

Kootenay Region

**MANAGEMENT DIRECTION
STATEMENT**

September 2004

**for Columbia Lake
Ecological Reserve**



**BRITISH
COLUMBIA**

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Columbia Lake Ecological Reserve Approvals Page

Foreword

This management direction statement for Columbia Lake Ecological Reserve provides management direction until such time as a more detailed management plan may be prepared. The ecological reserve was established to protect rare geological, hydrological and vegetation features associated with limestone strata. In addition, the ecological reserve protects a remnant grassland ecosystem that contains essential habitat for species at risk within the Columbia Valley.

Approvals:

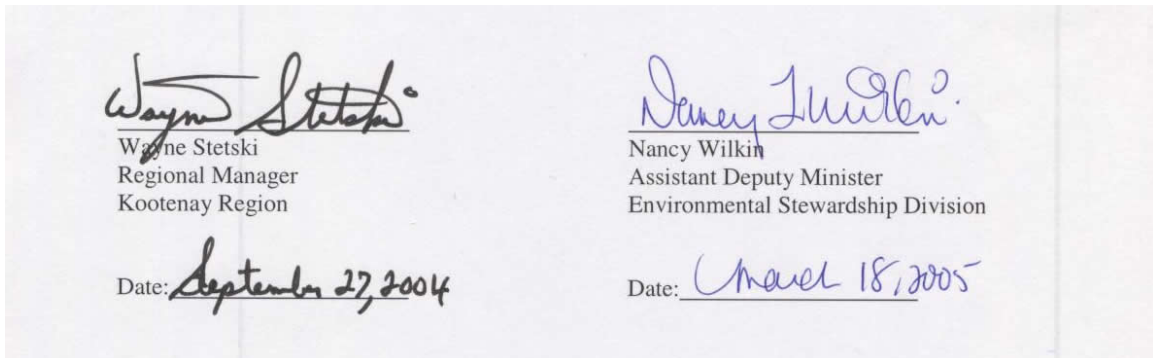


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Columbia Lake Ecological Reserve Management Direction Statement

