labrador tea  common wild rose, woods rose  <b>Cornus canadensis</b> L.  <b>Cornus sericea</b> L.  cotton-grass  <b>Drepanocladus</b> spp.  <b>Drosera anglica</b> Huds.  <b>Dryas integrifolia</b> M. Vahl.  dwarf birch, ground birch  dwarf red raspberry, dewberry  <b>Empetrum nigrum</b> L. ssp. <b>hermaphroditum</b> (Lge.) Böcher  <b>Equisetum pratense</b> Ehrh.  <b>Equisetum</b> spp.  <b>Eriophorum</b> spp.  fireweed  fox-tail barley  green alder  <b>Hordeum jubatum</b> L.  horsetails  jack pine  junipers  larch (tamarack)  <b>Larix laricina</b> (Du Roi) Koch  leatherleaf  <b>Ledum groenlandicum</b> Oeder  <b>Ledum palustre</b> subsp. <b>decumbens</b> (Aiton) Hultén  lichens, reindeer lichens  lodgepole pine  lodgepole x jack pine  low-bush cranberry, squashberry  meadow horsetail  mountain avens (entire-leaved mountain avens)</p>	<p><b>Betula neoalaskana</b> Michx.  green alder  <b>Vaccinium uliginosum</b> L.  wild sarsaparilla  red bearberry  common bearberry  <b>Carex atherodes</b> Spreng.  <b>Populus balsamifera</b> L.  dwarf birch, ground birch  Alaska paper birch  paper birch, white birch  <b>Empetrum nigrum</b> L. ssp. <b>hermaphroditum</b> (Lge.)  <b>Picea mariana</b> (Mill.) BSP.  northern groundcone  <b>Cornus canadensis</b> L.  reed bent-grass, bluejoint  awned sedge  sedges  arctic white heather, mountain-heather  leatherleaf  fireweed  reindeer lichen  lichens, reindeer lichens  <b>Rubus chamaemorus</b> L.  <b>Arctostaphylos uva-ursi</b> (L.) Spreng.  <b>Ledum groenlandicum</b> Oeder  <b>Rosa woodsii</b> Lindl.  bunchberry, dwarf dogwood  red osier dogwood  <b>Eriophorum</b> spp.  One of several mosses comprising wet moss peat  English sundew  mountain avens (entire-leaved mountain avens)  <b>Betula glandulosa</b> Michx.  <b>Rubus pubescens</b> Raf.  black crowberry  meadow horsetail  horsetails  cotton-grass  <b>Chamerion angustifolium</b> (L.) Holub.  <b>Hordeum jubatum</b> L.  <b>Alnus viridis</b> (Chaix.) DC.  fox-tail barley  <b>Equisetum</b> spp.  <b>Pinus banksiana</b> Lamb.  <b>Juniperus</b> spp.  <b>Larix laricina</b> (Du Roi) Koch  larch (tamarack)  <b>Chamaedaphne calyculata</b> (L.) Moench  common Labrador tea  northern Labrador tea, narrow-leaved Labrador tea  <b>Cladonia</b> spp., <b>Cladina</b> spp.  <b>Pinus contorta</b> Loud. var. <b>latifolia</b> Engelm.  <b>Pinus contorta</b> x <b>banksiana</b>  <b>Viburnum edule</b> (Michx.) Raf.  <b>Equisetum pratense</b> Ehrh.  <b>Dryas integrifolia</b> M. Vahl.</p>
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mountain cranberry, rock cranberry, bog cranberry	<b>Vaccinium vitis-idaea</b> L.
mountain-heather, arctic white heather	<b>Cassiope tetragona</b> (L.) D. Don
northern groundcone	<b>Boschniakia rossica</b> (Cham. & Schlecht.) Feddsch.
northern Labrador tea, narrow-leaved Labrador tea	<b>Ledum palustre</b> subsp. <b>decumbens</b> (Aiton) Hultén
paper birch, white birch	<b>Betula papyrifera</b> Marsh
peat mosses	<b>Sphagnum</b> spp, <b>Drepanocladus</b> spp. .
<b>Picea glauca</b> (Moench) Voss	white spruce
<b>Picea mariana</b> (Mill.) BSP.	black spruce
<b>Pinus banksiana</b> Lamb.	jack pine
<b>Pinus contorta</b> Loud. var. <b>latifolia</b> Engelm.	lodgepole pine
<b>Pinus contorta</b> x <b>banksiana</b>	lodgepole x jack pine
northern pitcher plant	<b>Sarracenia purpurea</b> L.
<b>Plantago eriopoda</b> Torr.	saline plantain
<b>Populus balsamifera</b> L.	balsam poplar
<b>Populus tremuloides</b> Michx.	trembling aspen
<b>Dasiphora fruticosa</b> (L.) Rydberg	shrubby cinquefoil
prickly rose	<b>Rosa acicularis</b> Lindl.
reed bent-grass, bluejoint	<b>Calamagrostis canadensis</b> (Michx.) Beauv.
red bearberry	<b>Arctostaphylos rubra</b> (Rehd. & Wils.) Fern
red glasswort	<b>Salicornia rubra</b> A. Nels.
red osier dogwood	<b>Cornus sericea</b> L.
reindeer lichen	<b>Cladina mitis</b> (Sandst.) Hale & W. Culb.
<b>Rosa acicularis</b> Lindl.	prickly rose
<b>Rosa</b> spp.	wild and prickly rose
<b>Rosa woodsii</b> Lindl.	common wild rose, woods rose
<b>Rubus chamaemorus</b> L.	cloudberry, baked-apple
<b>Rubus pubescens</b> Raf.	dewberry, dwarf red raspberry
<b>Salicornia rubra</b> A. Nels.	red glasswort
saline plantain	<b>Plantago eriopoda</b> Torr.
<b>Salix</b> spp.	willows
<b>Sarracenia purpurea</b> L.	northern pitcher plant
sedges	<b>Carex</b> spp.
<b>Shepherdia canadensis</b> (L.) Nutt.	Canada buffaloberry, soapberry
shrubby cinquefoil	<b>Dasiphora fruticosa</b> (L.) Rydberg.
snowberry	<b>Symphoricarpos albus</b> (L.) Blake
soapberry, Canada buffaloberry	<b>Shepherdia canadensis</b> (L.) Nutt.
<b>Sphagnum</b> spp.	peat mosses
English sundew	<b>Drosera anglica</b> Huds.
<b>Symphoricarpos albus</b> (L.) Blake	snowberry
trembling aspen	<b>Populus tremuloides</b> Michx.
<b>Vaccinium uliginosum</b> L.	alpine bilberry, bilberry
<b>Vaccinium vitis-idaea</b> L.	rock cranberry, bog cranberry, mountain cranberry
<b>Viburnum edule</b> (Michx.) Raf.	squashberry, low-bush cranberry
white birch, paper birch	<b>Betula papyrifera</b> Marsh
white spruce	<b>Picea glauca</b> (Moench) Voss
wild and prickly rose	<b>Rosa</b> spp.
wild sarsaparilla	<b>Aralia nudicaulis</b> L.
willows	<b>Salix</b> spp.



## Appendix 2. Changes to 1996 Ecozones and Ecoregions

### Introduction

This Appendix summarizes the changes made to the 1996 version of Ecozones and Ecoregions as defined by the Ecological Stratification Working Group (1996) that have resulted in the current version as presented in this report.

The review process started in early 2004, when the Government of the Northwest Territories (GNWT) contracted Timberline Forest Inventory Consultants (Timberline) to complete a review of the Ecozone, Ecoregion, and Soil Landscapes of Canada (SLC) polygon framework focusing on the Taiga Plains and Boreal Plains Ecozones. In March 2004, a summary report was submitted (Downing 2004). The Timberline report made the following overall recommendations respecting Ecozones and Ecoregions:

- Reassign the single ecoregion belonging to the Boreal Plains Ecozone within the Northwest Territories to the Taiga Plains Ecozone, and remove the Boreal Plains Ecozone from the Northwest Territories classification system;
- Reassign the Nahanni Plateau Ecoregion, the southern two-thirds of the Peel River Plateau Ecoregion, the Franklin Mountains Ecoregion, and the west half of the Sibbeston Lake Plain Ecoregion to the Taiga Cordillera Ecozone based on geologic, topographic and physiographic characteristics that indicated a much stronger affinity with the Taiga Cordillera Ecozone than with the Taiga Plains Ecozone;
- Subdivide the Horn Plateau Ecoregion based on local knowledge of productivity differences between the plateau, the plateau slopes, and the surrounding lowlands, and examine higher-elevation areas to the north and west of the Horn Plateau for similar tendencies;
- Divide the Mackenzie River Plain Ecoregion into at least two units to reflect climatic changes with latitude;
- Adjust the Northern Alberta Uplands Ecoregion line to extend the Hay River

Lowlands Ecoregion southwest to Fort Liard; and

- Subdivide the Northern Alberta Uplands into side slope and plateau units to reflect productivity and climatic differences;

A number of GNWT ecosystem experts and two federal experts from Agriculture and Agri-Food Canada<sup>11</sup> participated in a mapping workshop in December 2004 at which the Timberline recommendations were discussed; the group consensus was that improvements to the 1996 Ecozones and Ecoregions ecosystem classification should be made to better meet the needs of resource managers. These improvements included:

- Refinements to existing ecoregion and ecozone boundaries;
- Subdivision of existing ecoregions into more ecologically homogeneous map units;
- Inclusion of a climatic component by re-integrating the 1989 *Ecoclimates of Canada* classification; and
- Enhancement of ecoregion names to reference not only the geographic locale, but also the main landform and the regional climate.

Subsequent work in early 2005 included another mapping workshop at which a number of significant changes were proposed, a visit to Norman Wells to discuss the proposed changes with GNWT biologists familiar with the northern Northwest Territories, discussions with Alberta ecosystem experts respecting the northern extent of the Boreal Plains Ecozone, and field planning for summer 2005 to assess the proposed changes.

An intensive field program was carried out in July and August 2005 (refer to Section 2 of this report) and over 16,000 geographically referenced digital photographs were collected along with limited ground survey data throughout the entire Taiga Plains Ecozone, along the Mackenzie River valley between the Franklin and Mackenzie Mountains, and along the southwestern front ranges between Fort Simpson and Fort Liard. The Mackenzie River valley, the Franklin Mountains, and the southwestern front ranges were surveyed because

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<sup>11</sup> The agency responsible for coordinating the 1996 Ecozones and Ecoregions of Canada report and map.

they were included as part of the 1996 Taiga Plains Ecozone.

From 1996 to early 2006, the Canadian ecosystem classification framework was employed to delineate and describe ecosystem units within the Northwest Territories (Ecological Stratification Working Group 1995; Downing *et al.* 2006). Subsequent discussions with other experts in Canada and the United States in May 2006 led to the adoption of a North American continental ecosystem classification scheme (refer to Section 1.2 in main document for further discussion).

The continental system is a multilevel, nested system for delineating and describing ecosystems; the Government of the Northwest Territories uses this information for planning and reporting purposes. Currently, the top four levels of the continental framework as applied in the Northwest Territories to the Taiga Plains are Level I ecoregions, Level II ecoregions, Level III ecoregions, and Level IV ecoregions.

## Record of changes to 1996 classification

### Revised ecoregion naming convention

A three-part naming convention has been adopted for Level IV ecoregions to provide better information on where they are located and what their physiographic and climatic characteristics are. This naming convention is described in Section 1.5 of this report.

## Ecosystem classification changes

Compared to the 1996 Ecoregions and Ecozones map, in which there were 19 ecoregions distributed throughout the western Northwest Territories in the Taiga Plains, Taiga Cordillera, Boreal Cordillera and Boreal Plains Ecozones, the 2007 ecosystem classification identifies 45 distinct Level IV ecoregions within the Level II Taiga Plains Ecoregion. Nine Level IV ecoregions that formerly belonged to the Taiga Plains Ecozone have been reassigned to the Level II Taiga Cordillera Ecoregion on the basis of climate, elevation and physiography. Changes between the 1996 and 2007 versions of the Taiga Plains and adjacent Level II ecoregions and their Level III and Level IV ecoregion components are summarized in Table 3.

Figures 14 and 15 compare the 1996 and 2007 versions. For the sake of clarity, the individual ecoregion names are not included in the two figures; grayscale changes corresponding to major physiographic elements in the Taiga Plains graphically illustrate broad-scale changes to ecosystem classification.

### 1996 Boreal Cordillera and Taiga Cordillera Ecoregions

Revision of 1996 Boreal Cordillera and Taiga Cordillera Ecoregions is not part of the current Taiga Plains project and is not discussed elsewhere in this document. These ecoregions were assigned climate labels based on the *Ecoclimatic Regions of Canada* report and map (Ecoregions Working Group 1989) as shown in Table 3.

**Table 3. Summary of Changes Between 1996 Ecozones and Ecoregions, and 2007 Level II and Level IV Ecoregions, western Northwest Territories.** Climate annotation (abbreviations following Level IV ecoregion names) for Taiga Cordillera and Boreal Cordillera from *Ecoclimatic Regions of Canada* (1989).

