



Responsible Recreation: Pathways, Practices and Possibilities



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Columbia Mountains Institute of Applied Ecology

This document is available as a free PDF download from the website of the Columbia Mountains Institute, at www.cmiae.org in the “Past Events” section. Look for the write-up for this event [here](#).

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CMI acknowledges and honours the four nations on whose territory CMI works within the Columbia Mountains region: the Sinixt, the Secwepemc, the Ktunaxa, and the Syilx.

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Conference proceedings

This document is a summary of events, information shared, and resources from the conference: [Responsible Recreation – Pathways, Practices and Possibilities](#). Event presenters have submitted a summary of their work for this document including PDF copies of posters, and a write up discussions that took place during workshops and the Conversation Café are also included. We hope this document will serve as a resource to further the discussion and necessary work to mitigate the impacts of recreation on the landscape, helping to foster responsible and vibrant recreational activities and planning.

Presentation recordings were created at this conference and made available to registrants three months time.

The presentation summaries in this document were provided by the event presenters. Apart from small edits to create consistency in layout and style, the text appears as submitted by the speakers.

The information presented in this document has not been peer reviewed.

Note that some of the presenters at this event have not provided a written summary of their offerings for this proceedings document such as Indigenous speakers and ceremony leaders.

Conference description

Recreation and adventure tourism opportunities and activities are expanding globally, with the Columbia Mountains region being no exception. From hiking, mountain biking, snowmobiling, dirt biking, cross-country skiing, to motorized and non-motorized watercraft use, all activities can have an impact on wildlife and ecosystems. However, empirical measures of impacts are often difficult to obtain, with unknown thresholds that ultimately affect the viability of wildlife populations and ecosystems. This limits policy development and impact management. Furthermore, the cumulative effect of multiple overlapping recreational and industrial activities on the landscape are seldom considered or addressed.

This two-day conference was timely as an increasing number of people are pursuing outdoor activities, and there is growing recognition of the limited information, tools, and resources for managing and monitoring the impacts of these pressures on wildlife and habitat. It was an excellent opportunity to network and learn about current thinking on increasing outdoor recreation activities and the effect on wildlife and ecosystems. The

event addressed key questions regarding effects of current and future development and showcased best practices of established commercial and community managed recreation and adventure tourism tenures.

All event presenters were asked to respond to this guiding question: *What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?*

In attendance at this event were a number of Indigenous elders, community members and staff; provincial, municipal, and protected area land managers; recreation groups, scientists, non-profit organizations, community members, consulting biologists, adventure tourism leaders, community development consultants, and others. Just over 140 people attended in-person, and another 40 people attended online.

In two days we journeyed through questions of:

- How do we impact ecosystems and wildlife while recreating?
- How to measure, mitigate and minimize impacts, and with what tools?
- How do we can create effective management systems?

Built upon this flow of themes via panel discussions, traditional talks, a film screening, workshops, Indigenous ceremony and knowledge sharing, group discussions, and networking, we presented and discussed the *problems*, potential *pathways*, *practices* and *possibilities* of responsible recreation. You can see the full conference schedule [here](#). Of course, much more discussion and work are needed, but we hope this event and proceedings document serve as a platform to build upon.

Online attendance was made possible for all event panels and traditional style talks, recordings were made available for a 3 month period. Networking and discussion opportunities were arranged for online attendees, although uptake in these sessions was low. Still, some feedback was collected and has been incorporated into this document.

Acknowledgements

This conference was hosted by the Columbia Mountains Institute of Applied Ecology (CMI).

CMI is proud to have worked with the following agencies in the development of this event: [Selkirk College](#), [BC Parks](#), [Recreation Sites and Trails BC](#), [Golden + Area A Trail Alliance](#), [Creston Valley Wildlife Management Area](#), [Shuswap Trail Alliance](#), [Yellowstone to Yukon Conservation Initiative](#), and the [Outdoor Recreation Council of BC](#).



CMI extends our gratitude for the financial support provided by: [Revelstoke Tourism](#), [Yellowstone to Yukon Conservation Initiative](#), [Real Estate Foundation of BC](#), the Province of British Columbia's [Resort Municipality Initiatives Funding Program](#), [RC Strategies](#), [McElhanney](#), and [Revelstoke Credit Union](#).



CMI is grateful to the Indigenous community members and representatives and staff who attended and provided their perspectives at this event:

- Colville Confederated Tribes, Sinixt of the Arrow Lakes
- Ktunaxa Nation Council, Ktunaxa Nation
- Nesconlith Indian Band, Secwepemc Nation with the Shuswap Nation Tribal Council
- Okanagan Nation Alliance, Syilx Nation
- Splatshin First Nation, Secwepemc Nation with the Shuswap Nation Tribal Council

We are appreciative of the fabulous work done by our event organizing committee, and others who contributed expertise as the event developed. The members of the organizing committee were:

- Jeremy Ayotte, Phyla Biological Consulting, CMI
- Marc-Andre Beaucher, Creston Valley Wildlife Management Area, CMI
- Jen Bellhouse, Shuswap Trail Alliance
- Adrian Bostock, Shuswap Trail Alliance
- Rachel Darvil, Goldeneye Ecological
- Trevor Hann, Recreation Sites and Trails BC
- Doris Hausleitner, Seepanee Consulting, Selkirk College, CMI
- Jason Jones, Golden Backcountry Recreation Access Committee and Golden + Area A Trail Alliance
- Richard Klafki, Nature Conservancy of BC
- Renae Mackas, Mase Environmental, CMI
- Michael Proctor, Trans-border Grizzly Bear Project, Kootenay Connect, & the IUCN Species Survival Commission
- Nadine Raynolds, Yellowstone to Yukon Conservation Initiative
- Hailey Ross, CMI
- Amanda Webber-Roy, BC Parks
- Brendan Wilson, Selkirk College, CMI

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- Randy Moody, Whitebark Pine Ecosystem Foundation of Canada, CMI
- Isobel Phoebus, Girls on Ice Canada

We *thank* [Headwaters Marketing](#) for the technical support and facilitation of the online delivery of this conference:

- Kirsten Silvenius
- Katee Pederson (Katee Pederson Photography)

For all the presenters, panelists, workshop leaders, posters presenters and exhibitors - we are grateful for your willingness to share your knowledge with us, and for the support of your agencies in sending you to this event. For everyone in attendance, thank you for engaging in a lively, respectful and challenging discussion for which we hope this document continues to inform and support.

Summaries of presentations

The summaries of presentations in this document were provided by the event presenters. Apart from small edits to create consistency in layout and style, the text appears as submitted by the speakers.

The information presented in this document has not been peer reviewed.

Note that some of the presenters at this event have not provided a written summary of their offerings for this proceedings document such as Indigenous speakers and ceremony leaders.

The summaries appear here in the order in which they were presented at the event. For an overview of the event schedule, see [here](#).

Panel Discussion: How do we impact wildlife with recreation?

Panelists:

Ryan Gill, Wildlife Science Centre and University of British Columbia

Kim Heinemeyer, Director of Conservation Science, Round River Conservation Studies

Doris Hausleitner, Seepanee Ecological Consulting, Selkirk College

Steve Michel, Parks Canada Agency, National Human Wildlife Conflict and Coexistence Specialist

Moderated by: Danielle Backman, Parks Canada, Mount Revelstoke and Glacier National Parks

Each of the panelists submitted posters which provide more detail on their work. See the link to their poster PDF's and abstracts in the poster section of this document.

Take home messages and response to the guiding question 'What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?'

- Across a number of sensitive species, we see similar types of effects that include indirect habitat loss (habitat avoidance), physiological and behavioral changes linked to outdoor recreation activities, even at very low intensities.
- While it can be challenging to measure, these effects can translate into population level effects by affecting the survival, health and ability of animals to successfully reproduce

and rear young. In addition, human wildlife interactions often result in direct mortality of wildlife to reduce or remove the threat to humans.

- Outdoor recreationists generally place high value on the wildlife they share these landscapes with, although many impacts can occur inadvertently. It is worth investing in developing collaborative approaches to addressing our effects on wildlife.
- Creating a culture where wildlife values are a part of recreation/recreation planning and one where some places are not recreated in will be important moving forward.

Panelist and Moderator background

Ryan Gill is a self-employed wildlife biologist and GIS analyst based in Revelstoke, BC. He has lived in the Columbia Mountains for the past 20 years where he has worked on a broad range of ecological topics – from the nesting ecology of birds to predator/prey interactions within southern mountain caribou habitat. Most recently he has been examining the movement ecology of southern mountain caribou during the COVID-19 pandemic.

Doris Hausleitner is a consulting wildlife biologist operating from Nelson BC. Prior to that she completed her B.Sc. at the University of Anchorage Alaska and a MSc. at the University of Idaho studying a population of Greater Sage-grouse in Colorado. Her work in the west Kootenays has focused primarily on species at risk. Some of her favorite projects have been a radio-telemetry study of Western Screech-owls, Western toad migration and most recently, a long-term project on wolverine, using non-invasive techniques such as genetic hair snagging and track monitoring to find female denning locations. In addition to running research projects, she teaches applied wildlife science, ecology and restoration techniques at Selkirk College in Castlegar.

Kim Heinemeyer is the Senior Scientist at Round River Conservation Studies and its Canadian organization Round River Canada. Round River a non-profit research and education organization in the US and in Canada. Kim received her M.S. and PhD in Wildlife Biology and Conservation Biology, respectively. Her work with Round River Conservation Studies has allowed her to pursue her interest in the ecological, cultural and conservation values of large wild landscapes and the wide-ranging species that require them including on-going work in the US Rocky Mountains, northwestern Canada, and Botswana. She and colleagues completed a 6-year research effort in the Rocky Mountains of the US to document responses of wolverines to motorized and non-motorized winter recreation. In on-going partnerships with state and federal agencies, Kim has continued to advance work in understanding backcountry winter recreation and ways to monitor this use, as well as continuing additional analyses of wolverine responses to this use.

Steve Michel has worked in Canada's national park system for 28 years and is currently their National Human-Wildlife Conflict & Coexistence Specialist. During that time, Steve has worked on human-wildlife conflict challenges involving black and grizzly bears, cougars, wolves, and elk in various National Park locations in western and northern Canada. Currently his role is developing wildlife conflict policy and procedures for National Parks across Canada.

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Backcountry recreation management planning for wildlife: what tools do we have, where can we improve

Jeremy Ayotte, Phyla Biological Consulting & Shuswap Trail Alliance
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In BC we have developed planning tools designed to bridge species-specific science to recreation management to help minimize impacts on wildlife and ecosystems. Commercial backcountry recreation and the tools to manage it, are distinct from public or non-commercial recreation. This presentation is focused on the tools available to manage the impacts of public recreation on wildlife and ecosystems, however they borrow from the provincial wildlife guidelines for backcountry tourism/commercial recreation (2006), and there are lessons learned that can be applied to more effective management of both.

The 2006 wildlife guidelines for commercial recreation are intended to ensure that recreation activities do not compromise wildlife, with measures to achieve this, written into management plans as part of the commercial recreation tenure. Commercial guidelines are organized by recreation type (motorized, non-motorized, aerial), season (winter, non-winter), and coarse habitat type (grassland, alpine, forest). Guidelines for each issue/concern (soil erosion, vegetation disturbance, wildlife) are provided in a matrix format that provides details on results, desired behaviours, indicators, and limits (Table 1).

Table 1. Example of commercial backcountry recreation guidelines

3. Direct Disturbance of Wildlife

Concerns: Physiological and behavioural disruption, displacement from preferred habitats; direct mortality, habituation/sensitization

Results	Desired Behaviours	Indicators	Limits
<ul style="list-style-type: none">• Minimize physiological and behavioural disruption.• Minimize changes in habitat use.	<ul style="list-style-type: none">• Record wildlife encounters, actions taken, and responses of animals.• Remain on established trails or in areas of high visibility where no wildlife are present.• Obey all signs and area closures.• Do not harass wildlife.	<ul style="list-style-type: none">• Proportion of encounters resulting in an alarm response.• Population abundance and distribution trends of wildlife species.	<ul style="list-style-type: none">• No increase in rate of alarm responses over time caused by motorized activities.• No harassment caused by motorized activities.• No abandonment of habitats caused by motorized activities.

