

### 3.3.3 TAIGA PLAINS HIGH BOREAL (HB) ECOREGION



Typical upland landscapes in the Taiga Plains High Boreal (HB) Ecoregion are forested by closed to semi-closed stands of mostly black spruce and pine with some paper birch and understories of feathermoss, mountain cranberry, alpine bilberry, common Labrador tea, and lichen. White spruce and aspen mixed-wood stands occur on warm, moist well-drained sites. On drier sites mixed, open stands of black spruce and jack pine are widespread. Bog and fen complexes consisting of black spruce, common Labrador tea, alpine bilberry, bog rosemary, cloudberry, sedges and peat mosses dominate cold, wet, poorly drained sites. Shore fen wetlands are common but are not as extensive as those in the warmer Taiga Plains MB Ecoregion. Brunisols and Luvisols are common upland soils. Organic soils, Organic Cryosols and Gleysols are associated with wetlands.



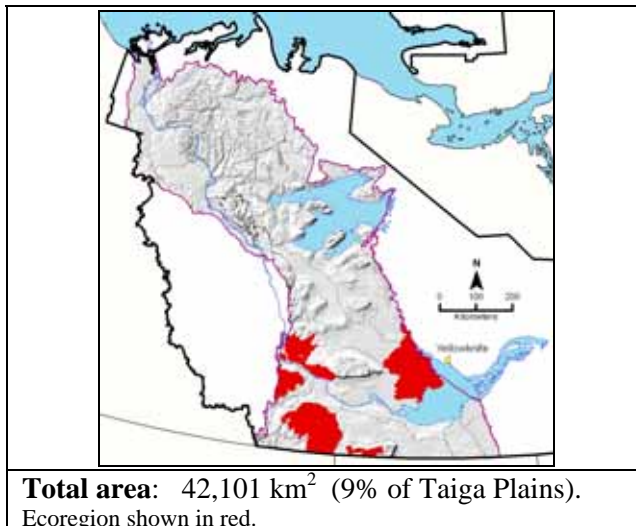
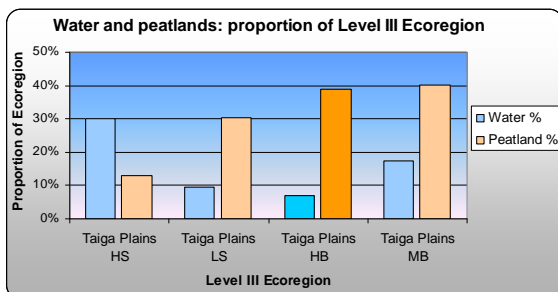
This photograph on the Ebbutt Upland shows the white spruce and aspen mixed-wood forests that grow on many slopes in the Taiga Plains HB Ecoregion, particularly those with southerly aspects. The photograph also includes a narrow sedge fen, a common feature on mid- to lower-slope positions where groundwater discharges produce flowing springs.



Bunchberry (*Cornus canadensis*) is a small, low-growing woody-stemmed herb that occupies moist woodlands and clearings. It is a widespread and very common plant of the boreal forest throughout the Taiga Plains.

### 3.3.3 TAIGA PLAINS HIGH BOREAL (HB) ECOREGION

**Overview:** *The Taiga Plains HB Ecoregion occurs at higher elevations in the southern Taiga Plains; it is surrounded by or lies immediately north of the lower-elevation Taiga Plains MB Ecoregion, and has a cooler climate.*



#### General Description

The Level III Taiga Plains HB Ecoregion extends across the southern third of the Taiga Plains at elevations of 300 to 700 mASL; the six Level IV ecoregions within it are surrounded by or lie immediately north of the lower-elevation Taiga Plains MB Ecoregion. Relatively poor forest growth and a higher proportion of organic terrain and peat plateaus are indicative of colder conditions at higher elevations. Imperfectly- to poorly-drained and gently sloping, level and undulating till occurs over much of the area; it is frequently mantled by peatlands. Low-growing open black spruce forests, treed bogs, horizontal fens and peat plateaus are dominant. Hill slopes, till with local relief, or coarse-textured parent materials provide generally better drained and warmer local environments, and allow the development of upland deciduous, mixed-wood and coniferous forests.

#### Climate

The Taiga Plains HB Ecoregion has sparse long-term climate data. Cooler conditions, relative to the adjacent lower-elevation Taiga Plains MB Ecoregion are indicated by the increased extent of permafrost features (peat plateaus) and less vigorous forest growth on uplands. These conditions are characteristic of High Boreal climates as defined by the Ecoregions Working Group (1989). Summer precipitation is expected to be higher than on the surrounding plains because of convective storms that form over higher terrain (Klock *et al.* 2000). Climate models (Agriculture and Agri-Food Canada 1997) provide the following general statistics. The mean annual temperature ranges from -2.0 to -4.5°C. The mean temperature in January, the coldest month, ranges from -24 to -28°C, and from 15.5 to 17.0°C in July, the warmest month. Mean annual precipitation is between 300 and 390 mm, with the wettest period in June through August and the driest period in December through April; about 55 percent

falls as rain and 45 percent as snow. The mean annual daily solar input (refer to Section 1.4.1 for further explanation) ranges between 10.5 and 11.0 mJ/m<sup>2</sup>/day, with low values of 1.0 to 1.5 mJ/m<sup>2</sup>/day in December and highs of 21.5 to 22.0 mJ/m<sup>2</sup>/day in June.

#### Topography, geology, soils, and hydrology

Hill systems at elevations of 300 to 700 mASL surrounded by the gently sloping to undulating plains of the Taiga Plains MB Ecoregion characterize four of the six Level IV ecoregions within the Taiga Plains HB Ecoregion; the other two Level IV ecoregions occur at more northerly latitudes. The most common landform is imperfectly- to poorly-drained glacial till on which Organic and Gleysolic soils or Organic Cryosols have developed. Brunisols and Luvisols occur along slopes and on hummocky or ridged till, or well-drained fluvial and glacio-fluvial materials. There are few named lakes and no major rivers in the Ecoregion.