1996 Ecozone	1996 Ecoregion	2007 Level II Ecoregion	2007 Level IV Ecoregion	Main changes
Boreal Plains	Slave River Lowland	<i>Taiga Plains</i>	Slave Delta MB	Reviews of available climate information, consultation with Alberta experts, and a review of the 1996 Boreal Plains concept led to the conclusion that this area is better matched to the Level II Taiga Plains than to the warmer Boreal Plains. The 1996 Slave River Lowland Ecoregion was assigned to three Level IV ecoregions that are distinct because of geologic, vegetation and geomorphic process differences. The Slave Delta MB Ecoregion differs from the other two by active fluvial processes.
	Slave River Lowland	<i>Taiga Plains</i>	Slave Lowland MB	See comments for Slave Delta MB.
	Slave River Lowland	<i>Taiga Plains</i>	Slave Upland MB	See comments for Slave Delta MB. Differs from the Slave Delta MB and Slave Lowland MB Ecoregions because of limestone bedrock influences and variable parent materials and correspondingly different vegetation.
Boreal Cordillera	Hyland Highlands	<i>Boreal Cordillera</i>	Hyland Highlands Alpine/Subalpine Mid-Cordilleran (MCsa)	Addition of ecoclimate label to name.
Taiga Cordillera	Selwyn Mountains	<i>Taiga Cordillera</i>	Selwyn Mountains Subalpine/Alpine Northern Cordilleran (NCsa)	Addition of ecoclimate label to name.
	Mackenzie Mountains	<i>Taiga Cordillera</i>	Mackenzie Mountains NCsa	Addition of ecoclimate label to name.
	British-Richardson Mountains	<i>Taiga Cordillera</i>	British-Richardson Mountains Subalpine/Alpine Northern Subarctic Cordilleran (NSCsa)	Addition of ecoclimate label to name from <i>Ecoclimatic Regions of Canada</i> .
Taiga Plains	Nahanni Plateau	<i>Taiga Cordillera</i>	Nahanni Plateau NCsa	Re-assignment to Taiga Cordillera based on pronounced relief and Cordilleran climatic regime as reported in <i>Ecoclimatic Regions of Canada</i> (1989).
	Peel River Plateau (above approx. 300 mASL, 100 mASL in far north)	<i>Taiga Cordillera</i>	British-Richardson Foothills NSCsa (adjacent British-Richardson Mountains)	Re-assignment to Taiga Cordillera based on pronounced relief and Northern Cordilleran climatic regime based on permafrost and vegetation characteristics; renamed to British-Richardson Foothills to reflect geographic locale.
	Peel River Plateau (above approx. 300 mASL, 100 mASL in far north)	<i>Taiga Cordillera</i>	Northern Mackenzie Foothills NCsa	Re-assignment to Taiga Cordillera based on pronounced relief and Northern Cordilleran climatic regime based on permafrost and vegetation characteristics; renamed to Northern Mackenzie Foothills to reflect geographic locale.
	Peel River Plateau (above approx. 300 mASL, 100 mASL in far north)	<i>Taiga Cordillera</i>	Southern Mackenzie Foothills NCsa	Re-assignment to Taiga Cordillera based on pronounced relief and Northern Cordilleran climatic regime based on permafrost and vegetation characteristics; renamed to Southern Mackenzie Foothills to reflect geographic locale.
	Franklin Mountains	<i>Taiga Cordillera</i>	Franklin Mountains NCsa	Re-assignment to Taiga Cordillera based on pronounced relief and geologic relationship to Cordillera; Northern Cordilleran climatic regime based on permafrost and vegetation characteristics.
	Mackenzie River Plain (southern half)	<i>Taiga Cordillera</i>	Central Mackenzie Plain Boreal Northern Cordilleran (NCb)	Re-assignment to Taiga Cordillera based on location between Franklin Mountains and Mackenzie Mountains and vegetation and permafrost evidence that Taiga Cordilleran climates are more influential than continental Low Subarctic climates.
	Sibbeston Lake Plain (west-central)	<i>Taiga Cordillera</i>	Nahanni Range NCsa	High-elevation Cordilleran element.

**Table 3 (continued)**

1996 Ecozone	1996 Ecoregion	2007 Level II Ecoregion	2007 Level IV Ecoregion	Main changes
Taiga Plains	Sibbeston Lake Plain (west of Nahanni Range)	<i>Taiga Cordillera</i>	Tetcela Valley NCb	Re-assignment to Taiga Cordillera based on the likelihood that Cordilleran climates are more influential than continental climates and location between Nahanni Front Range and Ram Plateau Mountains. Not addressed in this report.
	Sibbeston Lake Plain (northernmost part)	<i>Taiga Cordillera</i>	Ram Plateau NCsa	Re-assignment to Taiga Cordillera based on pronounced relief and Cordilleran climatic regime as reported in <i>Ecoclimatic Regions of Canada(1989)</i> . Not addressed in this report.
	Sibbeston Lake Plain (southern and western two-thirds)	<i>Taiga Cordillera</i>	Kotanalee Range MCsa	Re-assignment to Taiga Cordillera based on pronounced relief and Cordilleran climatic regime as reported in <i>Ecoclimatic Regions of Canada(1989)</i> . Not addressed in this report.
	Sibbeston Lake Plain (southern and western two-thirds)	<i>Taiga Cordillera</i>	South Nahanni MCsa	Re-assignment to Taiga Cordillera based on pronounced relief and Cordilleran climatic regime as reported in <i>Ecoclimatic Regions of Canada(1989)</i> . Not addressed in this report.
	Sibbeston Lake Plain (eastern third)	<i>Taiga Plains</i>	Sibbeston Upland HB	Change of landscape descriptor from plain to upland to reflect landform, and addition of ecoclimate label.
	Sibbeston Lake Plain (southern and western two-thirds)	<i>Taiga Plains</i>	Liard Plain MB (partly within 1996 Sibbeston Lake Plain Ecoregion))	Landscape produced by fluvial processes; distinct from Sibbeston Upland HB Ecoregion both physiographically and climatically.
	Mackenzie River Plain (northern half)	<i>Taiga Plains</i>	North Mackenzie Plain LS	North half of 1996 ecoregion influenced more by Low Subarctic climates than by Taiga Cordilleran climates as indicated by vegetation and permafrost features.
	Hay River Lowland	<i>Taiga Plains</i>	Liard Plain MB (partly within 1996 Hay River Lowland Ecoregion)	Landscape produced by fluvial processes; distinct from South Mackenzie Plain MB that has less floodplain development.
	Hay River Lowland	<i>Taiga Plains</i>	South Mackenzie Plain MB	Recognized as distinct ecoregion within former Hay River Lowland because of greater local relief and less wetland than Great Slave Lowland MB to the east.
	Hay River Lowland	<i>Taiga Plains</i>	Tathlina Plain MB	Recognized as distinct ecoregion because of dominant permafrost-affected peatlands.
	Hay River Lowland	<i>Taiga Plains</i>	Great Slave Lowland MB	Recognized as distinct ecoregion because of extensive wetlands.
	Northern Alberta Uplands	<i>Taiga Plains</i>	Liard Upland MB	1996 Northern Alberta Uplands assigned to 6 ecoregions in 2007. Liard Upland MB Ecoregion has warmer climate and more productive, diverse vegetation than the general concept for the 1996 Northern Alberta Uplands Ecoregion.
	Northern Alberta Uplands	<i>Taiga Plains</i>	Trout Lake Upland MB	Somewhat warmer climatic regime on southerly aspects and lower elevations near the NWT-BC border than the general concept for the 1996 Northern Alberta Uplands Ecoregion.
	Northern Alberta Uplands	<i>Taiga Plains</i>	Trout Lake Upland HB	Distinct from other ecoregions recognized within former Northern Alberta Uplands by hill systems and forest cover patterns.
	Northern Alberta Uplands	<i>Taiga Plains</i>	Cameron Plateau LS	Distinct from other ecoregions recognized within former Northern Alberta Uplands by permafrost features and physiography.
	Northern Alberta Uplands	<i>Taiga Plains</i>	Cameron Upland HB	Distinct from other ecoregions recognized within former Northern Alberta Uplands by physiography, hydrology.

**Table 3 (continued)**

1996 Ecozone	1996 Ecoregion	2007 Level II Ecoregion	2007 Level IV Ecoregion	Main changes
<b>Taiga Plains</b>	Northern Alberta Uplands	<i>Taiga Plains</i>	Cameron Slopes MB	Warmer climates than on higher-elevation uplands and plateau; nutrient/water flow processes different on slopes.
	Horn Plateau	<i>Taiga Plains</i>	Horn Plateau LS	1996 Horn Plateau Ecoregion assigned to 7 ecoregions in 2007. Horn Plateau LS Ecoregion is different from adjacent 2007 ecoregions – colder climates above about 700 m elevation and vegetation/landforms typical of Low Subarctic, supported by permafrost and vegetation characteristics.
	Horn Plateau	<i>Taiga Plains</i>	Horn Slopes LS	Northerly slopes assigned to cooler ecoclimatic regime; slopes designation infers different moisture/nutrient processes than surrounding terrain, supported by vegetation, hydrology and wetland patterns.
	Horn Plateau	<i>Taiga Plains</i>	Horn Slopes MB	Southerly slopes assigned to warmer ecoclimatic regime; slopes designation infers different moisture/nutrient processes than surrounding terrain, supported by vegetation and hydrology.
	Horn Plateau	<i>Taiga Plains</i>	Horn Plain HB	Gently sloping plain between colder, wetland-dominated Bulmer Plain LS Ecoregion and warmer South Mackenzie Plain MB Ecoregion; transitional area.
	Horn Plateau	<i>Taiga Plains</i>	Ebbutt Upland HB	Differs from 1996 concept of Horn Plateau Ecoregion; Ebbutt Hills are lower than Horn Plateau and have different vegetation and permafrost patterns.
	Horn Plateau	<i>Taiga Plains</i>	Ebbutt Upland LS	Recognition of geographic separation of Horn Plateau and Ebbutt Hills areas, and recognition of colder climates at higher elevations in Ebbutt Hills as indicated by permafrost patterns
	Horn Plateau	<i>Taiga Plains</i>	Bulmer Plain LS (partly within 1996 Horn Plateau Ecoregion)	Recognized as distinctly different from ecoregions occurring atop and on the slopes of the Horn Plateau.
	Great Slave Lake Plain	<i>Taiga Plains</i>	Bulmer Plain LS (partly within 1996 Great Slave Lake Plain Ecoregion)	Recognition that Bulmer Lake LS and Great Slave Plain HB Ecoregions are climatically and geologically distinct as expressed by vegetation and wetland patterns.
	Great Slave Lake Plain	<i>Taiga Plains</i>	Great Slave Plain HB (wholly within 1996 Great Slave Lake Plain Ecoregion)	1996 Great Slave Plain assigned to 4 ecoregions in 2007, one of which is Great Slave Plain HB Ecoregion; the other three ecoregions are Keller Plain LS, Bulmer Plain LS, and Lac Grandin Plain LS.
	Great Slave Lake Plain	<i>Taiga Plains</i>	Lac Grandin Plain LS (partly within 1996 Great Slave Lake Plain Ecoregion)	Recognition of climatic and physiographic differences as expressed by greater incidence of permafrost features in Lac Grandin LS Ecoregion and different landforms.
	Great Slave Lake Plain	<i>Taiga Plains</i>	Keller Plain LS (partly within 1996 Great Slave Lake Plain Ecoregion)	Only a small part of the 1996 Great Slave Lake Plain Ecoregion occurs in the Keller Plain LS Ecoregion; the Keller Plain LS has colder climate and different landforms and permafrost features than the Bulmer Plain LS Ecoregion that was also part of the 1996 Great Slave Lake Plain Ecoregion.
	Keller Lake Plain	<i>Taiga Plains</i>	Lac Grandin Plain LS (eastern 2/3 of 1996 Keller Lake Plain Ecoregion)	Lac Grandin Plain LS Ecoregion physiographically different (higher elevation, more variable terrain) with significantly less wetlands than the 2007 Keller Plain LS Ecoregion.
	Keller Lake Plain	<i>Taiga Plains</i>	Keller Plain LS (western 1/3 of 1996 Keller Lake Plain Ecoregion)	Similar concept to 1996 Keller Lake Plain Ecoregion.

