

# Ecological Reserves in the Columbia Headwaters

Liza Pegura, BC Parks  
Ranger, East Kootenays  
in Sept 2021



by Jenny Feick and Ian Hatter  
for FER Board Meeting on Dec. 16, 2025

Photo  
by  
Trevor  
Kinley



# ERs in the Columbia Headwaters

- Establishment of Mt Sabine & Columbia Lake ERs
- Location of Mt Sabine & Columbia Lake ERs
- Purpose & Eco Significance of CLER & MSER
- Flora, Fungi & Fauna in MSER & CLER
- Warden Activities in MSER & CLER
- Issues in MSER & CLER
- Questions

View toward ERs on East  
Side of Columbia Lake



All photos by Jenny Feick  
unless otherwise credited



# Establishment of ERs in the Columbia Headwaters

**ER #20 Columbia Lake**



**ER #19 Mount Sabine**



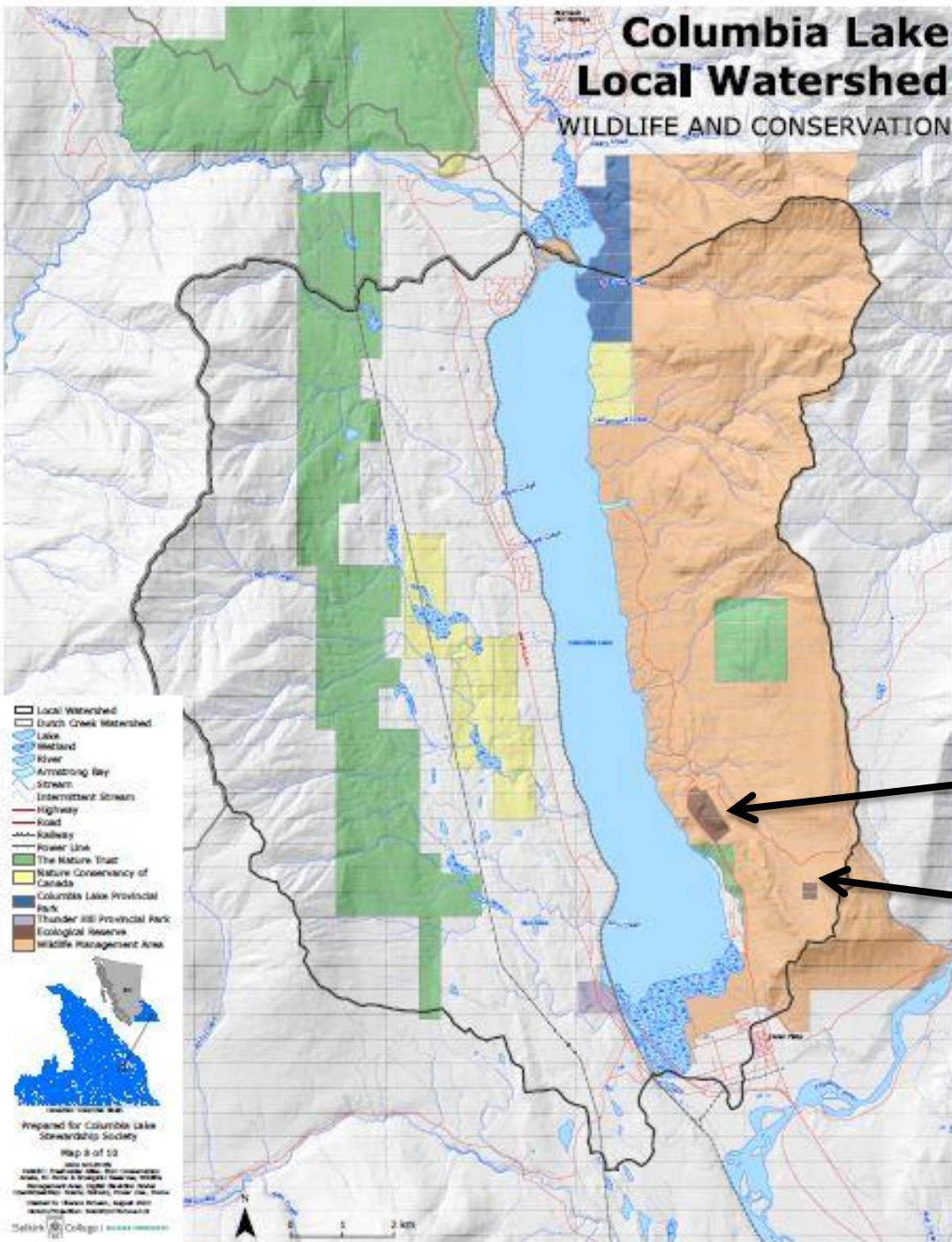


# Location of ERs in the Columbia Headwaters

# Columbia Lake ER

## Mt Sabine ER

Map provided by the  
Columbia Lake Stewardship  
Society





# Mt Sabine ER#19 Location



- located SE side of Columbia Lake
- Northeast of Canal Flats
- 7.9 ha in size





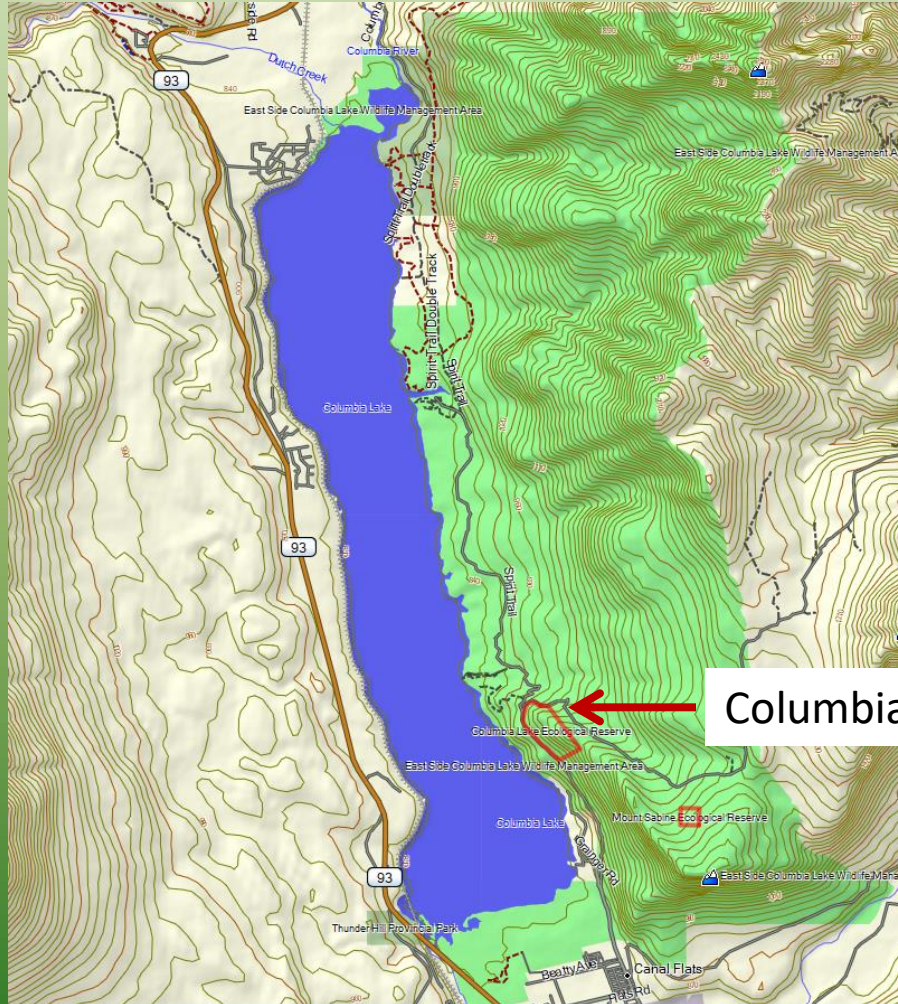
# Mt Sabine ER#19 Location



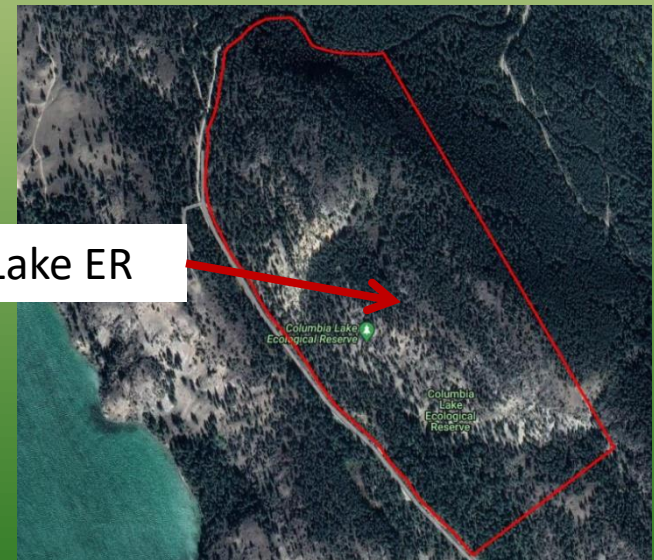
Photo: Jenny Feick



# Columbia Lake ER#20 Location



- Located SE side of Columbia Lake (29 ha)
- 5 km N of Canal Flats
- Near the Spirit Trail (8000 year old FN route)
- Surrounded by Columbia Lake WMA (8576 ha)