Management of non-commercial, or public recreation to minimize impacts on wildlife and ecosystems does not have the benefit of provincial guidelines, or a tenure system to support compliance. In 2009, the Shuswap Trail Alliance worked to create an environmental screening tool to help fill this gap. In 2015 Recreation Sites and Trails BC funded an expansion to the approach to create the Trail Environmental Screening Tool (TEST). The TEST is a fillable pdf form that connects trail proponents to relevant environmental policy, and a standard process to describe, map, assess, mitigate, and consult with stakeholders around the potential environmental impacts of a proposed new trail project. The TEST accesses provincial spatial and tabular data on wildlife, habitat features, and plant and animal species at risk.

Although the TEST is primarily office-based, proponents are encouraged to add field notes and use the document to consult with other stakeholders, experts and local knowledge keepers. Some of the limitations with this approach is that office-based information is dynamic, and web links to existing information resources as well as new interactive mapping sites need to be periodically updated. Potential improvements to the TEST include automation of spatial data queries.

Given uncertainties to thresholds of impact, management planning tools that are intended to reduce impacts to wildlife and ecosystems benefit by employing an adaptive or iterative approach. The adaptive approach involves monitoring and corrective actions. An ideal approach pre-sets corrective actions that are triggered when monitored indicators pass thresholds for acceptable change (Table 2). The monitoring plan, choice of indicators, and corrective actions can be proposed and discussed among recreational user groups, experts, and managers. Corrective actions are one thing missing from the 2006 commercial wildlife guidelines.

Recommended improvements to backcountry recreation management in BC include updating and examining the effectiveness of the 2006 Wildlife Guidelines for Backcountry Tourism/Commercial Recreation, continuing to develop, improve, and promote the TEST for public recreation groups, and incorporating long-term monitoring and corrective actions into all forms of backcountry recreation management.

Table 2. Example of a monitoring plan for minimizing recreational impacts of wildlife.

<u>Monitor</u>	<u>Indicators</u>	<u>Limits</u>	<u>Corrective Actions</u>
<ul style="list-style-type: none"> Record wildlife encounters, responses of animals, use remote trail cameras, annual maintenance inspections, trail user forms 	<ul style="list-style-type: none"> Increased proportion of encounters resulting in an alarm response. Declining wildlife sign in area 	<ul style="list-style-type: none"> No increase in rate of alarm responses of wildlife over time. No abandonment of habitats by wildlife. 	<ul style="list-style-type: none"> Trail closures. Trail relocation outside of prime habitat. Consult with species specialists to determine specific thresholds for trail closures

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Update and examine effectiveness of the 2006 Wildlife Guidelines for Backcountry Tourism/Commercial Recreation,
- Continue to develop, improve, and promote the TEST for public recreation groups,
- Incorporate long-term monitoring and corrective actions into all forms of backcountry recreation planning and management, support the use of tools such as trail cameras to collect meaningful information on recreation use,
- Consider options to mirror commercial recreation management tenure in the public recreation realm to serve as a compliance and enforcement tool to help minimize impact on wildlife and ecosystems,
- The challenge of quantifying thresholds of recreation use that negatively impacts wildlife should not limit attempts to improve data collection on human presence and recreational use, in fact with the current results-based approach, this information becomes critical to understanding these thresholds. There must be a commitment to collecting meaningful data on both human use and appropriate measures of wildlife disturbance over the long term. Both commercial and public recreational users need to “own” the issue of wildlife impacts, and agree that this is a problem worth solving,
- Recreation Management in BC needs a strategic re-think. Recreation Sites and Trails BC has become an agency that it was never designed to be. Capacity is extremely limited. There are several government agencies and branches currently responsible for recreation management, including tourism organizations that work independently. This is the source of several tangentially related issues. One organization, responsible for managing and promoting all types of recreation in BC (commercial and public), with independent policy such as a Recreation Act would ultimately reduce impacts to wildlife and ecosystems.

Jeremy Ayotte background

Jeremy a biologist with his company Phyla Biological Consulting. Jeremy lives in Salmon Arm where he works with a variety of species and ecological systems. He completed a Masters of Science through The University of Northern BC working on the ecological role of mineral licks for moose, elk, Stone's sheep, and mountain goats in northern BC. Currently he is the provincial coordinator for the BC Sheep Separation Program, working to mitigate the risk of respiratory disease transmission from domestic sheep to wild sheep across BC. Jeremy's interests also include youth outdoor education and he is a founding director of the Shuswap Outdoor Learning Foundation, and a supporting biologist with the Shuswap Trail Alliance.

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Simulating current and future impacts on ʔa-kxam̓is qapi qapsin (All Living Things): the role of recreation

Presenter: Nikki Heim, Ktunaxa Nation Council, Cranbrook, BC nikki.heim@ktunaxa.org

Recreational opportunities are increasingly sought out world-wide and highly valued as an ecosystem service. BC and the lands within ʔamakʔis Ktunaxa are no exception. Like many activities humans engage in on the land, outdoor recreation can have negative consequences when occurring at levels that exceed the lands' ability to remain resilient to change and support viable populations. Ktunaxa have expressed significant concerns related to the scale and pace of recreational activities and the cumulative impacts of overlapping interests. Cumulative effects is a complex idea that follows Ktunaxa natural law, what affects one affects all, or many sources that impact one. Guided by principles related to ʔa-kxam̓is qapi qapsin (All Living Things), a Ktunaxa-led cumulative effects assessment was initiated to evaluate past, current and potential future land use activities, including recreation. Compared with resource extraction activities (e.g., mining, forest harvest), recreation is commonly excluded as a key landscape disturbance factor in cumulative effects assessment. A focus of this work aims to integrate expert knowledge that best describes how recreational activities impacts habitat condition directly (e.g., soil erosion, trampling of vegetation) and indirectly (e.g., wildlife disturbance and displacement). We used ALCES Online and GIS software to apply habitat quality discounts resulting from current and potential future recreation activities. Complimenting ALCES simulation modelling, we used Bayesian Belief Networks as a participatory modelling tool in which a two-eyed seeing approach can be more aptly applied. Current data gaps related to non-commercial recreational activity and limited knowledge of species-specific responses to recreation types and levels were significant challenges. Improved understanding of the breadth of recreational impacts on ʔa-kxam̓is qapi qapsin will assist in land stewardship planning throughout ʔamakʔis Ktunaxa.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

As mentioned in the abstract, outdoor recreation interests have reached levels that must be considered as a land use in cumulative effects assessments. However, we are currently lacking an understanding of wildlife and ecosystem thresholds to recreation disturbance (threshold that will be dependent on activity type, species and systems). The level of uncertainty to realized impacts of outdoor recreation, both short and long term, urges us to ensure that recreational planning and management of existing and proposed interests are adaptive to new information and follow a pre-cautionary approach.

Further, it is critical to understand that 'all' our land use activities, including outdoor recreation, impact the land and as such impact the rights and stewardship obligations of Indigenous peoples.

Our work to reduce impacts to wildlife and ecosystems must be accomplished through meaningful collaborations and partnerships.

Nikki Heim background

Nikki began working for the Ktunaxa Nation Council as an Ecosystems Biologist in the spring of 2021. On behalf of the Ktunaxa First Nations, a focus of her work is to support the development of a Ktunaxa-led Cumulative Effects Framework. Nikki has over 15 years of experience in wildlife ecology and natural resource management. She has worked as a researcher, Park Ecologist for Alberta Parks, and Human-Wildlife Coexistence Specialist in Banff National Park. She has specialized in carnivore ecology and conservation, completing a graduate degree evaluating the cumulative effects of natural and anthropogenic factors influencing wolverine and carnivore community composition in the central Rocky Mountains.

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Comparing tools for measuring outdoor recreation intensity

Presenter: Talia Vilalta Capdevila, Yellowstone to Yukon Conservation Initiative, Canmore AB

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Project website: y2y.net/RecEcology

Background

This work is part of a larger recreation ecology project co-led by the University of Northern BC and the Yellowstone to Yukon Conservation initiative (Y2Y). Y2Y works across a 3,400 km long region to connect and protect habitat from Yellowstone National Park to the Yukon territory.

The study area for this project focuses on a 63,000 square kilometer area that overlaps parts of British Columbia and Alberta (Figure 1).



Figure 1. Study area in relation to Y2Y region.

As recreation is increasing and going farther, faster and louder, there are ever increasing data gaps that make management and planning challenging. The ultimate goal of this project is to map and model **where, when and how much** recreational use is occurring and how it relates to **wildlife** habitat.

Land Acknowledgement

Our study area is within the traditional lands of the Okanagan/Syilx, Sinixt, Ktunaxa, Secwépemc, Blackfoot, Stoney Nakoda, Mountain Cree Nations, lands within Treaties 6, 7, 8 and regions 2 and 3 of the Metis Nation of Alberta.

Why is recreation important?

Outdoor recreation is increasingly popular and includes large variety of activities (hiking, biking, motorized, heli-assisted sports, etc.), it provides a wide variety of health benefits and it is very valuable to people – many enjoy it and care about being able to continue recreating in the places they love. Outdoor recreation and tourism are also important economic drivers – 1 in 4 new jobs globally are in this sector (WTTC, 2022). Recreation planning is an essential part of effective recreation, conservation and human safety.

Why plan recreation?

Recreation has a wide variety of impacts, for example:

Ecological impacts

- Sedimentation of streams affects fish populations, displacement of animals such as wolverines when they move to avoid recreationists, habitat loss when important areas are not used by wildlife due to recreational activities (Farr et al 2018; Rogala et al 2011, Barreto et al 2022).

Human-wildlife conflicts

- Although not all frightening or deadly, encounters between recreationists and wildlife can be dangerous for both the people and wildlife. Habituation of animals as they get used to people or associate them with food can also lead to conflicts as well as the culling of the animal.

Conflicts among user groups

- Different activities may be incompatible in the same area or same time. For example, conflicts may arise between hikers and off highway vehicle users, or backcountry

skiers and snowmobilers. Also, when an area becomes crowded, it becomes less and less appealing and may lose some of its recreational value.

Recreation Ecology Research Objectives

The objectives for this project reflect some of what is needed to plan for recreation:

Where is recreation happening - we have completed this stage. We mapped trails and other linear features that can provide access to recreation. Please see report here: y2y.net/RecreationReport

How much recreation: how many people are there?

When is recreation happening: time of day, month, year.

What type of recreation is happening: what activities are occurring?

How it overlaps with **wildlife**: areas with recreation and wildlife overlap are more likely to have impacts.

This is the focus of this work is on the “how much?”. Specifically, we compare counts of recreationists from different tools over time and space.

Why compare tools?

Reliably counting recreationists is crucial for planning and understanding use – if we don’t know how many people are there, it’s harder to make decisions to mitigate impacts on ecosystems and wildlife. Understanding how specific counting tools compare is important for reaching management goals. Each tool tells you a different “story” about use: is it really high in some areas? Is it really low during certain times of the year? How does use change over time and space?

We use correlations to compare monthly count data – what are the stories? Each tool is like a witness – counting how many people are recreating. The more witnesses that tell a similar story the more confident we can be that it is the correct story. Each tool has its pro’s and cons, so we want to see which tools tell the same story, and which ones stand out. Using correlation can help us investigate that.

Summary of tools

Detailed data

Strava Metro:

- Uses data from STRAVA fitness app: tracks user, calculates distance, time etc.
- Data is linked to Open Street Maps (OSM) trails/roads (OSM forms the base for google maps – if a trail is not there, STRAVA info will not be linked to it)
- Information provided: how many ppl have travelled specific trails, speed, age categories of users
- It has lots of detailed info for large area, so it's a large dataset.
- limited to non-motorized activities (currently: hiking, walking, running and biking)

Trail cameras:

- take a picture of moving object passing in front of sensor
- very detailed information (activity type, group size, dogs etc.)
- very resource heavy (expensive (\$300-\$500 per camera), time consuming to set up, maintain, collect data and process it.