**Table 3 (continued)**

1996 Ecozone	1996 Ecoregion	2007 Level II Ecoregion	2007 Level IV Ecoregion	Main changes
<b>Taiga Plains</b>	Norman Range	<i>Taiga Plains</i>	Keller Plain LS (east-southeast part of 1996 Norman Range Ecoregion)	1996 Norman Range Ecoregion assigned to 5 ecoregions in 2007, differentiated by vegetation, landform, geology and permafrost features. The Keller Plain LS Ecoregion differs from the adjacent Blackwater Upland LS Ecoregion because of more subdued topography and higher peatland cover in the former; these ecoregions were formerly combined in the 1996 Norman Range Ecoregion.
	Norman Range	<i>Taiga Plains</i>	Blackwater Upland LS (wholly within 1996 Norman Range Ecoregion)	Refer to comments on Keller Plain LS Ecoregion.
	Norman Range	<i>Taiga Plains</i>	North Mackenzie Plain LS (partly within 1996 Norman Range Ecoregion)	The North Mackenzie Plain LS Ecoregion is distinct from the Norman Range LS Ecoregion; fluvial processes are more important and bedrock features are less important in the former ecoregion, with corresponding vegetation and landform differences.
	Norman Range	<i>Taiga Plains</i>	Great Bear Upland LS (partly within 1996 Norman Range Ecoregion)	The Great Bear Upland LS Ecoregion is distinct from the adjacent Norman Range LS Ecoregion because of bedrock-controlled more rugged topography and Taiga Cordilleran climatic influences in the latter.
	Norman Range	<i>Taiga Plains</i>	Norman Range LS (wholly within 1996 Norman Range Ecoregion)	Similar to the core concept of the 1996 Norman Range Ecoregion.
	Great Bear Lake Plain	<i>Taiga Plains</i>	Great Bear Plain LS	The 1996 Great Bear Lake Plain accounted for about 20 percent of the Taiga Plains Ecozone, and included a broad spectrum of climatic and physiographic conditions. It has now been assigned to 8 ecoregions in 2007. The Great Bear Plain LS Ecoregion occupies low-elevation, level to gently undulating areas adjacent to Great Bear Lake; the neighbouring Great Bear Upland LS Ecoregion occurs on more pronounced terrain at higher elevations.
	Great Bear Lake Plain	<i>Taiga Plains</i>	Great Bear Plain HS	Locally extensive and important near-shore permafrost features were not identified explicitly in the 1996 ecoregion map unit.
	Great Bear Lake Plain	<i>Taiga Plains</i>	Great Bear Upland LS	The Great Bear Upland LS Ecoregion identifies uplands within the southern half of the 1996 ecoregion that have diverse and relatively productive vegetation compared to upland areas in the north part of the 1996 ecoregion.
	Great Bear Lake Plain	<i>Taiga Plains</i>	Great Bear Upland HS	The Great Bear Upland HS Ecoregion includes islands of High Subarctic climate and associated vegetation and permafrost features not explicitly recognized in the 1996 mapped unit.
	Great Bear Lake Plain	<i>Taiga Plains</i>	Travaillant Upland HS	More pronounced terrain, fewer peatlands and different vegetation than the neighbouring Arctic Red Plain HS Ecoregion; both were part of the 1996 Great Bear Lake Plain Ecoregion. Northern boundary of the Level II Taiga Plains Ecoregion moved northward from 1996 position; boundary drawn with reference to tree line mapped on 1:250,000 National Topographic Series maps augmented by georeferenced digital photographs taken in 2005.
	Great Bear Lake Plain	<i>Taiga Plains</i>	Anderson Plain HS	Less pronounced terrain than the neighboring Travaillant Upland HS Ecoregion, and permafrost and vegetation more indicative of Low Arctic conditions. Northern boundary of the Taiga Plains Ecozone moved northward from 1996 position; boundary drawn with reference to tree line mapped on 1:250,000 National Topographic Series maps and mapped by Timoney et al. (1992), augmented by georeferenced digital photographs taken in 2005.

**Table 3 (concluded)**

<b>1996 Ecozone</b>	<b>1996 Ecoregion</b>	<b>2007 Level II Ecoregion</b>	<b>2007 Level IV Ecoregion</b>	<b>Main changes</b>
<b>Taiga Plains</b>	Great Bear Lake Plain	<i>Taiga Plains</i>	Arctic Red Plain HS	See comments for Travaillant Upland HS Ecoregion.
	Grandin Plains	<i>Taiga Plains</i>	Grandin Plain HS	Minor change to the 1996 ecoregion concept; the 1996 ecoregion is assigned to two ecoregions. The Grandin Plain HS Ecoregion is topographically more diverse and has different vegetation and permafrost patterns than the Grandin Upland HS Ecoregion. Northern boundary of the Taiga Plains Ecozone moved northward from 1996 position; boundary drawn with reference to tree line mapped on 1:250,000 National Topographic Series maps augmented by georeferenced digital photographs taken in 2005.
	Grandin Plains	<i>Taiga Plains</i>	Grandin Upland HS	See comments for Grandin Plain HS Ecoregion.
	Colville Hills	<i>Taiga Plains</i>	Colville Hills HS	Recognition of three physiographically distinct units with differing vegetation and permafrost attributes within 1996 Colville Hills Ecoregion. The 2007 Colville Hills HS Ecoregion includes bedrock ridges and elevated uplands with fewer peatlands and lakes than the other two Colville Ecoregions.
	Colville Hills	<i>Taiga Plains</i>	Colville Plain HS	Relatively flat ecoregion, in contrast to the ridges of the Colville Hills HS Ecoregion and the hummocky terrain of the Colville Upland HS Ecoregion.
	Colville Hills	<i>Taiga Plains</i>	Colville Upland HS	See Colville Hills HS and Colville Plain HS Ecoregions.
	Fort McPherson Plain	<i>Taiga Plains</i>	Arctic Red Plain LS	Ecoregions were renamed to identify the major river flowing through them; Low and High Subarctic ecoregions were split with reference to changes in vegetation and permafrost features (Level III ecoregions).
	Fort McPherson Plain	<i>Taiga Plains</i>	Arctic Red Plain HS	See comments for Arctic Red Plain LS Ecoregion.
	Fort McPherson Plain	<i>Taiga Plains</i>	Travaillant Upland HS	Travaillant Upland HS Ecoregion is hilly, not a nearly level plain.
	Mackenzie Delta	<i>Taiga Plains</i>	Mackenzie Delta HS	Basic concept and area delineated similar to 1996 ecoregion; climate label added; wetlands not as extensive as reported for 1996 ecoregion and primary tree species is white spruce.
<b>Southern Arctic</b>	Dease Arm Plain	<i>Taiga Plains</i>	Anderson Plain HS (in part)	Part of the 1996 Dease Arm Plain and Dease Arm Upland Ecoregions reassigned to the Level II Taiga Plains Ecoregion with reference to tree line mapped on 1:250,000 National Topographic Series maps augmented by georeferenced digital photographs taken in 2005.
	Tuktoyaktuk Coastal Plain	<i>Taiga Plains</i>	Sitidgi Plain HS	Revised tree line concept (see Anderson Plain HS Ecoregion); renamed ecoregion for largest lake.

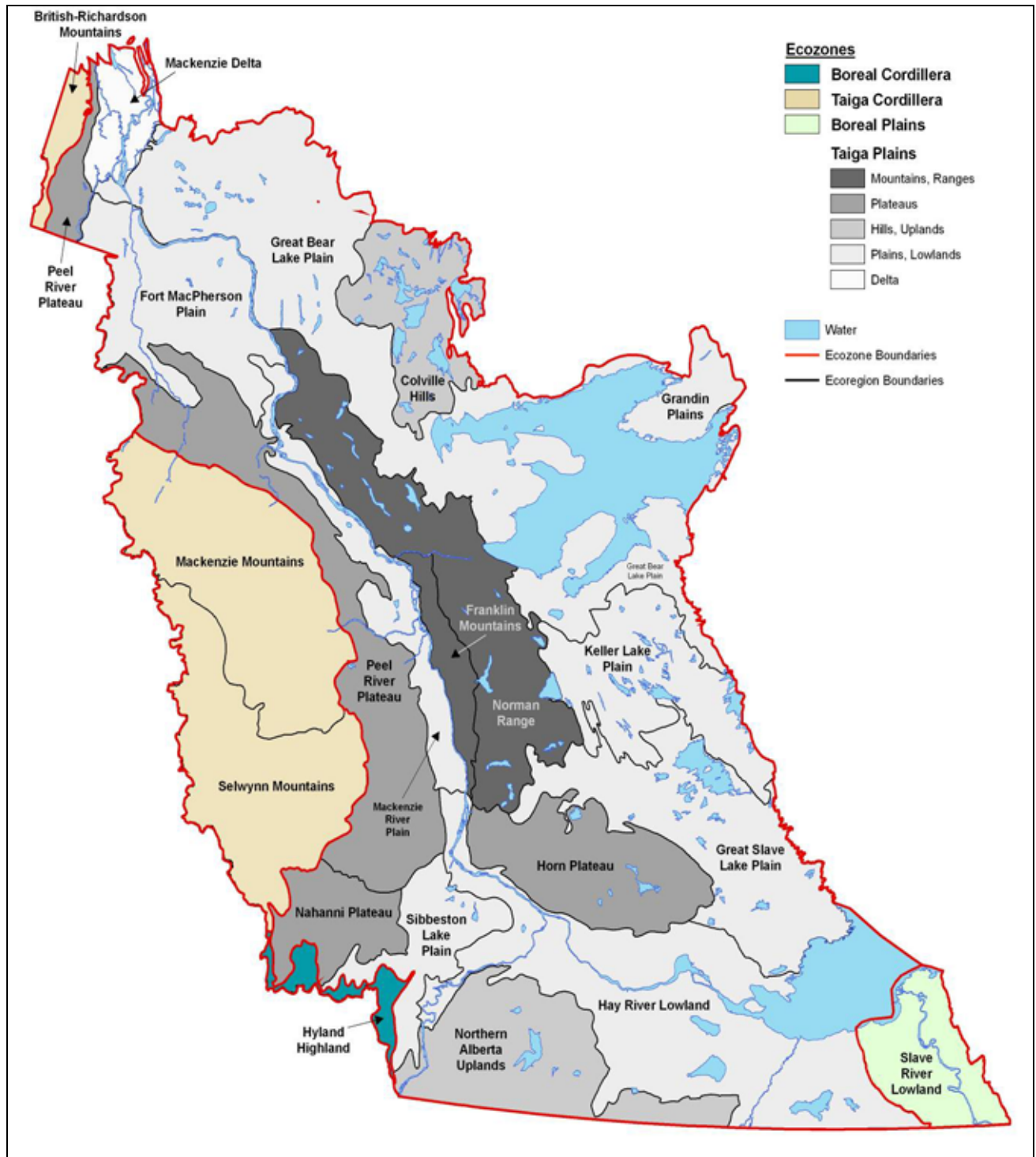
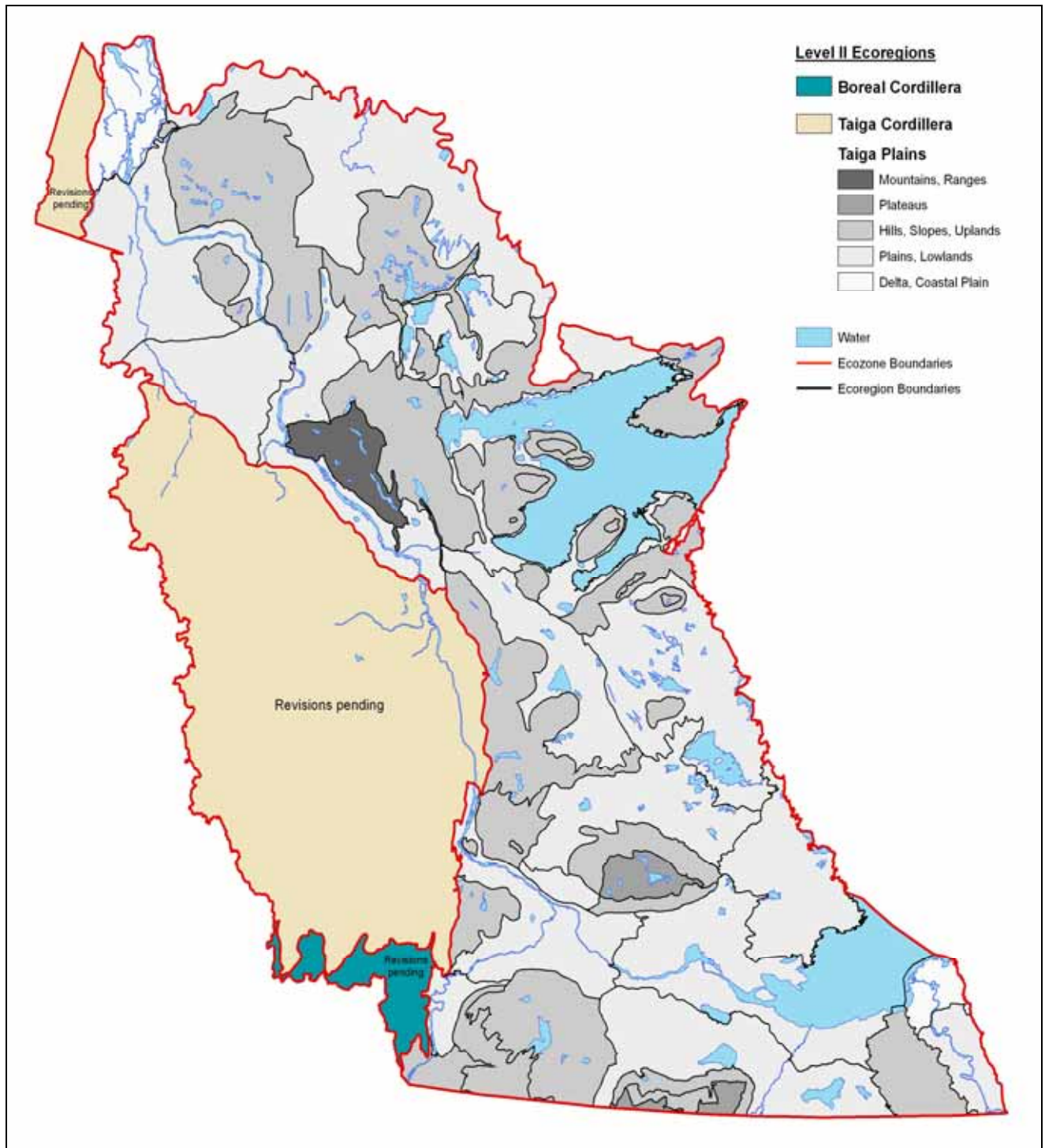


Figure 14. 1996 Ecozones, Ecoregions and Major Physiographic Elements of the Taiga Plains.



**Figure 15. 2007 Level II Ecoregions, Level IV Ecoregions and Major Physiographic Elements of the Taiga Plains.** Only the linework is shown for Level IV ecoregions; refer to Appendix 3 for ecoregion labels and legend.