Columbia Lake ER



# Columbia Lake ER#20 Location

Towers



Photo: Jenny Feick



# Columbia Lake ER Purpose & Ecological Significance



- Protects regionally significant geological, hydrological and vegetation features associated with mineral springs and tufa deposits
  - Includes calcicolous plants or “calcicoles” growing in both wet sites (e.g. stream orchid) or on limestone cliffs (e.g. Fee’s lip fern)
- Only ER in East Kootenay Trench Ecosection; small contribution (0.41%)









**Tufa  
deposits  
from cold  
springs**



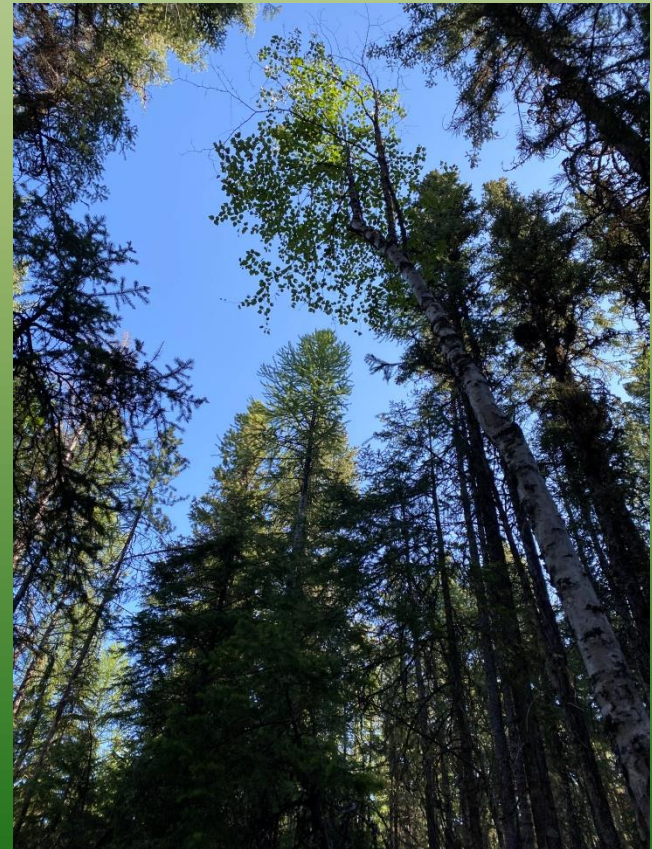
# Mt Sabine ER

## Purpose & Ecological Significance


**Established in 1971 to protect  
sedge meadow encircled by  
montane spruce forest within an  
overall semi-arid area**



**Opportunity to Monitor Climate  
Change Effects on Vegetation**







Found *Carex concinnoides*  
North-western sedge in Mt.  
Sabine ER in May 2025!!!



Engelmann spruce  
(*Picea engelmannii*)



Dead or dying subalpine fir  
(*Abies lasiocarpa*)



# Mt Sabine ER Flora - Conifers

**Variety of conifers in the ER**



**Cones of lodgepole pine**





Western rattlesnake plantain,  
(*Goodyera oblongifolia*)



Prince's pine or Pipsissewa,  
(*Chimaphila umbellata*)





Curved-beak lousewort, (*Pedicularis contorta*)



Canadian bunchberry, (*Cornus canadensis*)

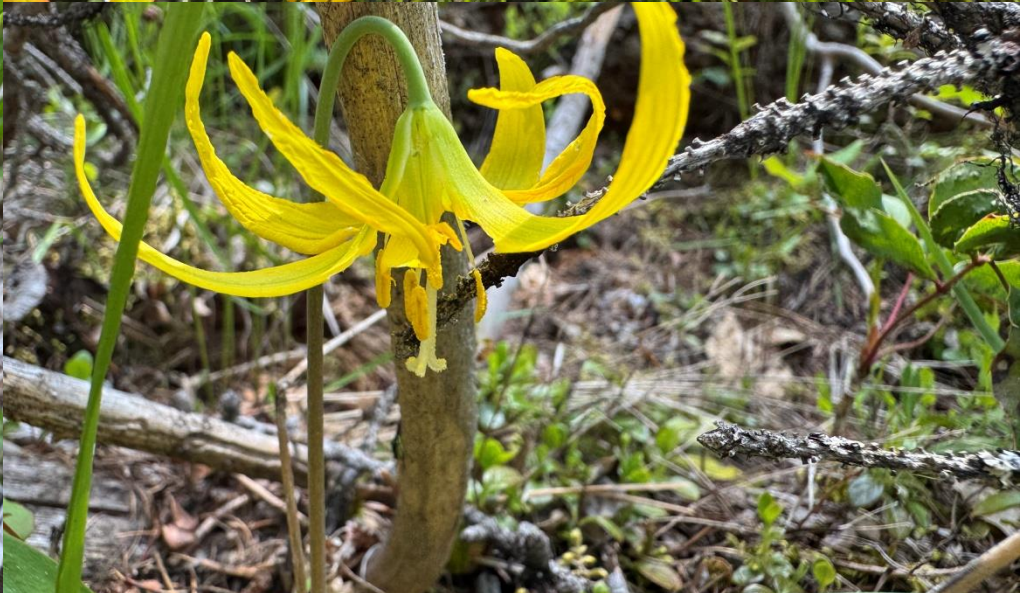


Twinflower,  
(*Linnaea borealis*)



