ECOLOGICAL REGIONS OF THE **NORTHWEST TERRITORIES** TAIGA SHIELD



Northwest Territories Environment and Natural Resources



Healthy natural ecosystems are critical to our well-being; they provide us with clean air and clean water, a wide rangeof renewable resources, and the opportunity to enjoy landscapes with their rich diversity of plant and animal communities. Climate and topography act together to produce ecosystems that

can range in size from lichen communities on a piece of granite to landscapes the size of Great Slave Lake. Understanding what makes one area different from another is an important part of wisely managing the vast expanses of the Northwest Territories for present and future generations. These differences can be described by dividing larger landscapes into smaller areas that have unique combinations of climate, terrain, vegetation, soils and wildlife; these are called ecological regions (ecoregions).

The Northwest Territories is developing an ecologically based landscape classification for environmental assessment, cumulative effects management, biodiversity monitoring and reporting, forest resource analysis and planning, wildlife habitat evaluation and conservation, and protected area identification. Such a classification is essential for responding to local, regional, national and international enquiries, and the Northwest Territories is working with other Canadian provinces and territories to use a North American continental approach to improve its ecological classification. The increasing pace and scale of mineral development on the Canadian Shield of the Northwest Territories made this area a priority for revision, and this poster describes the ecosystems of the Taiga Shield Ecological Region that occur within the Northwest Territories.

Ecological classification and mapping for the Taiga Shield are presented within an ecoregion framework for continental North America that includes four levels, from very large Level I ecoregions that represent ecosystems of global extent to relatively small Level IV ecoregions that represent ecosystems of several thousand square kilometers. The Northwest Territories includes parts of three Level I ecoregions: Tundra, Taiga and Northwest Forested Mountains. Eight Level II ecoregions including the Taiga Shield are nested within the Level I ecoregions and 17 Level III ecoregions are grouped under the Level II ecoregions. There are four Level III ecoregions within the Taiga Shield: the Taiga Shield High Subarctic (HS), the Taiga Shield Low Subarctic (LS), the Taiga Shield High Boreal (HB), and the Taiga Shield Mid-Boreal (MB). Level III ecoregions are identified primarily by regional climate differences reflected in the soils and vegetation unique to each ecoregion. The Level III ecoregions of the Taiga Shield are further divided into 25 Level IV ecoregions that are typically defined by a unique combination of terrain and vegetation patterns



This poster is associated with the ENR technical report: "Ecological Regions of the Northwest Territories - Taiga Shield" Additional copies of the poster and report may be obtained from: Department of Environment and Natural Resources P.O. Box 1320, Yellowknife, NT X1A 2L9 Phone: (867) 920-8064 Fax: (867) 873-0293

Web site: www.enr.gov.nt.ca

Taiga Shield High Subarctic (HS) Ecoregion

The Taiga Shield High Subarctic (HS) Ecoregion occupies nearly peat plateaus are typical wetland vegetation. Permafrost is 125,000 km², and includes 9 Level IV ecoregions that arc across continuous along the northern boundary but discontinuous the northern third of the Taiga Shield. Landscapes are dominated where bedrock is interspersed with mineral soils. Several large by bedrock in the western half, and boulder till and sandy or rivers including the Coppermine, Snare, Snowdrift, Taltson, gravel outwash further east. Slow-growing, open white and black Thelon and Dubawnt flow through the Ecoregion; hundreds of large lakes over 50 km² in area and thousands of smaller lakes spruce woodlands with lichen and shrub understories grow on lower slopes and valleys, shrub and lichen tundra occupies dot the landscape. upper slopes and hilltops, and sedge marshes and polygonal



edrock and boulder till in the Taiga ld High Subarctic (HS) Ecoregion covered by open and stunted ce woodlands with understory s such as ground birch, willow, iern Labrador tea, bog cranberry, bearberry and crowberry, as well cotton-grass, mosses and lichens. eless [tundra] areas consist of lowving shrubs, along with mountain ens, reindeer lichens and cottonass tussocks on hilltops and other osed sites; these become extensiv vards the northern edge of the

Taiga Shield Low Subarctic (LS) Ecoregion

The Taiga Shield Low Subarctic (LS) Ecoregion contains 10 Level IV ecoregions with an area of almost 115,000 km² in a broad, northwest-southeast band across the centre of the Taiga Shield. It includes the gently sloping bedrock plateaus north of Great Slave Lake and the nearly level to hummocky plains south and east of Great Slave Lake. Level to rolling and hilly bedrock with thin boulder till, open black spruce-lichen woodlands and forests, and large burned areas regenerating with dwarf birch and black spruce are characteristic



n spruce – lichen woodland closed stands of black spruce e typical of well-drained sites in he Taiga Shield Low Subarctic (LS) region. Understory vegetation sists mostly of lichens, with bog nberry, bog bilberry, crowberry, mon Labrador tea and mosses. atlands are vegetated by low shrubs ch as ground birch, willow, heaths, s well as lichens, sphagnum mosses nd sedges in wet depressions; black ruce and larch [tamarack] are It plateaus. Exposed bedrock and ulder terrain are covered by lichens