Introduction

Purpose of the Management Direction Statement

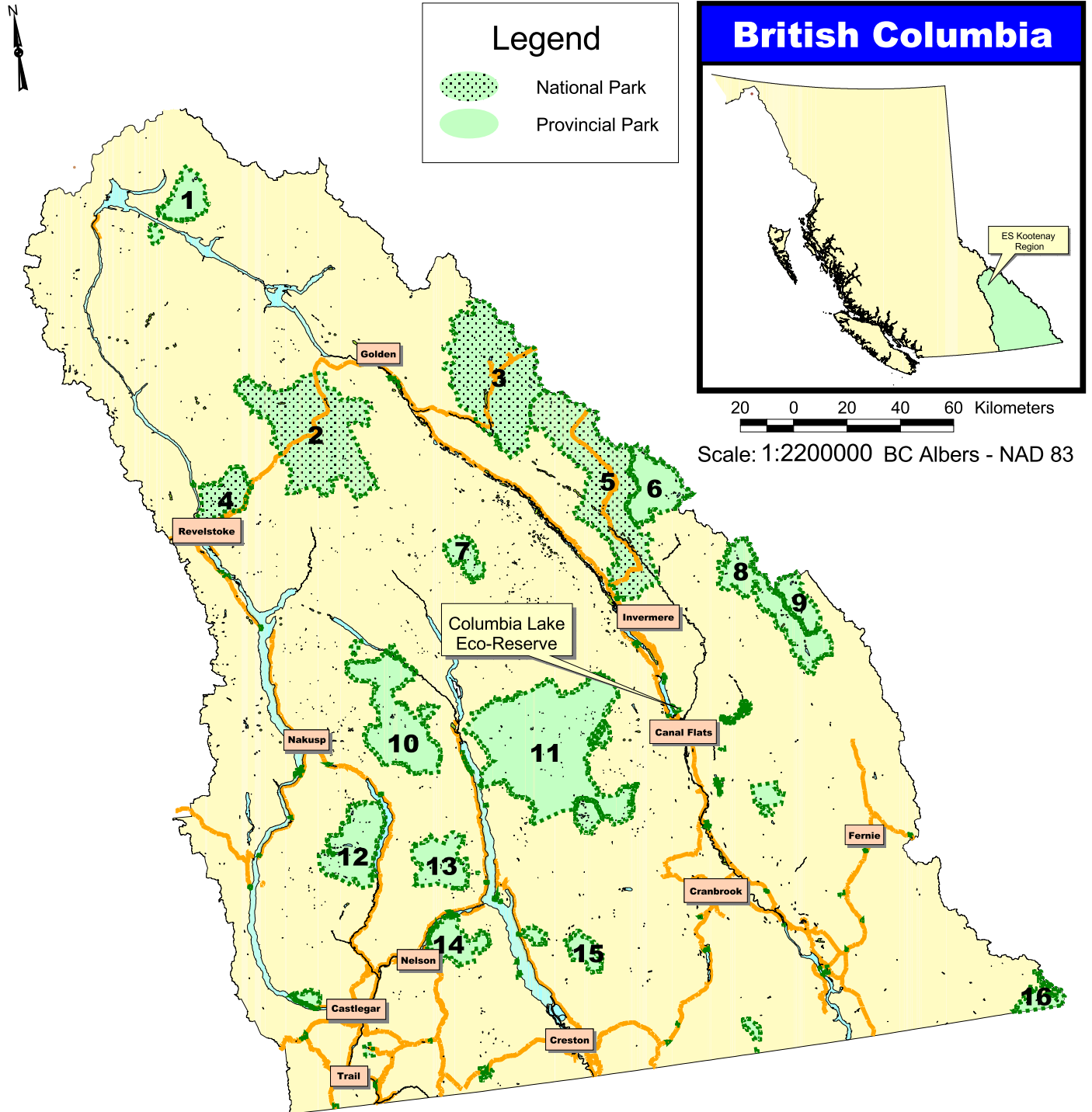
Management direction statements (MDS) provide strategic management direction for protected areas that do not have a full management plan. MDS do not negate the need for future more detailed management plans. Management direction statements also describe protected area values, management issues and concerns; a management strategy focused on immediate priority objectives and strategies; and directional statements from other planning processes. While strategies may be identified in the MDS, the completion of all these strategies is subject to funding and funding procedures. In addition, all management strategies within the ecological reserve are subject to the Environmental Stewardship Division's Impact Assessment Policy. This management direction statement is intended to provide direction and guidelines for managing Columbia Lake Ecological Reserve for the foreseeable future.

Context

- Designated by Order in Council #1582 under the Ecological Reserve Act in 1971 and is presently listed and described in Schedule B of the *Protected Areas of British Columbia Act*
- The 29 hectare ecological reserve is situated in both the East Kootenay Trench Ecosection (13 ha.) and the Southern Park Ranges Ecosection (16 ha.).
- Surrounded by the 8,576 hectare East Side Columbia Lake Wildlife Management Area which protects essential habitat for ungulates and wildlife.
- Located on the east side of Columbia Lake, 5 km north of the community of Canal Flats.
- Four provincial parks and two ecological reserves are located within a 40-kilometre radius of Columbia Lake Ecological Reserve.
- Protects regionally significant hydrological and terrestrial features associated with limestone stratification within the East Kootenay Trench and Southern Park Ranges ecosections.
- Contains special grassland habitat that supports species at risk.