Bronze bells,  
(*Anticlea occidentalis*)





Glacier lilies (*Erythronium grandiflorum*)





purple clematis,  
(*Clematis occidentalis*)



Utah honeysuckle  
(*Lonicera utahensis*)



Canadian bunchberry,  
(*Cornus canadensis*)

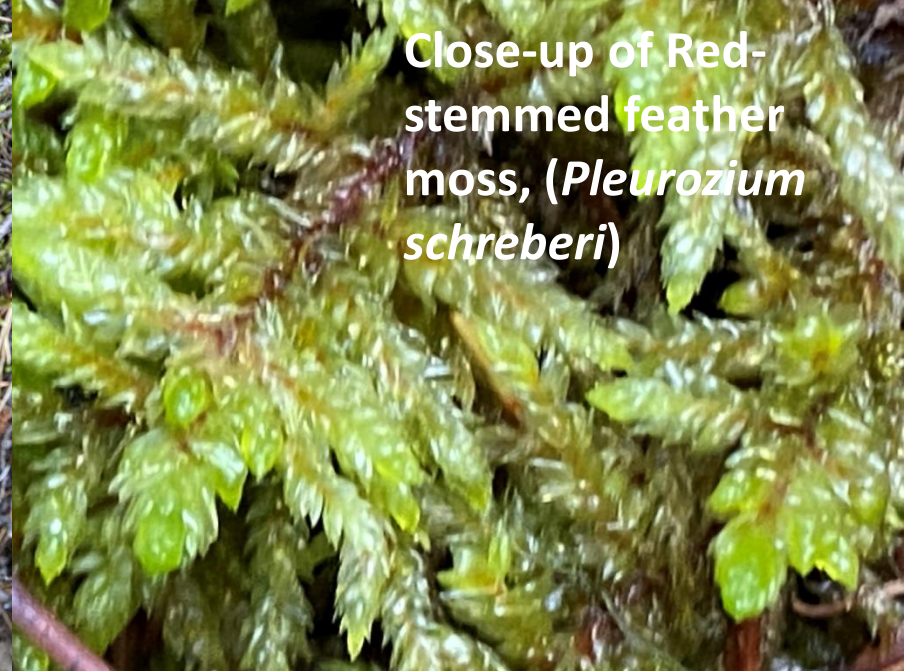


Western snowberry,  
(*Symphoricarpos occidentalis*)





Red-stemmed  
feather moss,  
(*Pleurozium  
schreberi*)



Close-up of Red-  
stemmed feather  
moss, (*Pleurozium  
schreberi*)



Austria  
timmia  
moss,  
(*Timmia  
austriaca*)



Fragile fork-moss,  
(*Dicranum tauricum*)





Conifer mazegill,  
(*Gloeophyllum sepiarium*)



Rufous milkcap,  
(*Lactarius rufus*)



Mountain Wolf lichen, (*Letharia lupina*)



Veinless pelt lichen,  
(*Peltigera malacea*)



# Mt. Sabine ER - Evidence of Fauna

Flower crab spider  
(*Misumena vatia*)



Holes made by pileated woodpeckers  
(*Dryocopus pileatus*)





# Mt Sabine ER - Mammals

**Yellow-pine chipmunks**  
(*Neotamias amoenus*)



**Rocky Mountain elk (*Cervus canadensis nelsoni*) pelvis bones**





# Columbia Lake ER Flora

Oregon woodsia  
(*Woodsia oregana*)



Creeping juniper  
(*Juniperus horizontalis*)

Sagebrush mariposa  
lily (*Calochortus  
macrocarpus*)



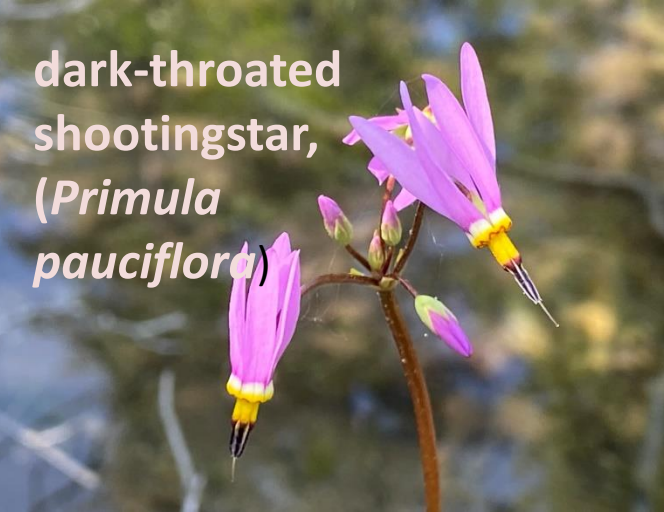




horned  
butterwort  
(*Pinguicula  
macroceras*)



Tufa  
deposits  
from cold  
springs



dark-throated  
shootingstar,  
(*Primula  
pauciflora*)



Maryland sanicle  
(*Sanicula marilandica*),



wood lily, (*Lilium  
philadelphicum*).



