

PARKER LAKE

ER #47

ORIGINAL PURPOSE To protect northern bogland containing populations of three plants that are very rare in British Columbia

OVERVIEW

Date established:	29 May 1973	Location:	S side of Parker Lake, 10 km W of Fort Nelson
ORC #:	3047	Latitude:	58°49'N
Map number:	94 J/15	Longitude:	122°54'W

Total Area:	259 ha	Elevation:	385 m
Land:	259 ha		

Access: Access Parker Lake by road and boat across the lake to the north edge of the reserve. Winter access is possible by foot across ice on Parker Lake or by snowmobile. The reserve is so boggy that travel through it is almost impossible in summer.

Biogeoclimatic Zones:	Boreal White and Black Spruce (BWBS)
Biogeoclimatic Variant:	BWBSmw2 Fort Nelson Moist Warm
Ecosection:	Fort Nelson Lowland
Region:	Peace
Management Area:	Liard

COMPOSITION

Physical: The reserve lies on a flat, boggy lowland within the Alberta Plateau. Low hills rise one or two kilometres to the north and Pouce Creek to the south has cut a channel into the lowland surface. However, the entire reserve is level and boggy with no organized drainage pattern. Four small shallow lakes, five to 12 ha in size, lie in the northeast quarter of the reserve.

This area was glaciated by the Keewatin rather than Cordilleran ice sheet, and ice movement, to the west and southwest, resulted in a veneer of glacial drift. The land surface of the reserve has been little modified since the glacial period.

Soils that have developed on the glacial drift are entirely organic and result from accumulation of dead plant material such as sphagnum moss and sedges. This material breaks down slowly in these cold, wet environments. The moderately decomposed organic soils associated with shrub-sedge habitats in the reserve are called Mesisols. The poorly decomposed materials characteristic of black spruce-sphagnum sites are classified as Fibrisols. The organic layer is fairly thin but serves as a huge sponge which regulates streamflow by holding and slowly transmitting vast quantities of water. Topographic maps indicate that streams surrounding the reserve mostly radiate away from it, therefore recharge of the wetlands is mostly by rainfall and snowmelt. Since there is no import of dissolved minerals into the streams they tend to be nutrient-poor.

The climate is characterized by long cold winters and short warm summers,

moderated to a minor extent by low elevation. The mean monthly temperature has placed this reserve just inside the southern boundary of discontinuous permafrost, defined by the -1°C annual isotherm. If this has not already changed, it will soon be outside this zone due to climate change.

Biological: Of great interest is the occurrence of three species of wetland plants which have been placed in the category of greatest rarity for British Columbia flora. All are restricted to the Alberta Plateau-Rocky Mountain Foothills area of extreme northeastern British Columbia, and none have been collected in more than three locations.

The first discovery of Mackenzie's water-hemlock was made in Parker Lake E.R.; one additional collection has been made south of Dawson Creek. This northern species occurs from Alaska to Quebec. In the reserve it grows in lake edge communities with sedges and cotton-grass. The reserve is also one of only two British Columbia locations where the striking, carnivorous, common pitcher plant is known to occur. The other site is not far away. This species occurs from the Northwest Territories to Newfoundland. In the reserve it is commonly associated with cotton-grasses, scheuchzeria, and seaside arrow-grass. The third rare species, *Pedicularis macrodonta*, is a lousewort which ranges from Alaska to Quebec but is also rare in Yukon Territory and Alberta.

Wetland communities in the reserve are diverse for this latitude and exhibit a wide range of successional stages from pondweed associations in shallow lakes to bog forest. Shallows in the lakes are dominated by submerged and floating-leaved macrophytes such as pondweeds of the *Potamogeton* group, and yellow waterlily. Emergent marsh communities occur in shallow waters at lake edges. These include virtually pure stands of cattail, as well as associations in which beaked sedge and wild calla (water arum) are abundant. Fen communities surrounding the lakes may be characterized by an association of cotton-grass, common pitcher plant, scheuchzeria, and seaside arrow-grass or by sedges, cotton-grass and buckbean.

Transitional areas between fen and bog forest are characterized by scrub birch cover and scattered tamarack trees. Associated plants include buckbean, dwarf bog cranberry, leatherleaf, sedges, ribbed bog moss, and sphagnum moss. Two black spruce bog communities have been noted.

Parker Lake, adjacent to but not in the reserve, has been the site of several bird surveys and 83 species have been noted in summer, among which waterfowl and shorebirds are notably diverse. Most of the same species probably occur in the reserve. Black terns, perhaps 20 pairs, are known to nest within the reserve, this being one of the northernmost colonies in the province. Other species seen in the reserve and probably nesting there include Bonaparte's gull, white-winged scoter, ring-necked duck, greater yellowlegs, solitary sandpiper, rusty blackbird, and red-winged blackbird.

MANAGEMENT CONCERNS

SIGNIFICANT SPECIES	BC LIST STATUS	COSEWIC STATUS	CF PRIORITY
Caribou (boreal population) (<i>Rangifer tarandus</i> pop. 14)	Red listed	Threatened (2002)	1
Lapland sedge	Blue listed		2
European water-hemlock	Blue listed		3
common pitcher plant	Blue listed		2

THREATS

Climate Change: Warming temperatures, changes in precipitation and changes in snowmelt have been projected. These may pose a threat to the boggy wetlands, shallow lakes and the associated flora within this reserve. Of particular concern is the population of rare plants. Such changes in conditions may create unfavourable habitat for the unique vegetation, putting it at risk of extirpation. As this reserve is just inside the discontinuous permafrost zone, it will soon be affected by loss of permafrost if it has not already.

Access: Snowmobiles through the old seismic lines in the reserve are preventing regeneration to an original state.

RESEARCH OPPORTUNITIES

This is an ideal site to study succession in northern wetland plant communities.

SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE PARKER LAKE ER ACCOUNT

Flora

arrow-grass, seaside (*Triglochin maritima*)
birch, scrub (*Betula nana*)
buckbean (*Menyanthes trifoliata*)
calla, wild (*Calla palustris*)
cattail, common (*Typha latifolia*)
cotton-grass, narrow leaved, (*Eriophorum angustifolium*)
cranberry, bog (*Oxycoccus oxycoccus*)
leatherleaf (*Chamaedaphne calyculata*)
lousewort, muskeg (*Pedicularis macrodonta*)
moss, peat (*Sphagnum* spp.)
moss, ribbed bog (*Aulacomnium palustre*)
pitcher plant, common (*Sarracenia purpurea* spp. *gibbosa*)
pondweed (*Potamogeton* spp.)
scheuchzeria (*Scheuchzeria palustris* ssp. *americanas*)
sedge, beaked (*Carex utriculata*)
sedge, Lapland (*Carex lapponica*)
spruce, black (*Picea mariana*)
tamarack (*Latix laricina*)
water-hemlock, European (*Cicuta virosa*)
waterlily, yellow (*Nuphar mexicana*)

Fauna

Blackbird, Red-winged (*Agelaius phoeniceus*)

Blackbird, Rusty (*Euphagus carolinus*)

Caribou (boreal population) (*Rangifer tarandus* pop. 14)

Duck, Ring-necked (*Athya collaris*)

Gull, Bonaparte's (*Chroicocephalus philadelphia*)

Sandpiper, Solitary (*Tringa solitaria*)

Scoter, White-winged (*Melanitta fusca*)

Tern, Black (*Chlidonias niger*)

Yellowlegs, Greater (*Tringa melanoleuca*)