Figure 1: Context

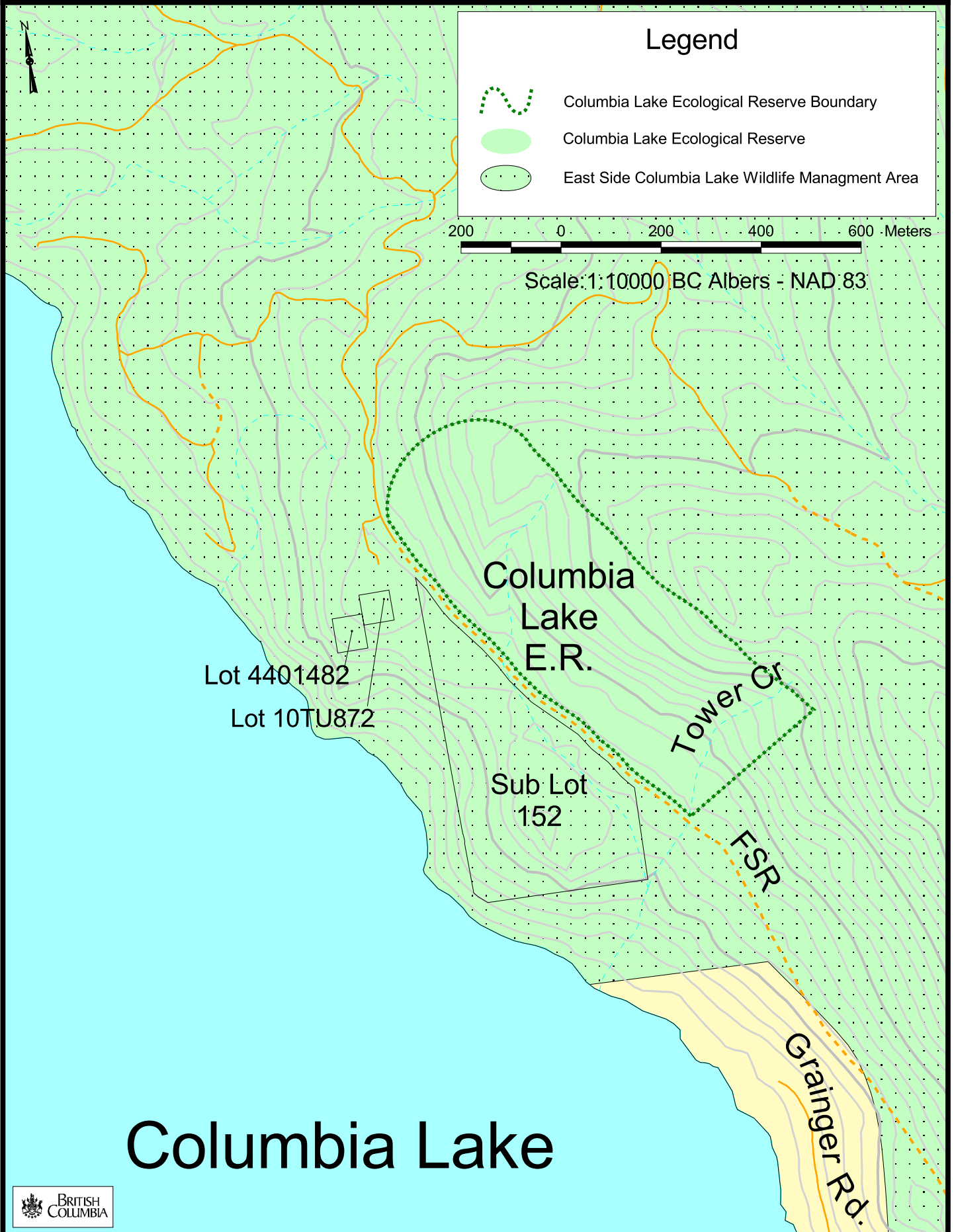
Columbia Lake ER



Major Provincial & National Parks - Kootenay Region	
1. Cummins Lakes Provincial Park	9. Elk Lakes Provincial Park
2. Glacier National Park	10. Goat Range Provincial Park
3. Yoho National Park	11. Purcell Wilderness Conservancy Park
4. Mt. Revelstoke National Park	12. Valhalla Provincial Park
5. Kootenay National Park	13. Kokanee Glacier Provincial Park
6. Mt. Assiniboine Provincial Park	14. West Arm Provincial Park
7. Bugaboo Provincial Park	15. Kianuko Provincial Park
8. Height of the Rockies Provincial Park	16. Akamina-Kishinena Provincial Park