Kalm's lobelia, (*Lobelia kalmii*)



Rhexia-leaved paintbrush (*Castilleja rhexifolia*)





Yellow lady's slipper (*Cypripedium parviflorum*)



North wind bog orchid (*Platanthera aquilonis*)

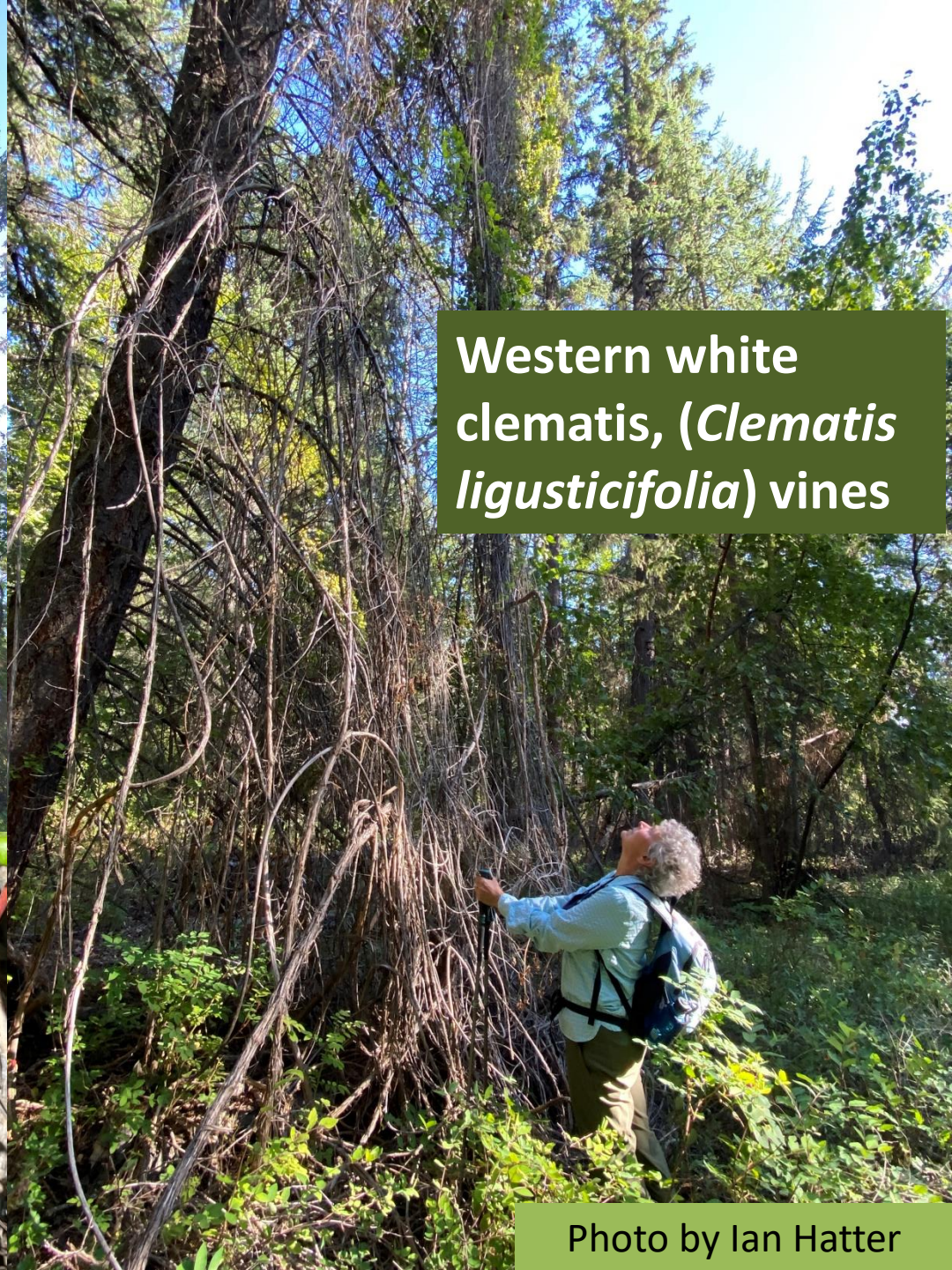






**stream orchid or  
giant helleborine,  
(*Epipactis  
gigantea*, a  
Species of Concern  
in SARA**





Western white  
clematis, (*Clematis  
ligusticifolia*) vines



Photo by Ian Hatter





**Columbia Lake Ecologic Reserve - only ER  
representing dry Interior Douglas-fir BEC zone**



Endangered  
limber pine  
(*Pinus flexilis*)