## Appendix 3. Level III and Level IV Ecoregions of the Taiga Plains

### Taiga Plains High Subarctic (HS) Ecoregion (3.3.1)

- 3.3.1.1 Mackenzie Delta HS
- 3.3.1.2 Arctic Red Plain HS
- 3.3.1.3 Campbell Hills HS
- 3.3.1.4 Sitidgi Plain HS
- 3.3.1.5 Travaillant Upland HS
- 3.3.1.6 Anderson Plain HS
- 3.3.1.7 Colville Upland HS
- 3.3.1.8 Colville Plain HS
- 3.3.1.9 Colville Hills HS
- 3.3.1.10 Great Bear Upland HS
- 3.3.1.11 Great Bear Plain HS
- 3.3.1.12 Grandin Plain HS
- 3.3.1.13 Grandin Upland HS
- 3.3.1.14 Lac Grandin Upland HS

### Taiga Plains Low Subarctic (LS) Ecoregion (3.3.2)

- 3.3.2.1 Arctic Red Plain LS
- 3.3.2.2 North Mackenzie Plain LS
- 3.3.2.3 Norman Range LS
- 3.3.2.4 Great Bear Upland LS
- 3.3.2.5 Great Bear Plain LS
- 3.3.2.6 Blackwater Upland LS
- 3.3.2.7 Keller Plain LS
- 3.3.2.8 Lac Grandin Plain LS
- 3.3.2.9 Lac Grandin Upland LS
- 3.3.2.10 Bulmer Plain LS
- 3.3.2.11 Ebbutt Upland LS
- 3.3.2.12 Horn Slopes LS
- 3.3.2.13 Horn Plateau LS
- 3.3.2.14 Cameron Plateau LS

### Taiga Plains High Boreal (HB) Ecoregion (3.3.3)

- 3.3.3.1 Ebbutt Upland HB
- 3.3.3.2 Horn Plain HB
- 3.3.3.3 Sibbeston Upland HB
- 3.3.3.4 Trout Upland HB
- 3.3.3.5 Cameron Upland HB
- 3.3.3.6 Great Slave Plain HB

### Taiga Plains Mid-Boreal (MB) Ecoregion (3.3.4)

- 3.3.4.1 South Mackenzie Plain MB
- 3.3.4.2 Liard Plain MB
- 3.3.4.3 Liard Upland MB
- 3.3.4.4 Trout Upland MB
- 3.3.4.5 Horn Slopes MB
- 3.3.4.6 Great Slave Lowland MB
- 3.3.4.7 Tathlina Plain MB
- 3.3.4.8 Cameron Slopes MB
- 3.3.4.9 Slave Upland MB
- 3.3.4.10 Slave Delta MB
- 3.3.4.11 Slave Lowland MB

## ECOLOGICAL REGIONS OF THE NORTHWEST TERRITORIES TAIGA PLAINS

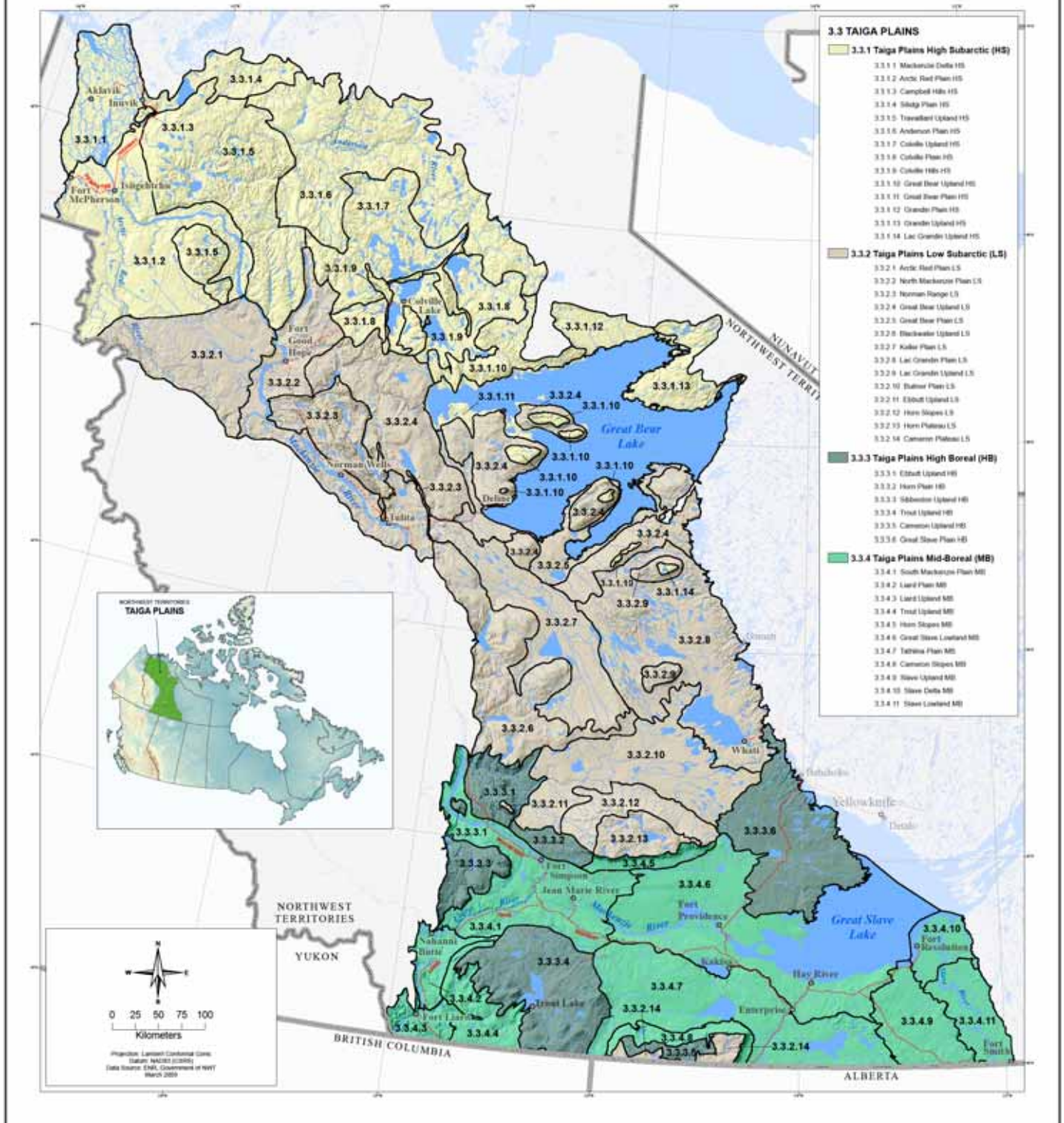


Figure 16. 2007 Level III and Level IV Ecoregions of the Taiga Plains.



## Appendix 4. Glossary of Terms

The following definitions are taken mainly from *Terminology of Ecological Land Classification in Canada* (Cauboue *et al.* 1999) and *Soil and Environmental Science Dictionary* (Gregorich *et al.* 2001), supplemented by *Glossary of terms in Soil Science* (Canadian Society of Soil Science 1976), *Multi-language glossary of permafrost and related ground-ice terms* (van Everdingen, 2005), *Glossary of Permafrost and Related Ground-ice Terms* (National Research Council 1988), and *Wetlands of Canada* (National Wetlands Working Group 1988). W.W. Pettapiece compiled most of this glossary from the listed sources; many of the permafrost terms are referenced in van Everdingen (2005) and National Research Council (1988).

**A horizon** – A mineral horizon formed at or near the surface in the zone of removal of materials in solution and suspension, or maximum accumulation of organic carbon, or both.

**Ae** – A horizon that has been eluviated of clay, iron, aluminum, or organic matter, or all of these.

**Ah** – A horizon in which organic matter has accumulated as a result of biological activity.

**Ap** – A horizon markedly disturbed by cultivation or pasture.

**abiotic** – Describing the nonliving components of an ecosystem.

**abundance-dominance** – This term expresses the number of individuals of a plant species and their coverage in a phytosociological survey. The scale generally used is that of J. Braun-Blanquet from which stemmed many variations. It is based on the coverage of individuals for classes with a coverage higher than 5% and on the abundance for classes with a lower percentage; frequently, this is also referred to as 'cover-abundance'. See **Braun-Blanquet** method.

**acid igneous rock** – Describing igneous rock\* composed of >66% silica.

**Acidic (soil)** – Having a pH value of less than 7.0.

**active delta marsh** – A marsh occupying lowlands on deltas, usually with drainage connections to active river channels. The marsh is subject to inundation at least once during a season, followed by a slow drawdown of the water levels. A high rate of sedimentation may occur in many parts of the marsh.

**active layer** – The seasonal thaw zone at the surface of permafrost terrain.

**advance regeneration** – Young trees under existing stands. Regeneration established before logging that has survived the logging operation.

**aeolian (eolian)** – Referring to mineral particles moved and sorted by wind, usually fine sands and coarse silt.  
See dune and loess.

**aerobic** – Occurring in the presence of oxygen as applied to chemical and biochemical processes; opposite of anaerobic.

**aggregate** – A group of soil particles cohering in such a way that they behave mechanically as a unit.

**albedo** – A measurement of reflected energy. Albedo is the coefficient of reflectance, usually applying only to short-wave radiation.

**alkaline** – Having a pH value of >7.0.

**alliance** – A vegetation classification level in the Braun-Blanquet system, a collection of associations with similar physiognomy and the same dominant and constant species.  
See **Braun-Blanquet method**.

**alluvium** – Mineral material deposited by flowing water, usually sands, silts and gravels.

**alpine** – The ecological zone that occurs above an elevational tree line, characterized by a distinct climate and vegetation.

**alvar** – Swedish term for an unusual landform which occurs when soils are scraped away from bare limestone bedrock by ice, wind, and water. Alvars and associated biota are globally rare features.

**anaerobic** – Occurring in the absence of oxygen as applied to chemical and biochemical processes.

**anthropogenic** – Human-made or human-modified materials such that their initial physical properties have been drastically altered.

**aquatic** – Living or growing in water.

**arable land** – Land that is cultivated or suitable for cultivation (as opposed to grazing or non-cultivated land).

**arctic** – The ecological zone north of the latitudinal tree line, characterized by a distinct climate and vegetation.

**arid** – Describing a soil, climate or region where vegetation may not grow due to a severe lack of water.

**aspect** – The orientation of a slope face, expressed using a compass direction.

**association** – 1. A classification level in the Braun-Blanquet system, which is a subdivision of a formation based on floristic composition, an abstract plant community.  
2. Sometimes used as a general term for a collection of vegetation stands with similar composition and structure.

**avalanche** – A form of mass wasting involving snow and ice.

**Azonal** – Vegetation (or soil) that develops on atypical conditions such as flooded or rapidly drained sites.

**B horizon** – A subsoil horizon characterized by one of:  
a) an enrichment in clay, iron, aluminum, or humus (Bt or Bf).  
b) a prismatic or columnar structure that exhibits pronounced coatings or stainings associated with significant amounts of exchangeable sodium (Bn or Bnt).  
c) an alteration by hydrolysis, reduction, or oxidation to give a change in color or structure from the horizons above or below, or both (Bm).

**basal area** – The area occupied by a plant near the ground surface; measured across the stem of a tree 1.3 to 1.5 m above the ground surface, or across a clump in the case of graminoids, usually 2 to 3 cm above the ground surface.

**bedrock** – The solid rock underlying soils and the regolith or exposed at the surface.

**bioclimate** – All the climatic conditions (climate factors) of a region that have a fundamental influence on the survival, growth, and reproduction of living organisms.

**biocoenosis** – A group of interacting organisms including both plants and animals.

**biodiversity** – Totality of the richness of biological variation, ranging from within-species genetic variation, through subspecies and species, to communities, and the pattern and dynamics of these on the landscape.

**Biogeoclimatic Ecosystem Classification (BEC) in British Columbia** – A hierarchical ecosystem classification system applied in British Columbia that describes the variation in climate, vegetation, and site conditions throughout the province.

- biogeoclimatic zone** – A level in the British Columbia Biogeoclimatic ecosystem classification system that represents areas with the same regional climate.  
See **ecoclimatic region**, **ecoregion**, and **ecological region**.
- biogeocoenosis** – A group of interacting organisms living together in a particular environment, an ecosystem.
- biogeography** – A branch of biology or of geography that deals with the geographical distribution of plants and animals.
- biomass** – The mass of living organisms within a defined space, usually expressed in kg/ha or g/m<sup>2</sup> of dry matter.
- biome** – Major biotic community composed of all the plants and animals and smaller biotic communities. The smaller communities in a biome possess similarities in gross external appearances (deciduous trees, grasslands, etc.) and gross climatic conditions (desert, tropical, etc.). A particular biome is defined in terms of the characteristic vegetation forms (or life forms).
- Biophysical Land Classification** – An approach to land classification that combines the physical and biological components of the environment. As the precursor to Ecological land classification, the hierarchical classification system originally included four levels. Sometimes the physical components of classification are more heavily weighted than the biological components. The term biophysical was subsequently replaced by "ecological".
- biota** – The living component of an ecosystem.
- biotic** – Pertaining to life.
- Black** – A soil classification Great Group or Subgroup designation indicating a surface (Ah or Ap horizon) color value darker than 3.5 moist and dry, with a chroma less than 2, dry (grassland or parkland soils with generally greater than 4 % organic matter).
- bog** – Ombrotrophic (nutrient poor) peatland that is acidic (generally unaffected by nutrient-rich groundwater) and usually dominated by heath shrubs and *Sphagnum* mosses and that may include open-growing, stunted woodlands of black spruce or other tree species.
- boreal** – (1) Pertaining to the north.  
(2) A climatic and ecological zone that occurs south of the subarctic, but north of the temperate hardwood forests of eastern North America, the parkland of the Great Plains region, and the montane forests of the Canadian cordillera.
- boulder** – Rock fragment over 60 cm in diameter. In engineering, practice boulders are over 20 cm in diameter.
- brackish** – Water with a salt content between that of fresh and sea water. Brackish water usually has 5-10 parts of salt per thousand.
- Braun-Blanquet method** – An approach to classifying vegetation that utilizes floristic composition (i.e. characteristic species and associations), developed in central and southern Europe. Includes the ZurichMontpellier School of Phytosociology.
- break of slope** – An abrupt change in slope steepness.
- broadleaved forest** See **deciduous forest**.
- Brown** – A soil classification Great Group or Subgroup designation indicating a surface (Ah or Ap horizon) color value darker than 3.5 moist and 5.5 dry with a chroma less than 3.5 moist (grassland soils with less than about 2% organic matter).
- Brunisol** – A soil of the Brunisolic Order.
- Brunisolic** (1) – An Order of soils whose horizons are developed sufficiently to exclude them from the Regosolic Order but lack the degrees or kinds of horizon development specified for soils