TRAFx infrared trail counters:

- has infrared (IR) scope that gets mounted on a tree and counts people on trails, paths and sidewalks
- data provided as counts with date and time stamp
- less resources heavy than camera (not as expensive to buy), but still has to be deployed on the trails
- will count anything that sets the sensor off (i.e. wildlife, sometimes vegetation if not set up correctly)

Broad data

Participatory mapping with experts:

- meet with people and they show where they know there are people recreating – may be able to provide estimates on counts
- can cover large areas with some detail (varies from person to person and area), but it may be quite subjective

Wikilocs (www.wikilocs.com):

- people track their recreation track (lots of activities to choose from) and share on this platform
- have to download each track one by one, which can be very time consuming.

STRAVA heatmap (www.strava.com/heatmap):

- visual map showing where lots of STRAVA (hot) and few (cold)
- Maps shows use for 1 whole year
- Variety of activities can be represented

Winter recreation aerial surveys

- flying over a grid looking for off trail tracks
- good detail – especially for off-trail winter activities such as snowmobiling, backcountry, heli and cat skiing.
- expensive and time consuming

How to compare tools

Correlation

- Low (0): stories don't match – points are scattered in a plot. Sometimes a camera count of 10 may match to a count of 10 in another tool, other times 30 or anything in between.
- High (1): stories match – points are tight together, forming a line. A count on a camera always has the same match in another tool.
- With correlation, we can measure how close the points are to forming a line.

Matches between tool were made in space and time:

- count data on the same day
- within 30m

Comparing locations: How many places do tools tell the same story?

Points in graph represent individual locations where counts were compared, the vertical axes represent the correlation value between tools for each location.

Cameras vs TRAFx

- 90% of locations have correlation above 0.8 – they are telling the same story (Figure 2).

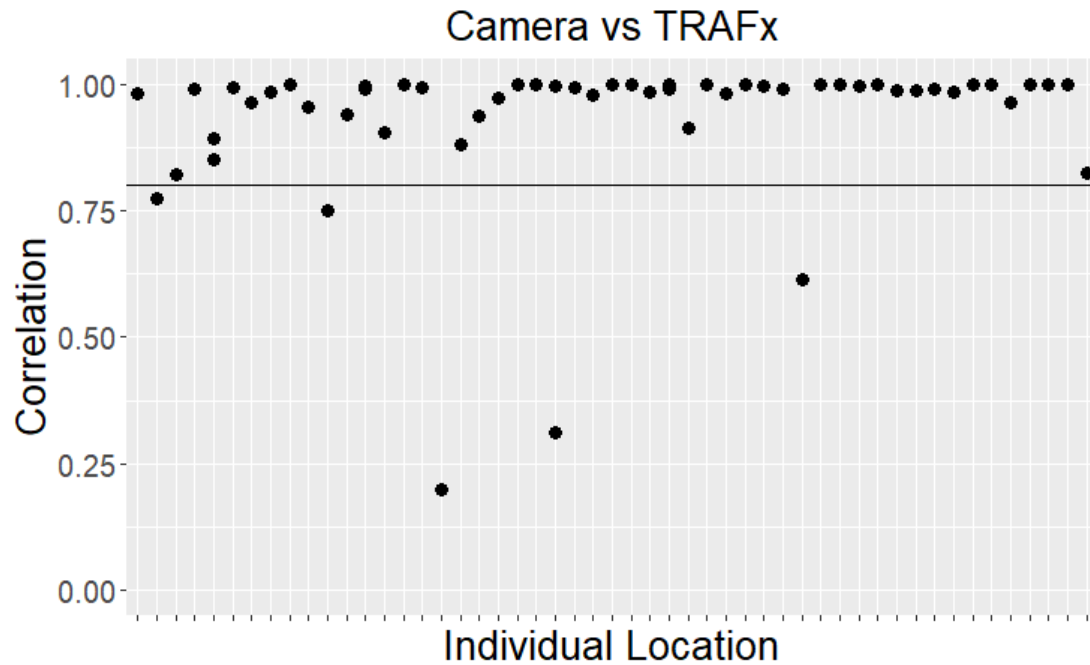


Figure 2. Correlation values from comparing monthly counts between remote cameras and TRAFx trail counters at individual locations.

Cameras vs STRAVA

- 75% of locations have correlation above 0.8 (Figure 3).

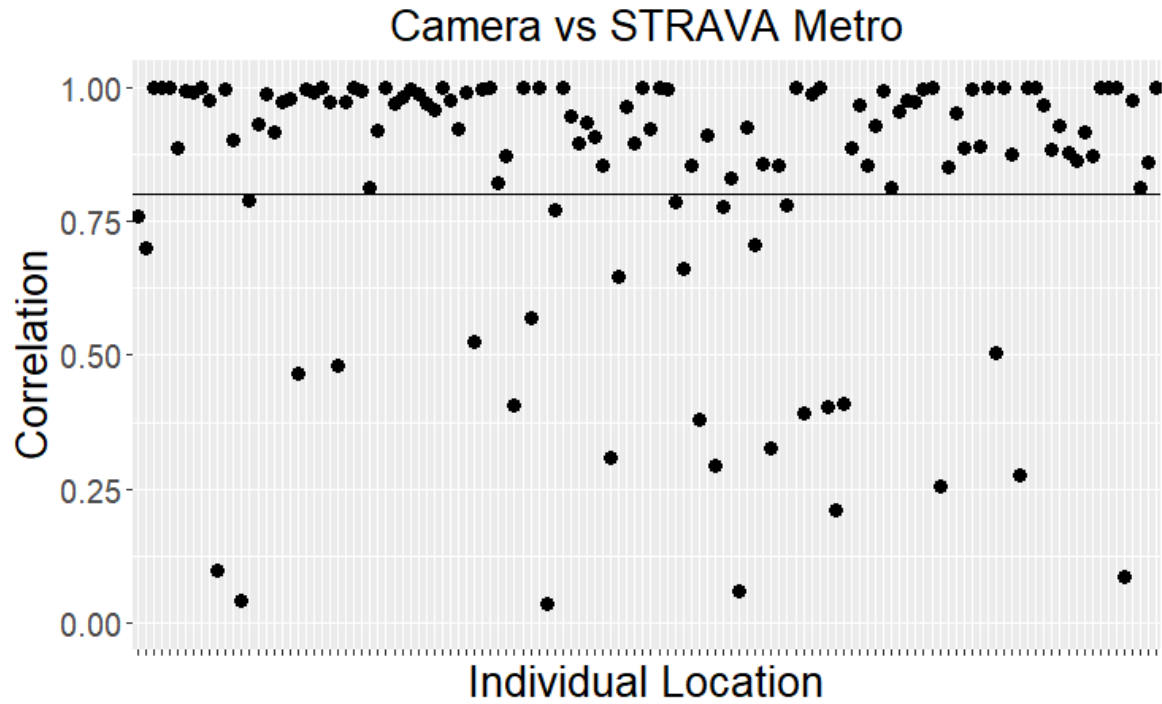


Figure 3. Correlation values from comparing monthly counts between remote cameras and STRAVA Metro at individual locations.

TRAFx vs STRAVA

- 84% of locations (Figure 4).

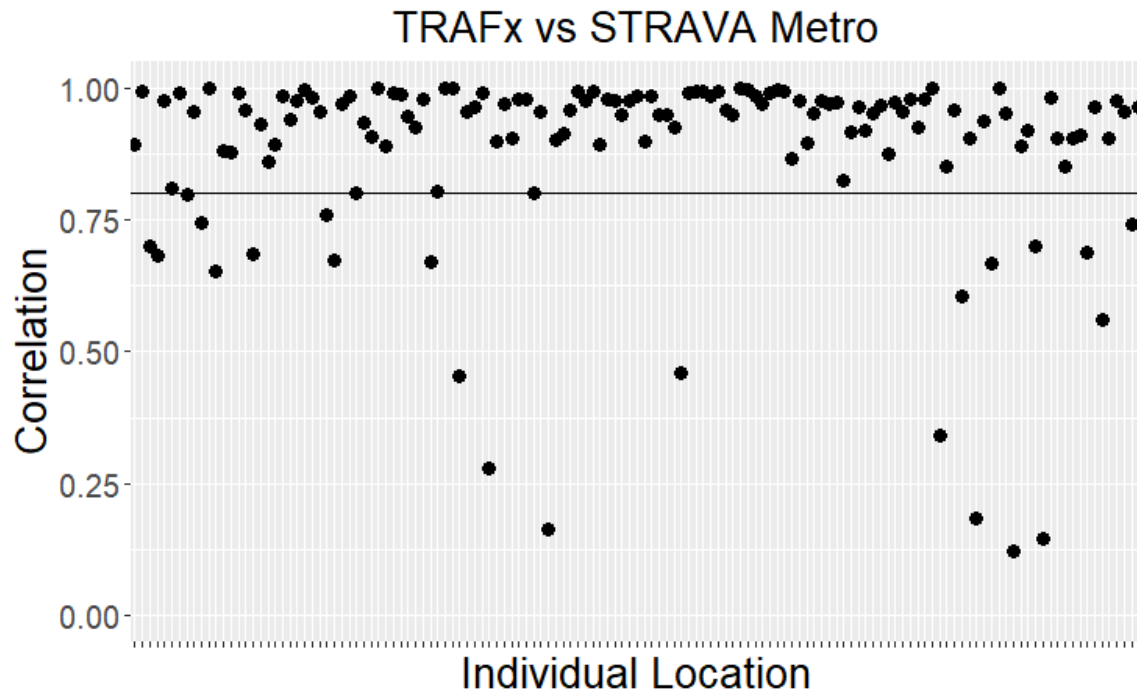


Figure 4. Correlation values from comparing monthly counts between TRAFx trail counters and STRAVA Metro at individual locations.

Stories match well in most locations

Comparing over time: When do tools tell the same story?

Horizontal axes represent month of the year (1 = January, 12 = December). Box-and-whiskers represent spread of monthly correlations across a few years.

Cameras vs TRAFx:

- Year-round mainly: correlation values are pretty high all year, small dip in the summer months (Figure 5).

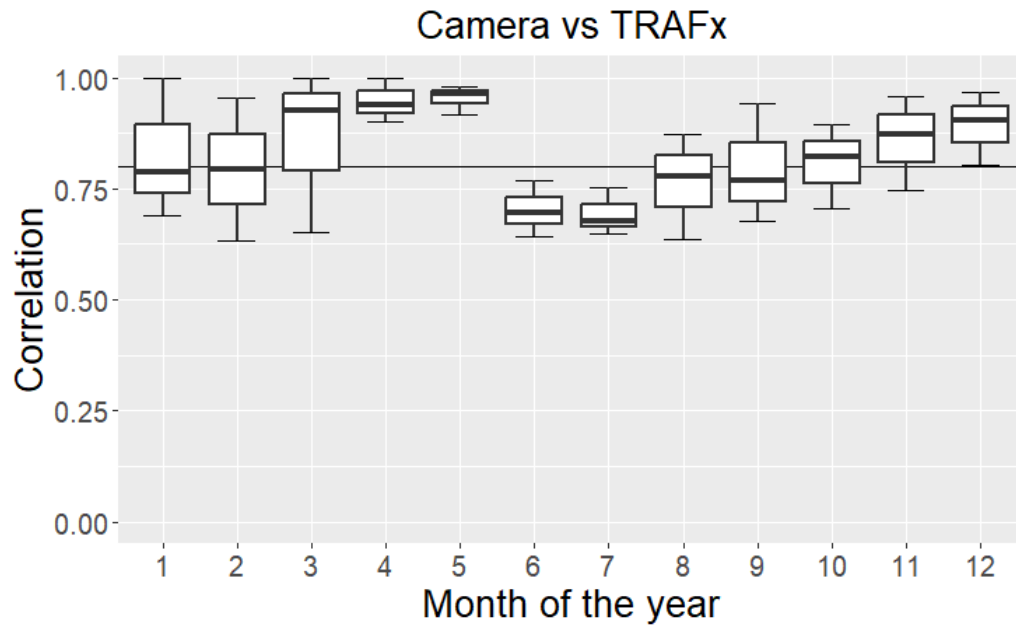


Figure 5. Correlation values from comparing monthly counts between remote cameras and TRAFx trail counters throughout months of the year.

Cameras vs STRAVA:

- Spring & winter have the highest correlation, with a marked decrease in correlation in the summer. These tools are telling pretty different stories in the summer (Figure 6).