#### Vegetation

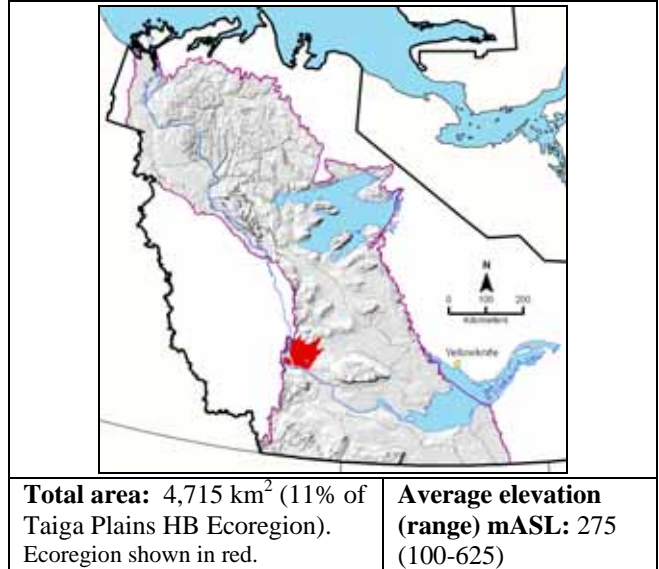
Stunted black spruce forests with Labrador tea-feathermoss understories, black spruce bogs, horizontal fens, and peat plateaus are widespread on wet, poorly-drained sites. Warmer and better drained slopes, hummocky and ridged landforms, and coarse-textured materials are sites where more vigorous and diverse mixed-wood, deciduous and conifer stands are locally abundant. Elsewhere, upland forests are restricted to relatively small areas. Black spruce forests, bogs and peat plateaus are more extensive than in the Taiga Plains MB Ecoregion. Northern ribbed fen and horizontal fen development is also different between these two Level III ecoregions; plant growth is not as vigorous and larch is less common on fens in the Taiga Plains HB Ecoregion.

### 3.3.3.1 Ebbutt Upland HB Ecoregion

**Overview:** *The Ebbutt Upland HB Ecoregion includes several prominent hills with relatively tall and diverse mixed-wood forests on the slopes and a central gently domed plateau covered by slow-growing black spruce forests and peat plateaus.*

**Summary:**

- South and west slopes with relatively tall and diverse mixed-wood forests.
- Level to gently sloping, poorly-drained areas with more open and stunted black spruce-shrub forests and peat plateaus.



#### General Description

The Ebbutt Upland HB Ecoregion includes gently to steeply sloping terrain at elevations from 200 m ASL to 600 m ASL. It slopes gently up to the north and east from the South Mackenzie Plain MB Ecoregion. Its eastern extent is defined by the poorly-drained expanse of burned peat plateaus that typifies the Bulmer Lake LS Ecoregion, and its northern boundary is the generally higher-elevation and colder Blackwater Upland LS Ecoregion. Gently sloping and undulating till plains surround three prominent hills; there is also an outlying smaller hill to the west of the main ecoregion unit. Tall and diverse mixed-wood and deciduous stands occupy south and west facing slopes; slumping occurs on steep terrain on the upper slopes of the hills. The central part of the Ecoregion is a gently domed plateau forested by wet black spruce stands with shrubby understories; peat plateaus with large collapse scars are common and these features together with poor spruce growth on slopes are indicative of the cooler climate. The Ebbutt Hills generate convective summer storms, and rainfall amounts are likely higher than in the surrounding lowland terrain (Klock *et al.* 2000).

#### Geology and Geomorphology

Horizontally bedded Cretaceous shales underlie the Ebbutt Hills. Till is the dominant surficial landform, and is gently undulating and sloping with some ridged areas. Slope failures are common particularly on the upper slopes of the highest hill to the south and along parts of the Willowlake River; springs and seeps occur in places. Peatlands overlie till materials to varying depths in the gently sloping bowl between the hills and on the hilltops. Coarse-textured glacio-fluvial materials occur in pockets mainly in the northwest part of the Ecoregion. Permafrost is discontinuous but locally extensive in the bowl and on the hilltops, occurring mainly as peat plateaus.

#### Soils

Fine-textured Luvisolic and Brunisolic soils are associated with conifer, mixed-wood and aspen stands on the slopes; colluvial deposits (i.e., slump areas) have Regosolic soils. The central bowl-shaped area is imperfectly- to poorly-drained, and Gleysols or Gleysolic subgroups of mineral Cryosols and Organic soils are the dominant soil types along with Organic Cryosols under peat plateaus.

#### Vegetation

Vegetation in the Ebbutt Upland HB Ecoregion varies with aspect, slope position, and parent material. On the gentle southerly and westerly slopes adjacent to the Mackenzie River and along the steeper slopes of the hills and the Willowlake River valley, relatively tall and dense trembling aspen, mixed-wood and white spruce stands with diverse and vigorous understories including low-bush cranberry and prickly rose occur on moderately well-drained soils. On the undulating plain between the hills, slow-growing closed black spruce-low shrub communities are widespread on imperfectly- to poorly-drained sites; peat plateaus that include open black spruce-lichen forests and large, sedge and peat-dominated collapse scars are common. Jack pine stands occur on sandy glacio-fluvial deposits in the northwest part of the Ecoregion.

#### Water and Wetlands

The Willowlake River carves a broad, deep valley through the northern part of the Ecoregion. Numerous small intermittent and permanent streams flow off the hillsides. Peat plateaus are the most common wetland type; spring fens occur along the slopes of the major hill systems.

