

Biodiversity and Wildlife: A Case Study

Caas Tl'aat Kwah
Drainage

(Serb Creek: 50km SW of
Smithers)

March 18, 2024

Presented by:

Dave Duncan, RPF

BC Timber Sales, Babine Business Area

What has been Assessed, and by Whom?

- **Stream Classification:** Fish and Non-Fish bearing streams: *Marlim Ecological Consulting*
- **Proposed Road Location:** 10 km, multiple streams and Two Alluvial Fans to cross: *Fortech Environmental and the Regional geomorphologist*. (Fortech also located a rare patch of Western red cedar)
- **Grizzly Bear Habitat Suitability:** *Ministry of Environment*, modelling and ground checks
- **Wildlife Habitat:** *TerraNiche Environmental Solutions*, installation of Wildlife Cameras and habitat assessments
- **Water Quality:** *Terraniche Environmental Solutions*, Turbidity and Water Volume at the Serb Creek confluence

Bulkley LRMP Management Direction:

- ▶ Biodiversity: “Maintain the integrity of this sensitive ecosystem.”
 - ▶ “Manage as a low risk area for fire management”
- ▶ Wildlife Habitat: “Identify and maintain grizzly bear habitat.”
- ▶ Outdoor Recreation and Tourism: “This area has high potential for backcountry wilderness experiences. Maintain in a primitive state...”
- ▶ Timber Management: “Development will be less intense than in IRM (Integrated Resource Management) zones.”

Indigenous Management Direction

- The Wetsu'wet'en Yintah (Land) Stewardship Document calls for using the **Precautionary Principle** in decision-making.
- *"We are the land and the land is us. The health and well being of the Yintah reflects the health and well being of the people."*
- Principle "F" of the Yintah calls for preserving the full range of options for future generations. BCTS has a role to play in reconciliation and supporting the OW in their decision-making.
- The house clan in the Serb is the Laksilyu "Small Frog" clan. They probably knew coastal tailed frog lived there for millenia.



Old Growth Strategic Review April 2020:

All Fourteen Recommendations were Accepted by the BC Government
(The Technical Advisory Panel included a Biologist and a Forester from Smithers)

Recommendation #1: **Engage the full involvement of Indigenous leaders** and organizations to review this report and any subsequent policy or strategy development and implementation.

“ A paradigm shift from: Manage for timber... to: Manage for ecosystem health”

Recommendation #2: **Declare conservation of ecosystem health and biodiversity of British Columbia's forests as an overarching priority and enact legislation that legally establishes this priority for all sectors**

Old Growth in the Serb

- Old Growth in the Serb is defined as forests > 250 years old
- The Serb is the last unlogged BCTS operating area watershed from Smithers to Burns Lake (outside of a park or reserve).
- Long time intervals between forest disturbances in the Serb area*:
- ICH zone (north end of Serb Creek) averages 250-350 years between disturbances
- ESSF zone: 350 years between disturbances by wildfire or insects



Some Identified Habitat and Cultural Features in the Serb Watershed:

- A large rocky outcrop area: prime mammal denning habitat
- CMT's
- High value Grizzly and Moose habitat (security, foraging breeding)
- Cultural Trails
- Grizzly bear digging sites
- Hi value Arboreal Lichen Loading site (potential for caribou use)
- Coastal Tailed Frog, Western Red Cedar & Whitebark Pine



