

GLADYS LAKE

ER #68

ORIGINAL PURPOSE To provide an alpine – subalpine study area containing unharvested large mammal populations, and to protect Spruce-Willow-Birch and Alpine Tundra ecosystems

OVERVIEW

Date established: 28 Nov. 1975 **Location:** Eaglenest Range, 65 km
Dates amended: 19 March 1981 ESE of Iskut
March 2006

ORC #: 3068 **Latitude:** 57°35'N
Map number: 104 H (1:250,000) **Longitude:** 128°30'W

Total Area: 40,541 ha **Elevation:** 1,200-2,515 m
Land: 40,432 ha
Lake: 109 ha

Access: Access via foot, horseback, or float plane to Cold Fish Lake. A research cabin is present at Gladys Lake where pioneering studies of Stone sheep were carried out.

Biogeoclimatic Zone: Spruce-Willow-Birch (SWB); Boreal-Altai Fescue Alpine (BAFA)

Biogeoclimatic Variant: SWBmk Moist Cool; BAFAunp Undifferentiated Parkland

Ecosection: Southern Boreal Plateau

Region: Skeena

Management Area: Stikine

COMPOSITION

Physical: In size alone this ecological reserve is unique, being the largest in the province, comprising over 30% of the land area in the system. Completely surrounded by Spatsizi Wilderness Park, this spectacular reserve encloses the rugged central block of the Eaglenest Range, composed of folded volcanic and sedimentary rock. Most peaks and high ridges are jagged and serrate due to alpine glaciation and have cirque basins on their north and northeast faces, some containing alpine glaciers and others now ice-free. Evidence of formerly more extensive alpine glaciation includes moraines and kame and kettle topography in the valleys. Other alpine features are solifluction lobes, discontinuous permafrost, patterned ground, and boulder stripes.

Surficial materials are mostly glacial drift or gravitational deposits such as talus. Physical features of importance to wildlife include south-facing slopes having high insolation, caves used for shelter, both wet and dry mineral licks, and cliffs used by nesting raptors. In winter, temperature inversions and chinook winds frequently benefit ungulates on these high elevation ranges.

Gladys Lake, 60 ha in size, is a central feature of the reserve. Streams draining four or five major valleys converge on the lake, which then drains into Cold Fish Lake and the Spatsizi River.

The climate is generally cold and continental, with frequent summer rain. Snow and frost may occur at any time, especially at higher elevations.

Biological:

Despite the high elevation and harsh climate of this reserve, a surprising diversity of plant communities and species has been described. Twenty-one communities have been documented and additional types occur in specialized sites. An impressive 370 species of vascular plants have been identified, making this one of the floristically best known reserves in the province.

Lower valleys and slopes, up to the 1500-1700 m level, support communities typical of the Spruce-Willow-Birch Zone. Open forest types characterized by white spruce, grey-leaved draba, and scrub birch or by Subalpine fir, scrub birch, and crowberry are widespread. The shrub stands are usually dense; trees in the Subalpine fir type may be of a krummholz form.

Small areas of closed white spruce, lodgepole pine, or subalpine fir woods occur in favourable locations, and stands of trembling aspen and balsam poplar of poor stature are present on some middle elevation slopes. The most extensive subalpine shrub communities are the grey leaved draba-scrub birch-Altai fescue, and scrub birch-Altai fescue-lichen types. Willow-dominated communities also occur in valley bottom fens, along streams, on wet alluvial fans, and on burned slopes. A dry community characterized by common juniper, kinnikinnick, and grasses is fairly common on colluvial slopes to the 1630 m level. Herbaceous subalpine communities are commonly dominated by Altai fescue.

Alpine tundra communities are well developed above the 1675 m level and include dwarf shrub, heath, seepage, tundra, and fellfield types. Heath types characterized by white mountain-heather, mountain-avens, netted willow, polar willow, or bryophytes are extensive between the 1675 and 1800 m elevations, while tundra characterized by dwarf willows, Altai fescue, small-awned sedge, or lichen communities occurs on the highest vegetated terrain.