#### Notable Features

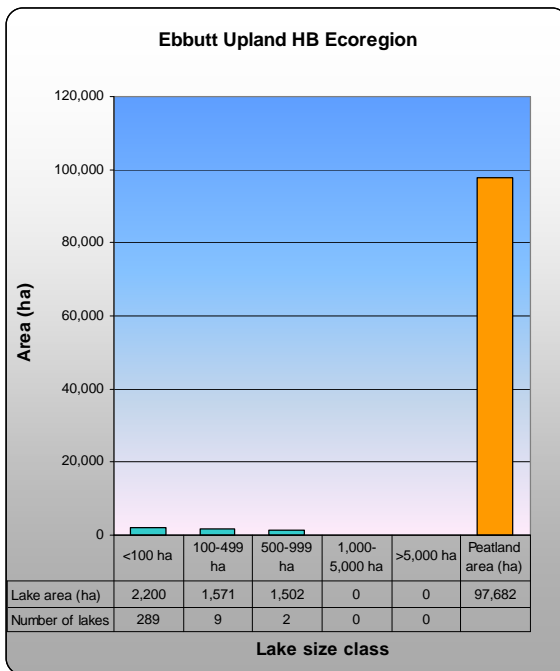
The south and west slopes of the Ebbutt Upland HB Ecoregion are probably the most northerly occurrence of extensive, relatively tall and diverse boreal mixed-wood stands in the Taiga Plains.



Tall, diverse white spruce and trembling aspen stands cover the southwest slope of one of three major hills in the Ebbutt Upland HB Ecoregion.



A poorly-drained black spruce – peat plateau complex dominates the central gently domed plateau of the Ecoregion.



Proportion of Ecoregion occupied by lakes: 1%  
 Proportion of Ecoregion occupied by bogs and fens: 21%



Groundwater seepage together with south-facing aspects supports good growth of mixed-wood forests on the slopes and gives rise to this mossy spring, midslope on the most southerly hill within the Ecoregion.

### 3.3.3.2 Horn Plain HB Ecoregion

**Overview:** *The Horn Plain HB Ecoregion is a gently sloping, generally wet plain with a mix of open, slow growing black spruce forests and patterned fens, patchy mixed-wood and jack pine growth, and peat plateaus in the north.*

#### Summary:

- Gently sloping plain.
- Mixed spruce forests and patterned fens on wet, poorly-drained soils across most of the Ecoregion.
- Jack pine and mixed-wood forests where drainage is better and along the southern border.
- Peat plateaus are common in the north.



**Total area:** 2,061 km<sup>2</sup> (5% of Taiga Plains HB Ecoregion).  
Ecoregion shown in red.

**Average elevation (range) mASL:** 250 (125-400)

#### General Description

The Horn Plain HB Ecoregion, at the base of the Horn Plateau, slopes gently south toward the Mackenzie River. The colder Bulmer Plain Low Subarctic (LS) and Horn Slopes LS Ecoregions lie to the north, and the warmer South Mackenzie Plain MB and Horn Slopes MB Ecoregions to the south and east. Till plains, frequently mantled by organic veneers and blankets, are the dominant landform; open, slow growing forests of black and white spruce grow on very moist to wet sites. Scattered pockets of coarse-textured glacio-fluvial deposits provide adequate sites for jack pine and trembling aspen stands. Patterned fens occur on the slopes; along the northern border, peat plateaus are extensive. This Ecoregion is distinct from the Ebbutt Upland HB Ecoregion to the west and the Horn Slopes MB Ecoregion to the east because it has less pronounced terrain and generally less vigorous forest cover than the latter two Ecoregions.

#### Geology and Geomorphology

Fine-textured, imperfectly- to poorly-drained till deposits, frequently overlain by organic veneers and blankets, constitute the main materials on the gently sloping plain. Ancient meltwater channels and pockets of glacio-fluvial or washed till materials are scattered across the plain. Thicker organic deposits occur as peat plateaus along the northern border.

#### Soils

Gleysols and Organic soils are the most common soil type and are associated with wet soils across much of the Ecoregion. Brunisols occur on coarser-textured glacio-fluvial materials in association with jack pine and mixed-wood stands and Luvisols near the base of the slope in association with trembling aspen and mixed-wood stands. Organic Cryosols occur with peat plateaus.

#### Vegetation

The very gentle southerly slopes within the Horn Plain HB Ecoregion are probably seepage areas, receiving surface and groundwater inputs from the adjacent higher-elevation Horn Plateau and Ebbutt Hills. These conditions support short, open canopied mixed black spruce and white spruce stands with shrub and moss understories on wet mineral soils and organic veneers and blankets; patterned sedge fens with larch and black spruce occupy slightly wetter sites. Patches of slightly elevated till or coarse-textured glacio-fluvial materials provide better drainage, and are occupied by trembling aspen, mixed-wood and white spruce stands with shrubby understories including low-bush cranberry and prickly rose. Jack pine stands with sparse lichen and low shrub understories occur on dry, rapidly drained glacio-fluvial deposits. Relatively tall and dense white spruce stands grow only in narrow riparian zones. Near the base of the slope, trembling aspen and mixed-wood stands become more continuous. Peat plateaus with open stunted black spruce-northern Labrador tea-lichen stands and sedge-moss communities in the collapse scars are extensive in the northernmost part of this Ecoregion, where it adjoins the Bulmer Plain LS Ecoregion.

#### Water and Wetlands

There are no major rivers traversing the Ecoregion, and only a few small, shallow ponds. Wetlands are mainly northern ribbed fens and horizontal fens; peat plateaus become more common to the north. Small, circular thermokarst lakes have developed in places where permafrost has thawed. Groundwater seepage and surface water flows from the adjacent uplands are probably both important contributors to generally wet conditions.