- in other orders. They always have Bm or Btj horizons. The order consists of Melanic, Eutric, Sombric and Dystric Great Groups.
- (2) – A soil classification Subgroup designation indicating the formation of a Bm or Btj horizon within the Ae of a Luvisolic soil (a strongly degraded Luvisol).
- bulk density, soil** – The mass of dry soil per unit bulk volume.
- C horizon** – A mineral horizon comparatively unaffected by the pedogenic processes operative in the A and B horizons except for the process of gleying (Cg) or the accumulation of calcium carbonate (Cca) or other salts (Csa). A naturally calcareous C horizon is designated Ck.
- calcareous soil** – Soil containing sufficient calcium carbonate (often with magnesium carbonate) to effervesce visibly when treated with cold 0.1 N hydrochloric acid.
- C:N ratio** – The ratio of the weight of organic carbon to the weight of total nitrogen in a soil or in an organic material.
- Canadian System of Soil Classification** – Hierarchical soil classification system in which the conceptual classes are based upon the generalization of properties of real bodies of soil. Taxa are defined on the basis of observable and measurable soil properties that reflect processes of soil genesis and environmental factors.
- canopy** – The more or less continuous cover of branches and foliage formed by the crowns of trees.
- canopy closure** – The degree of canopy cover relative to openings.
- capability** – A natural ability to support a selected activity such as agriculture or recreation.
- catchment area**            See **drainage basin**.
- channel marsh** – A marsh occurring in well-defined, abandoned channels where stream flow is discontinuous or blocked.
- characteristic species** – (1) A diagnostic species used to separate plant community types within the Braun-Blanquet vegetation classification system.  
 (2) Characteristic species may occur in more than *one* community, but are significant (e.g. much more abundant) in only one community.  
 (3) A species with high cover\* (abundance) and presence.
- Chernozem** – A soil\* of the Chernozemic Order\*.
- Chernozemic** – An Order of soils that have developed under xerophytic or mesophytic grasses and forbs, or under grassland-forest transition vegetation, in cool to cold, subarid to subhumid climates. The soils have a dark-colored surface (Ah, Ahe or Ap) horizon and a B or C horizon, or both, of high base saturation. The order consists of Brown, Dark Brown, Black and Dark Gray Great Groups.
- Chinook** – a warm, dry wind characteristic of southern Alberta and northern Montana created by moisture condensation and precipitation on the western side of the mountains and compression as the dry air descends onto the plains. In the Northwest Territories, similar conditions produce Chinook-like winds in the Fort Liard area.
- chroma** – A measure of color strength in the Munsell Soil Color Chart.
- chronosequence** – A chronosequence is a sequence through time. Often, it refers to a secondary successional sequence within a set of plant communities.
- classification** – The systematic grouping and organization of objects, usually in a hierarchical manner.
- clay** – 1. Mineral particles <0.002 mm in diameter.  
 2. Soil and texture class with approximately a 40 to 60% composition of clay size particles.
- climate** – The accumulated long-term effects of weather that involve a variety of heat and moisture exchange processes between the earth and the atmosphere.

**climatic climax**        See climax.

**climatic index** – Number indicating a combination of climatic factors, most often temperature and precipitation, in order to describe the vegetation distribution.

**climax** – Stable, self-perpetuating vegetation that represents the final stage of succession\* (89).  
climatic climax – Stable, self-perpetuating vegetation developed through succession in response to long-term climatic conditions, as opposed to edaphic climax. **Edaphic climax** – Stable, self-perpetuating vegetation developed through succession on azonal sites.

**cluster analysis** – A multidimensional statistical analysis technique used to group samples according to their degree of similarity.

**classification, soil** – The systematic arrangement of soils into categories and classes on the basis of their characteristics. Broad groupings are made on the basis of general characteristics and subdivisions on the basis of more detailed differences in specific properties.

**clay** – As a particle-size term: a size fraction mm equivalent diameter.

**clod** – A compact, coherent mass of soil produced by digging or plowing.

**coarse fragments** – Rock or mineral particles 2.0 mm in diameter.

**coarse texture** – The texture exhibited by sands, loamy sands, and sandy loams except very fine sandy loam. A soil containing large quantities of these textural classes.

**codominant** – Trees with crowns forming the general level of the main canopy in an even-aged stand of trees. Two plant species of similar stature and cover that occur on the same site.

**collapse scar** – That portion of a peatland where the whole or part of a palsa or peat plateau has thawed and collapsed to the level of the surrounding peatland.

**collapse scar bog** – A circular or oval-shaped wet depression in a perennially frozen peatland. The collapse scar bog was once part of the perennially frozen peatland, but the permafrost thawed, causing the surface to subside. The depression is poor in nutrients, as it is not connected to the minerotrophic fens in which the palsa or peat plateau occurs.

**collapse scar fen** – A fen with circular or oval depressions, up to 100 m in diameter, occurring in larger fens, marking the subsidence of thawed permafrost peatlands. Dead trees, remnants of the subsided vegetation of permafrost peatlands, are often evident.

**colluvium** – Unconsolidated materials moved by gravity, often occurring at the base of a slope.

**community** – An assemblage of organisms that interact and exist on the same site.

**community type** – A group of vegetation stands that share common characteristics, an abstract plant community.

**companion species** – In phytosociology, a species occurring in several associations with relatively the same frequency, or a species characteristic of another association, but having a lower frequency.

**competition** – The interaction between organisms resulting from common use of a limited resource. Intraspecific competition occurs within the same species, while interspecific competition arises between different species.

**conifer** – A cone-bearing plant (except for the taxaceous family) belonging to the taxonomic group Gymnospermae.

**coniferous forest** – A plant community with a cover made up of 75% or more conifers.

**consistence** – The degree of soil cohesion and adhesion based on its resistance to deformation.

**consociation** – A classification level within the Scandinavian approach to vegetation classification, a collection of sociations with the same dominant species.

- constant species** – A species occurring more than 80% of the time within a particular plant community type.
- constraint** – A factor that limits the optimal condition, such as steep slopes or cold temperatures, usually associated with land use capability assessments.
- continuous permafrost** – Permafrost occurring everywhere beneath the exposed land surfacethroughout a geographic region with the exception of widely scattered sites, such as newly deposited unconsolidated sediments, where the climate has just begun to impose its influence on the thermal regime of the ground, causing the development of continuous permafrost
- continuous permafrost zone** – The major subdivision of a permafrost region in which permafrost occurs everywhere beneath the exposed land surface with the exception of widely scattered sites.
- control section** – The minimum depth used to classify a soil, usually 1.0 m for mineral soils and 1.6 m for organic deposits.
- cordillera** – An elongated range of mountains.
- corridor** – In a landscape, a narrow strip of land that differs from the matrix on either side. Corridors may be isolated strips, but are usually attached to a patch of somewhat similar vegetation.
- coulee** – A western Canadian term for a steep-sided prairie valley. It may refer to valleys that have a relatively broad bottom, often as a result of a glacial meltwater channel or to v-shaped gullies caused by more recent erosion.
- cover** – The area of ground covered with plants of one or more species, usually expressed as a percentage.
- cover type** – A very general unit of vegetation classification and mapping based on existing plant cover, e.g. closed-canopied deciduous forest, pasture, or native prairie.
- Cryosol** – A soil\* of the Cryosolic Order\*.
- Cryosolic** – An Order of soils formed in either mineral or organic materials that have perennially frozen material within 1 m of the surface in some part of the soil body (or within 2 m if the pedon has been strongly cryoturbated). The mean annual temperature is less than 0°C. The order consists of Turbic, Static or Organic Great Groups based on degree of cryoturbation and the nature of the soil material.
- cryoturbation** – Irregular structures formed in earth materials by deep frost penetration and frost action processes, and characterized by folded, broken and dislocated beds and lenses of unconsolidated deposits, included organic horizons and even bedrock. Terms such as “frost churning” and “frost stirrings” are not recommended.
- Cumulic** – A soil classification Subgroup designation indicating successive mineral layers that result from deposition of materials (e.g. flood plain deposits).
- Dark Brown** – A soil classification Great Group or Subgroup designation indicating a surface (Ah or Ap horizon) color value darker than 3.5 moist and 4.5 dry with a chroma greater than 1.5, dry (grassland soils with organic matter content in the 2% to 4% range).
- Dark Gray** – A soil classification Great Group or Subgroup designation indicating a surface (Ah or Ap horizon) color value darker than 3.5 moist and 3.5 to 4.5 dry with a chroma of 1.5 or less (transition forest soils with less than about 2% organic matter).
- dbh** – The diameter of a tree at breast height. Diameter is measured at 1.3 to 1.5 m above ground surface.
- deciduous** – Refers to perennial plants from which the leaves abscise and fall off at the end of the growing season.

**deciduous forest** – A plant community with a cover made up of 75% or more of deciduous trees.  
*Syn.* broadleaved forest.

**degree-day** – A measure of temperature above or below a reference temperature that is generally added up for a certain period. Thus it is a cumulative measurement of the quantity of energy available for growth that makes it possible to compare growth conditions between regions.

**delta** – Alluvial deposits at the mouth of a river, usually triangular in outline with low relief.

**Deposit**            See surficial materials.

**depression** – An area that is lower than the general surrounding landscape, usually less well-drained than the surrounding terrain.

**diagnostic species** – Plant species used to distinguish plant communities based on their presence or absence and on their abundance.

**differential species** – A diagnostic species that occurs primarily within one or a few plant community types, but that is less abundant and with lower constancy than characteristic species. It may be present in other communities\*, but with lower abundance and constancy.

**discontinuous permafrost** – Permafrost occurring in some areas beneath the exposed land surface throughout a geographic region where other areas are free of permafrost.

**diversity** – The richness of species within a given area. Diversity includes two distinct concepts: (1). richness of species.  
 (2). evenness in the abundance of the species.

**domain** – Territory including all the regions having the same vegetation or climatic groups on modal sites.

**dominant** – A plant with the greatest cover and/or biomass within a plant community. The tallest trees within a forest stand, which extend above the general canopy.

**drainage** – The removal of excess water from soil as a result of gravitational flow. Soil drainage refers to the frequency and duration of periods when the soil is not saturated. Terms used are – excessively, well, moderately, imperfectly and poorly-drained.

**drainage basin** – Area tributary to or draining to a lake, stream, reservoir or other body of water.  
*Syn.* catchment area See watershed.

**drift** – A glacial deposit.

**droughty soil** – A soil with low water supplying capacity (sandy or very rapidly drained soil).

**drumlin** – A smooth, elongated hill created by flowing glacial ice . The long axis and tapered end are oriented in the direction of glacial ice flow.

**dryland farming** – The practice of crop production in low-rainfall areas without irrigation.

**duff** – A general term for the litter and humus layers of the forest floor.

**dune** – A low hill or ridge of sand that has been sorted and deposited by wind.

**Dystric** – A soil classification Great Group designation indicating Brunisolic soils with an acidic solum – a pH (0.01M Ca Cl<sub>2</sub>) of less than 5.5 for at least 25 cm starting at the top of the B horizon.

**dystrophic** – Referring to a physical environment very unbalanced from a nutritive standpoint due to an excess or a significant lack of a mineral or organic element.

**earth hummock** – A hummock having a core of silty and clayey mineral soil which may show evidence of cryoturbation . Earth hummocks are a type of nonsorted circle (see also *patterned ground*) commonly found in the zone of continuous permafrost. They develop in

- materials of a high silt and clay content and/or of high ice content.
- ecoclimatic province** – A broad complex of ecoclimatic regions that have similar climatic conditions as reflected by vegetation. Examples of such units generally approximate continental climatic zones. See **vegetation zone**.
- ecoclimatic region** – An area characterized by a distinctive regional climate as expressed by vegetation. Equivalent to a domain.
- ecodistrict** – A subdivision of an ecoregion based on distinct assemblages of relief, geology, landform, soils, vegetation, water, and fauna. Canadian ecological land classification (ELC) system unit. Scale 1 :500,000 to 1 :125,000. The subdivision is based on distinct physiographic and/or geological patterns. Originally referred to as a land district. See **ecological district**.
- ecological district** – Portion of land characterized by a distinctive pattern of relief, geology, geomorphology, and regional vegetation. See **ecodistrict**.
- ecological factor**. Element of the site that can possibly influence living organisms (e.g. water available for plants). This term is also frequently used to refer to ecological descriptors.
- Ecological Land Classification (ELC)** – The Canadian classification of lands from an ecological perspective, an approach that attempts to identify ecologically similar areas. The original system proposed by the Subcommittee on Biophysical Land Classification in 1969 included four hierarchical levels that are currently called ecoregion, ecodistrict, ecosection, and ecosite. Ecozone, ecoprovince and ecoelement were later added to the upper and lower levels of the hierarchy.
- ecological range** – Interval included between the lower and upper limits of an ecological factor allowing the normal development of a specific organism (or a group of organisms). *Syn.* range of tolerance or ecological amplitude.
- ecological region** – A region characterized by a distinctive regional climate as expressed by vegetation.
- ecological unit** – Very general term used to refer to a mapping or classification unit of any rank and based on ecological criteria.
- ecology** – Science that studies the living conditions of living beings and all types of interactions that take place between living beings on the one hand, and living beings and their environment on the other hand.
- ecoprovince** – A subdivision of an ecozone that is characterized by major assemblages of landforms, faunal realms, and vegetation, hydrological, soil and climatic zones. Canadian ecological land classification (ELC) system unit.
- ecoregion** – An area characterized by a distinctive regional climate as expressed by vegetation. Canadian ecological land classification\* (ELC) system unit. Scale 1:3,000,000 to 1:1,000,000. Originally referred to as a land region. See **ecological region** and **biogeoclimatic zone**.
- ecosite** – 1. A subdivision of an ecosection that consists of an area of land with a particular parent material\*, having a homogeneous combination of soils\* and vegetation. A Canadian ecological land classification (ELC) system mapping unit, usually mapped at a scale of 1 :50,000 to 1 :10000. Originally referred to as a "land type".  
2. In Alberta, ecosite is defined as an area with a unique recurring combination of vegetation, soil, landform, and other environmental components.
- ecosystem** – 1. A complex interacting system that includes all plants, animals, and their environment\* within a particular area.  
2. The sum total of vegetation, animals, and physical environment in whatever size segment

of the world is chosen for study.