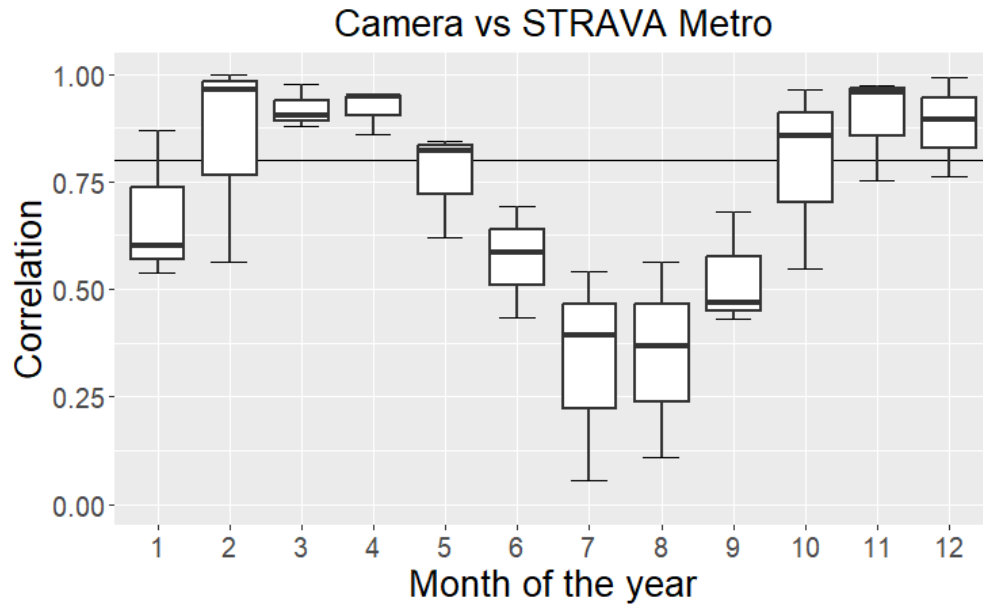


Figure 6. Correlation values from comparing monthly counts between remote cameras and STRAVA Metro throughout months of the year.

TRAFx vs STRAVA:

- Winter has highest correlation between these two tools, with a strong dip in the summer months as well. The correlation is somewhat lower altogether (Figure 7).

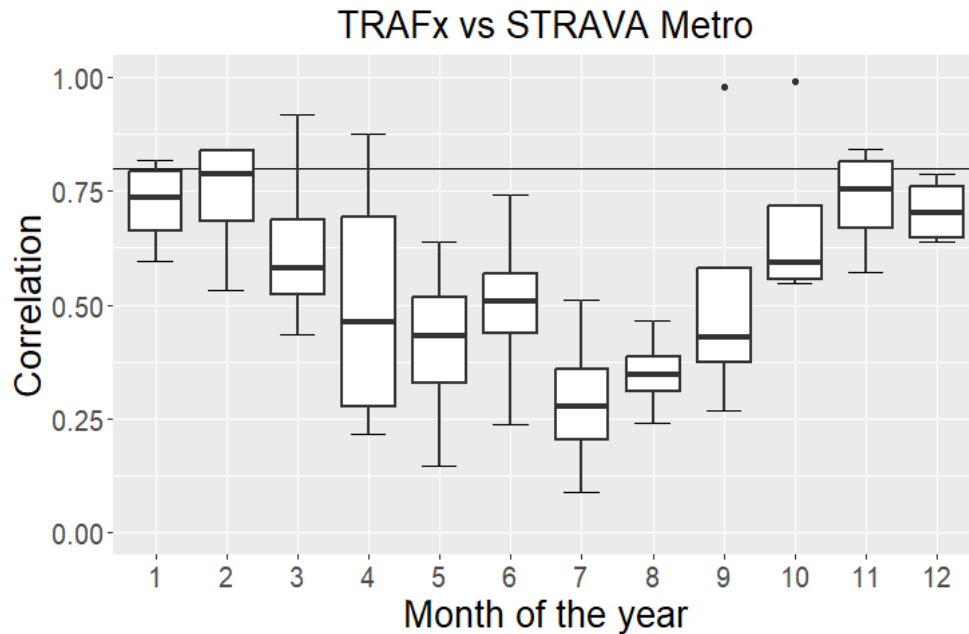


Figure 7. Correlation values from comparing monthly counts between TRAFx trail counters and STRAVA Metro throughout months of the year.

Tools match better in quieter months

Summary

Comparing locations

Cameras vs TRAFx: high (>0.8) correlation in most locations

- Both tools pick up changes in use: when one tool detects high use, the other does as well.

STRAVA story has low (<0.8) correlation in more places

- Proportion of STRAVA users to camera or TRAFx counts changes in some areas

Comparing over time

Summer (high counts), lower correlation for all tools

- TRAFx extreme counts in some areas, undercounting of large groups of people

Year-round, STRAVA story different to cameras and TRAFx

- Proportion of STRAVA users may not be consistent in any given month, especially in months with very high use (summer).

Measuring recreation to reduce impacts:

All tools have advantages and disadvantages

- Cameras and TRAFx correlate well, however they are costly
- STRAVA has large spatial coverage, but app use is inconsistent

With lots of use (i.e. summer months), correlation lower between all tools

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- We need to know **how much** recreation is occurring
- Understanding differences between tools allow us to:
- Choose the best tool for the job
 - How many resources are available (time, budget)?
 - How much detail is needed?
 - Camera – need lots of details (activity, group sizes)
 - TRAFx – need pretty good counts
 - STRAVA – need to cover large area or no field work possible, interested in relative use
- Account for uncertainty and limitations
 - Knowing that some tools may be missing some information, or are not able to do certain things is important when basing decisions from their counts
 - STRAVA – only those that use the app are counted -> relative use. Are some trails more popular than others for STRAVA users?
 - TRAFx – when in groups, might miss some people, will also count wildlife, could be set off by overgrown vegetation.
- Have confidence in the story - When understanding the tool and taking into consideration the uncertainty and limitations, you can be confident that you are getting the right story.

Thank-you partners and funders

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Habitat Conservation Trust Foundation

Eco Canada

Parks Canada

References

World Travel and Tourism Council: Travel & Tourism Economic Impact Global Trends 2022.
Barrueto, M., A. Forshner, J. Whittington, A. P. Clevenger, and M. Musiani. 2022. Protection status, human disturbance, snow cover and trapping drive density of a declining wolverine population in the Canadian Rocky Mountains. *Scientific Reports* 12:17412.

Farr, D., A. Braid, and S. Slater. 2018. Linear disturbances in the Livingstone-Porcupine hills of Alberta: review of potential ecological responses. Government of Alberta, Environment and Parks. <open.alberta.ca/publications/9781460140338>.

Rogala, J. K., M. Hebblewhite, J. Whittington, C. A. White, J. Coleshill, and M. Musiani. 2011. Human activity differentially redistributes large mammals in the Canadian Rockies National Parks. *Ecology and Society* 16:16.

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The roaming closure – using GPS collared caribou to manage snowmobiling across the Central Selkirk Mountain caribou herd

Presenter: Aaron Reid, Caribou Recovery Program, BC Ministry of Water, Land and Resource Stewardship

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Aaron Reid, Caribou Recovery Program, BC Ministry of Water, Land and Resource Stewardship

The Central Selkirk subpopulation, like many of British Columbia's mountain caribou populations, experienced significant declines in the late 1990s through the early 2000s. These declines were primarily attributed to apparent competition (Seip 1992, Wittmer 2005b, Apps et al 2013,). The declines continued to this date and the population is estimated at 26 (90%CI 21-39) as of March 2023 (Reid 2023). Over the past decade, low recruitment rates, on average 8%, have severely limited recovery (Reid 2021).

Many recovery actions have been implemented to mitigate the declining population trend. Most significantly in 2009, Government Action Regulations (GAR) were legislated which halted timber harvesting across 276,944 ha of core caribou habitat. Between B,C Parks and GAR, 86% of core habitat is now protected from timber harvest.

In 2019 several recovery actions were implemented to prevent extirpation in the Central Selkirks. Predator management for wolf and cougar began in 2019 and then in 2022 a maternity pen was initiated. These two measures were required to mitigate the high levels of adult mortality that were being experienced due to predation and to increase calf recruitment with hopes of growing the population.

Each mountain caribou population has experienced similar threats across populations but there is usually a distinct set of challenges that are unique to the local herd area. In the case of the Central Selkirk subpopulation, high levels of winter recreation were identified as a likely factor that could limit recovery success. There are several heli-ski tenures and numerous cat ski tenures operating within the Central Selkirk herd boundary. In addition, increasing levels of snowmobile use were being documented over the past decade. This increasing trend in snowmobiling was identified as a risk to caribou due to the limited amount (~6%) of legislated snowmobile closures in the Central Selkirks.

Winter recreation is an issue for caribou because winter recreation activities directly overlap spatially with caribou winter ranges. Mountain caribou's sole food source, arboreal lichen, is

highly digestible but low in crude protein. This means that caribou are on a negative energy budget throughout winter and are susceptible to behavioral and physiological stressors on their winter ranges which can lead to factors such as abandonment of winter ranges and reduced recruitment success over time (Seip et al 2007, Freeman 2008).

To address the increasing pressures and disturbance from snowmobiling, we began meeting with the local snowmobile and recreation clubs in summer 2019. The newly formed Arrow Lakes Caribou Society, of whom most interested stakeholders were members, helped facilitate the process. The stakeholders were interested in using technology to increase the flexibility of any new proposed closures.

Allowing caribou collars to determine areas closed to snowmobiling, a roaming closure was proposed early on in our process and seemed feasible for several reasons. First, we had the ability to automatically download collar data daily directly from the collar manufacturer to a 3rd party webapp where the public could access and view closure maps. Second, we had the ability to close large areas of Crown Land using the Wildlife Act but then grant access to groups (clubs and members) through exemption permits under specific conditions. The exemption permits allowed us to be flexible to dictate the rules permittees would have to follow to access the closure. Access to the closure can be provided through an exemption permit granted by a Regional Manager.

Perhaps most importantly the population size and demographics in the Central Selkirk was suitable to try something new. The Central Selkirk is currently small, at around 28 individuals as of 2021, (Reid 2021). In addition, a high proportion of cows in the population were GPS collared (~75%). These collars had provided us with detailed information about the remaining caribou's winter movements and range use. There are few remaining cow/calf groups in the Central Selkirk; therefore, as long as at least one collar is within a group the entire group could be protected.

The regulatory mechanism for snowmobile closures in BC is under Section 7 of the Motor Vehicle Prohibition Regulation within the Wildlife Act. This regulation can close large areas of Crown Land in BC specifically to recreational and commercial snowmobiling.

To run the opening and closing of areas or zones within the closure, we developed a fully automated model. The primary objective of the model was to allow caribou to utilize their winter range without snowmobile disturbance but still allow snowmobiles access to areas where disturbance to caribou was not an issue. As caribou move across their range from early winter through early spring, the closure would follow them. The model was developed by Will Burt a programmer from BC Ministry of Water, Land and Resource Stewardship – Kootenay Geomatics team (Information and Digital Services Division).

The model was built using recent collar data to identify the most important areas for caribou within their winter range. To understand and predict caribou movement, we completed a step rate analyses which helped us understand daily movements throughout the winter months (Figure 1). We prioritized different areas of caribou habitat based on caribou occupancy using adaptive kernel density estimation by zone. Zones began at the watershed level and were modified in consideration of snowmobile riding areas, access to those areas and predictable caribou movement in winter (Figure 2).