#### Notable Features

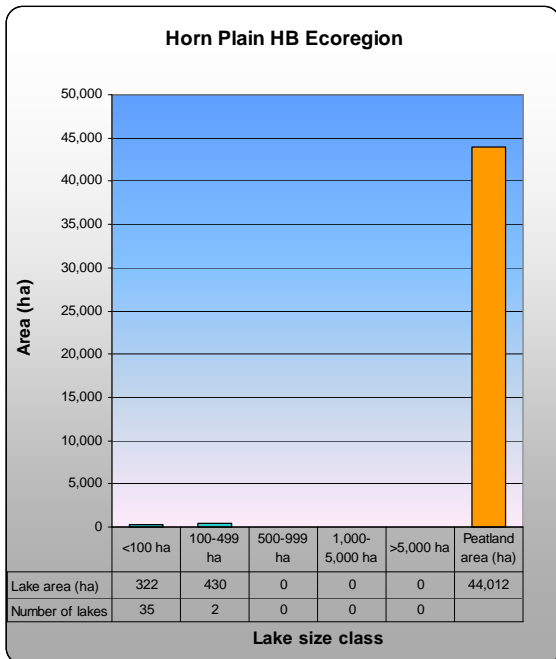
This Ecoregion is transitional between the colder permafrost-dominated landscapes to the north and the generally warmer lacustrine plains and slopes to the south and east.



Closed canopy black and white spruce forests with horizontal and northern ribbed fens and scattered trembling aspen and mixed-wood stands (the lighter green tones in upper half of image) are typical of landscapes in the Horn Plain HB Ecoregion.



Relatively tall and diverse conifer-dominated forests are restricted mainly to narrow bands along stream channels; here, white spruce and willow shrublands parallel a sluggish creek.



Proportion of Ecoregion occupied by lakes: <1%  
 Proportion of Ecoregion occupied by bogs and fens: 21%

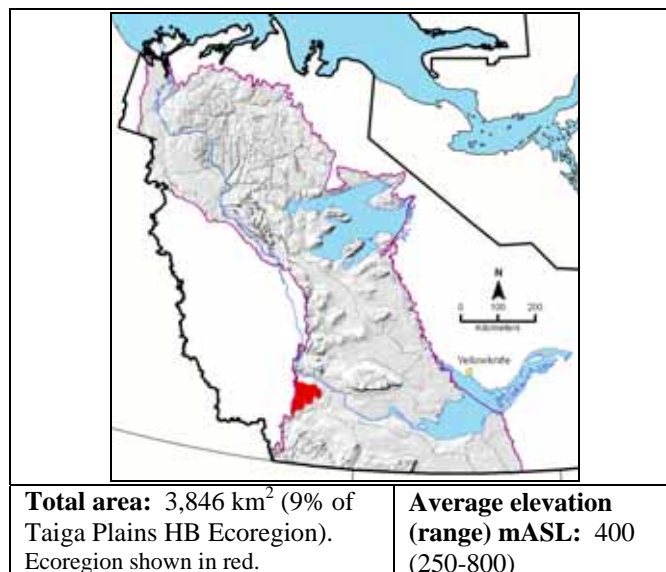
Northern ribbed fens with larch and black spruce occur on gentle slopes in the Ecoregion; the small ponds are probably the result of melting permafrost (thermokarst).

### 3.3.3.3 Sibbeston Upland HB Ecoregion

**Overview:** A complex of hills, slopes and low-lying areas create highly contrasting ecosystems, including diverse upland forests on warm, relatively well-drained slopes, wet, low-lying areas with black spruce stands, and extensive peat plateaus.

**Summary:**

- The Martin Hills, two smaller hills, and the lowermost slopes of the Nahanni Range provide locally warmer, better-drained conditions that favor upland forest development.
- Peat plateaus, horizontal fens and northern ribbed fens occupy large areas around Sibbeston Lake, and much of the remaining area is forested by black spruce-Labrador tea stands.



#### General Description

The Sibbeston Upland HB Ecoregion occurs at elevations of about 300 to 600 m ASL. It is surrounded on the north, east and south by the lower-elevation South Mackenzie Plain MB Ecoregion; the lower colluvial slopes of the Nahanni Range form its western border. Vegetation community structure is affected by slope, local moisture and climate. The slopes of the Martin Hills and two other smaller hills to the south, the lower slopes below the Nahanni Range, and till ridges provide somewhat warmer, better drained sites and promote the development of deciduous, mixed-wood and coniferous stands interspersed with northern ribbed fens. Below the slopes on level to gently undulating wet till plains, shallow to deep peat deposits have developed. Open, slow-growing forests of black and white spruce occur on slightly sloping areas, and extensive peat plateaus and horizontal fens with black spruce occupy level terrain. The Martin Hills generate convective summer storms, and rainfall amounts are likely higher than in the surrounding lowland terrain (Klock *et al.* 2000).

#### Geology and Geomorphology

Fine-textured till deposits occur across the Ecoregion; there are striking glacial fluting features north of Sibbeston Lake. Slope failures are common and sometimes spectacular on the steeper slopes of the Martin Hills and the lower slopes of the Nahanni Range. Minor alluvial and glacio-fluvial deposits occur along narrow stream valleys.

#### Soils

On the warmer south facing slopes, Luvisols and Brunisols are associated with relatively vigorous upland forests and Regosols with recently slumped terrain. Cryosols occur with mineral soils over much of the area, Organic soils with fens, and Organic Cryosols with peat plateaus.

#### Vegetation

Vegetation growth is strongly influenced by slope, aspect and soil moisture within this Ecoregion. The gentle to moderate slopes of the Martin Hills and two other smaller hills to the south, and the east-facing slopes below the Nahanni Range are moderately well- to imperfectly-drained and relatively warm on easterly, southerly and westerly aspects. They support a mixture of trembling aspen, mixed-wood and white spruce forests; rich larch – sedge patterned fens occur in seepage areas on lower slope positions and in some places, extensive tall green alder and willow shrublands occur. On the surrounding lower-elevation areas, deciduous and coniferous forests including jack pine grow along the well-drained tops of parallel till ridges. Elsewhere, the water table is near the surface, and short, open-canopied black spruce stands with Labrador tea and moss understories grow on poorly-drained wet mineral soils and organic veneers and blankets. Deep peat deposits are extensive, and treed fens and peat plateaus are a dominant feature of the central and northern parts of this Ecoregion.