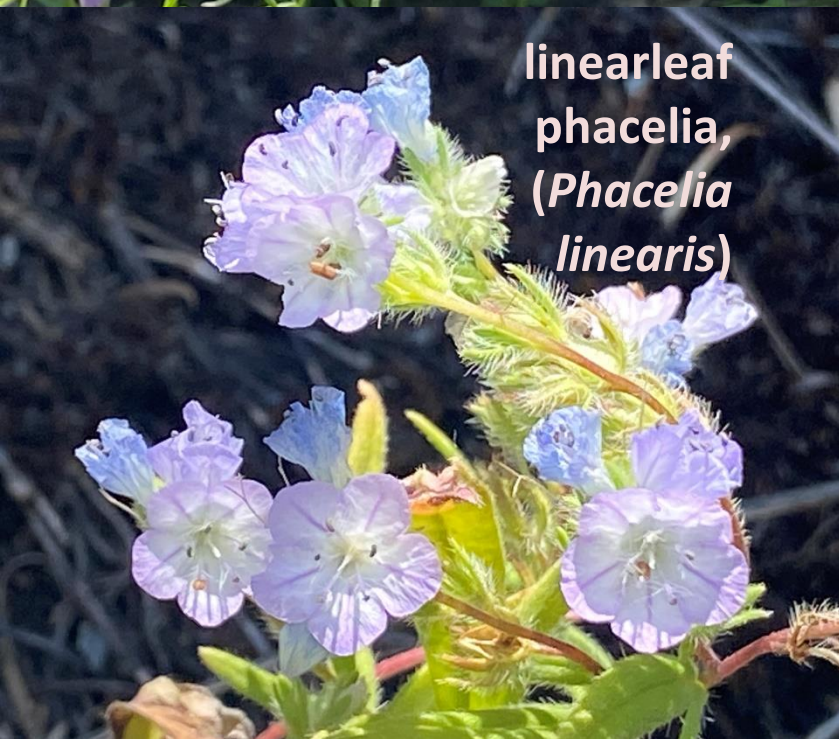


Ponderosa pine  
(*Pinus ponderosa*)





**Alaskan bellflower**  
**(*Campanula alaskana*)**



**linearleaf**  
**phacelia,**  
**(*Phacelia***  
***linearis*)**



**Fee's or slender lip-fern**  
**(*Myriopteris gracilis*)**

**Look for short**  
**pale tan hairs**  
**on underside**  
**of frond**



# Columbia Lake ER - Ferns & Horsetails

**Gastony's cliff-brake (*Pellaea gastonyi*), a vulnerable species**



**Field horsetail (*Equisetum arvense*)**







Stairstep moss, (*Hylocomium splendens*)



Woodsy thyme-moss, (*Plagiomnium cuspidatum*)



Sessile grimmia moss, (*Schistidium apocarpium*)



Star moss, (*Syntrichia ruralis*)





**Rust fungus**  
(Order Pucciniales)



**Rounded earth star,**  
(*Geastrum saccatum*)

**Bristly beard lichen,**  
(*Usnea hirta*)



**Elegant sunburst lichen,**  
(*Rusavskia elegans*)



# Columbia Lake ER - Fauna

## Invertebrates

### Arthropods

- \* Diplopods
- \* Arachnids
- \* Insects



## Vertebrates

- \* Birds
- \* Mammals





# Fauna - Arthropods



Mormon fritillary (*Speyeria mormonia*) feeding on rabbit-brush (*Ericameria nauseosa*)



Rocky Mountain wood tick (*Dermacentor andersoni*)



# Columbia Lake ER Fauna - Birds



Common nighthawk  
eggs and “nest”  
(*Chordeiles minor* )



Turkey vulture  
(*Cathartes aura*)



# Columbia Lake ER Fauna - Mammals



Bighorn sheep ram  
(*Ovis canadensis* )



Scat of Rocky Mountain elk  
(*Cervus canadensis nelsoni*)



# ER Warden Activities & Issues



Ian Hatter pulling common mullein in the Columbia Lake ER Sept 2025



Jenny Feick bird watching in Mt Sabine ER Sept 2024 (Photo by Ian Hatter)



# Annual Reports



## Mount Sabine Ecological Reserve #19

### Warden Report for 2023



Yellow columbine (*Aquilegia scopulorum*) in Mount Sabine Ecological Reserve (Photo by Jenny L. Frick)

Report completed by: Jenny L. Frick, PhD, ER Warden for Mount Sabine Ecological Reserve

Report completion date: September 4, 2023.



