

## SKWAHA LAKE

E.R. #88

**ORIGINAL PURPOSE** To preserve representative Interior Douglas-fir and Montane spruce ecosystems, together with many diverse meadow communities containing outstanding wildflower displays and rare plants

### OVERVIEW

<b>Date established:</b>	10 Feb. 1978	<b>Location:</b>	In the Clear Range, 11 km W of Spences Bridge
<b>Order-in-Council number:</b>	293	<b>Latitude:</b>	50°24'N
<b>Application number:</b>	187	<b>Longitude:</b>	121°30'W
<b>Map number:</b>	92 I/5; I/6		

<b>Total Area:</b>	849 ha	<b>Elevation:</b>	1,140-1,740 m
<b>Land:</b>	848 ha		
<b>Lake:</b>	1 ha		

**Access:** Access to the vicinity of the reserve boundary is possible via Botanie Lake road which branches right from Highway 12 across the Thompson River from Lytton

**Biogeodimatic Zones:** Interior Douglas-Fir (IDF); Montane Spruce (MS); Engelmann Spruce-Subalpine Fir (ESSF)

**Biogeodimatic Variants:** ESSFxc Very Dry Cold; IDFdk1 Thompson Dry Cool; MSsxk Very Dry Cool

**Ecosection:** Pavilion Ranges

**Region:** Thompson

**Management Area:** Fraser

### COMPOSITION

**Physical:** The reserve is near the southern end of the Clear Range which occupies the “V” between the Thompson and Fraser rivers, north of Lytton. The reserve has two major landforms, a rolling summit above the 1650 m elevation in the north, and steep valley slopes in the south. The predominant aspect is south and southwest. Soils are primarily Brunisols, characteristic of moderately open coniferous forest zones. Drainage is entirely via small tributaries of Skoonka Creek, eastward into the Thompson River. The climate is moderately dry due to the rain-shadow effect of the Coast Ranges, however, precipitation increases markedly with elevation and considerable snow accumulates in the summit area.

**Biological:** Variations in elevation, exposure, soil moisture and fire history result in a very complex mosaic of mature forest, burned forest and meadows in this reserve. The tree cover here, over an elevational range of only 600 m, contains such ecologically diverse elements as scattered ponderosa pine trees and subalpine fir stands. Grass-forb meadows, many with spectacular wildflower stands, are widespread at lower and middle elevations as a result of the generally dry climate, southerly exposure and occurrence of wildfire. Large alpine-subalpine meadows also occur in a parkland setting among subalpine forest stands on the summit.

The Douglas-fir Zone, with an understory of pinegrass, occurs primarily below the

1500 m elevation at the lower fringe of the reserve, and contains a few scattered ponderosa pine trees and aspen groves. The Montane Spruce Zone, characterized by Engelmann spruce-lodgepole pine stands, is mostly between the 1525 and 1675 m levels, while the Engelmann Spruce-Subalpine Fir Zone is restricted to the summit area, primarily above the 1675 m elevation. Burned forests, at various elevations in the eastern half of the reserve, are largely dominated by juvenile lodgepole pine.

Eight meadow communities have been described and mapped, four within the Interior Douglas-fir and Montane Spruce zones and four in the subalpine area. The lowest elevation meadows, usually on moderate south-facing slopes, are dominated by an association of arrow-leaved balsam-root and grasses, the dominant grass on grazed sites being Kentucky bluegrass, that on ungrazed sites bluebunch wheatgrass. Acres of densely packed balsam-root plants, together with less abundant species like common red paintbrush and upland larkspur, present a spectacular sight during the peak of flowering. These meadows give way with increasing elevation to the pinegrass-balsamroot community. At middle to upper elevations, two other communities dominated by pinegrass also occur.

The most extensive subalpine meadows are dominated by Indian hellebore, cow-parsnip and arctic lupine but include other showy species like Sitka valerian, western and arrowleaved groundsel and glacier lily. Less extensive moist, subalpine meadows support sharptooth angelica-western groundsel and Sitka valerian-Indian hellebore-globeflower communities. On exposed subalpine ridges, a community complex characterized by thread-leaved sandwort has been recognized in which associated species include pussytoes, old man's whiskers, Rocky Mountain fescue, balsamroot and pinegrass.

To date, 273 species of vascular plants have been recorded in this reserve, of which at least 16 are rare in British Columbia. Rare plants include alpine-wintergreen, Hooker's onion, large-flowered triteleia, white triteleia, Raynold's sedge, alpine Indian paintbrush, mountain lady's slipper, many-flowered hackelia, blue hackelia, Nuttall's sunflower, little sunflower, Fendler's waterleaf, alpine lewisia and purple onion grass.

The reserve provides excellent summer range for mule deer, and for a herd of Rocky Mountain bighorn sheep which was introduced to the Spences Bridge area. Coyotes and black bears have been noted. Horned larks and waterpits are common in alpine areas. Other birds recorded here include the blue grouse, golden eagle, red-tailed hawk, pileated woodpecker, common flicker, Clark's nutcracker, gray jay, Steller's jay, red crossbill and several species of warblers, chickadees and sparrows.