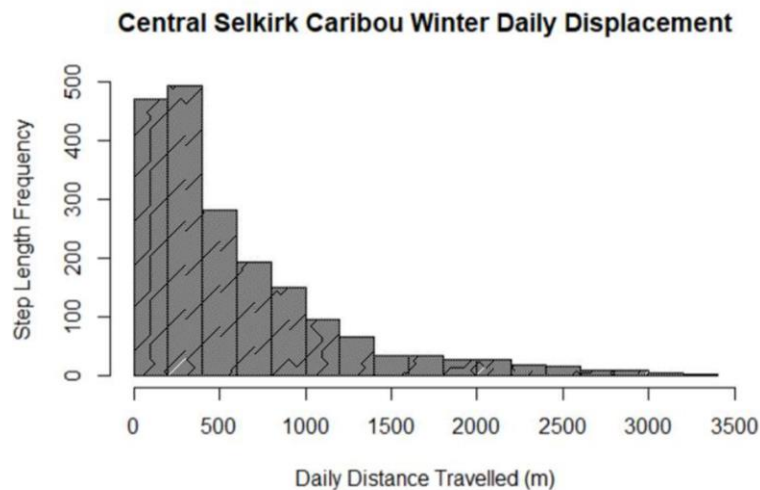


Figure 1. Step rate analysis for collared caribou in the Central Selkirks 2017 – 2020 for n-7 female caribou. Analysis performed by Luke Vander Vennen, BC Ministry of Forests.



Figure 2. Zones were created within the model to open and close areas around caribou locations.

The final model contained 65 zones (7 high priority, 9 medium, 49 low). We created different look out distances from a collar to trigger zones to close based on their priority. The look out distances were 4km for high priority zones, 2 km for medium and 1km for low. For example, if the caribou happened to be in high priority zone the model would close not only the zone the collar was within but all other high priority zones within 4km and all other medium priority zones within 2 km and low priority zones within 1 km. This ensured that at all times large areas of contiguous winter range were available to caribou without adjacent disturbances. It was important that

disturbance from snowmobiling, not just direct overlapping use but even distant sound, not influence caribou range use.

Two local clubs (Arrow Lake Ridge Riders and the Trout Lake Recreational Club) were the recipients of the exemption permits to access the closure. Club support was essential as they would be the face of the closure and have to manage memberships and communication with riders. The British Columbia Snowmobile Federation supported the clubs by creating a website (snowmobileselkirks.ca) where users could get all their information in one location. Users could pay and become members, read and understand the closure background and permit conditions as well as get access to the daily web-map to view daily closures (Figure 3).

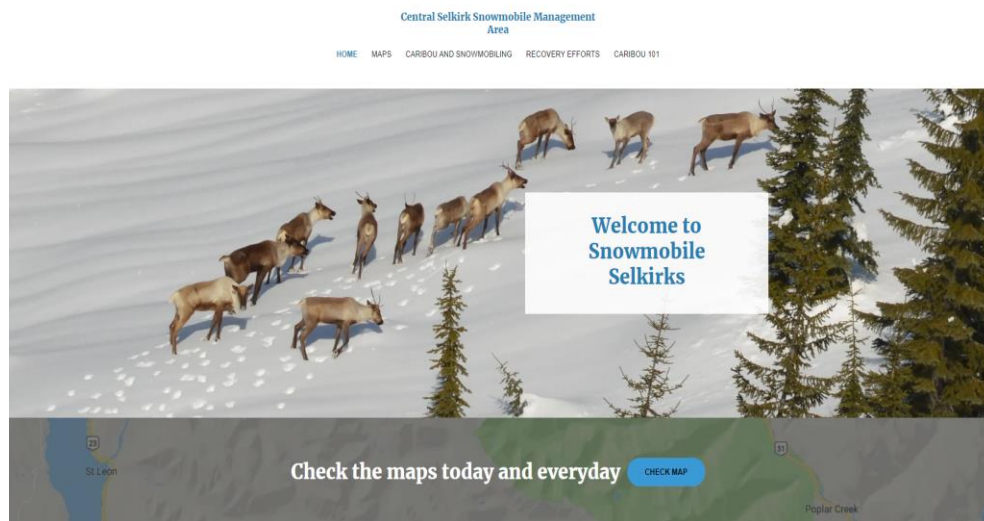


Figure 3. The website snowmobileselkirks.ca was developed to allow users to purchase memberships, learn more about the closure and access daily closure maps.

A third party web map, hosted by BC Map Hub and linked to by the snowmobileselkirks.ca, provides riders with refreshed maps daily at 3:00 am (Figure 4). The maps indicate the areas within the closure that are closed as well as allow users to download a geo-referenced pdf map for field verification.

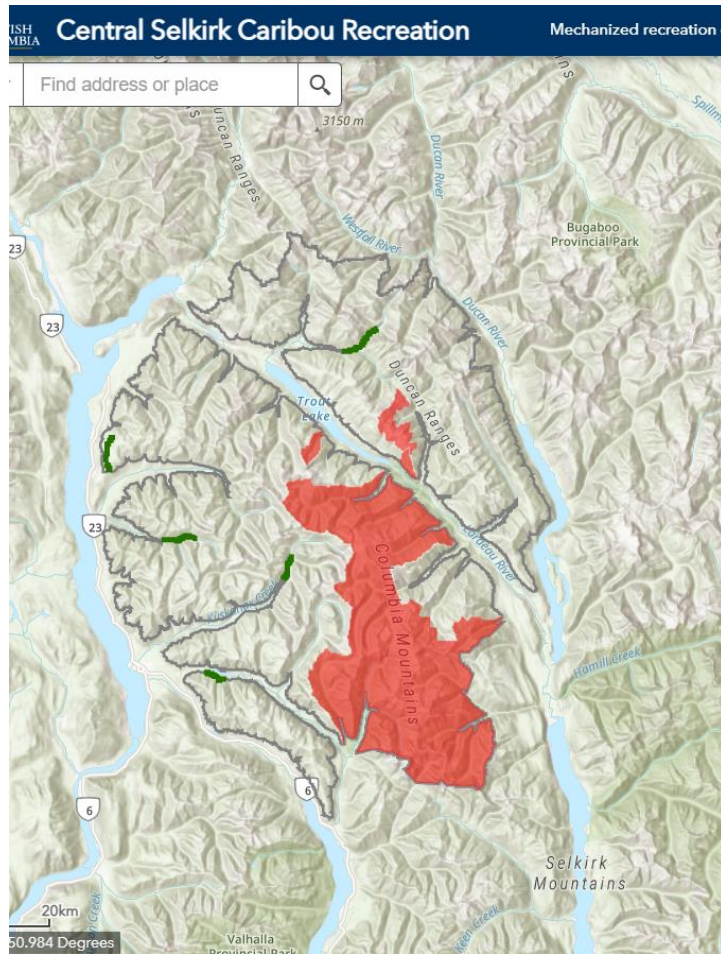


Figure 4. Daily maps are accessed through the website snowmobileselkirs.ca and linked to BC map hub which allows third party users to view daily closures within the managed area.

The model has been in operation since January 2020 and has had very little technical issues and is running 365 days of the year. The Conservation Officer Service (COS) is responsible for enforcing the Wildlife Act. The COS fly the area for compliance using a helicopter as well as access the area with snowmobiles to check users for memberships and ensure closed areas are not entered. To date, compliance from users has been very good.

A Stewardship Management Agreement (SMA) was created as a governing document to outline the obligations of the parties (i.e.

Government of BC, British Columbia Snowmobile Federation, Arrow Lake Ridge Riders and the Trout Lake Recreational Club). The model details are described within the SMA as well as the processes for how and when to make changes. The SMA is the guiding document that describes how the parties will work together to ensure the closure meets the overall caribou conservation objective over time.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Don't be hesitant to try a new approach to solve problems
- Full transparency from all parties will help to build a better solution
- Keep it simple

References

- Apps, C. D., B. N. McLellan, T. A. Kinley, R. Serrouya, D. R. Seip, and H. U. Wittmer. 2013. Spatial factors related to mortality and population decline of endangered mountain caribou. *The Journal of Wildlife Management* 77:1409–1419
- Freeman, N. 2008. Motorized backcountry recreation and stress response in mountain caribou (*Rangifer tarandus caribou*). M.Sc. thesis, University of British Columbia, Vancouver, BC
- Reid A. 2021. 2021 Mountain Caribou Census, Central Selkirk Mountains. Forests, Lands and Natural Resource Operations and Rural Development. Nelson, BC
- Reid A. 2023. 2023 Mountain Caribou Census, Central Selkirk Mountains. Water, Land and Resource Stewardship. Nelson, BC.
- Seip, D. R. 1992. Factors limiting woodland caribou populations and their interrelationships with wolves and moose in southeastern British Columbia. *Canadian Journal of Zoology* 70:1494–1503.
- Seip, D. R., C. J. Johnson, and G. S. Watts. 2007. Displacement of mountain caribou from winter habitat by snowmobiles. *Journal of Wildlife Management* 71:1539–1544.
- Wittmer, H. U., A. R. E. Sinclair, and B. N. McLellan. 2005b. The role of predation in the decline and extirpation of woodland caribou. *Oecologia* 144:257–267. Wittmer, H. U., A. R. E. Sinclair, and B. N. McLellan. 2005b. The role of predation in the decline and extirpation of woodland caribou. *Oecologia* 144:257–267.

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Trail development guidelines to minimize disturbance to and conflict with large carnivores

Presenters: Magi Scallion, McElhanney

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Kim Titchener, Bear Safety & More Inc.

Email: kim@bearsafety.ca

Magi Scallion and Kim Titchener were inspired to create a guide for trail developers to minimize conflicts with wildlife. There is a vast amount of research available on human recreational disturbance to animals, but no guidelines available for trail builders. As human wildlife conflicts continue to increase, one of the ways to mitigate this could be through better trail planning, design, and operations with wildlife in mind. The goal of the work is to reduce human-wildlife conflict, making recreational trails safer for humans and ensuring that animals have sufficient area to roam and forage in their natural habitats.

The guidelines were created through a process of literature review, compilation of available research, and creation of the guidelines. Several recreation and wildlife biology specialists provided input for the final creation of the guidelines.

To streamline and focus the guidelines into a manageable scope, Magi and Kim focused on:

Bears, Cougars and Wolves

Hiking, Running, and Biking

Non-winter, Natural surface, Singletrack trails

Surprise encounters are a major cause of bear attacks and fatalities. Carnivore attacks are increasing over time and there is a direct relationship with the increasing number of humans accessing carnivore habitat. About half the time when people are attacked by carnivores, they're doing risk-enhancing behaviours, such as walking a dog off-leash, not supervising children, travelling on trails from dusk to dawn, or approaching a female bear with cubs, or a bear on a food cache.

The guidelines are broken into three sections: Planning, Design and Operations.

Planning is the phase where a trail or trail system is envisioned – where it is in the landscape, who the trail users will be, and what types of trails will be created.

Design is the phase where the trail is detailed on the landscape and constructed.

Operations cover everything from trail management and maintenance to monitoring and evaluation of the trail or trail system.

The best practises for each of the different phases of trail development are provided in the guidelines. The literature review and associated references are also included in the guidelines document. This document can be found online at: <https://www.orcbc.ca/blog/trail-development-guidelines-to-minimize-disturbance-to-and-conflict-with-large-carnivore>

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Minimizing disturbance to and conflicts with wildlife needs to start at the planning and design phase of recreational trail development.
- More education and management is required to ensure trail users don't inadvertently disturb or have conflict with wildlife.
- "Somebody" (government authorization bodies?) need to take responsibility and leadership in ensuring trails are planned, designed and constructed to minimize opportunities for conflict and/or disturbance; AND, to remove (close and decommission) trails that are not compatible with the ecology from the landscape.

Acknowledgements

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Ted Morton, B.TM., Trail Specialist
Sara Parsons, B.Sc., Animal Health
Louise Pedersen, M.Sc., Outdoor Recreation Council of BC
Peter Thompson, PhD., Wildlife Biologist

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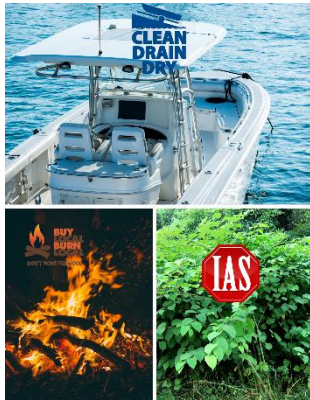
Leave no trace...of invasive species!