Thirty-five species of vascular plants in the reserve are listed as rare in the province, of which 14 are in the category of greatest rarity. These are arctic rush two-flowered rush, northern wood-rush, Raup's willow, sulphur buttercup, pale poppy, gray-leaved draba, Austrian draba, lance-fruited draba, thyme-leaved saxifrage, field locoweed, Huddelson's locoweed, and swamp willowherb.

The reserve and surrounding area is renowned for its abundance of wildlife. Twenty-six species of mammals have been documented. An estimated 30-45 mountain goats and 60-70 Stone sheep find year-round range in the reserve, the former on sparsely vegetated rocky ridges, the latter on grassy slopes. A few moose are present year-round, being confined to valley bottom willow stands near Gladys Lake in winter. Mountain caribou are present primarily in summer when up to 30 cows may use the high ridges as scattered calving sites. Grizzly bears, wolves, and wolverines move in and out of the reserve which, despite its large size, is too small to contain home ranges of these highly mobile species. A variety of smaller mammals is present, including beaver, snowshoe hares, hoary marmots, arctic ground squirrels, lemmings, and voles. These are an important food source for predatory birds and mammals. Sixty-eight species of birds have been recorded here.

Cultural: An historic First Nations food gathering trail stretches across the reserve.

MANAGEMENT CONCERNS

SIGNIFICANT SPECIES	BC LIST STATUS	COSEWIC STATUS	CF PRIORITY
alpine draba	Blue listed		3
arctic rush	Blue listed		3
arctic wood-rush	Blue listed		3
Austrian draba	Blue listed		3
Caribou (northern mountain population 15)	Blue listed	Threatened/Special Concern (2002)	2
Edwards wallflower	Blue listed		3
gray-leaved draba	Blue listed		3
Greenland wood-rush	Blue listed		3
Grizzly Bear	Blue listed		2
Iceland koenigia		Special Concern (2002)	4
Jordal's locoweed	Blue listed		3
lance-fruited draba	Blue listed		3
milky draba	Blue listed		3
Mount Sheldon butterweed	Blue listed		2
Mountain Goat			1
northern daisy	Blue listed		3
northern swamp willowherb	Red listed		2
northern wood-rush	Blue listed		3

THREATS

Climate Change:

As this is the largest ecological reserve in British Columbia, the effects of climate change may be varied and site-specific. The alpine areas may be displaced by migrating forest systems as the temperatures in the North continue to warm, and growing degree days increase in number. Warmer temperatures are projected to result in glacial melt, reduction in snow pack and associated changes in hydrology. These combined effects may also impact the fauna along with the flora in each locale. For example, the seasonal ranges of migratory species such as the Caribou or Moose may diverge as the habitat changes. The survival of resident fauna such as the many small mammals or Mountain Goats may be challenged due to rapid habitat loss as the alpine areas are reduced.

Recreation:

Illegal hunting occurs in the reserve.

RESEARCH OPPORTUNITIES Reports are available on vegetation and wildlife in the reserve.

SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE GLADYS LAKE ER ACCOUNT

Flora

butterweed, Mount Sheldon (*Senecio sheldonensis*)
daisy, northern (*Erigeron uniflorus* ssp. *eriocephalus*)
draba, alpine (*Draba alpina*)
draba, Austrian (*Draba fladnizensis*)
draba, gray-leaved (*Draba cinerea*)
draba, lance-fruited (*Draba. lonchocarpa* var. *thompsonii*)
draba, milky (*Draba lacteal*)
koenigia, Iceland (*Koenigia islandica*)
locoweed, Jordal's (*Oxytropis campestris* var. *jordalii*)
rush, arctic (*Juncus arcticus* var. *alakanus*)
wallflower, Edwards (*Eutrema edwardsii*)
willowherb, northern swamp (*Epilobium davuricum*)
wood-rush, arctic (*Luzula nivalis*)
wood-rush, Greenland (*Luzula groenlandica*)
wood-rush, northern (*Luzula confusa*)

Fauna

Bear, Grizzly (*Ursus arctos*)
Caribou (northern mountain population) (*Rangifer tarandus* pop. 15)
Goat, Mountain (*Oreamnos americanus*)
Moose (*Alces americanus*)