Figure 2: Base

Columbia Lake ER



Ecological Reserve Attributes

Conservation

- The plant communities associated with the mineral springs and calc-tufa/limestone deposits are unusual and provincially significant.
- Rare and endangered flora and fauna have been recorded/observed within the ecological reserve, namely, five vascular plants (Gastony's cliff-brake, Hooker's townsendia, annual paintbrush, giant helleborine, and marsh muhly) and vertebrate species such as Rocky Mountain bighorn sheep and the flammulated owl.
- The East Kootenay Trench Ecoregion is very poorly represented¹ in the province wide protected area system (0.68%). Columbia Lake is the only designated ecological reserve in the East Kootenay Trench Ecoregion, but contributes negligibly (0.41%) to the overall representation of this ecoregion.
- Contributes minimally to the representation of the Interior Douglas Fir Kootenay Dry Mild (IDFdm2) and Montane Spruce Dry Cool (MSdk) biogeoclimatic subzone/variants within the protected area system (0.5% and 0.3% respectively).
- The bulk of MSdk biogeoclimatic subzone/variant protected province wide (90%) exists in national parks (Kootenay and Yoho).

Education and Research

- Study and research of unique vegetation associated with calcareous seeps and springs.
- Research and monitoring of avian and mammal species listed as endangered, threatened or of special concern.
- Research of hydrological processes associated with tufa formations (hardened deposits of calcium carbonate).

Cultural Heritage

- The entire east side of Columbia Lake was used extensively by First Nations groups in the pre-colonial period.
- The Spirit Trail (8000 year old First Nations' trade/travel route) passes within one kilometre of the ecological reserve.

Significance in the Protected Area System

Special Natural Features

- Contains hydrological and geological features unique to the Columbia Valley.

¹ Representativeness is defined in Goal 1 of the Protected Area Strategy for BC (1993). The purpose is to ensure protection of viable, representative examples of natural diversity in each of the province's 116 ecoregions. Currently, 27% of British Columbia's ecoregions have more than 12% of their land areas in protected areas; another 27% have between 3% and 12%; and 46% have 3% or less of their land within protected areas. (Source Ministry of Water, Land and Air Protection- 2003).

- The East Kootenay Trench Ecosection has minimal representation in the provincial protected areas system (0.7%) and the IDFdm2 biogeoclimatic subzone/variant is a remnant ecosystem in the East Kootenay Trench (0.9% protected).
- Contains several known flora species at risk and provides essential habitat for rare/endangered vertebrate species in the grasslands portion of the reserve.
- Complements linkage zones for wildlife within the East Side Columbia Lake Wildlife Management Area.

Cultural Heritage Significance

- Immediate area supports a large number of known archaeological and traditional use sites.
- Preserves natural landscape features adjacent to the Spirit Trail.

Land Use, Tenures and Interests

Access

Columbia Lake Ecological Reserve is located 5 km north of Canal Flats. A rough 2WD Forest Service Road parallels the western boundary of the ecological reserve. No formalized trails exist within the ecological reserve.

Existing Tenures, Alienations and Encumbrances

- None identified.

Adjacent Patterns of Land Use

- East Side Columbia Lake Wildlife Management Area surrounds the ecological reserve. Vehicle and hunting (i.e., MU-25) restrictions are in effect within the wildlife management area.
- Lots 4401483 and 10TU872 (immediately west of the park) are utilized by the Canadian Broadcast Corporation as a transmission site.
- Sublot 72 (north) contains an inactive mineral claim.
- Sublot 72 (south) is held by the Nature Trust of British Columbia.
- Trapping territory #0425T006 and Guide/Outfitter Territory #400807 abut the ecological reserve.
- A Conditional Water Licence is issued for Tower Creek (Licence #68011).
- A Forest Service Road (non-gazetted) abuts the western boundary of the ecological reserve (i.e., not within the ecological reserve). The road serves as connector to the Kootenay Forest Service Road.
- Invermere Timber Supply Area borders the reserve (licencee- Tembec Inc.).