#### Water and Wetlands

Sibbeston, Little Doctor, Cli and Tsetso Lakes are the main waterbodies. Many intermittent streams flow off the hills and drain into Sibbeston Lake or into tributaries of the Liard and Mackenzie Rivers. Bogs forested by open, stunted black spruce on peat plateaus, collapse scar bogs, northern ribbed fens, and horizontal fens are common on level to gently undulating terrain throughout the Ecoregion.

#### Notable Features

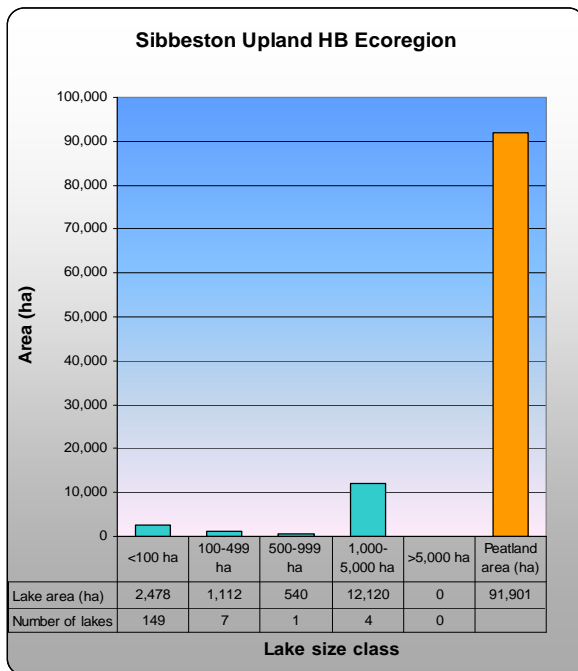
Northern pitcher plants, reported as rare in the Northwest Territories by McJannet *et al.* (1995), were found in collapse scars within peat plateaus near Sibbeston Lake during fieldwork in 2005.



Mixed-wood forests are dominant on the side slopes of the Martin Hills, the major hill system within the Sibbeston Upland HB Ecoregion. .



Tall, dense white spruce – trembling aspen – Alaska paper birch mixed-woods are typical of the north slope of the Martin Hills.



Proportion of Ecoregion occupied by lakes: 4%  
 Proportion of Ecoregion occupied by bogs and fens: 24%



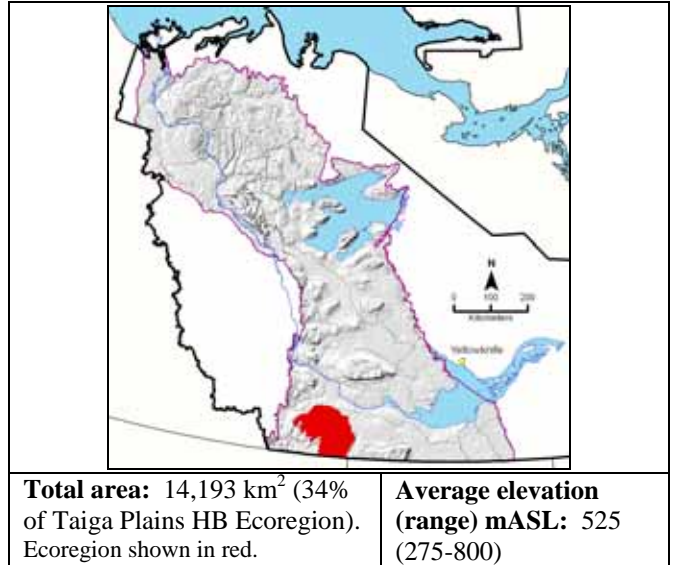
Northern pitcher plants are reported as rare by McJannet *et al.* (1995), but this and other recent studies indicate that it may be widespread.

### 3.3.3.4 Trout Upland HB Ecoregion

**Overview:** Level to hilly till uplands with peat plateaus, black spruce bogs, and scattered upland forests on slopes and raised till features are characteristic of the Trout Upland HB Ecoregion.

**Summary:**

- Extensive peat plateaus at higher elevations, and bogs and nutrient-poor horizontal fens throughout.
- Deciduous, mixed-wood and conifer forests are restricted to slopes, locally elevated areas and stream courses.
- Lodgepole pine and pine hybrids occur at higher elevations.



#### General Description

The Trout Upland HB Ecoregion occurs at elevations of 400 to 700 mASL. It is bordered on the west, north and east, respectively, by the lower-elevation Trout Upland MB, South Mackenzie Plain MB, and Tathlina Plain MB Ecoregions; the southern boundary is the Alberta – British Columbia border. A series of low hills above 600 mASL trending northwest to southeast occupy about a third of the Ecoregion; the remainder is a plain that gently slopes to the northeast. Till plains and ridges are mantled by peatlands over much of the Ecoregion, including the hills. Peat plateaus at higher elevations and bogs with open, stunted black spruce woodlands are characteristic peatland types throughout the Ecoregion. Deciduous, mixed-wood, white spruce and lodgepole pine stands or jack pine – lodgepole pine hybrid stands are found only as scattered patches on slopes and on hummocky or fluted till. The Trout Upland and Cameron Hills generate convective summer storms, and rainfall amounts are likely higher than in the surrounding lowland terrain (Klock *et al.* 2000).

#### Geology and Geomorphology

Fine-textured till deposits are the most common parent material, and are usually covered by organic veneers and blankets. Thick peat layers have accumulated over time on level areas and depressions. Glacial fluting is common on the hilltops. Numerous small meltwater channels run perpendicular to contour mainly along the northern third of the Ecoregion, minor alluvial deposits occur along small local streams.