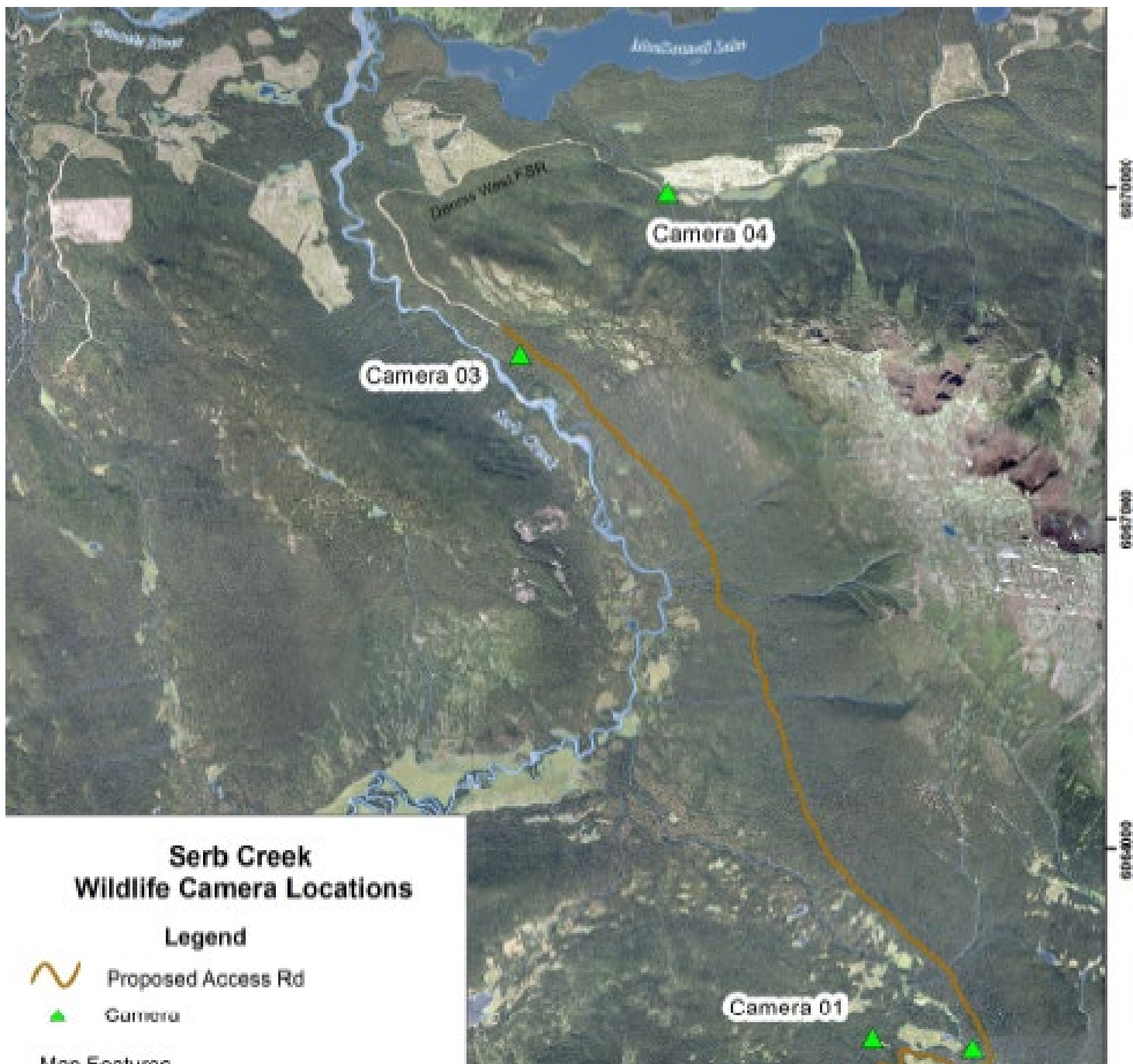
Identified Species of Management Concern in the Serb Creek Drainage:

- Wolverine
- Grizzly Bear
- Mountain Goat
- Moose
- Coastal Tailed Frog
- Bull Trout
- Cutthroat Trout
- Whitebark Pine and Clark's Nutcracker
- Western Red Cedar (occurs in a rare ecosystem.)
- Fisher (tough to photograph)



Wildlife Cameras Installed in October 2021 Along the Proposed Road

- Cameras #1, 2 and 3 are installed along the proposed road layout
- 10 km of proposed road is shown
- A further 10km of road is proposed to access timber located Southwest of Camera #1



Wolverine: Blue-listed in BC (A Species of Special Concern)