First Nations Interests

- Management of the ecological reserve will require ongoing consultation with the Ktunaxa Nation and Shuswap Nation.

- It is the request of the Ktunaxa/Kinbasket Tribal Council that the Chief and Council of both the Columbia Lake and Shuswap (Secwepemc) Indian Band be consulted with reference to any future management planning of the ecological reserve

Other Agency Interests

- Regional District of the East Kootenay (dealing with issues surrounding local government)
- Ministry of Water, Land and Air Protection
 - water protection, monitoring and reporting
 - enforcement of applicable acts and regulations
 - management of Wildlife Management Areas
- Ministry of Sustainable Resource Management
 - Kootenay Region of SRM (responsible for strategic planning and implementing the Kootenay Boundary Land Use Plan)
- Land and Water British Columbia Inc. (responsible for adjacent Crown land tenures)

Private and Public Stakeholder Interests

- *Rocky Mountain Naturalists*
Interest: dedicated to the conservation and enjoyment of the Columbia Valley's wildlife and natural habitats. Interest is focused on conserving the natural habitat in and around Columbia Lake Ecological Reserve.
- *Rocky Mountain Trench Natural Resources Society*
Interest: to encourage, support, participate in and initiate operations which will restore lost ecosystem function, with emphasis on the forage resource. Within Columbia Lake Ecological Reserve, the Society's interest is the loss of native grassland habitat.
- *East Kootenay Conservation Program*
Interest: involvement with private land stewardship within the East Kootenay. The focus of the program is to encourage the preservation/conservation of natural tracts of land (especially private). Currently, the program is identifying 8 key habitats in lower valley bottoms that are essential to wildlife/native plant species.
- *The Nature Trust of British Columbia*
Interest: acquisition of private land holdings around Columbia Lake. Currently, the Nature Trust has approximately 6,437 hectares (6,246 hectares on the west side of the lake above Hwy 93/95 and 250 hectares on the east side). This land has been set aside as essential wildlife habitat for perpetuity.
- *Friends of Ecological Reserves*
Interest: promote the interests of the ecological reserves program in British Columbia, by raising public awareness of the ecological reserve program and by raising funds that are used to support research and wardens in ecological reserves.

Ecological Reserve Role Statement

The primary role of the Columbia Lake Ecological Reserve is to protect regionally significant geological, hydrological and vegetation features associated with limestone strata. In addition, Columbia Lake Ecological Reserve is the only ecological reserve in the Kootenay Region that contributes to the representation of Interior Douglas-fir grasslands, a remnant ecosystem which contains essential habitat for numerous species at risk within the Columbia Valley.

Secondarily, the ecological reserve serves a research and education role by providing opportunities to study and learn more about calcareous mineral springs, their developmental history and associated plant communities.



Photo: View north-west up Columbia Lake from the Ecological Reserve

Management Commitments and Issues

Management Direction from Previous Planning

There has been no prior management direction for this ecological reserve.

Management Issues

Theme	Issue
Protecting ecological values	<ul style="list-style-type: none">• Adjacent land use (mineral claims, off road vehicles, water licences) may pose a risk to the ecological reserve's ecological integrity (e.g., altered hydrology and loss of soil substrate for rare plant species).• Boundary is unmarked (except along roadway).• Unauthorized hunting may be present.• A Warden is not currently designated for the ecological reserve.• Noxious/non-native weeds (knapweed) competing with indigenous plants.• A significant number of rare plant species and fragile tufa formations are just outside the ecological reserve.
Protecting cultural values	<ul style="list-style-type: none">• Extent of traditional use within the ecological reserve is undetermined.

Management Direction

The following objectives and strategies will direct the short and long-term management of the ecological reserve.

