12.03.2025

Living Lab Program for Climate Change and Conservation - Final Report

Project title: Post-fire whudzih (Rangifer tarandus caribou, woodland caribou) habitat recovery in Ulkatcho

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Research findings

[Please include key quantitative and qualitative research accomplishments. Bullets are acceptable]

- Terrestrial lichen recovery occurred between 62- and 68-years post-fire
- Stand density failed to reach likely suitable openness for caribou within 90 years post-fire
- Lodgepole pine hosted Byroria sp. loadings as early as 40 years after stand-replacing fire, although not enough to sustain caribou
- Competition from mosses and vascular plants was significant in predicting lichen abundance, but only vascular plants were significant in predicting lichen presence/absence

Methods summary

[Please be brief - bullets are acceptable]

- Ulkatcho oral history and Dakelh linguistics were integrated into study design and field sampling
- 'Think Like A Caribou' plots simulated likely caribou forage and received positive feedback from Ulkatcho field assistants
- Quantitative plots measured terrestrial lichen abundance, canopy closure, stand structure, vascular plant cover and moss cover
- Arboreal lichen availability was measured qualitatively
- Tree cores were used to estimate stand age of controls

Key outcomes for BC Parks

[e.g., what are the consequences of your research for park values (conservation, recreation, and/or cultural)?, bullets are acceptable]

- Working side-by-side with indigenous partners on caribou conservation may allow for deeper understanding of caribou significance and understanding of habitat use within parks.

- Caribou likely have a holistic perception of winter habitat, and other factors outside of lichen abundance may play a role in their return to historically burnt areas.

Relevance to BC Parks management

[Provide any recommended steps BC Parks can take to incorporate your project's findings in our day-to-day management of the park system]

- Wildfires naturally destroy caribou lichen forage and mature forests that provide important winter habitat. More research is needed to understand if wildfire suppression inside Provincial Parks for the purpose of caribou habitat conservation should be considered.
- The importance of caribou to the Ulkatcho people cannot be understood outside of Ulkatcho cosmology. Caribou herds that use habitat in Itcha-Ilgachuz and Entiako Provincial Parks hold immense importance to the Ulkatcho people and have done since creation.

Project's challenges/opportunities

[List challenges/lessons learned or opportunities here]

- Involvement of both Ulkatcho youth and students, and undergraduates from Thompson Rivers University in remote fieldwork provided broad skill development. This included but is not limited to:
    - Remote camp set-up, water filtration, bear safety, InReach and Satellite phone best practise
    - The use of technical field equipment such as increment borers and spherical densiometers
    - Plant, tree and wildlife identification (and the field use of identification guides)
    - Helicopter and float plane protocols and safety
    - Team-building and teamwork in remote environments

  We will attempt to expand this learning opportunity to more students and youth in future projects.

- Lessons learned: bear fences may become less effective when in contact with dense and moist brush. Gravity water filters require proactive maintenance to maximize efficiency.
- Opportunities: Taking the time to develop good relationships with heli and floatplane companies allowed for strong working partnerships for remote fieldwork in this area.

Conclusions/next steps

- We are in the process of producing a formal findings report for the Ulkatcho First Nation and will present this alongside community meetings with elders and community members.
- We plan to present this research at the 2026 North American Caribou Workshop
- Two academic papers based on the data collected in this research will be submitted for peer-review