#### Soils

Organic Cryosols, Organic soils and Gleysols are associated with peat plateaus, bogs and fens and are the most common peatland soil types. Brunisols are probably the most common mineral soil, occurring on fine- to coarse-textured parent materials.

#### Vegetation

Peat plateaus and their associated open black spruce – Labrador tea – lichen – moss plateau communities and sedge – moss collapse scar communities are widespread and characteristic of higher terrain in this Ecoregion. Short open-canopied wet black spruce – shrub forests, black spruce bogs, treed black spruce – larch fens and sedge fens are common throughout. Deciduous and mixed-wood forests are restricted to hill slopes or areas of local relief where moisture and temperature conditions are conducive to tree growth. White spruce grows well only in narrow belts immediately adjacent to stream drainages. Young lodgepole pine and hybrid lodgepole pine – jack pine stands, commonly with a black spruce component, are common on till parent materials at higher elevations.

#### Water and Wetlands

Trout, Trainor and Cormack Lakes are the main waterbodies. Many intermittent streams flow off the hills and into Trout Lake. Wetlands are common on level to gently undulating terrain throughout the Ecoregion, and are mainly bogs with open, stunted black spruce cover or sparsely forested horizontal fens.

#### Notable Features

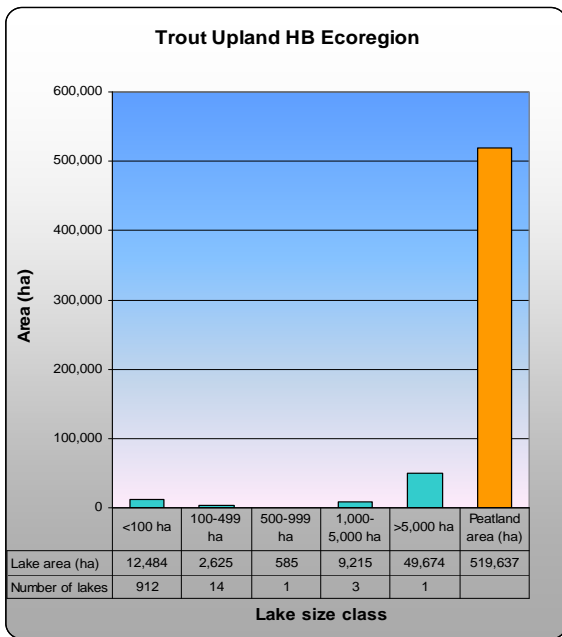
Veneer bogs, characteristic features of Low Subarctic climates that occur in the Cameron Plateau LS Ecoregion to the east, also occur within this Ecoregion on high, sloping terrain over areas too small to map at the ecoregion scale and indicate a transition to colder conditions at higher elevations.



Peat plateaus and bogs with scattered islands of deciduous and mixed-wood forest are characteristic of the Trout Upland HB Ecoregion.



In this oblique view of peat plateaus, the dark brown areas are burned bogs with Labrador tea and dwarf birch regeneration, the brownish-orange patches are collapse scars, and the green areas are sedge and shrub fens.



Proportion of Ecoregion occupied by lakes: 5%  
 Proportion of Ecoregion occupied by bogs and fens: 37%



Late evening sun across the western part of the Ecoregion highlights glacial fluting patterns; deciduous forests occupy the elevated flutes and black spruce bogs occupy the interflute depressions. White spruce stands grow well on well-drained warm sites, such as the stream terraces in the foreground.

### 3.3.3.5 Cameron Upland HB Ecoregion

**Overview:** *Wet, level to gently sloping terrain with peat plateaus and fens, and lodgepole pine stands on hummocky till characterize this small, relatively high-elevation ecoregion atop the Cameron Hills.*

**Summary:**

- Level, gently sloping and hummocky till with organic veneers and blankets in level to gently sloping areas.
- Peat plateaus and sloping fens on level to sloping peatlands; and lodgepole pine or pine hybrids on hummocky and ridged till.



<b>Total area:</b> 1,449 km <sup>2</sup> (3% of Taiga Plains HB Ecoregion). Ecoregion shown in red.	<b>Average elevation (range) mASL:</b> 625 (525-800)
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#### General Description

The Cameron Upland HB Ecoregion, the smallest Level IV ecoregion within the Level III Taiga Plains HB Ecoregion, includes level to gently sloping areas at elevations mainly above 600 m in the Cameron Hills. It is bordered on the north and west by the Cameron Slopes MB Ecoregion and on the east and south by the Cameron Plateau LS Ecoregion. Peatlands frequently blanket fine-textured till materials, and hummocky tills in the western portion create a knob-and-kettle landscape with many pothole lakes and wetlands. Lodgepole pine stands or jack pine – lodgepole pine hybrid stands occur on well- to imperfectly-drained sites; trembling aspen stands are occasional. Wet, sometimes intricately patterned northern ribbed fens, and peat plateaus with black spruce and lichen cover are dominant features of this Ecoregion. Summer thunderstorms are more frequent and rainfall amounts are likely higher in the Cameron Hills than in the surrounding lowland terrain (Klock *et al.* 2000).

#### Geology and Geomorphology

Fine-textured till parent materials occur as gently sloping plains, hummocky knob and kettle deposits, ridges and flutings. Organic veneers and blankets are dominant on level to gently sloping areas. Coarse-textured level to hummocky glacio-fluvial deposits occur in scattered pockets. Permafrost is discontinuous but locally extensive, occurring mainly as peat plateaus.

#### Soils

Brunisolic and Luvisolic soils are probably common on well- to moderately well-drained hummocky and ridged till deposits. Gleysols and gleyed subgroups of other soil types are likely typical of sloping tills that are not blanketed by peat deposits. Organic soils are associated with patterned and sloping fens, and Organic Cryosols with peat plateaus.