Priority Management Objectives and Strategies

Objective	Strategy
To protect known species at risk	<ul style="list-style-type: none">• Monitor adjacent land use activities and ensure management activities do not impact on the ecological reserve's hydrology and vegetation.• Monitor and treat weed invasions on an annual basis.
Expand protection of known species at risk to areas adjacent to the ecological reserve.	<ul style="list-style-type: none">• Pursue boundary extension onto adjacent Crown land to preserve rare plant and geological features.
To protect the reserve's cultural values	<ul style="list-style-type: none">• Clarify locations of the culturally significant "Spirit Trail" in relation to the ecological reserve.• Work with First Nations to determine traditional uses.• Ensure access to traditional use opportunities and identify cultural heritage values.
Improve public acknowledgement and recognition of the ecological reserve.	<ul style="list-style-type: none">• Mark boundary at key areas.• Recruit an Ecological Reserve Warden for the reserve.

Consultation and Future Planning

Planning and management of the ecological reserve will conform to the intent and directions as set forth in the Protected Areas Strategy. The Environmental Stewardship Division is accountable for planning, administration and management of the ecological reserve through the application of the *Ecological Reserve Act* and other laws, regulations and policies .

Although no specific future planning is envisioned beyond the term of this management direction statement, the Environmental Stewardship Division will coordinate management of the ecological reserve with other agencies, the Regional District of the East Kootenay, various public stakeholders, and First Nations as required.

Appendix A: Table of Acceptable Uses, Activities and Facilities

Activity/Use/Facility	Acceptability
Aboriginal traditional activities and uses	M
Hunting	N
Fishing	N
Trapping	N
Utility Corridors	N
Communication Sites	N
Horse Use (Pack Animals)	N
Guide Outfitting (hunting)	N
Guide Outfitting (fishing)	N
Guide Outfitting (nature tours)	N
Ski hills	N/A
Grazing (Domestic Livestock)	N
Recreational Gold Panning/ Rock Hounding	N
Commercial Recreation (facility-based)	N
Commercial recreation (non-facility based)	N
Backcountry Huts	N/A
Water Control Structures	N
Fish Stocking and Enhancement	N
Road Access	N
Off-road Access (snowmobiling)	N
Off-road Access (motorized)	N
Off-road Access (mechanized activities)	N
Motorized Water Access (Non -swimming Areas)	N/A
Aircraft Access	N/A
Fire Management (suppression)	N1
Fire Management (prescribed fire management)	N1
Fire Management (prevention)	N
Forest Insect/Disease Control	N1
Noxious Weed Control	Y
Exotic Insect/Disease Control	N
Scientific Research (specimen collection)	N
Scientific Research (manipulative activities)	M

Y= allowed, subject to conditions identified in the management direction statement or management plan
M= may be permitted if compatible with protected area objectives

N = not allowed
N1= allowed for expressed management purposes only
N2= present and allowed to continue, but not normally allowed
N/A= not applicable.

Appendix B: Flora Species at Risk in the Rocky Mountain Forest District

(shading indicates confirmation in Columbia Lake Ecological Reserve).