- “They don’t need pure wilderness to exist, but they have low reproductive rates, so you have to watch what happens to their territory, or else they are going to blink out of existence”. (Scrafford, 2021. *Canadian Geographic*)
- a healthy wolverine population is a strong sign of a healthy ecosystem (Scrafford, 2021)
- *An umbrella species is a species that through the protection of its habitat protects other species*



Mountain Goat (Blue listed)



2022-09-02 21:15:07

M 3/3

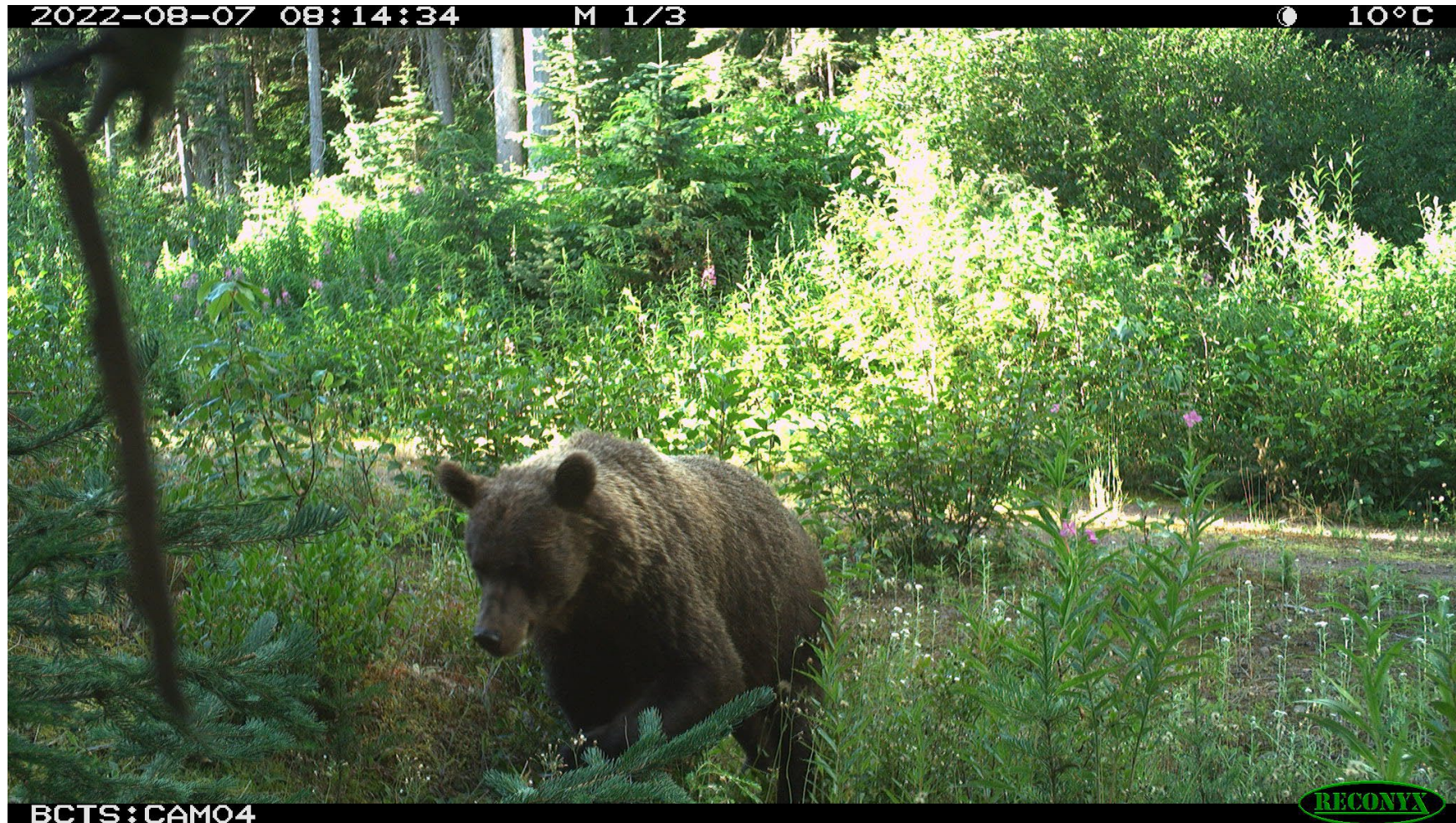
51°F



BCTS:CAM03

RECONYX

Grizzly Bear (Blue listed)