## MANAGEMENT CONCERNS

SIGNIFICANT SPECIES	BC LIST STATUS	COSEWIC STATUS	CF PRIORITY
alpine-wintergreen			4
Bighorn Sheep	Blue listed		3
curly sedge	Blue listed		3
Fendler's waterleaf			4
Geyer's onion	Blue listed		3
Great Basin nemophila			4
Hooker's onion			4
large-flowered triteleia			2
Nuttall's sunflower	Red listed		2
oniongrass	Red listed		2
purple oniongrass	Blue listed		3
Raynold's sedge			4
white triteleia			2

## THREATS

<b>Climate Change:</b>	New climates may favour invasive species as they have more generalized adaptive abilities than the more specialized native species. Rare plants may be at risk due to aggressive invasion that is projected to accompany climate change.
<b>Non-native species:</b>	Knappweed, dandelion, and thistles have been introduced by cattle.

## RESEARCH OPPORTUNITIES

Reserve encompasses extensive meadows in three biogeoclimatic zones, containing an exceptional diversity of showy wildflowers and several plants that are rare in British Columbia.

## SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE SKWAHA LAKE ER ACCOUNT

### Flora

alpine-wintergreen (*Gaultheria humifusa*)  
 angelica, sharptooth (*Angelica arguta*)  
 aspen, trembling (*Populus tremuloides*)  
 balsamroot, arrowleaf (*Balsamorhiza sagittata*)  
 bluegrass, Kentucky (*Poa pratensis*)  
 cow-parsnip (*Heracleum maximum*)  
 dandelion, common (*Taraxacum officinale*)  
 Douglas-fir (*Pseudotsuga menziesii*)  
 fescue, Rocky Mountain (*Festuca saximontana*)  
 fir, subalpine (*Abies lasiocarpa* var. *lasiocarpa*)  
 globeflower (*Trollius albiflorus*)  
 groundsel, arrow-leaved (*Senecio triangularis*)  
 groundsel, western (*Senecio integerrimus* var. *exaltatus*)  
 helianthella, Rocky Mountain (aka little sunflower) (*Helianthella uniflora* var. *douglasii*)  
 hellebore, Indian (*Veratrum viride*)

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knapweed, diffuse (*Centaurea diffusa*)  
lady's-slipper, mountain (*Cypripedium montanum*)  
larkspur, upland (*Delphinium nuttallianum*)  
lewisia, alpine (*Lewisia pygmaea* var. *pygmaea*)  
lily, glacier (*Erythronium grandiflorum*)  
lupine, arctic (*Lupinus arcticus*)  
nemophila, Great Basin (*Nemophila breviflora*)  
old man's whiskers (*Geum triflorum*)  
onion, Geyer's (*Allium geyeri* var. *tenerum*)  
onion, Hooker's (*Allium acuminatum*)  
oniongrass (*Melica bulbosa* var. *bulbosa*)  
oniongrass, purple (*Melica spectabilis*)  
paintbrush, alpine (*Castilleja rhexifolia*)  
paintbrush, scarlet (*Castilleja miniata*)  
pine, lodgepole (*Pinus contorta* var. *latifolia*)  
pine, ponderosa (*Pinus ponderosa*)  
pinegrass (*Calamagrostis rubescens*)  
pussytoes, woolly (*Antennaria lanata*)  
sandwort, thread-leaved (*Arenaria capillaris* ssp. *americana*)  
sedge, curly (*Carex rupestris*)  
sedge, Raynold's (*Carex raynoldsii*)  
spruce, Engelmann (*Picea engelmannii*)  
stickseed, blue (*Hackelia micrantha*)  
stickseed, many-flowered (*Hackelia floribunda*)  
sunflower, Nuttall's (*Helianthus nuttallii* var. *nuttallii*)  
triteleia, large-flowered (*Triteleia grandiflora*)  
triteleia, white (*Triteleia hyacinthine*)  
valerian, Sitka (*Valeriana sitchensis*)  
waterleaf, Fendler's (*Hydrophyllum fendleri* var. *albifrons*)  
wheatgrass, bluebunch (*Pseudoroegneria spicata*)

## **Fauna**

Bear, American Black (*Ursus americanus*)  
Chickadee (*Parus spp.*)  
Crossbill, Red (*Loxia curvirostra*)  
Deer, Mule (*Odocoileus hemionus*)coyotes  
Eagle, Golden (*Aquila chrysaetos*)  
Flicker, Northern (*Colaptes auratus*)  
Grouse, Dusky (aka Blue Grouse) (*Dendragapus fuliginosus*)  
Hawk, Red-tailed (*Buteo jamaicensis*)  
Jay, Gray (*Perisoreus canadensis*)  
Jay, Steller's (*Cyanocitta stelleri*)  
Lark, Horned (*Eremophila alpestris*)  
Nutcracker, Clark's (*Nucifraga columbiana*)  
Sheep, Bighorn (*Ovis canadensis*)  
Woodpecker, Pileated (*Dryocopus pileatus*)