Scientific Name	English Name	G Rank	Subnational	COSEWIC	BC Status
<i>Adiantum capillus-veneris</i>	southern maiden-hair	G5	S1	E (May 2000)	RED
<i>Agoseris lackschewitzii</i>	pink agoseris	G4	S2S3		BLUE
<i>Arabidopsis salsuginea</i>	saltwater cress	G4G5	S1		RED
<i>Aster ascendens</i>	long-leaved aster	G5	S2S3		BLUE
<i>Astragalus bourgovii</i>	Bourgeau's milk-vetch	G5	S3		BLUE
<i>Astragalus filipes</i>	threadstalk milk-vetch	G5	S3		BLUE
<i>Atriplex argentea</i> ssp. <i>argentea</i>	silvery orache	G5T5	S1		RED
<i>Bouteloua gracilis</i>	blue grama	G5	S1		RED
<i>Braya purpurascens</i>	purple braya	G4G5Q	S2S3		BLUE
<i>Calamagrostis montanensis</i>	plains reedgrass	G5	S1		RED
<i>Carex incurviformis</i> var. <i>incurviformis</i>	curved-spiked sedge	G4G5T4T5	S2S3		BLUE
<i>Carex rostrata</i>	swollen beaked sedge	G5	S2S3		BLUE
<i>Carex scoparia</i>	pointed broom sedge	G5	S2S3		BLUE
<i>Carex sychnocephala</i>	many-headed sedge	G4	S3		BLUE
<i>Castilleja cusickii</i>	Cusick's paintbrush	G4G5	S1		RED
<i>Castilleja minor</i> ssp. <i>minor</i>	annual paintbrush	G5T5	S1		RED
<i>Delphinium bicolor</i> ssp. <i>Bicolour</i>	Montana larkspur	G4G5T?	S2S3		BLUE
<i>Delphinium sutherlandii</i>	Sutherland's larkspur	G?	S2S3		BLUE
<i>Draba porsildii</i>	Porsild's draba	G3G4	S2S3		BLUE
<i>Draba ruaxes</i>	coast mountain draba	G3	S2S3		BLUE
<i>Eleocharis rostellata</i>	beaked spike-rush	G5	S2S3		BLUE
<i>Epilobium glaberrimum</i> ssp. <i>fastigiatum</i>	smooth willowherb	G5T?	S2S3		BLUE
<i>Epipactis gigantea</i>	giant helleborine	G3	S2S3	SC (1998)	BLUE
<i>Erigeron trifidus</i>	three-lobed daisy	G2G3	S2		RED
<i>Gaura coccinea</i>	scarlet gaura	G5	S1		RED
<i>Gayophytum ramosissimum</i>	hairstem groundsmoke	G5	S1		RED
<i>Glyceria pulchella</i>	slender mannagrass	G5	S2S3		BLUE
<i>Helianthus nuttallii</i> var. <i>nuttallii</i>	Nuttall's sunflower	G5T5	S1		RED
<i>Hypericum scouleri</i> ssp. <i>nortoniae</i>	western St. John's-wort	G5T?	S2S3		BLUE
<i>Juncus arcticus</i> ssp. <i>alaskanus</i>	arctic rush	G5T?	S2S3		BLUE
<i>Lomatium triternatum</i> ssp. <i>platycarpum</i>	nine-leaved desert-parsley	G5T?	S2		RED
<i>Megalodonta beckii</i> var. <i>beckii</i>	water marigold	G4G5T4	S3		BLUE
<i>Melica bulbosa</i> var. <i>bulbosa</i>	oniongrass	G5T5	S2		RED
<i>Minuartia austromontana</i>	Rocky Mountain sandwort	G4	S2S3		BLUE
<i>Muhlenbergia andina</i>	foxtail muhly	G4	S1		RED
<i>Muhlenbergia glomerata</i>	marsh muhly	G5	S3		BLUE

Scientific Name	English Name	G Rank	Subnational	COSEWIC	BC Status
<i>Pellaea gastonyi</i>	Gastony's cliff-brake	G2G3	S2		RED
<i>Phacelia lyallii</i>	Lyall's phacelia	G3G4	S2S3		BLUE
<i>Physaria didymocarpa</i> var. <i>didymocarpa</i>	common twinpod	G5T4	S2S3		BLUE
<i>Plantago eriopoda</i>	alkali plantain	G5	S1		RED
<i>Poa laxa</i> ssp. <i>banffiana</i>	Banff bluegrass	G5?T1	SH		RED
<i>Potamogeton strictifolius</i>	stiff-leaved pondweed	G5	S2S3		BLUE
<i>Potentilla ovina</i> var. <i>ovina</i>	sheep cinquefoil	G5?T5?	S2S3		BLUE
<i>Salix boothii</i>	Booth's willow	G5	S2S3		BLUE
<i>Scirpus pallidus</i>	pale bulrush	G5	S1		RED
<i>Scolochloa festucacea</i>	rivergrass	G5	S2		RED
<i>Schizachyrium scoparium</i>	little bluestem	G5	S1		RED
<i>Sphenopholis intermedia</i>	slender wedgegrass	G5	S2		RED
<i>Sphenopholis obtusata</i>	prairie wedgegrass	G5	S1		RED
<i>Sphaeralcea coccinea</i>	scarlet globe-mallow	G5?	S1		RED
<i>Stuckenia vaginata</i>	sheathing pondweed	G5	S2S3		BLUE
<i>Townsendia hookeri</i>	Hooker's townsendia	G5	S2		RED
<i>Trisetum wolfii</i>	Wolf's trisetum	G4	S2S3		BLUE