2023-05-21 06:29:20

M 1/3

33°F



BCTS:CAM03

RECONYX

Road Density is key to grizzly bear population management

- “Specific to Serb Creek, if you’re able to emphasize the strong relationship between roads – human access and grizzly bear mortalities, that would be key.” Karine Pigeon, WLRS Habitat Team Lead, Skeena Region:
- “A recent report found grizzly bear densities were best explained by huckleberry patches, alpine areas, a greenness index, and road densities: which further emphasizes the value of having some remaining areas without roads that have high potential for berry abundance.”
- Karine is leading the Grizzly bear habitat modelling completed for the Skeena Region (South), including in Serb Creek.
- The Babine BA assisted Karine and her team in ground-truthing the habitat model in Serb Creek.
- High value habitat polygons were identified along the proposed road layout in Serb Creek.
- *Keystone species are those that have a disproportionately large effect on the communities in which they occur.*

Timber Wolves

yellow-listed: populations are considered secure in BC



2023-05-26 16:54:50

M 2/3

60°F



BCTS:CAM03

RECONYX

Marten:

Yellow listed, but there
are concerns about
widespread habitat loss
East of the Bulkley TSA
due to beetles and
wildfire



2022-12-12 13:43:44

M 3/3

-9°C



BCTS:CAM01



Moose:

yellow listed

- A Population Decline of 1/3 in the BVLD since 2004 (Schindler, Peard, & Hinchcliffe 2019)
- The Serb drainage has important breeding, security, and foraging habitat.



:CAM03

2022-11-23 10:59:37

M 2/3

○ 31°F



BCTS:CAM03



Homo Sapiens

Yellow listed.

Estimated population:
8 billion...





Coastal Tailed Frog

yellow listed

(The Serb is the Eastern-most extent of its range)

Habitat: clean, cold, fast moving small streams (S4 or S6) with coarse cobble-boulder substrates.

Nearly all of the streams intersecting the proposed road are excellent tailed frog habitat. One stream had two tailed frogs identified, two more streams had weak DNA responses.

Coastal Tailed Frog Best Management Practices:

No road crossings in the upper watershed. **Minimize road density and stream crossings.**

A 30m riparian reserve of mature timber on both sides of streams, with an additional 20m of increased mature structure adjacent to the 30m reserve.

{Similar to the Wetsuwet'en Yintah Riparian Management Area Requirements (Jan 2023): (e.g., Reserves of 100m on S1-S4 streams, 30m on S5-S6 streams)}



Bull Trout and Cutthroat Trout:

Blue listed sub-species

- Highly susceptible to over-fishing in small streams
- Both species are sensitive to habitat degradation caused by road building and logging
- Bull trout are temperature sensitive: water $> 10^{\circ}\text{C}$ impacts survival. Shading of streams is essential.