#### Vegetation

Vegetation in the Cameron Upland HB Ecoregion is probably very similar to that described for the adjacent Upper Boreal Highlands Natural Subregion in Alberta. Wetlands are extensive and include patterned sedge fens, sloping black spruce fens, and bogs forested by open black spruce-northern Labrador tea-peat moss-lichen communities and underlain by permafrost (peat plateaus). Upland forests are mainly young to mid-successional lodgepole pine – jack pine hybrids or pure lodgepole pine at the highest elevations, with black spruce as a frequent and sometimes dominant associate. Forest understories are typically species-poor, and include common and northern Labrador tea, mountain cranberry, feathermosses and lichens (Natural Regions Committee 2006). Trembling aspen is uncommon, occurring on hummocky till or on stream valley walls.

#### Water and Wetlands

There are no named permanent water bodies in this Ecoregion; many small pothole lakes occur in areas of hummocky till. Deeply incised gullies mark the headwaters of tributaries to Kakisa and Cameron Rivers. Bogs on peat plateaus and associated collapse scar bogs are the most common wetland type; northern ribbed fens with closely spaced, fine strings are an interesting feature of this Ecoregion.

#### Notable Features

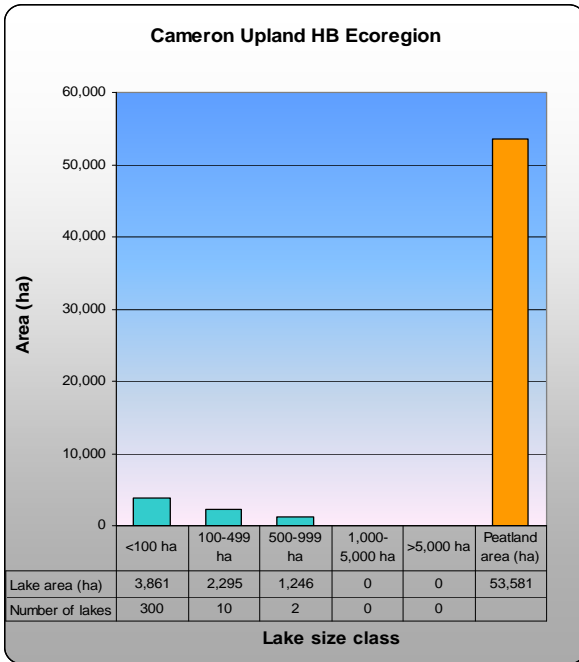
Lodgepole pine and lodgepole pine–jack pine hybrids reach their northern distribution limits in the Taiga Plains within the Northwest Territories, where they occur only at higher elevations in the Cameron Upland and Trout Upland.



The Cameron Upland HB Ecoregion and the deeply incised Cameron River valley occupy the foreground, with the lower-elevation Tathlina Plain MB Ecoregion in the background. White spruce, scattered trembling aspen and lodgepole pine – jack pine hybrids occur here on well-drained valley slopes.



Peat plateaus (grayish-green) with large brownish-yellow collapse scars are typical of about 40 percent of the Ecoregion. The linear feature is a seismic line used for petroleum exploration.



Proportion of Ecoregion occupied by lakes: 5%  
 Proportion of Ecoregion occupied by bogs and fens: 37%



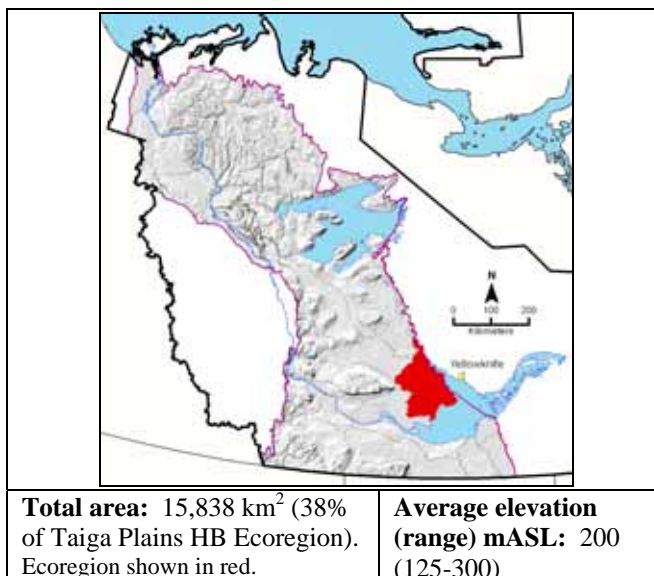
Hummocky till with lodgepole pine and lodgepole pine-jack pine hybrids occupies the western part of the Ecoregion in this northwest view; Dogface Lake is in the upper image.

### 3.3.3.6 Great Slave Plain HB Ecoregion

**Overview:** *Marl ponds, sinkholes, coarse-textured beach ridges, and extensive jack pine and white spruce forests characterize the Great Slave Plain HB Ecoregion.*

#### Summary:

- Dry, well-drained and frequently burned washed tills forested by extensive young jack pine stands and slow growing white spruce.
- Limestone exposures, karst topography, and shallow marl ponds.



#### General Description

The Great Slave Plain HB Ecoregion is the largest Level IV ecoregion within the Level III Taiga Plains HB Ecoregion. It is bounded on the east by the Level II Taiga Shield Ecoregion, on the south by Great Slave Lake, and on the north and west by the nearly level Bulmer Lake LS and Great Slave Lowland MB Ecoregions. Its regional topography is gently dome-shaped. Limestone escarpments, thousands of marl ponds and associated wetlands, sinkholes (karst topography), and beach ridges with intricate scroll patterns make this Ecoregion unique within the Taiga Plains HB Ecoregion. Young jack pine and white spruce forests cover most of the northern half; deciduous and mixed-wood forests become more common to the south. Permafrost features (peat plateaus) occur along the western boundary.