Appendix C: Fauna Species at Risk in the Rocky Mountain Forest District

(shading indicates confirmation in Columbia Lake Ecological Reserve).

Scientific Name	English Name	G Rank	Subnational	COSEWIC	BC Status
<i>Acrocheilus alutaceus</i>	Chiselmouth	G5	S3	DD (1997)	BLUE
<i>Aeronautes saxatalis</i>	White-throated Swift	G5	S3S4B,SZN		BLUE
<i>Ardea herodias herodias</i>	Great Blue heron, <i>herodias</i> subspecies	G5T5	S3B,S4N		BLUE
<i>Argia vivida</i>	Vivid Dancer	G5	S2		RED
<i>Asio flammeus</i>	Short-eared Owl	G5	S3B,S2N	SC (1994)	BLUE
<i>Botaurus lentiginosus</i>	American Bittern	G4	S3B,SZN		BLUE
<i>Buteo swainsoni</i>	Swainson's Hawk	G5	S2B,SZN		RED
<i>Chrysemys picta</i>	Painted Turtle	G5	S3S4		BLUE
<i>Colias meadii</i>	Mead's Sulphur	G4G5	S3		BLUE
<i>Dolichonyx oryzivorus</i>	Bobolink	G5	S3B,SZN		BLUE
<i>Falco mexicanus</i>	Prairie Falcon	G5	S2B,SZN	NAR (1996)	RED
<i>Grus canadensis</i>	Sandhill Crane	G5	S3S4B,SZN	NAR (1979) <i>G. canadensis</i> tabida assessed	BLUE
<i>Gulo gulo luscus</i>	Wolverine, <i>luscus</i> subspecies	G4T4	S3	SC (1989) WESTERN POPULATION ONLY	BLUE
<i>Martes pennanti</i>	Fisher	G5	S3		BLUE
<i>Melanerpes lewis</i>	Lewis's Woodpecker	G4	S3B,SZN	SC (NOV 2001)	BLUE
<i>Myotis septentrionalis</i>	Northern Long-eared Myotis	G4	S2S3		BLUE
<i>Numenius americanus</i>	Long-billed Curlew	G5	S3B,SZN	SC (1992)	BLUE
<i>Oncorhynchus clarki lewisi</i>	Cutthroat Trout, <i>lewisi</i> subspecies	G4T3	S3SE		BLUE
<i>Otus flammeolus</i>	Flammulated Owl	G4	S3S4B,SZN	SC (NOV 2001)	BLUE
<i>Ovis canadensis</i>	Bighorn Sheep	G4	S2S3		BLUE
<i>Rana pipiens</i>	Northern Leopard Frog	G5	S1	E (May 2000)	RED
<i>Salvelinus confluentus</i>	Bull Trout	G3	S3		BLUE
<i>Tamias minimus selkirki</i>	Least Chipmunk, <i>selkirki</i> subspecies	G5T1T3	S1S3		RED
<i>Taxidea taxus</i>	Badger	G5	S1	E (May 2000)	RED
<i>Tympanuchus phasianellus columbianus</i>	Sharp-tailed Grouse, <i>columbianus</i> subspecies	G4T3	S2S3		BLUE
<i>Ursus arctos</i>	Grizzly Bear	G4	S3	SC (MAY 2002)	BLUE