Western red cedar patch

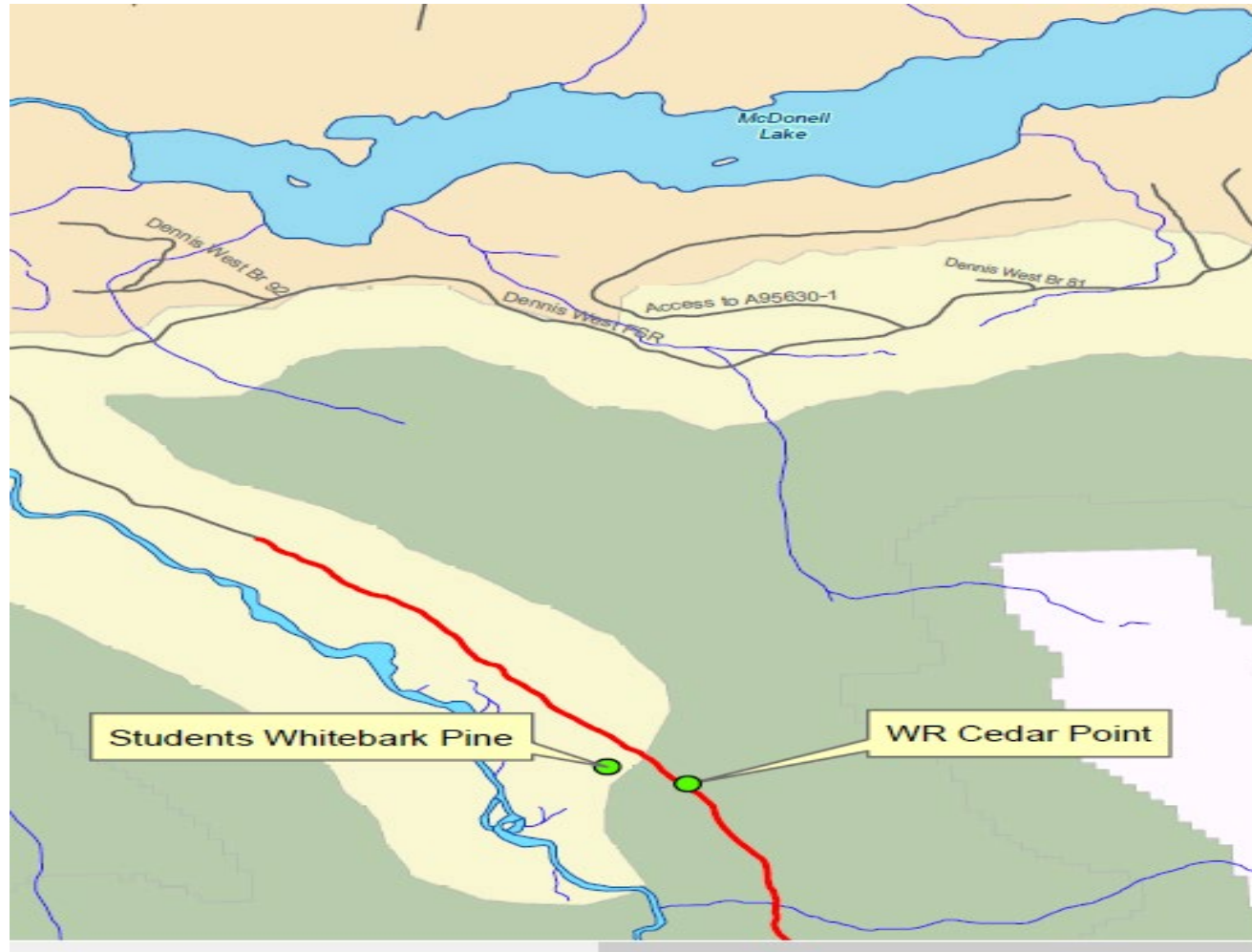
A potential rare occurrence for this site series (and the Easternmost occurrence in the TSA): a possible red or blue-listed plant community



Plant Species at the edge of their range:

Well-positioned for Climate Change Adaptation

Yellow = Interior Cedar Hemlock zone, Green= Engelmann Spruce Subalpine Fir



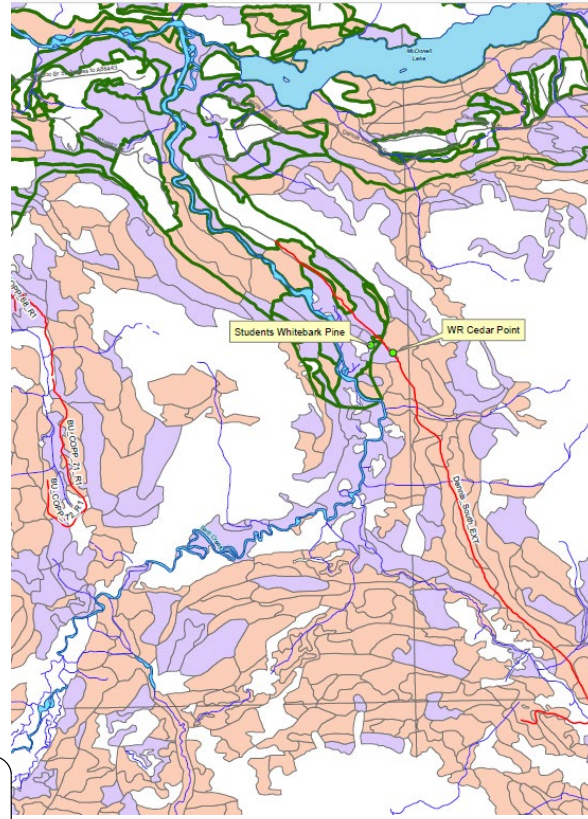
Whitebark Pine

(Blue Listed)



- ▶ Threatened by Mountain Pine beetle and White Pine Blister Rust
- ▶ Found at an unusually low elevation in the Serb Creek area, in the ICH

High Value Migratory Bird Nesting Habitat, and High Value Fisher Habitat





Other Resource Values:

Cost:Benefit Analysis

- ▶ A Cost:Benefit analysis is **important for making sustainable longterm management decisions**. It can be completed by TSA to provide scenarios for setting FLP objectives.
- ▶ Example: 2021 Port Renfrew TSA analysis of OG, timber harvest, tourism, and carbon storage
- ▶ Analysis of timber values, water quality, road costs, planting and deactivation costs, carbon storage values, wilderness tourism, hunting/fishing, and other forest values
- ▶ **The Serb:** Low % sawlog, expensive road building (blasting, and two major bridges)
- ▶ Common models used: **CBM** (Carbon Budget Model), **Patchworks** (harvest scenarios), **Forest Estate** (modelling over a 250 year horizon)
- ▶ **A detailed Cost:Benefit analysis costs approx. \$50,000 to \$100,000 for timber harvest scenarios**
- ▶ **Add approx. \$50k for analysis of wildlife habitat and wilderness tourism**

1. Water Quality:

An SFI Management Objective

Sampling at the Serb confluence, for baseline data:

- ▶ Spring freshet and Fall sampling was conducted in 2021, 2022 and 2023
- ▶ Conclusion: Sediment and turbidity levels were low during peak flows
- ▶ Some glacial silt is present year-round



Photo 1. Water quality monitoring station, Serb Creek. Pink flagging tape (seen here below the water surface) is the normal wetted width/depth.

Photo taken July 4, 2022: Very High water level: above the usual wetted perimeter (pink tape).

2. Carbon Storage and Offsets

An Ecological Service that our forests and wetlands provide for free

- ▶ Valued at \$50/tonne in BC, and more on the world market
- ▶ **The Serb basin is richer in carbon than most of our forest types**, due to the wetter coastal influence: approximately 400-500 tonnes/ha. The huge **wetland complex stores 20 times more carbon/ha than the forested landscape**
- ▶ **Long Natural disturbance intervals (250-350 years) in the Serb: a positive factor** in the evaluation process for a carbon offset project.
- ▶ The Serb is “a bit small” (16,000 hectares) compared to some carbon offset areas, but the Serb could potentially produce annual carbon offset revenue for the provincial government and FN’s.
- ▶ **Cost would be in the \$250,000 range for Carbon offset certification**
- ▶ There’s a field assessment process every 2-3 years to ensure the area is still a carbon storage area. This could be completed by BCTS and OW technicians.