Taiga Shield High Boreal (HB) Ecoregion

The Taiga Shield High Boreal (HB) Ecoregion occupies the southwestern third of the Taiga Shield and also includes the somewhat lower elevations east and north of Great Slave Lake. It contains 5 Level IV ecoregions totaling nearly 85,000 km². Eskers and outwash deposits occur mainly in the southeast on higher terrain. Mixed white spruce and trembling aspen forests are common in the western portion of the Ecoregion on moist, rich sites, and extensive young jack pine stands have developed on huge burns.



uplands, forested by stands lack spruce and jack pine with a cranberry, common Labrador tea. ens and mosses, are a common widespread landscape feature bughout the Taiga Shield High preal (HB) Ecoregion. Paper birch is e dominant deciduous species while hite spruce and aspen are generally stricted to warm, moist, well-drained d nutrient-rich sites. Black spruce, h [tamarack], paper birch, Labrador a, bog cranberry, red bearberry, udberry, sedges and peat mosses upy the cold and wet bogs and

Taiga Shield Mid-Boreal (MB) Ecoregion

The Taiga Shield Mid-Boreal (MB) Ecoregion occupies the extreme wood, deciduous and coniferous forests and extensive wetlands southwest corner of the Northwest Territories Taiga Shield and within a complex of low exposed bedrock and outwash deposits. includes 1 Level IV ecoregion that covers approximate 6,600 km² Permafrost is less common than in other Level III ecoregions. The Ecoregion occupies the easternmost extent of the former In contrast to other parts of the Taiga Shield, peatlands cover glacial Lake McConnell along the present-day Slave River valley, nearly one-third of the Ecoregion, and high water tables in the which over time filled with fine-textured river and lakebed deposits. southern portion support extensive wetlands south of Tsu Lake. Compared to the other three Level III ecoregions this Ecoregion The Taltson River is the only large river and parallels the western has a relatively warm climate that together with the moist, boundary north to Great Slave Lake. rich parent materials has produced a mosaic of vigorous mixed-



oist, fine-textured and fertile soils round granite bedrock knobs in Taiga Shield Mid-Boreal (MB) aion. Dense and diverse mixed kposed rocks can support scattered jack pine and black spruce, and are usually lichen covered. Poorlydrained sites support stands of black spruce, larch [tamarack] and paper birch with shrubs, lichens and mosses inderneath. Productive wetlands that include marshes, shrub fens and edge fens are common and extensive



y spaced and narrow spires nted spruce on nutrient-poor often frozen soils that are ated by a thick organic blanket ommon in the Taiga Shield Subarctic (HS) Ecoregion. white spruce forests with a b and lichen understory are non in the northwest portion Ecoregion as well as along Ion River valley to the eas



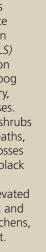


s are a common glacial landscape feature he Taiga Shield and are particularly extensive he Taiga Shield High Subarctic (HS) Ecoregion y provide a wide range of conditions for nts, from sheltered lower slopes with enough ture for good tree growth to upper slopes support only low shrubs and lichens. Esker vide important habitat for many different llife species including barren-ground caribou skoxen, grizzly bears, wolves, foxes, wolverii

o is an Inuit word that refers to small hill e mounds of earth-covered ice are formed en water freezes and forces the overlying upward; they can reach heights up to 70 res along the Arctic coast. "Muskox Hill", a ic pingo that lies just north of the Northwest pries-Nunavut border near the Thelon River he Taiga Shield High Subarctic (HS) Ecoregion, a very rare permafrost feature in the Northwest ories outside of the lower Mackenzie River

and associated coastal plains

landscapes. Drumlins are extensive and conspicuous landforms in the southeastern portion of the Ecoregion, as are peatlands underlain by permafrost. About one-quarter of the Ecoregion is covered by water; the East Arm of Great Slave Lake and Hottah Lake are the two largest lakes, and the Snare, Lockhart, Snowdrift, Taltson, and Dubawnt are the largest rivers.