#### Geology and Geomorphology

Horizontally bedded dolomite, limestone and sandstone of Cambrian to Devonian age underlie this Ecoregion. Scalloped escarpments parallel to Great Slave Lake are evidence of wave erosion by glacial Lake McConnell. Where the limestone has dissolved, areas of karst topography have developed, especially in the northeastern portion. Solution waters are high in dissolved solids, and white calcium carbonate deposits form on the bottom and along the shorelines of shallow ponds. Water-washed gravelly and highly calcareous till deposits overlying bedrock form a low, dry north – south ridge through the centre of the Ecoregion; on this surface, intricately shaped, concentric beach ridges formed after the last glaciation as glacial Lake McConnell withdrew and the land surface rose following removal of thick glacial ice sheets. Eolian deposits occur inland from Lonely Bay on Great Slave Lake.

#### Soils

Coarse-textured Brunisolic soils occur throughout the Ecoregion. Gleysols occur adjacent to ponds. Deep peat deposits are uncommon.

#### Vegetation

The Great Slave Plain HB Ecoregion is characterized by coarse-textured and rapidly drained glacial till and highly calcareous soils. Extensive pure jack pine stands with sparse common bearberry and lichen understories occupy many frequently burned areas. White spruce is common throughout the area with similar understory associates; it generally has narrow crowns and only grows well adjacent to small streams and wetlands. Trembling aspen becomes more common toward the south near Great Slave Lake. Some of the washed till deposits on the long, low ridge that runs north to south through the centre of the Ecoregion are too dry to support tree growth, and sparse communities of common bearberry and shrubby cinquefoil grow on calcareous gravels and coarse sands. Small horizontal fens, typically sedge-dominated, occur together with calcareous ponds and in aggregate cover about half the Ecoregion. Peat plateaus are uncommon.

#### Water and Wetlands

There are no major rivers traversing the Ecoregion. Chedabucto, Bras d'Or and Birch Lakes are the three largest water bodies, and are shallow. Thousands of small, very shallow permanent and ephemeral marl ponds dot the landscape on either side of the low north – south ridge, which has virtually no standing water. Calcium-rich net fens surrounding these ponds cover extensive areas. Permafrost-influenced wetlands are uncommon, occurring mainly along the western boundary.

#### Notable Features

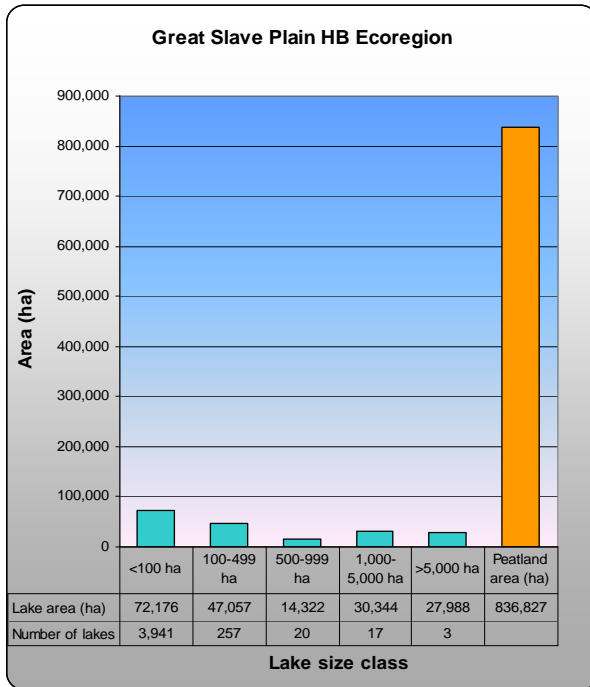
This Ecoregion is unique within the Level III Taiga Plains HB Ecoregion; its surface and subsurface geology create a mosaic of very dry pine-dominated uplands and calcareous ponds and wetlands, and the convoluted beach ridge patterns are rarely seen elsewhere in the Taiga Plains.



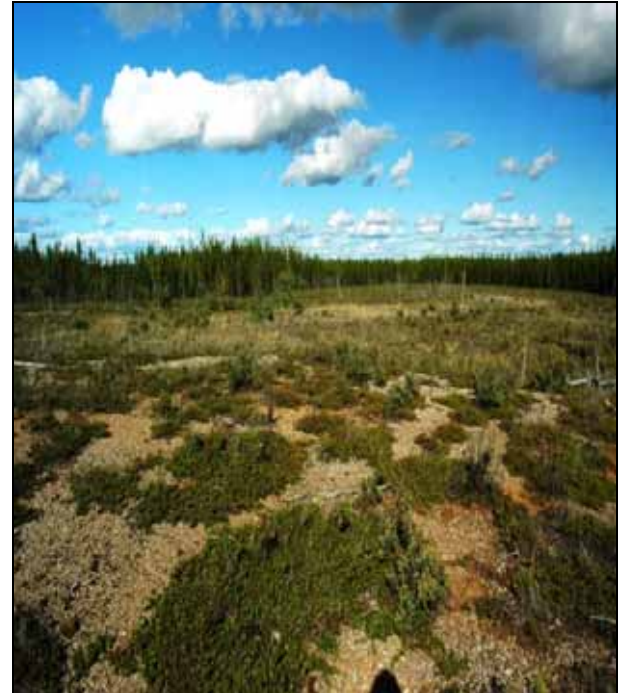
A complex of jack pine forests (light green tones, mid-image) on well-drained sandy and gravelly uplands and calcareous ponds and fens in low-lying areas is common in the Great Slave Plain HB Upland.



The central ridge through this Ecoregion is very well-drained. These intricate scrollwork patterns are old beach ridges consisting of coarse gravelly deposits and vegetated by open jack pine stands with sparse understories.



Proportion of Ecoregion occupied by lakes: 12%  
 Proportion of Ecoregion occupied by bogs and fens: 53%



Dwarf shrubs such as common bearberry and shrubby cinquefoil are the dominant ground vegetation on the highly calcareous gravels of the beach ridges in the top right-hand image.