Provincial Contact: Warren Greeves, Manager of FCOP (Forest Carbon Offsets Projects, Office of the Chief Forester)

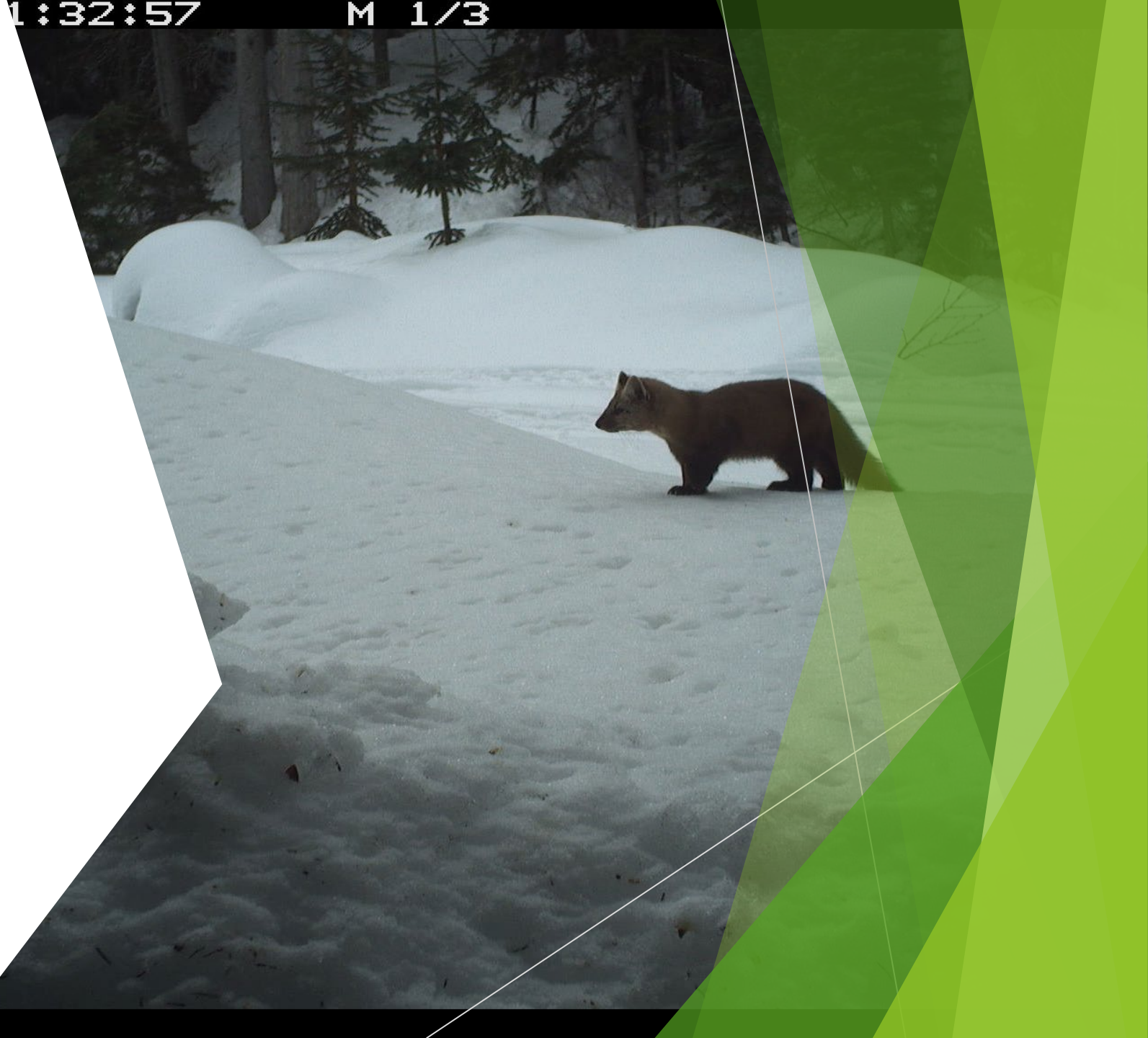
3. Climate Change Refugia Areas

Climate Change Refugia Areas are likely to remain cool enough during the next 50-100 years to retain their existing forest structure for natural processes and wildlife habitat.