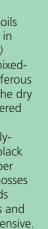


eatlands such as at this site east of Selwyn Lake, are widespread nroughout the Taiga Shield Low Subarctic (LS) Ecoregion. Sedge and cotton-grass meadows in wet depressions and surrounded y open forests of stunted black d lichens on elevated plateaus o organic soil, is a recurring

Open jack pine-spruce woodlands and lichen-shrub communities grow on rock outcrops, thin boulder till and outwash. Permafrost is discontinuous and typically associated with peatlands and fine-textured soils. Lakes account for nearly one-third of the area, and Great Slave Lake is the largest water body. Major rivers flowing through the Ecoregion north of Great Slave Lake include the Camsell, Snare, Yellowknife and Beaulieu; south of Great Slave Lake, the Snowdrift, Taltson and Tazin are the largest rivers.



ellowknife, are typical of the tre over throughout much of the Taiga hield High Boreal (HB) Ecoregion ack pine can grow in very small il on bedrock Areas of exposed lrock with little or no soil are acterized by drought-toleran⁻ ens, mosses, grasses and low



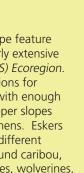


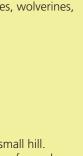
lar, paper birch, black spruce and larch [tamarack] occur on nd sites throughout the Taiga nield Mid-Boreal (MB) Ecoregion. iverse and vigorous shrub growth ypically includes willow, green lder, wild sarsaparilla, bunchberry, kly rose, bog cranberry and non Labrador tea.





he extensive and productive lowlands nd riparian areas that make up much of the Taiga Shield Mid-Boreal (MB) coregion provide optimal habitat for moose. This Ecoregion supports the highest density of moose within the aiga Shield.







cons are rare visitors throughou t of the Taiga Shield but commonly in the Taiga Shield High Subarctic coregion. Gyrfalcons prey on and mammals ranging in size from pirds to geese, and from voles to Arctic es. Although they usually nest on cliffs, use trees when cliffs are unavailable

ess peat plateaus occur in low, wet o

anently frozen areas throughout the

a Shield High Subarctic (HS) Ecoregion

d the northern parts of the Taiga Shield

wn colour of these "polygonal" peat

ditions. These deteriorating peat

Subarctic (LS) Ecoregion. The reddish-

aus indicates an eroding peat surface,

o melting permafrost and drier surface

ions may be an indicator of changing

Tundra-dwelling Arctic ground squirrels range south into the subarctic regions of the Taiga Shield, wherever suitable habitat conditions occur. They ar most common in the Taiga Shiel High Subarctic (HS) Ecoregion an can be locally abundant in sites where permafrost and surface bedrock ar limited and thereby allo easier burro

The Taiga Shield provides impor

major herds of barren-ground car

"keystone" species in that the

species are dependent

and abundance of many other

Barren-ground caribou are cons

fall and winter habitat for sever









spreys are fish-eating birds of prey that e closely associated with larger lakes and ers in the Taiga Shield. They are particularly ndant in the Taiga Shield Low Subarctic coregion southeast of Great Slave Lake, e they often nest on small protruding hore boulders in lakes and shallow ponds ese boulders provide nesting sites secure n many potential predators.

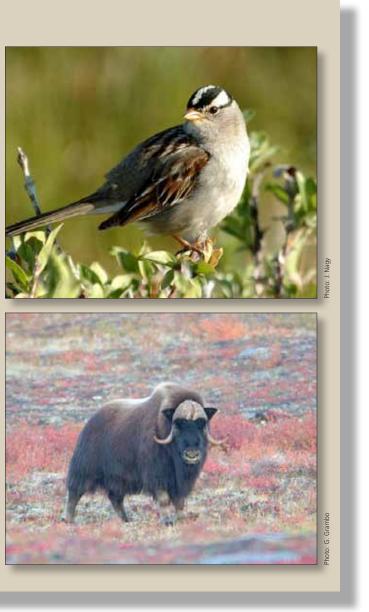
nd eskers are common in the Taiga Shield w Subarctic (LS) Ecoregion; open lichen dlands dominate these sandy or gravelly, ell-drained sites. Black spruce is most mon, but paper birch and white spruce can locally abundant. Along the southern limit the Ecoregion jack pine occupies similar eas with black spruce. Common bearberry og cranberry and reindeer lichens dominate e ground vegetation. North-facing slopes. n this photo of an esker near Gameti, can stands with multiple tree species facing slopes are very dry and often patches of bare groun

acial landscape features like outwash

common breeders in the Taiga Shiel Low Subarctic (LS) Ecoregion. Th forage for seeds and insects near th ground and favour open woodland recently burned forest and shrub areas – habitats that are abu within this Eco

White-crowned Sparrows are

Muskoxen have recently expanded their range southward into the Taiga Shield Low Subarctic (LS) Ecoregior and are now found in small numbers near the east end of Great Slave Lake and to the southeast. commonly associated with productive sedge-grass meadows throughout









Taiga Shield High Boreal (HB) Ecoregion Taiga Shield Mid-Boreal (MB) Ecoregion