3. A volume of earth-space that is set apart from other volumes of earth-space in order to study the processes and products of production, particularly those transactions between a community\* of organisms and its nonliving environment.

**ecotone** – The transition zone between two adjacent types of vegetation that are different.

**ecotype** – A group of individuals of the same species that are genetically adapted to local ecological conditions.

**ecozone** – An area of the earth's surface representing large and very generalized ecological units characterized by interacting abiotic and biotic factors. The most general level of the Canadian ecological land classification (ELC) system.

**edaphic** – Related to the soil.

**edaphic climax**        See climax.

**edaphic grid** – A two-dimensional graphic illustrating the relationship between soil moisture and soil fertility.

**edatopic grid**    See **edaphic grid**.

**elevational zone** – Altitudinal zonation of vegetation.

**Elfinwood**        See **krummholz**.

**eluviation** – The general process of removing, or leaching of, materials from a soil horizon in solution or suspension.

**emergent vegetation** – Plant species that have a part extending below the normal water level. Such plants are adapted to periodic flooding and include genera such as *Carex*, *Scirpus*, and *Typha*.

**endangered species** – Any indigenous species of fauna or flora whose existence in Canada is threatened with immediate extinction throughout all or a significant portion of its range, owing to the actions of humans.

**endemic** – An organism confined to a certain geographical area.

**environment** – The summation of all living and nonliving factors that surround and potentially influence an organism.

**Eolian**    See **aeolian**.

**erosion** – The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

**Eutric** – A soil classification Great Group designation indicating Brunisolic soils with a relatively high degree of base saturation – a pH (0.01M Ca Cl<sub>2</sub>) of 5.5 or higher for 25 cm starting at the top of the B horizon.

**eutrophic** – Refers to nutrient rich status and little or no acid.

**evapotranspiration** – The combined loss of water by evaporation from the soil surface and by transpiration from plants.

**exposure** – Location of a site with respect to an environmental factor such as the sun, rain or wind.

**fan (alluvial fan)** – Unconsolidated materials at the base of a steep slope that were carried and deposited by flowing water; these deposits generally have a conical shape.

**fauna** – (1) A general term for animals.  
(2) A list of the animal species present in an area.

**fen** – A peat-covered or peat-filled wetland with a water table which is usually at or above the surface. The waters are mainly nutrient-rich, minerotrophic waters from mineral soils. The

- vegetation consists mainly of sedges, grasses, reeds and brown mosses with some shrub cover and at times, a scanty tree layer.
- fertility, soil** – The status of a soil with respect to the amount and availability of elements necessary for plant growth.
- field guide** – A field document with keys to identify a plant community, a forest type or a site from biological and physical criteria. These keys may include complete descriptions of plant communities, forest types or forest sites of the region concerned.
- fibric** – An organic layer containing large amounts of weakly decomposed material whose origins are readily identifiable.
- fine texture** – Consisting of or containing large quantities of the fine fractions, particularly of silt and clay.
- fire climax** – Plant community that is maintained by repeated fires.
- flark** – A Swedish term to designate an elongated, wet, and muddy depression in a patterned peatland.
- flat bog** – A bog having a flat, featureless surface and occurring in broad, poorly defined depressions.
- flood plain** – An area adjacent to a stream or river, consisting of alluvial sediments, that is periodically inundated during periods of high stream flow.
- flora** – (1) A general term for plants.  
(2) A list of the plant species present in an area.
- fluvial** – Related to stream flow and its associated erosional/depositional processes.
- fluvioeolian** – Referring to sediments that have been deposited or reworked by both fluvial and aeolian processes; the deposits cannot be separated as either fluvial or aeolian.
- fluvio-glacial** See **glacio-fluvial**.
- fluviolacustrine** – Describing lacustrine deposits that have been partially reworked by fluvial processes.
- floodplain** – The land bordering a stream, built up of sediments from overflow of the stream and subject to inundation when the stream is at flood stage.
- fluvial** – Material that has been transported and deposited by streams and rivers (also alluvial).
- foothills** – Low subsidiary hills at the foot of a mountain.
- forb** – "Forb" is only used for herbaceous plants, and is generally used for broad-leaved herbs, regardless of whether they are monocots or dicots (e.g. *Maianthemum* is a forb).
- forest** – A relatively large assemblage of tree-dominated stands.
- forest floor** – Organic layer on soil surface consisting of one or more of L, F, and H horizons.
- forest region** – A major geographical zone characterized by a broadly uniform topography and the same dominant tree species.
- forest site** – 1. Portion of land whose physical and biological characteristics are sufficiently homogeneous to justify a specific silviculture, for a given species, with an expected productivity\*falling within known limits.  
2. Forest planning unit whose bioclimatic, physical and plant characteristics simply some given silvicultural potential and constraints.
- forest site type** – Summary and synthesis of the characteristics of similar forest sites grouped according to topographic and geomorphological location, nature of soil, floristic composition and vegetation dynamics, etc. It is a classification unit but is often used to name

- a portion of an area as well as a typological unit.
- forest type** – 1. An assemblage of forest sample plots with similar floristic composition, forest productivity, and site properties.  
See vegetation type and association.
- forest typology** – Study and classification of forest site (or forest types) according to growing sites, composition and stand evolution.
- formation** – (1) A regional vegetation zone composed of plants with similar physiognomy and environmental conditions.  
(2) A primary unit of bedrock in stratigraphy.
- friable** – A consistency term pertaining to the ease of crumbling of soils.
- frost-free period** – Season of the year between the last frost of spring and first frost of fall.
- frost boil** – see **earth hummock**
- genotype** – The genetic constitution of an individual that may be transmitted.
- geomorphology** – The study of landforms and their origin.
- glaciation** – The formation, movement, and recession of glaciers or ice sheets.
- glacier** – A mass of ice that develops as a result of snow and ice accumulation over a long period of time and that moves laterally from the centre of accumulation.
- glacio-fluvial** – Pertaining to the meltwater streams. flowing from wasting glacier ice and especially to the deposits and landforms produced by streams; relating to the combined action of glaciers and streams.
- glacio-lacustrine** – Pertaining to or characterized by glacial and lacustrine conditions. Said of deposits made in lakes affected by glacier ice or by meltwaters flowing directly from glaciers.
- Gleysol** – A soil\* of the Gleysolic Order\*.
- Gleysolic** – An Order of soils developed under wet conditions and permanent or periodic reduction. These soils have low chromas, or prominent mottling, or both, in some horizons. The Order includes Gleysol, Humic Gleysol and Luvic Gleysol Great Groups.
- gradient (ecological gradient)** – Continuous and regular variation of one or more ecological factors.
- Graminoid** – A plant that is grass-like; the term refers to grasses and plants that look like grasses, i.e. only narrow-leaved herbs; in the strictest sense, it includes plants belonging only to the family *Poaceae*.
- grassland** – Vegetation consisting primarily of grass species occurring on sites that are arid or at least well-drained.
- gravel** – Rounded rock particles with sizes ranging from 2 mm to 75 mm in diameter. **gravelly** – Containing appreciable or significant amounts of gravel.
- Gray** – A soil classification Great Group designation indicating a surface (Ae or Ap horizon) color value 5 or higher, dry (forest soils with organic matter content less than 2%).
- great group** – A subdivision of a soil order having some properties that reflect differences in the strength of soil-forming processes.
- ground cover** – The overall canopy cover of a plant community without reference to different strata.
- groundwater** – The subsurface water that is below the water table. That portion of the hydrosphere which at any particular time is either passing through or standing in the soil and the underlying strata and is free to move under the influence of gravity.
- growing degree-days** – Accumulated heat units above a threshold temperature of 5<sup>0</sup>C. See **degree-**

- day.**
- growing season** – Number of days where the mean temperature is equal to or above 5°C.
- habitat** – The place in which an animal or plant lives. The sum of environmental circumstances in the place inhabited by an organism, population or community.
- hardwood** – A tree with broad leaves such as *Acer*, *Fraxinus*, *Populus*, and *Quercus*.
- heath** – Uncultivated land generally dominated by shrubs, such as ericaceous ones.
- herb (herbaceous)** – A nonwoody vascular plant.
- hill** – A prominence smaller than a mountain, usually <300 m .
- hilly** – Large landform elements with local relief in the 200 to 500 m range. This includes foothills, dissected plateaus and major uplands.
- horizon** – The basic unit of soil classification that is a horizontal layer of mineral or organic material having differentiated characteristics as a result of soil-forming processes.
- horizontal fen** – A fen with a very gently sloping, featureless surface. This type of fen occupies broad, often ill-defined depressions, and may be interconnected with other fens. Peat accumulation is generally uniform.
- hue** – One of the three variables of color. A color or shade of color in the Munsell Soil Color Chart such as red, green, or blue.
- humic** – An organic layer of highly decomposed material containing little fibre.
- humification** – The processes by which organic matter decomposes to form humus.
- humus** – A general term for partially or completely decomposed plant litter; well decomposed organic matter.
- humus form** – Group of soil horizons located at or near the surface of a pedon, which have formed from organic residues, either separate from, or intermixed with, mineral materials.
- hummocky** – A landform characterized by a complex surface of low- to moderate-relief (local relief generally less than 10 m) knolls and mounds of glacial sediments separated by irregular depressions, all of which lack linear or lobate forms (also called knob and kettle). Slopes are generally less than 0.8 km with gradients of greater 5% to 30%.
- hydromorphic soil** – A general term for soils that develop under conditions of poor drainage in marshes, swamps, seepage areas, or flats.
- hydrophyte** – A plant growing in water. In some cases, only the inflorescence lives out of the water.
- ice-contact deposit** – Deposits that occur when in contact with ice, such as kames and eskers.
- igneous rock** – A type of rock that forms from the solidification of magma.
- immature soil** – A soil with indistinct or only slightly developed horizons.
- impeded drainage** – A condition which hinders the movement of water through soils under the influence of gravity.
- impervious** – Resistant to penetration by fluids or by roots.
- inactive delta marsh** – A marsh occupying higher portions of a delta, usually some distance from active river channels. The marsh is inundated only during very high flood stages or by wind-driven waves. Shallow water may be impounded for long periods of time.
- indicator species** – Species, usually plants, used to indicate an ecological condition such as soil moisture or nutrient regime that may not be directly measured.
- insolation** – Radiant energy received from the sun.

**inventory** – The systematic survey, sampling, classification, and mapping of natural resources.

**irrigation** – The artificial application of water to the soil for the benefit of growing crops.

**isohyet** – Lines of equal precipitation.

**isostatic rebound** – a general rise in the land surface following the removal of thick glacial ice.

**isotherm** – Lines of equal temperature.

**kame** – A conical hill or irregular ridge of sand and gravel that was deposited in contact with glacier ice.

**karst** – Surface and subsurface features created by the dissolving of soluble rock such as limestone or gypsum, which results in such features as caverns and sinkholes.

**kettle** – A depression created by the melting of glacial ice that was buried in moraine.

**key** – A taxonomic tool used to identify unknown objects (e.g. plants or plant communities) through the use of paired questions.

**krummholz** – Scrubby, stunted growth form of trees, often forming a characteristic zone at the limit of tree growth in mountains.

**lacustrine** – Material deposited in lake water and later exposed; sediments generally consisting of stratified fine sand, silt, and clay.

**landform** – 1. A topographic feature.  
2. The various shapes of the land surface resulting from a variety of actions such as deposition or sedimentation, erosion, and earth crust movements.

**landscape** – (1) All the natural features such as fields, hills, forests, water, etc., which distinguish one part of the earth's surface from another part. Usually that portion of land or territory which the eye can comprehend in a single view, including all its natural characteristics.  
(2). A heterogeneous land area composed of a cluster of interacting ecosystems that are repeated in similar form throughout. Landscapes can vary in size, down to a few kilometers in diameter.

**landscape ecology** – 1. A study of the structure, function, and change in a heterogeneous land area composed of interacting ecosystems.  
2. The scientific basis for the study of landscape units from the smallest mappable landscape cell to the global ecosphere landscape in their totality as ordered ecological, geographical and cultural wholes.

*Rem.:* This concept as well as the related works fluctuates greatly from one author to the other. Nevertheless, the concept generally recognizes the importance of interactions between landscape elements, the necessity of a global approach and the importance of human activities. Impact of human activities on the landscape is recognized with the concept but it also recognizes the constraints imparted by the biophysical properties of the landscape.