- ▶ Refugia areas are not likely to have a large natural disturbance in the next 100 years. The Natural Disturbance interval in the Serb is roughly 250-350 years.

Forest Connectivity Areas: Intact drainages like the Serb are important for the migration of plant and animal species to temperatures they are adapted to - from warming coastal habitat areas to cooler habitat in the Interior.

- ▶ Connected areas are “Safe landing Zones” for species forced to migrate.
- ▶ Intact valleys that are free of roads and cutblocks allow juveniles to migrate to establish new territories (ex. Mountain goats, bears).



4. Wilderness Tourism



- ▶ Twenty-five years ago, the Serb was noted for its wilderness potential:
- ▶ *“This area has high potential for backcountry wilderness experiences; maintain in a primitive state by managing for low intensity, low impact recreation.”* Bulkley TSA Land and Resource Management Plan, 1998.
- ▶ The Serb has the potential for much more wilderness tourism: hiking, snowshoeing and cross-country skiing:

- ▶ New trails and upgrade existing trails, better signing
- ▶ Warming huts and an interpretation display

Snowmobiling is occurring but it is incompatible with a low impact recreation strategy, and it creates undue stress for wildlife. Zoning and regulation may be needed.

- ▶ Mountain goats will have increased calving mortality due to noise-related stress and will leave their winter range.
- ▶ Bears emerge occasionally from hibernation during the winter and will also be negatively impacted.
- ▶ Caribou predation increases with packed snow trails.



Some Management Options

IPCA: Indigenous Protected and Conserved Areas:

Garnering attention worldwide, there are IPCA's in over 25 countries

An IPCA enables Indigenous governments to perform the primary role in protecting and conserving ecosystems.

"Culture and language are the heart and soul of an IPCA." 2018 Indigenous Circle of Experts Report.

IPCA's can take many forms, with various amounts of conservation and development

IPCA's will assist Canada in reaching the federal target of conserving 30% of lands and oceans by 2030. This goal is also supported by the province of BC.

The Tlingit and Tahltan have signed IPCA's for the Taku and Mt Edziza areas

Management Options (continued):

OGSR Deferred Areas: The Babine Business Area has recommended the Serb drainage to the province for OG Deferral, as an intact watershed.

Bulkley FSP Extension (BCTS); under review by MOF staff

- ▶ The Bulkley FSP addresses the Objectives set out in the Bulkley LRMP, approved in 1998.

Forest Landscape Plans (FLP's):

- ▶ Forest Landscape Plans must be developed in consultation and cooperation with Indigenous peoples. A cost:benefit analysis would assist.
- ▶ Indigenous Governing Bodies can enter into a decision-making agreement under section 7 of the Declaration Act.
- ▶ Carbon Offset Projects and IPCA's can be included as part of or adjacent to FLP areas.
- ▶ A detailed Cost:Benefit analysis would assist in planning and in communication with stakeholders and the general public

Conclusions

- ▶ The Wet'suwet'in Yintah calls for using the Precautionary Principle in decision-making. This bodes well for sustainable planning of the Serb drainage.
- ▶ Principle "F" of the Yintah calls for preserving the full range of options for future generations. BCTS has a role to play in reconciliation and supporting the OW in their decision-making.
- ▶ As the last unlogged drainage in the Babine Business Area, future generations of Indigenous and non-Indigenous people will be directly impacted by the management decisions made in Serb Creek.
- ▶ We're in a Biodiversity and Climate Crisis. Species of Management Concern and intact ecosystems need our attention to maintain biodiversity, and to prevent several species from being extirpated by loss of habitat and climate change.
- ▶ Currently, the Serb Creek drainage stores millions of tonnes of carbon.
- ▶ In November 2023, the UN's IGPPC stated Earth is on target for a 2.5 Celsius to 3 degree increase in global temperature this century unless countries significantly reduce carbon emissions now. Such an increase would be "devastating".

Questions?

(Grizzly sow with two cubs)