Presenter: Jess Booth, Columbia Shuswap Invasive Species Society,

Email: jbooth@columbiashuswapinvasives.org

CoAuthors: Collaborative Presentation by the Columbia Shuswap Invasive Species Society, (Jess Booth- Education and Outreach Coordinator) East Kootenay Invasive Species Society (Megan MacPhee Education and Communications Manager), and the Central Kootenay Invasive Species Society (Kalenna Olynyk, Field Program Manager)

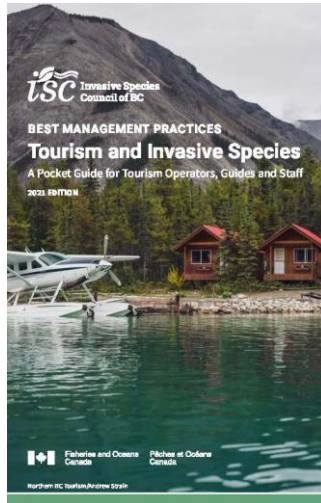
The presentation answered the question “*What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?*” by demonstrating the negative impact of invasive species and the meaningful and simple action recreationalists and tourism operators can take to reduce the impact of invasive species.



We explained the significant impact invasive species have within a recreational context, including reducing biodiversity, damaging infrastructure and changing the ecosystems and food webs that support the landscape and recreational opportunities in the Columbia Mountains. We explored how recreation can act as a major pathway for the introduction and spread of invasive species. Activities such as boating, off-road driving, mountain biking, hiking and remote weddings can result in the accidental introduction of invasive species, if gear and vehicles are not cleaned properly.

However, we explained simple and effective practices that can be followed by everyone, to prevent the introduction and spread of invasive species during recreation. We explored best practices such as arriving with clean gear, encouraging guests to arrive with clean gear, staying on designated trails, reporting invasives, and cleaning your gear following an activity.

Online training, webinars and best practices are available via the Invasive Species Council of BC, to help recreators and tourism operators reduce the spread of invasive species and the subsequent impacts to wildlife and ecosystems. The presentation aimed to empower tourism operators with the knowledge and tools needed to actively prevent the introduction and spread of invasive species. This proactive approach contributes to safeguarding BC's rich biodiversity and ecosystems, ensuring that invasive species remain unwelcome tourists in our beloved province.



Acknowledgement: CSRD- Columbia Shuswap Regional District, Tourism Revelstoke, Columbia Basin Trust, Invasive Species Council of BC, BC Parks, The Shuswap Trail Alliance, Fish and Wildlife Compensation Program, Habitat Conservation Foundation, Parks Canada, Shuswap Watershed Council and various other funders and partners across the Columbia Basin

Sources: Canadian Columbia Basin Regional Framework for an Aquatic Invasive Species Program, Invasive Species Council of BC, Tourism BMP Booklet

British Columbia’s tourism industry is ranked as the most important sector to the economy - generating billions of dollars annually. Much of the industry’s success relies on BC’s amazing biodiversity and wide variety of healthy natural landscapes. Invasive species can impact ecosystems, landscapes and native wildlife—the very things that attract visitors and make BC such a wonderful place to live. This presentation was developed to support tourism operators in adopting simple best management practices to prevent the introduction and spread of invasive species and protect BC’s rich biodiversity and ecosystems.

Background

Invasive Species groups throughout the province and the Columbia Mountains have been working collaboratively to mitigate the negative environmental, social, and economic impacts of invasive species. For 20+ years, Invasive Species groups have been providing invasive plant management, treatment and education to local communities. This presentation is in partnership with the Columbia Shuswap Invasive Species Society, East Kootenay Invasive Species Society and the Central Kootenay Invasive Species Society.

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Panel discussion: Pathways to minimize and mitigate recreational impacts to ecosystems with Recreation Sites and Trails BC

Panelists:

Marcia Bennet, District Recreation Officer, Columbia Shuswap, RSTBC
Trevor Hann, District Recreation Officer, Rocky Mountain North, RSTBC
Lisa Cox, District Recreation Officer, Rocky Mountain South
Kevin Eskelin, Regional Manager for RSTBC, Southern Interior East.

Moderated by Jeremy Ayotte, Phyla Biological Consulting & CMI

Summary document not yet received.

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The impacts of outdoor recreation in rural BC communities / A look into Burns Lake, Fernie, Revelstoke, Squamish, and Tofino

Presenter: Ximena Diaz Lopez, Outdoor Recreation Council of BC

Email: ximenalopez@orc.bc.ca

www.orcbc.ca

Access to full report: <https://www.orcbc.ca/s/The-Impacts-of-Outdoor-Recreation-in-Rural-BC-Communities.pdf>

Summary

Introduction

The Outdoor Recreation Council of BC (ORCBC) sought to better understand the impacts of outdoor recreation in rural B.C. communities. At the time of designing the study, there had been limited or outdated research and exploration into the impacts of B.C.'s outdoor recreation sector. This study aims to broadly explore and record observed impacts. The initial data suggests that there are significant challenges and opportunities in B.C.'s outdoor recreation sector that merit further discussion and studies. The study reflects the circumstances and challenges present at the time of the interviews between October 2022 and November 2022. This study does not provide a statistically significant sample or measurable impacts.

Methods

The research is exploratory and qualitative in nature. Interviews (30 minutes to 1 hour) are the main form of data collection. Interviews were conducted primarily with community leaders who could provide perspectives on behalf of community members and who would understand the community's outdoor recreation sector. A thematic analysis of the interviews was used to identify the themes.

Community Selection: Five communities with known outdoor recreation sectors were selected. Other considerations included rural classifications, population size, geographic region, and outdoor assets among others.

Interviewee Selection: Interviewees were selected to provide perspectives on behalf of the community or of a group in the community. Leadership roles and professional practitioners were selected as they were more likely to have oversight on the sector.

Interviews and Analysis: Interviews included general questions and questions on economic, community, equity, and environmental topics. A thematic analysis of the interview data was conducted. The interview data is the main source of data in this study.

Results and Discussion

A. 3 Key Elements of Outdoor Recreation

There were three key similarities in all five of the communities that can provide insights about the development of the outdoor recreation sector. The first is the existence of **outdoor assets**. The second is **access** to outdoor assets. The third, are the **people** that access the outdoor spaces. The research revealed how community members in the five communities protect outdoor spaces, create access, and protect access –all of which enables outdoor recreation opportunities and drives people to participate. The research also revealed that there are observable increases in participation of outdoor recreation thought to be accelerated by promotion and by the COVID-19 pandemic

B. Impacts

The interview data suggests that impacts of outdoor recreation are widespread, positive and negative, and include direct or indirect impacts to the land and to the community. The research identified recurring themes from the interview discussions. The themes highlight what the interviewees observed in their communities. There are themes that may exist beyond what emerged during the interview process of this research.

Largely discussed were impacts to the land. “Land impacts” refers to impacts in outdoor spaces or that are closely related to the outdoors. In other word, they are directly related to outdoor spaces. Table 1 summarizes the main land impacts discussed in the interviews.

<i>Table 1: Land impacts discussed in the interviews</i>		
	Theme	Description
1.	Human-Caused Damages to the Land and Its Values	Individual action can intentionally or unintentionally cause damages to the land and associated values such environmental or cultural ones. Too many people leads to overuse which can also cause damages. The table provides an overview of how and where damages were discussed.
2.	Connection to nature	People who participate in outdoor recreation can form personal connection to nature which can motivate responsible recreation, stewardship and education.
3.	Environmental Stewardship	There is active environmental stewardship directly linked to outdoor recreation. The table below provides an overview of the different ways environmental stewardship was discussed.
4.	Knowledge and Skills	Participation in outdoor recreation or the existence of an outdoor recreation sector opens learning opportunities.
5.	Inclusivity and Accessibility	In all five communities, there are initiatives geared towards inclusivity and accessibility with a desire to do more.
6.	Indigenous Involvement	Indigenous involvement can be an important aspect of outdoor projects which may take place as consultations or as unique

		relationship building between Indigenous Peoples and non-indigenous organizations or governments.
7.	Natural Resource Values	Outdoor recreation influences how natural resources are valued. E.g. the co-existence of extractive and non-extractive values, competition for resources, or transition of resource uses.
8.	Destination Marketing and Management	Destination marketing can motivate people to participate in outdoor recreation however, too many visitors can strain community resources which is leading some tourism organizations towards destination management.

Also discussed were impact to the community. “Community impacts” refers to effects that take place in the community or for residents. Table 2 illustrates the community impacts that emerged.

Table 2: Community impacts discussed in the interviews

	Theme	Description
1.	Community Culture and Identity	Interviewees described the significance of the outdoor recreation sector economically, socially, and culturally. It was identified as an important part of their community.
2.	Lifestyle and Wellbeing	Easy access to outdoor recreation motivates lifestyle and wellness choices such as increased physical activity.
3.	Social Connection and Community Engagement	Outdoor recreation opportunities can motivate social connection and citizen engagement.
4.	Economic	Every community observes economic activities directly linked to outdoor recreation. Outdoor recreation is also used a selling point and as an economic diversification strategy.
5.	Housing & Migration	The interviews showed that outdoor recreation is a reason that people stay in the community and a reason for people to move into the community.
6.	Strain on Community Infrastructure	Small, rural communities are not always able to keep up with demands caused by outdoor recreation such as with emergency services.

C. Barriers, challenges and other discussions

In all the communities, there was extensive discussion about the barriers and challenges to the outdoor recreation sector. Often, they emerged within the first ten minutes of an interview as interviewees spoke about their work.

The interview data illustrates that land or resource managers, organized outdoor groups, Indigenous Peoples and destination management play an essential role in minimizing or eliminating the negative impacts of outdoor recreation such as human-caused damages. The interview data also demonstrates that the benefits of outdoor recreation such as environmental stewardship, Indigenous involvement, inclusivity, and education are largely enhanced by the work of these groups. As such, the role of land or resource managers, organized outdoor groups, Indigenous Peoples and destination management are essential to maintaining a healthy outdoor recreation sector. Challenges to these groups are a direct challenge to the continued existence of the sector.

The main challenges discussed were:

1. Limited capacity for land managers namely Recreation Sites and Trails BC and BC Parks
2. Limited funding for land managers, outdoor recreation groups, Indigenous Peoples and destination management.
3. Complex issues and complex processes that are faced for outdoor recreation projects.
4. Over-reliance on volunteers as they play a vital role in maintaining and building outdoor recreation infrastructure and providing opportunities.
5. The need for more planning and visioning as a tactic to improve the outdoor recreation sector and address issues.
6. Limited research and data as a barrier to, economic development, fundraising efforts, understanding wildlife impacts, and understanding the carrying capacity of outdoor spaces.
7. What is Outdoor Recreation? The definition of the sector was questioned as it related to cultural practices, sustenance activities and industry definitions.

Concluding Message

The study illustrates the many positive aspects to arise from the outdoor recreation sector but at the same time, without adequate support, there can be several negative outcomes. There is often limited or no additional support when the load goes beyond the capacity of those caring for them which can be alarming because it could mean the loss of outdoor spaces and their associated values. The study also provided a lens on how the outdoor recreation sector operates and extends. The experiences of the five research communities and the cases in this study can serve as lessons learned for communities looking to develop their own sectors. They also illustrate the different direct and indirect roles of outdoor recreation stakeholders and the different functions of the sector. For people currently in the outdoor recreation sector unfamiliar with the activities of other stakeholders, it may provide insights on what others do and avenues for collaboration.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

1. There are far-reaching and widespread impacts that are both positive and negative. They require a careful balancing.
2. There are people who are passionate about the outdoors in every community who are already doing their best to support outdoor recreation and outdoors spaces, including associated values like ecosystems and wildlife.
3. A majority the positive impacts are provided or enhanced by the organized sector. The organized sector also plays an important role in mitigating negative impacts. The organized outdoor recreation sector includes the people and organizations who are doing on the ground work such as outdoor recreation organizations, land managers, First Nations and destination managers. By supporting them and addressing numerous barriers they face, we will also be supporting the better management of outdoor spaces.
4. People in every community are facing similar stories despite the details differing. With the re-emerging patterns, there is an opportunity to learn from each other so that the outdoor recreation sector can develop in a way that is positive for people, communities, and nature.

References

This is an interview-based project that mostly relies on primary data from interviews. The full study is available at www.orcbc.ca

Acknowledgements

This study would not have been possible without the generous support and time from many people. A special thank you goes to all the advisors and friends that provided recommendations for the initial design of the project and to all the interviewees who shared their time and experiences with us.