## Columbia Lake Ecological Reserve #20

### Warden Report, 2023



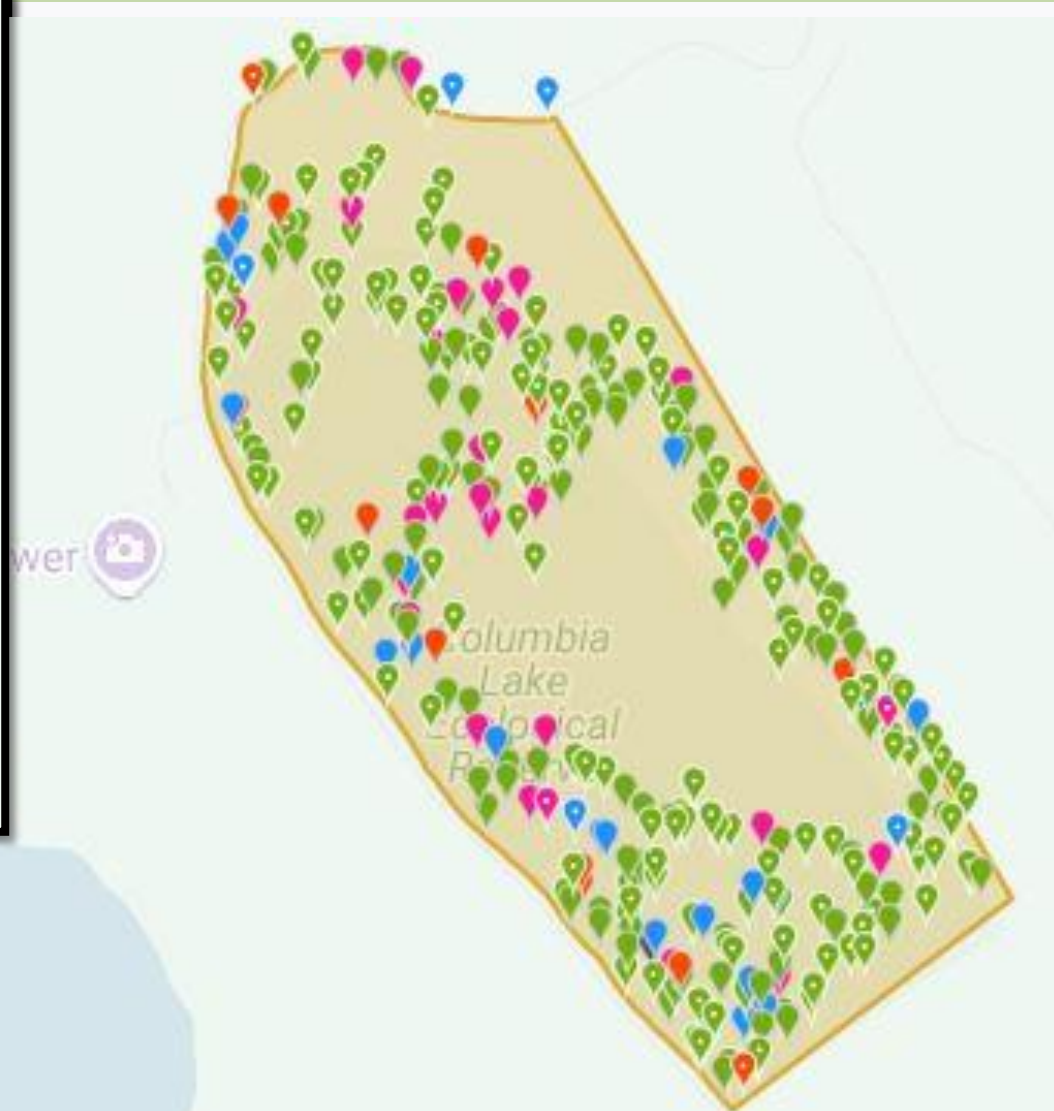
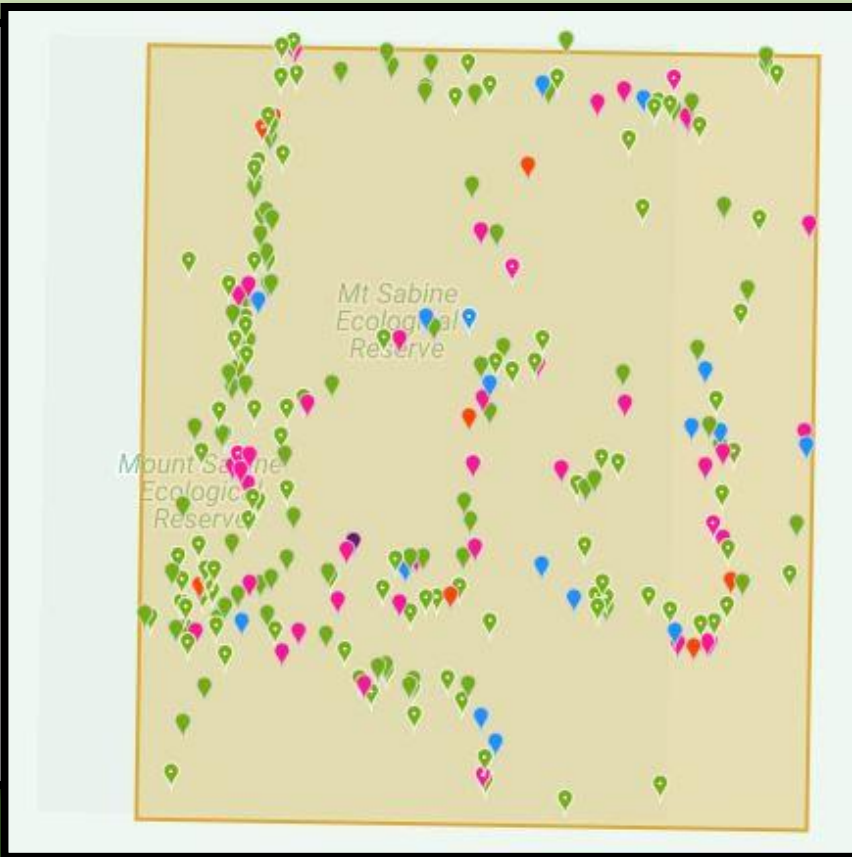
Giant bell orchid (*Cyclopogon crassifolius*) orchid, also known as stream orchid