**landscape element** – The basic, relatively homogeneous, ecological unit, whether of natural or human origin, on land at the scale of a landscape.

**Layer** See stratum.

**leaching** – The removal of soluble materials from a soil horizon by percolating water.

**levee** – flood-deposited fluvial materials; when floodwaters overflow streambanks, the resulting fluvial deposits accumulate and raise the streambanks above the adjacent floodplain.

**level** – Refers to land without slope.

**limiting factor** – Ecological factor that limits the development of an organism by its presence, absence or quantity irrespective of the state of other factors.

**lithic** – A feature of a soil subgroup which indicates a bedrock contact within the limits of the control section.

**litter** – The uppermost portion of plant debris on the soil surface, usually not decomposed.

**loess** – Material transported and deposited by wind and consisting of predominantly silt-sized particles.

**lowland** – Extended plains or land that occur below a significantly elevated area.

**loam** – see soil texture. A mixture of sand, silt and clay. It is not related to color.

**loose** – A soil consistency term.

**Luvisol** – A soil\* of the Luvisolic Order.

**Luvisolic** – An Order of soils that have eluvial (Ae) horizons, and illuvial (Bt) horizons in which silicate clay is the main accumulation product. The soils developed under forest or forest-grassland transition in a moderate to cool climate. The Order includes Gray Brown Luvisol and Gray Luvisol Great Groups (The latter is the most common in western Canada).

**macroclimate** – Regional climate related to geographical location and relief.

**mapping unit** – Unit that allows the definition of a geographical reference context.

**marl** – soft deposits of calcium carbonate, often associated with calcareous springs and calcium-rich ponds.

**marsh** – A wetland with a mineral or peat substrate inundated by nutrient rich water and characterized by emergent graminoid\* vegetation.

**meadow** – A moist area usually dominated by grasses or forbs.

**meander** – Looped pattern of a stream course.

**medium texture** – Intermediate between fine-textured and coarse-textured (soils). (It includes the following textural classes: very fine sandy loam, loam, silt loam, and silt).

**meltwater channel** – A valley-like feature created by flowing water that originated from the melting of glacial ice.

**mesic** – (1) Describing the sites that are neither humid (hydric) nor very dry (xeric). Average moisture conditions for a given climate.  
(2) An organic layer of intermediately decomposed material (between that of fibric and humic).

**mesoclimate** – Macroclimate that undergoes local modifications to many of its elements. The climate of a forest or a slope is a mesoclimate.

**mesotrophic** – Medium nutrient status and moderately acidic.

**metamorphic rock** – Rock formed from preexistent rock after undergoing natural geological processes such as heat or pressure. It differs from the original rock in terms of its physical, chemical or mineral properties.

**microclimate** – Localized climatic conditions ranging down to conditions at the stand or even individual plant environment level.

**mineral soil** – A soil that is largely composed of unconsolidated mineral matter.

**minerotrophic** – Nourished by mineral water. It refers to wetlands that receive nutrients from mineral groundwater in addition to precipitation by flowing or percolating water.

**mixed-wood** – Forest stands composed of conifers and angiosperms each representing between 25 and 75% of the cover; for example, trembling aspen and white spruce mixed-wood forests.

**modal site** – A well to moderately well-drained site without topographic or edaphic extremes that

could reflect the influences of regional climate rather than local site conditions. Also used to describe typical site conditions for an ecosystem unit.

See **normal**, **zonal** and **reference site**.

**moder** – Partially decomposed litter as a result of soil faunal activity, usually not matted.

**moderately-coarse texture** – Consisting predominantly of coarse particles. (In soil textural classification, it includes all the sandy loams except the very fine sandy loam).

**moderately-fine texture** – Consisting predominantly of intermediate and fine sized particles. (In soil textural classification, it includes clay loam, sandy clay loam, and silty clay loam).

**moisture deficit** – A condition that occurs when evaporation and/or transpiration exceeds the available water supply.

**moisture regime** – Refers to the available moisture supply for plant growth estimated in relative or absolute terms.

**mor** – Raw plant litter, usually matted, with a distinctive boundary that occurs at the mineral soil surface, in which fungal activity is the primary method of decomposition.

**moraine** – A mound, ridge, or other distinct accumulation of generally unsorted, unstratified glacial drift, predominantly till, deposited chiefly by direct action of glacier ice, in a variety of topographic landforms that are independent of control by the surface on which the drift\* lies (19).

**morphology, soil** – The physical constitution, particularly the structural properties, of a soil profile as exhibited by the kinds, thickness and arrangement of the horizons and by the structure, consistence and porosity of each horizon.

**mountain** – Land with large differences in relief, usually refers to areas with more than 600 m of relief.

**Munsell color system** – A color designation system that specifies the relative degree of the three simple variables of color: hue, value, and chroma. For example: IOYR 6/4 is a color with a hue 10-YR, value -6, and chroma -4. These notations can be translated into several different systems of color names as desired. See chroma, hue, and value.

**mull** – Decomposed organic matter that has been incorporated with mineral soil; could represent an Ah horizon,

**Munsell Soil Color Chart** – A booklet of standardized color chips used to describe soil horizon colors.

**mycorrhiza** – The symbiotic association of fungi with the roots of seed plants.

**natural province** – Vast land mass (of the order of 100,000 km<sup>2</sup>) with characteristic features determined by major geological events. There are 3 Natural Provinces recognized in Alberta).

**natural region** – Extensive land mass (of the order of 20,000 km<sup>2</sup>) characterized by permanent geographic boundaries (geological, physiographic, etc.) and a certain uniformity and individuality of climatic, topographical, geomorphological and biological conditions.

**natural subregion** – Large land mass (of the order of 10,000 km<sup>2</sup>) characterized by permanent geographic boundaries (geological, physiographic, etc.) and a certain uniformity and individuality of climatic, topographical, geomorphological and biological conditions.

**neutral soil** – A soil having a pH value of approximately 7.0 in the surface horizons.

**niche** – A unique habitat or set of conditions that allows a species to exist with minimal competition from other species.

**nonsoil** – rock, water, snow or ice, mineral or organic material <10 cm thick over rock or soil materials displaced by unnatural processes such as earth fill.

**normal site** – A site with deep loamy soils, with neither a lack nor an excess of soil nutrients, located in well-drained positions in the landscape and neither protected from, nor exposed to, local climatic extremes.

See **zonal, modal** and **reference** site.

**northern ribbed fen** – A fen with parallel, low peat ridges (“strings”) alternating with wet hollows or shallow pools, oriented across the major slope at right angles to water movement. The depth of peat exceeds 1 m.

**nutrient** – Usually refers to one of a specific set of primary elements found in soil that are required by plants for healthy growth, such as nitrogen, phosphorus, potassium, calcium, magnesium, and sulphur.

**nutrient regime** – The relative level of nutrient availability for plant growth.

**old growth** – A stand of mature or overmature trees relatively uninfluenced by human activity.

**oligotrophic** – A condition of low nutrient status and acidic reaction).

**ombrotrophic** – An ecological system that derives its nutrients solely (or primarily) from precipitation.

**Order** – The highest taxonomic level in the Canadian System of Soil Classification, reflecting the nature of soil environment and the effects of dominant soil-forming processes.

**Organic** (1) – An Order of soils that have developed dominantly from organic deposits. The majority of organic soils are saturated for most of the year, unless artificially drained. The Great Groups include Fibrisol, Mesisol, Humisol and Folisol.

(2) – A soil classification Great Group designation indicating a Cryosolic soil formed in organic materials (e.g. a bog with permafrost).

**organic matter** – The decomposition residues of biological materials derived from: (a) plant and animal materials deposited on the surface of the soils; and (b) roots and micro-organisms that decay beneath the surface of the soil.

**Orthic** – A soil classification Subgroup designation indicating the usual or typical (central concept) for the Great Group.

**outcrop** – Exposure of bedrock at the ground surface.

**outwash** – Materials washed from a glacier by flowing water and laid down as stratified sorted beds. Generally, it is made up of stratified sand and/or gravel.

**overstory** – The uppermost continuous layer of a vegetation cover, e.g. the tree canopy in a forest ecosystem or the uppermost layer of a shrub stand.

**paralithic** – Poorly consolidated bedrock which can be dug with a spade when moist. It is severely constraining but not impenetrable to roots.

**palsa** – A peaty permafrost mound possessing a core of alternating layers of segregated ice and peat or mineral soil material. Palsas are typically between 1 and 7 m in height and a few meters to 100 m in diameter.

**parent material** – The unconsolidated and more or less chemically unweathered material from which soil develops by pedogenic processes.

**parkland** – Relatively open forest at both low and high elevations – very open in nature.

**particle size** – The size of a mineral particle as measured by sedimentation, sieving, or micrometric methods. Also referred to as grain size.

**patterned ground** – A general term for circles, polygons, strips, nets, and steps created by frost action.

**peat** – An accumulation of partially decomposed plant matter under saturated conditions.

**peat moss** – In scientific literature, peat material is classified on the basis of its botanical composition. The most common moss peat materials are feather moss peat, brown moss peat, *Drepanocladus* moss peat, and *Sphagnum* peat.

**peat plateau bog** – A bog composed of perennially frozen peat, rising abruptly about 1 m from the surrounding unfrozen fen. The surface is relatively flat and even, and often covers very large areas. The peat was originally deposited in a non-permafrost environment and is often associated with collapse scars or fens.

**peaty** – A soil classification phase designation indicating an accumulation of 15 cm to 40 cm of surface peat (15 – 60 cm if fibric).

**peatland** – Peatlands (organic wetlands) are characterized by more than 40 cm peat accumulation on which organic soils (excluding Folisols) develop.

**ped** – A unit of soil structure such as a prism or granule, which is formed by natural aggregates.

**pedogenesis** – 1. The mode of origin of the soil, especially the processes or soil-forming factors responsible for the development of the solum.

**pedology** – The aspects of soil science dealing with the origin, morphology, genesis, distribution, mapping, and taxonomy of soils.

**pedon** – A real unit of soil, the smallest homogenous, three-dimensional unit that can be considered a soil.

**percolation, soil water** – The downward movement of water through soil; especially, the downward flow of water in saturated or nearly saturated soil at hydraulic gradients of the order of 1.0 or less.

**periglacial** – Said of the processes, conditions, areas, climates, and topographic features at the immediate margins of former and existing glaciers and ice sheets, and influenced by the cold temperature of the ice. Permafrost is a periglacial process.

**permafrost** – Ground (soil or rock and included ice and organic materials) that remain at or below 0°C for at least two consecutive years.

**pH** – A measure of acidity or alkalinity of a solution, based on hydrogen ion concentration.

**phase** – judged to meaningfully subdivide the unit, especially for management purposes. The phase is not a formal category in the taxonomy.

**phenotype** – The observable structural and functional properties of an organism that derive from the interaction between its genotype and its environment.

**physiognomy** – The general appearance of vegetation by broadly defined life forms, such as forest or grassland.

**physiographic region** – Topographically similar landscapes with similar relief, structural geology and elevation at a mapping scale of 1:1,000,000 to 1:3,000,000.

**physiographic subregion** – A subdivision of a physiographic region based on distinct patterns of relief, geology and geomorphology, and drainage pattern and density at a mapping scale of 1:250,000 to 1:1,000,000.

**physiography** – The study of the genesis and evolution of land forms.

**pioneer species** – Plant species that initially invade a newly exposed surface.

**plain** – A relatively large, level, featureless topographic surface.

**plant community** – A concrete or real unit of vegetation or a stand of vegetation.

**plateau** – An elevated area with steep-sided slopes and a relatively level surface

- platy** – Consisting of soil aggregates that are developed predominately along the horizontal axes, laminated; flaky.
- plot** – A vegetation sampling unit used to delineate a fixed amount of area for the purpose of estimating plant cover, biomass, or density. Plots can vary in their dimensions depending on the purpose of the study and the individual researcher.
- polygonal peat plateau bog** – A perennially frozen bog, rising about 1 m above the surrounding fen. The surface is relatively flat, scored by a polygonal pattern of trenches that developed over ice wedges. The permafrost and ice wedges developed in peat originally deposited in a non-permafrost environment. Polygonal peat plateaus are commonly found near the boundary between the zones of discontinuous and continuous permafrost.
- population** – A group that includes all possible members of a species in a territory at a given time.
- postglacial** – Occurring after glaciation.
- potential** – General evaluation of the possible biological productivity or carbon production potential of a site resource (or an area) usually expressed in terms of values to an appropriate management regime. It may be generally established or estimated from site components that represent a permanent character (e.g. soil quality).
- potential climax** – The species or plant community that will form the climax vegetation on a site. The existing species or plant association may be different from the potential climax due to site disturbance and successional stage.
- prairie** – An extensive area of native upland grass with a semi-arid to arid climate.
- precipitation** – A collective term for snowfall and rainfall.
- primary succession** See **succession**.
- pristine** – An undisturbed natural condition.
- productivity** – A measure of the physical yield of a particular crop. It should be related to a specified management. Merchantable wood volume productivity is generally expressed in m<sup>3</sup>/ha/yr. It may be further subdivided into types (gross, net, primary).or allocations (leaves, wood, above ground, below ground).
- profile, soil** – A vertical section of the soil through all its horizons and extending into the parent material.
- proglacial** – Pertaining to all observable phenomena on the face of a glacier or just beyond its ablation area.
- quadrat** – A vegetation sampling unit with specific dimensions and shape.
- reaction, soils** – The degree of acidity or alkalinity of soil, usually expressed as a pH value.
- rare species** – Any indigenous species of fauna or flora that, because of its biological characteristics, or because it occurs at the fringe of its range, or for some other reasons, exists in low numbers or in very restricted areas of Canada but is not a threatened species.
- reconnaissance** – A level of field analysis that involves relatively quick sampling for the purpose of obtaining general information about an area. In some cases, sampling quality may be high, but the intensity of sampling is very low relative to the size of the total area being studied.
- reference site** – A site that serves as a normal or modal condition, an "average" or benchmark in terms of vegetation, soil and general site conditions.  
See **modal, normal** and **zonal site**.
- regeneration** – 1. The renewal of a forest crop by natural or artificial means. Also the new crop so obtained. The new crop is generally less than 1.3 m in height.