We gratefully acknowledge the financial support from the Four Wheel Drive Association of BC, ECO Canada, and the Province of British Columbia through the Ministry of Environment and Climate Change Strategy.

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HeliCat Canada's vision 2030 and the Wildlife and Environmental Research Fund

Presenter: Ross Cloutier, Helicat Canada
ed@helicat.org

Summary document not yet received. Ross spoke about the worked highlighted [here](#).

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Community Keynote

This evening event was free and open-to-the-public. On this evening, we looked at responsible recreation through the lenses of climate and culture with Sinixt cultural facilitator for the Colville Tribes [Shelly Boyd](#), outdoor recreation researcher [Natalie Knowles](#), a screening of the film [Beyond Begbie](#) and a panel discussion. Panel participants include the aforementioned, Beyond Begbie film producer [Nat Segal](#), film participant Dale Tomma, Indigenous Liaison for the City of Revelstoke's Economic Development Department, and Indigenous artist and recreationalist, [Ariel Hill](#).



[Shelly Boyd](#) is the cultural facilitator for the Sinixt Confederacy of the Colville Tribes, of the Arrow Lakes. Born in Kewa (near Inchelium), Shelly grew up under the leadership of her Tupa (great grandmother), who like her parents are descendants of the Sinixt people. Shelly holds a BA in Indian Studies and a Masters in Education. Shelly spent nearly 20 years working with the Inchelium School District on the Colville Reservation and The Medicine Wheel Academy of Spokane, working with Native Youth. Following which, she co-founded the Inchelium Language and Culture Association, (ILCA) a non-profit with the mission to revitalize the Sinixt language and culture. We invite you to read [this article](#) to learn more about the Sinixt and the Desautel case.



[Natalie Knowles](#) is an explorer and academic focused on social, economic and environmental sustainability in adventure travel and outdoor recreation. Nat is the Research Specialist for Protect Our Winters Canada and a PhD researcher at the University of Waterloo investigating climate change impacts, adaptations and sustainability transitions in mountain tourism and recreation. Natalie presented:

Adventures in a Warmer World: Responding and Decarbonizing the Outdoor Industry

Climate change will alter outdoor recreation and related tourism especially in Canada's mountain regions, with far-reaching consequences for biodiversity, employment, culture, sport and recreation, community health and well-being, real estate, and economies in outdoor recreation and tourism-dependent mountain communities across the country. Despite facing significant climate impacts, the outdoor recreation and tourism industry is not currently well prepared to respond to climate change. With little research available on the localized impacts of climate change on outdoor recreation and tourism, the emissions from this sector, climate adaptation and

carbon emission reduction strategies are often disconnected. Similarly, outdoor recreation participants and tourists actions, the commercial sector management plans, and community recreation and tourism policy lack integration. This multi-disciplinary research links quantitative climate modeling with qualitative stakeholder (including participants, community policy makers and industry experts) engagement to demonstrate the climate impacts across low and high emission futures on key outdoor recreation activities including shifts in seasonality, identify key emission sources from this industry and suggest implementable context specific solutions. These climate and carbon impacts are combined to discuss integrated climate adaptation and decarbonization strategies available for the sector at the individual, commercial and community scale. While the outdoor recreation and tourism sector is often hesitant to engage in the climate change space, this research aims to provide a positive and solutions-focused perspective that brings stakeholders together over a shared passion and unites the power of the industry for large-scale climate action.



Nat Segal is a professional skier and producer hailing from Melbourne, Australia, now based full-time in Revelstoke, BC. After spending six years competing on the Freeskiing and Freeride World Tours, Nat focused her attention on film and expedition projects.



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Efforts to balance species habitat needs with recreational pressures in BC Parks in the Kootenays

Presenter: Amanda Weber-Roy, BC Parks

Email: amanda.weber-roy@gov.bc.ca

I spoke about specific projects in the Kootenay Section (Kootenays) of the Kootenay Okanagan Region where BC Parks and our partners have recognized where we are having challenges, impacts and conflicts with recreational activities and species habitat needs and requirements. My talk focused on specific examples where BC Parks in the Kootenays is taking measures to more fully understand the pressures on species and their habitats from recreation or where we have taken direct measures to exclude recreation, as indicated in the literature, would be most beneficial for that particular species.

As a public trust, BC Parks' mission is to protect representative and special natural places within the province's Protected Areas System for world-class conservation, outdoor recreation, education, and scientific study. Fundamental to implementing BC Parks mission is integrating reconciliation with Indigenous peoples into everything that we do. [Mandate - Province of British Columbia | BC Parks](#)

Inherent in this mandate is the requirement to maintain a balance between BC Parks' goals for protecting natural environments and outdoor recreation, as well as supporting our reconciliation commitments to Indigenous peoples. This is a tall order and can be exceptionally challenging. BC Parks consistently relies on our very valuable partners and stakeholders and Indigenous peoples and all British Columbians for that matter to help us understand, work with us and share knowledge to work together on this common goal of providing outdoor recreation opportunities while protecting the natural environment.

Outdoor recreation has exploded, and that use is projected to increase. Now more than ever, people are looking for recreational opportunities and can be unaware of impacts they could potentially have.

[BC Parks day-use pass program continues in three popular parks | BC Gov News](#)
[Are we loving our parks to death? | Canada's National Observer: News & Analysis](#)
[Facts and figures - Province of British Columbia | BC Parks](#)

The specific projects that I spoke about are:

- At Windermere Lake Provincial Park just south of Invermere, biologist Rachel Darvill discovered a bank swallow colony through her research on the Upper Columbia Swallow Habitat Enhancement Project. Rachel provided this information to BC Parks because she expressed great concern for the impacts that were happening to the colony as a result of boaters and park visitors recreating on the beach and colony. Here is a link to Rachel's work: [Upper Columbia Swallow Habitat Enhancement Project – Wildsight](#).
[Windermere Lake Park | BC Parks](#)
- Wolverine researchers Andrea Kortello and Doris Hausleitner have been working with BC Parks to conduct locate and conduct research of wolverine maternal dens in parks in the Kootenays where there are also skiing opportunities. [wolverinewatch.org](#)
 - We have four confirmed dens in BC Parks which have resulted in seasonal access restrictions. Two in Kokanee Glacier and two in Goat Range Park. Maps and info can be found here under the advisories tab:
[Kokanee Glacier Park | BC Parks](#)
[Goat Range Park | BC Parks](#)
- BC Parks became increasingly concerned about how habituated mountain goats were interacting with park visitors in Valhalla Park. We have collared goats, we are educating park visitors and have installed a diversionary salt lick.
[Valhalla Park | BC Parks](#)
- Southern mountain caribou – the Central Selkirk herd on the brink of extirpation and use portions of Goat Range Park as their habitat. BC Parks is working closely with the Caribou Recovery Program to balance recreation and the needs of this herd on the brink.
[Program Background – Caribou Recovery \(gov.bc.ca\)](#)
- After many years of documented non-compliance and out of concern for winter wildlife use the previous special exemption to allow snowmobiling in Elk Lakes Park has been cancelled and the whole park is now closed to motorized activities.
[Elk Lakes Park | BC Parks](#)

The [BC Parks Licence Plate Program](#) has been the main funder of this work and we work with many partners to deliver these key projects.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Telling our stories (the good, the bad and the ugly); education, garnering public support/action and compliance
 - If we restrict recreational activities, we need to say why
- 1995-2001 Land Use Planning processes were a long time ago. Things have changed and we may need to adjust in some cases [Land Use Planning for Provincial Public Land - Province of British Columbia \(gov.bc.ca\)](#)
- Support volunteers and partners

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Management planning and strategic environmental assessment as a tool to achieve recreation and conservation objectives in national parks

Presenter: Alexandra Taylor, Impact Assessment Scientist, Parks Canada

Email: Alexandra.Taylor@pc.gc.ca

Introduction

Parks Canada's mandate of inclusive of conservation and visitor use requires planning to ensure that both objectives can be successfully achieved. Management plans of national parks and their Strategic Environmental Assessment (SEA) are an opportunity for Parks Canada to cumulatively assess impacts of infrastructure, recreation, and climate change on a park's ecological integrity, as well as set targets and objectives that concurrently support conservation priorities and visitor use and enjoyment of the park.

Management Planning

National park management plans are future-oriented, strategic management direction for a national park to support Parks Canada's mandate. The *Canada National Parks Act* 4(1) states:

The national parks of Canada are hereby dedicated to the people of Canada for their benefit, education and enjoyment... and the parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations.

Management plans establish a vision, key strategies and objectives looking ten years into the future. Once approved by the Minister responsible for Parks Canada and tabled in Parliament, the management plan ensures Parks Canada's accountability to Canadians, outlining how the management team of the national park will achieve measurable results.

The *Canada National Parks Act* 8(2) states that the:

Maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks.

This is achieved, in part, through management planning which ensures that there is an explicit direction for maintenance or restoration of ecological integrity and for guiding appropriate use of the park for duration of the plan.

All management plans are subject to Strategic Environmental Assessment (SEA) under a Cabinet Directive (Privy Council Office and CEAA 2010). SEAs provide a comprehensive approach to incorporating broad-scale environmental considerations from multiple sources into planning and policy documents. SEA focuses on impacts for which Parks Canada has the greatest responsibility and those that are the highest risk to help identify issues of greatest importance for the management cycle. Analysis in the SEA contributes to evidence-based decision making by integrating responses to the anticipated cumulative effects into strategic plans and policies.

Cumulative effects are when more than one project, activity, or stressor impacts a single ecological component. Cumulative effects have been identified as an issue of concern for ecological integrity in national parks and Strategic Environmental Assessments are the appropriate processes assess cumulative effects rather than project-specific assessment (CEAA 2017; Parks Canada Agency 2021).

The SEA of management plans focuses on the impacts of projected cumulative effects over the next ten years and identifies appropriate mitigative actions to include in the management plan.

Valued Components

SEAs used valued components in their analysis. A valued component is an environmental element of an ecosystem that is identified as having scientific importance. It is not feasible to do an assessment on every element of the environment, so we select a series of valued components that together, give a picture on overall impacts of a project on the natural environment.



Figure 1. Overview of Parks Canada management plan and SEA processes.

The impact assessment scientist writing the SEA establishes a systematic approach to bring together different points of view, integrating park planners and policy experts, visitor experience who can identify recreational opportunities and ecologists, who can inform targeted mitigations.

Management plans and SEAs go through separate but parallel processes. They are iterative, and at many points one document will inform the other (Figure 1).

Case Study: Kluane National Park and Reserve

Kluane National Park and Reserve (Kluane) is in the southwest corner of Yukon. It is 21 980km², which is roughly double the size of Jasper National Park. However, over 80% of the park is glaciated and 97% of visitation occurs in the non-glaciated portion of the park. In addition, 80% of visitation occurs between the months of June and August. These spatial and

First Nation Final Agreements

The Final Agreements are constitutionally-protected modern treaties that outline First Nations' rights within their traditional territories in the Yukon.

temporal considerations mean there is considerable overlap between wildlife and visitor use of the park, particularly in sensitive times of years when wildlife are raising their young and preparing for winter.

Kluane is co-managed through the Kluane National Park Management Board. This is an advisory body that makes recommendations and provides advice to the Minister of Environment and Climate Change Canada, Parks Canada, Champagne and Aishihik First Nations (CAFN) and Kluane First Nation (KFN). The Kluane National Park Management Board was established in 1995 following the signing of the CAFN Final

Agreement in 1993. KFN joined the Board in 2003, when they ratified their Final Agreement. Cumulative effects that may impact Kluane include recreational activities, park management initiatives, climate change, and external development and pressures which include:

- Mining activities,
- Highways 1 (Alaska Highway) and 3 (Haines Road), and
- The village of Dakwākāda /Haines Junction.

The management plan initiatives that were the focus of the SEA were two new Indigenous led eco-tourism lodges. Both lodges will be in Kluane's backcountry and will be fly in/fly out operations. There will be additional recreational activities associated with these lodges, potentially including new hiking trails and angling in nearby lakes.