Report completed by: Ian W. Heltzer, ER Warden for Columbia Lake Ecological Reserve, and Dr. Jenny Frick, ER Warden for Mt. Sabine. All photos were taken by Jenny Frick.

Report completion date: October 24, 2023



# iNaturalist Observations 2023



2025



# Warden Activities in Mt Sabine ER





# Warden Activities in Columbia Lake ER







Ian counted 177 stream  
orchid plants blooming on  
July 9, 2023







Ian counted 207 stream  
orchid plants blooming in  
two patches on July 19, 2024




Ian counted ~167 stream  
orchid plants blooming in  
two patches on July 27, 2025





# BC Biodiversity Team Visit in June 2024

Photo by Lyle  
Grisedale

A group of 12 people, including men and women of various ages, are posing for a group photo in a forest. They are standing and kneeling on a forest floor covered with green plants and fallen leaves. Several large, ancient-looking trees with thick, textured bark are visible in the background. The people are dressed in outdoor gear, including hats, backpacks, and cameras. Some are holding long poles or tools. The scene is bright and sunny, with sunlight filtering through the trees.

“Marika --- Great day yesterday at Gilnockie! Likely add 50 - 100 plant species to the list under iNaturalist - Gilnockie. We saw, and a number of people photographed, a flying squirrel and a pygmy owl! Several new birds as well from people using EBird. Also were insects photographed by the Parks inaturalist team... See you Tuesday.”  
Wayne Stetski, 15 June 2024

Screenshot of BC Biodiversity Team Big Year website







# Mt Sabine ER Issue – Unmarked Boundaries Evidence of Timber Cruising



Photos: Jenny Feick



# Mt Sabine ER Issues - Access

Side access road to climbing area cutting through  
Mt Sabine ER Mount Sabine

Asimov Cliffs on Mount Sabine





# Mt Sabine ER Issues - Access

Camp Road access road above the W side of Columbia Lake ER is now passable only to quads



It's a long hike to get to Mt Sabine ER





# Mt Sabine ER Issues

## CC Effects on Vegetation





# Columbia Lake ER Issues – Human Use

- A trail biker is repeatedly accessing the ER, causing erosion and invasion of alien plants species
- Evidence of campfire and dirt bike use along dry grassy areas above and below the limestone cliffs





# Columbia Lake ER Issues – Tree Cutting

Photo below: Ian Hatter





# Columbia Lake ER Issues - Access

- Access to the lower portion of ER is along a rough 2WD gravel road accessible by AWD SUV
- The road to access the upper portion is full of deep ruts and rocks with steep grades that require a 4WD truck or ORV





# Addressing Access Challenges in Mt Sabine & Columbia Lake ERs





# Help from BC Parks Park Enhancement Fund

## **Funding available for community-led projects – apply now!**

Posted on April 30, 2025

Categories:

[BC Parks News](#)

BC Parks is pleased to announce we are now accepting applications for the 2025/26 Community Park Enhancement Fund (Community PEF). This funding supports community-led conservation and recreation projects in BC Parks thanks to funding from BC Parks licence plates.

**Applications are now open!** [Click here to apply.](#)

**Application deadline:** Friday, May 30<sup>th</sup>, 2025.









2025-10-14 10:10:06 AM M 1/3

HYPERFIRE HF4K

● -4°C



2025-10-10 12:36:00 AM M 1/3

HYPERFIRE HF4K

● 10°C







Photo by Marika Welsh, BC Parks



# Questions?



Selfie of us by Ian Hatter at the SW corner of Columbia Lake ER