**Rego** – A soil classification Subgroup designation indicating a soil profile with little or no B horizon – an AC profile (often caused by erosion truncation)

**regolith** – The unconsolidated mantle of weathered rock and soil material overlying solid rock.

**Regosol** – A soil\* of the Regosolic Order\*.

**Regosolic** – An Order of soils having no horizon development or development of the A and B horizons insufficient to meet the requirements of the other orders. Included are Regosol and Humic Regosol Great Groups.

**relief** – The difference between extreme elevations within a given area (local relief).

**remote sensing** – The gathering and interpretation of land-based information by indirect methods such as aerial photography or satellite imagery.

**residual material** – Unconsolidated and partly weathered mineral materials accumulated by disintegration of consolidated rock in place.

**residual soil** – Soil formed from, or resting on, consolidated rock of the same kind as that from which it was formed and in the same location.

**riparian** – Refers to terrain, vegetation or simply a position adjacent to or associated with a stream, flood plain, or standing waterbody.

**rock** – A consolidated mass of mineral matter; a general term for stones.

**rolling** – A landform characterized by a regular sequence of moderate slopes producing a wavelike pattern of moderate relief (20 m to 100 m). Slope lengths are often 1.6 km or greater with gradients usually greater than 5%.

**runnel** – a pattern of alternating flow channels and interchannel uplands perpendicular to contour. In permafrost-affected areas, light and dark-striped patterns on hill slopes are runnels; the light stripes are usually sparsely treed, lichen covered interchannel areas with permafrost close to the surface, and the dark stripes are shallow drainage channels vegetated by dwarf birch, willow and other shrubs with a thicker active layer.

**runoff** (run-off) – The portion of the total precipitation in an area that flows on the surface of the land, without entering the soil, reaches streams, and flows away through stream channels.

**saline soil** – A nonalkali soil containing soluble salts in such quantities that they interfere with the growth of most crop plants. The conductivity of the saturation extract is greater than 4 dS/m (formerly mmhos/cm), the exchangeable-sodium percentage is less than 15, and the pH is usually less than 8.5.

**salinization** – The process of accumulation of salts in soils.

**sand** – A soil particle between 0.05 and 2.0 mm in diameter.

**saturation percentage** – The amount of water required to saturate a unit of soil (often correlated with sodicity).

**silt** – A soil separate consisting of particles between 0.05 to 0.002 mm in equivalent diameter.

**soil** – The unconsolidated mineral material on the immediate surface of the earth that serves as a natural medium for the growth of land plants.

**sand** – Mineral particles with diameters ranging from 0.05 to 2.0 mm.

**saprolite**        See **residual soil**.

**scree**        See **talus**.

**secondary succession**        See **succession**.

**sedimentary rock** – A rock formed from materials deposited from suspension or precipitated from solution and usually more or less consolidated.

**seepage** – The slow movement of water near the soil surface, often occurring above an impermeable subsoil layer or at the boundary between bedrock and unconsolidated material that is exposed at ground surface, usually occurs downslope of the recharge area.

**seral** – Recognizably different succession stages along a successional path or sere.

**seral stage** See **successional stage**.

**shade tolerant** – Plants capable of growing and successfully reproducing beneath the shading canopy of other species.

**shield rock** – Crystalline Precambrian rock that forms the core of continents.

**shrub** – A perennial plant usually with a woody stem, shorter than a tree, often with a multi-stemmed base.

**shrubland** – An area dominated by shrubs, usually individual plants not in contact and with a herbaceous ground cover.

**silt** – Mineral particles with a diameter of 0.05 to 0.002 mm.

**site** – 1. The place or the category of places, considered from an environmental perspective, that determines the type and quality of plants that can grow there .  
2. All the physical elements of a forest site (climate, deposit, drainage, etc.). It is a relatively homogeneous area in its physical permanent conditions.

**site index (SI)** – An expression of forest site quality based on the height of dominant and codominant trees at a specific age.

**slope** – 1. An inclined surface.  
2. The steepness of an inclined surface, measured in degrees or percentages from the horizontal.

**slope fen** – A fen occurring mainly on slowly draining, nutrient enriched seepage slopes. Pools are usually absent, but wet seepage tracks may occur. Peat thickness seldom exceeds 2m.

**slough** – A Western Canadian term for a shallow prairie pond that largely disappears in late summer, often with a muddy bottom.

**softwood** – 1. A coniferous tree such as *Pinus* (pine) or *Picea* (spruce).  
2. A forest type with a cover made up of 76 to 100% of conifers.

**soil** – Unconsolidated mineral material or organic material >10 cm thick that occurs at the earth's surface and is capable of supporting plant growth. It is also the zone where the biological, physical, and atmospheric components of the environments interact.

**soil map** – A map showing the distribution of soil types or other soil mapping units in relation to the prominent physical and cultural features of the earth's surface.

**soil moisture** – Water contained in the soil.

**soil profile** – A vertical section of the soil through all its horizons and extending into parent material.

**soil structure** – The combination or arrangement of primary soil particles into secondary compound units or peds. The secondary units are characterized and classified on the basis of size, shape, and degree of distinctness into classes, types, and grades, respectively. Common terms for kind of structure are – single grain, amorphous, blocky, subangular blocky, granular, platy, prismatic and columnar.

**soil survey** – The systematic classification, analysis, and mapping of soils within an area.

**soil zone** – A large area dominated by a zonal soil that reflects the influence of climate and vegetation.

**solar radiation** See **insolation**.

**Solonetz** – A soil\* of the Solonetzic Order\*.

**Solonetzic** – An Order of soils developed mainly under grass or grass-forest vegetative cover in semiarid to subhumid climates. The soils have a stained brownish or blackish solonetzic B (Bn, Bnt) horizon that can be very hard when dry and a saline C horizon. The order includes the Solonetz, Solodized Solonetz and Solod Great Groups.

**solum** – The upper horizons of a soil in which the parent material has been modified and in which most plant roots are contained. It usually consists of A and B horizons.

**species** – A group of organisms having a common ancestry that are able *to* reproduce only among themselves.

**Spring fen** – A fen nourished by a continuous discharge of groundwater. The surface is marked by pools, drainage tracks and occasionally somewhat elevated “islands”. The nutrient level of water is highly variable between locations.

**stand** – A collection of plants having a relatively uniform composition and structure, and age in the case of forests.

**stand density** – A quantitative measure of tree cover on an area in terms of biomass, crown closure, number of trees, basal area, volume, or weight

**stand structure** – The distribution of trees in a stand or group by age, size, or crown classes.

**string bog** – a pattern of narrow (2-3 m wide), low (less than 1 m deep) ridges oriented at right angles to the direction of drainage. Wet depressions or pools occur between the ridges. The water and peat are very low in nutrients, as the water has been derived from ombrotrophic wetlands. Peat thickness exceeds 1 m.

**stone** – Rock fragment with a diameter ranging from 25 to 60 cm.

**story** – A horizontal stratum or layer in a plant community; in forest appearing as one or more canopies.

**subalpine** – A zone in the mountains that occurs below the alpine.

**subarctic** – A zone immediately south of the arctic characterized by stunted, open-growing spruce vegetation.

**subclimax** – Successional stage of a plant community preceding the climax.

**subgroup** – A subdivision of a soil great group, differentiated on the basis of the kind and arrangement of horizons that indicate conformity to the central concept of the great group, intergrading towards soils of another order, or other special features.

**subsoil** – A general term referring to the underlying part of the soil itself and that is often considered as being located under the A horizon.

**substrate** – The medium on which a plant grows.

**succession** – The progression within a community whereby one plant species is replaced by another until a stable assemblage for a particular environment is attained. **Primary succession** occurs on newly created surfaces, while **secondary succession** involves the development or replacement of one stable successional species by another on a site having a developed soil. Secondary succession occurs on a site after a disturbance (fire, cutting, etc.) in existing communities.

**successional stage** – Stage in a vegetation chronosequence in a given site. *Syn.* seral stage.

**surficial materials** – Unconsolidated materials that occur on the earth's surface.

**swamp** – A mineral-rich wetland characterized by a dense cover of deciduous or coniferous trees, or shrubs.

**taiga** – Refers to a coniferous boreal forest. Often, this term is used to refer to the vegetation zone of

- transition between boreal forest and tundra. This vegetal formation corresponds to a forest-tundra.
- talus** – A collection of fallen disintegrated material that has formed a pile at the foot of a steep slope.
- terrace** – Relatively level benches that are created and occur adjacent to streams or rivers, sometimes sharp or low breaks occur between individual terrace surfaces. These features are formed during a period of fluvial stability followed by a period of down cutting by a stream.
- terrain** See **topography**.
- terrestrial** – Pertaining to land as opposed to water.
- Terric** – A soil classification Subgroup designation indicating a mineral substrate within 40 cm to 140 cm of the surface (shallow peat).
- texture** – The relative proportions of sand, silt and clay (the soil separates) and coarser materials in a mineral sample. It is described in terms such as sand, loamy sand, sandy loam, loam, silt loam, clay loam, silty clay loam and clay that are often grouped into classes according to specific needs (fine texture, medium texture, moderately coarse texture, etc.).
- thermokarst** – The process by which characteristic landforms result from the thawing of ice-rich permafrost or the melting of massive ice.
- thermokarst lake** – A lake occupying a closed depression formed by settlement of the ground following thawing of ice-rich permafrost or the melting of massive ice.
- threatened species** – Any indigenous species of fauna or flora that is likely to become endangered in Canada if the factors affecting its vulnerability are not reversed.
- till (glacial till)** – Unstratified drift, deposited directly by a glacier without being reworked by meltwater. See also **moraine**
- topography** – The physical features of an area such as land shape and relief.
- toposequence** – A sequence of related soils that differ one from the other primarily because of topography and its influence on soil-forming processes. The relationship between soil and vegetation types, primarily a response to different relief.
- tree** – A woody plant usually with a single main stem.
- tree line** – The uppermost elevation or northern limit of tree growth, usually on upland sites.
- tundra** – A level to undulating, treeless plain characteristic of arctic or alpine regions. For most of the year, the mean monthly temperature is below the freezing point.
- undergrowth** – All the shrubs, herbaceous plants and mosses growing under a canopy.
- understory** – Vegetation growing beneath taller plants such as trees or tall shrubs.
- undulating** – A landform with a regular sequence of gentle slopes producing a wavelike pattern of low local relief. Slopes are generally less than 0.8 km long with gradients of less than 5%.
- uneven-aged** – Of a forest, stand, or forest type in which intermingling trees differ markedly in age.
- upland** – (1) A general term for an area that is elevationally higher than the surrounding area, but not a plateau.  
(2) An area that is not a wetland and that is also not imperfectly or poorly-drained.
- valley** – Any hollow or low-lying area bounded by hill or mountain ranges, and usually traversed by a stream.
- Value, color** – One of the three variables of color. A Munsell Soil Color Chart notation that indicates the lightness of a color.
- vegetation** – The general cover of plants growing on the landscape.

- vegetation structure** – The vertical stratification associated with a plant community.
- vegetation type** – 1. An abstract vegetation classification unit, not associated with any formal system of classification.  
2. In phytosociology, the lowest possible level to be described.  
See **forest type** and **association**.
- vegetation zone** – A naturally occurring band of vegetation that occupies a particular environment such as an elevational zone (e.g. subalpine zone).
- veneer** – A thin layer of unconsolidated material between 10- and 100-cm thick that does not mask the topographic character of the underlying terrain.
- veneer bog** – A bog occurring on gently sloping terrain underlain by generally discontinuous permafrost. Although drainage is predominantly below the surface, overland flow occurs in poorly defined drainage ways during peak runoff. Peat thickness is generally less than 1.5 m.
- Typic** – A soil classification Subgroup designation indicating a depth of more than 140 cm of organic material.
- von Post humification scale** – A manual method for estimating degree of decomposition of peat materials. It is a 10 point scale with assessment based on color of drained water and structure of hand squeezed material.
- watershed** – All lands enclosed by a continuous hydrologic-surface drainage divide and lying upslope from a specified point on a stream.  
See drainage basin.
- water table** – The upper surface of groundwater or that level below which the soil is saturated with water.
- weathering** – The physical and chemical disintegration, alteration and decomposition of rocks and minerals at or near the earth's surface by atmospheric agents.
- wetland** – Land that is saturated with water long enough to promote hydric soils or aquatic processes as indicated by poorly-drained soils\*, hydrophytic vegetation, and various kinds of biological activity that are adapted to wet environments.
- wildlife** – Natural fauna, usually limited to macro-organisms such as mammals, birds, reptiles, and amphibians.
- windfall** – A tree uprooted or broken off by wind, and areas containing such trees.
- woodland** – woody plants 2-8 m tall growing somewhat closely spaced.
- xeric** – Describes a dry site.
- zonal** – Describing a soil that reflects the influence of climate and climactic vegetation (e.g. Luvisol).
- zonal site** – Site with conditions that could potentially support climatic climax plant communities and their associated soils and thus reflect the regional climate.  
See **normal**, **modal** and **reference** site.
- zonation** – The natural stratification of the landscape in response to significant area differences.