The development of these eco-lodges is supporting a management plan objective for Parks Canada to collaborate with CAFN and KFN to meet obligations set out in the Final Agreements. Specifically, that Parks Canada will facilitate economic and employment opportunities for CAFN

and KFN related to the management of Kluane. To accommodate these initiatives and for long-standing recreational activities such as hiking and rafting to remain in place, Parks Canada altered the zoning in Kluane's management plan.

Of the 13 Zone I areas in the 2010 plan, this plan converts six to Ecologically Sensitive Areas (ESAs). ESAs allow for more flexibility for appropriate activities than using the Zone I or Zone II categories. For example, it permits specific spatial or temporal considerations. Based on new ecological information, one Zone I has been converted to Zone II. The remaining six areas retain their Zone I designations and public access is prohibited. Three new Zone IV areas have been created to accommodate the new proposed eco-lodges themselves.

Zoning

The national park zoning system is a management tool in which land and water areas are classified according to ecosystem and cultural resource protection requirements, and the capability and suitability to provide opportunities for visitor experiences. Generally, Zone I is the most recreationally prohibitive while Zone IV is the most permissive.

Changing zoning can be controversial. It may be perceived as Parks Canada either limiting recreational opportunities or reducing levels of ecological protection.

To reduce controversy and increase transparency an evidence-based approach to the assessment of zoning changes were required. While working through the analysis, the following questions were assessed:

- What is the ecological value of the area?
- What is the recreational value of the area?
- What is the proposed change?
- What are the pathways of effects, including cumulative effects?
- Is there effective mitigation?
- Are there residual effects?

The following example from the Dän Zhùr/Donjek – Mt. Hoge Zone will illustrate how zoning changes were assessed in the SEA.

Dän Zhùr/Donjek – Mt. Hoge: Ecological Value

Defining the ecological value of the zone requires specific articulation on the value that needs protecting. The park ecologist and impact assessment scientist worked closely together to define any spatial or temporal considerations when identifying the ecological unit. In the case of the Dän Zhùr/Donjek – Mt. Hoge Zone, the area supports over 1,000 mǎy (Dall's sheep), one of the largest populations on an all-season range in North America. During the summer 40% of these mǎy (Dall's sheep) are found in Hoge and Atlas/Expectation passes (Parks Canada Agency 2017). The alpine also protects some of the most northern ambäy (mountain goats) in Canada, several wildlife Species at Risk, and rare and endemic plant species. Shar shǎw (grizzly bears) and 'a-gǎy (wolves) have been extensively documented using the valley during summer months. A known 'a-gǎy (wolf) den has been used since the 1980s in this valley.

Southern Tutchone

Southern Tutchone is the language of CAFN and KFN. By using Southern Tutchone names for places and ecological components, we recognize the long history of Indigenous peoples' relationship with the land. Further, Indigenous names for places often indicate significant happenings or geologic features. For example, Dän Zhùr means Silverberry in Southern Tutchone. Silverberries are an edible berry that grow in abundance along the Dän Zhùr Chù'.

Dän Zhùr/Donjek – Mt. Hoge: Recreational Value

Collaborating with visitor experience and site managers, defining the recreational potential of the zone helped to focus the assessment on the potential impacts to the ecological value. The Dän Zhùr (Donjek) is a popular hike and a flagship visitor experience offer. The 100-120km route starts where Shar Nuh Chù' (Duke River) meets the Alaska Highway, and it typically takes people from eight to ten days to complete. Designated as a route, there is not a formally maintained trail nor any established campsites. Packrafting is also a common activity along the Dän Zhùr Chù (Donjek River). The KFN eco-lodge, Bighorn Lodge, will also be in this area. There will be additional recreational opportunities associated with the lodge, including potential new hiking trails and angling at nearby lakes.

Dän Zhùr/Donjek – Mt. Hoge: Proposed Change

Understanding the ecological and recreation potential, the planner identified the appropriate zoning to accommodate recreational activities within Parks Canada policy. The proposed zoning changes converts the Dän Zhùr/Donjek – Mt. Hoge area from Zone I to an ESA. The new Dän Zhùr/Donjek – Mt. Hoge ESA will be larger than the former Zone I and will include the former Zone II area from Mt. Hoge to the park boundary. A new Zone IV to accommodate the new Bighorn eco-tourism lodge will also be within this area.

Dän Zhùr/Donjek – Mt. Hoge: Pathway of Effects

With the ecological value and recreational potential defined, the impact assessment scientist developed appropriate pathways of effects on the valued components. For example, one of the impacted valued components with the Dän Zhür/Donjek – Mt. Hoge are mǎy and ambǎy (alpine ungulates), which may be negatively affected through:

- Direct mortality,
- Increased stress from sensory disturbance,
- Reduced habitat, and
- Reduced connectivity (Figure 2).

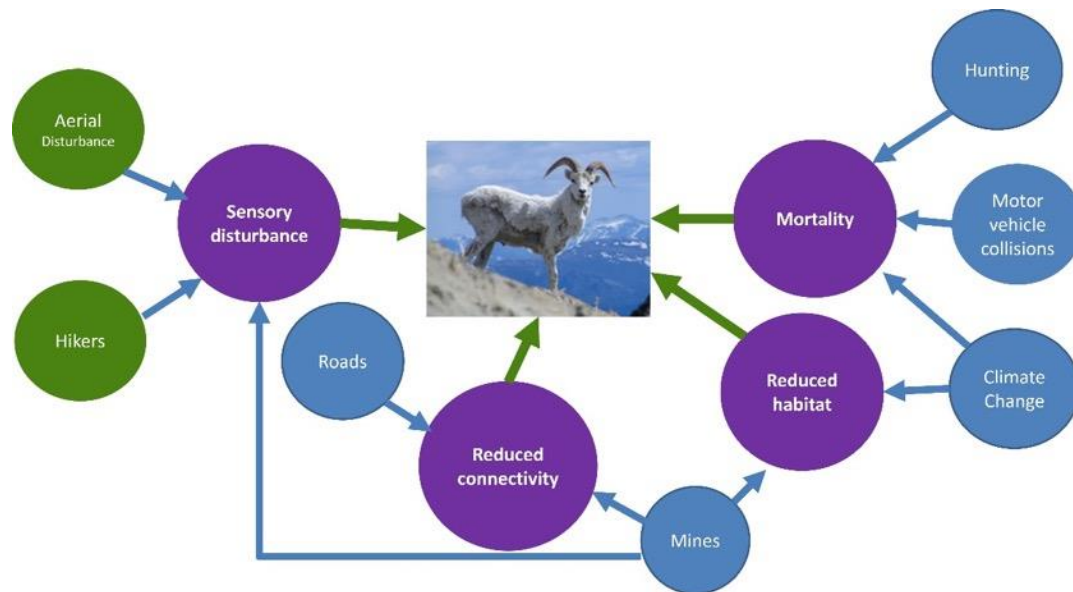


Figure 2. Overview schematic of the pathways of effects influencing mǎy and ambǎy (alpine ungulates) in Kluane. Impacts in green are those which Parks Canada has the most influence in regulating.

Zoning specific impacts (Parks Canada can manage)

The analysis on pathways of effects focused on impacts for which Parks Canada can manage or may influence outcomes. Within the Dän Zhür/Donjek – Mt. Hoge ESA, this is primarily sensory disturbance from both helicopters transporting visitors to/from the Bighorn Lodge and from visitors hiking through the area.

Access to the Bighorn Lodge will result in an increase in aerial disturbance to both mǎy and ambǎy (alpine ungulates) in the Dän Zhür/Donjek Valley and surrounding habitat, particularly through Hoge and Expectation/Atlas passes (Parks Canada Agency 2017 & 2018). Mǎy (Dall's sheep) in the Hoge Pass area of the Dän Zhür/Donjek Valley have been known to interrupt resting periods or flee and take longer to resume resting or foraging after interactions with direct approaches by aircraft (Parks Canada Agency 2017). Indirect flight paths by rotary-wing aircrafts have also

resulted in fleeing behaviour and mǎy (Dall's sheep) that were more than 20m from escape terrain would flee when an aircraft approached within 2km (Frid 2003). Similar results have been observed in ambäy (mountain goats) (Slocombe and others 2002; Goldstein et al. 2005; Côté 1996). Over the long-term these disturbances could decrease reproductive success and the overall alpine ungulate population in Kluane (Frid 1997).

Increased visitation will likely result in more hiker interaction with mǎy (Dall sheep) in the Hoge or Expectation and Atlas Passes (Parks Canada Agency 2017). The operating season (May-October) for the Bighorn Lodge overlaps with the most productive season for vegetation, and disturbance to mǎy and ambäy (alpine ungulates) during this time may have negative overwinter survival implications (Parks Canada Agency 2017). It is difficult to determine the impact of this increase, and while it may be insignificant in isolation, it will contribute to cumulative effects stresses on mǎy and ambäy (alpine ungulates).

Additional cumulative effects considerations

While Parks Canada does not have authority over many of the cumulative effects impacting mǎy and ambäy (alpine ungulates), scoping them into the assessment increases confidence that the new zoning and associated activities will not exceed any disturbance thresholds and have negative population-level effects on the valued component. Within the Dǎn Zhǔr/Donjek – Mt. Hoge ESA, there are several additional cumulative effects considerations for mǎy and ambäy (alpine ungulates):

- Mǎy and ambäy (alpine ungulates) are impacted by direct mortality events due to harvest pressures outside of Kluane boundaries and motor vehicle incidents on Highway 1 (Alaska Highway), adjacent to the park. Commercial traffic from the Haines port is projected to increase traffic on both Highways 1 (Alaska Highway) and 3 (Haines Road), which may increase the risk of mǎy being killed in motor vehicle incidents. These highways may also have a negative effect on connectivity.
- Climate change may also contribute to mortality of mǎy and ambäy (alpine ungulates). For example, an increase of rain on snow events or spring storms would likely negatively impact their recruitment and survival (Wong 2017).
- Several mining projects adjacent to Kluane, including smaller scale placer mining and larger operations, have the potential to impact mǎy and ambäy (alpine ungulates) through reduced habitat, connectivity, and sensory disturbance.

Dǎn Zhǔr/Donjek – Mt. Hoge: Mitigations

Development of mitigations in the management plan and the SEA is the most iterative part of the process. Collaboratively, the park managers, ecologist and impact assessment scientist brainstorm practical and feasible mitigations to reduce impacts on valued components. Some mitigations will be targeted at specific Parks Canada management plan initiatives, while others

are collaborative with partners to mitigate impacts of cumulative effects and increase a valued component's resilience to disturbance. Higher level initiatives are brought into the management plan as targets, while site or project specific mitigations are identified in the SEA (Table 1). With these mitigations in place, no residual effects on mǎy and ambǎy (alpine ungulates) are anticipated as result of the park management plan.

Table 1. Examples of mitigations in the management plan and SEA to address impacts to mǎy and ambǎy (alpine ungulates).

Targeted zoning mitigations	Mitigations to address cumulative effects
Camping is prohibited in Hoge Pass	Non climatic stressors have been reduced to increase species' resilience to climate change; in particular mǎy (sheep) mortality along the Alaska Highway is reduced within two years.
Work with the operators of Bighorn Lodge to develop a flight plan strategy that may restrict flight paths in sensitive alpine ungulate areas, particularly during lambing/kidding season	Identify and implement long term strategies to enhance connectivity for mǎy (Dall's sheep) across the boundary and Alaska Highway at a pinch point where there have been repeated sheep-vehicle collisions.
Seasonal activity restrictions to reduce impacts during sensitive times of the year (kidding, lambing).	Kluane will continue to work with the Yukon Environmental and Socio-economic Assessment Board and participate in environmental assessments for projects around the park.
Request visitors refrain from bringing dogs on trails in important mǎy and ambǎy (alpine ungulates) habitat.	
The impacts of backcountry visitor use, including those from biking, hiking and aircraft, are monitored, assessed, and mitigated.	

Continued monitoring of valued components as part of Parks Canada's Ecological Integrity Monitoring Program allows for adaptive management. The management plans are required every ten years, and this continual reassessment of impacts and cumulative effects on valued components increases confidence that decisions can be made in advance of negative impacts occurring at the population-level.

Consultation

The draft Kluane National Park and Reserve Management Plan underwent eight weeks of public consultation in the fall of 2022. Separate consultation occurred with KFN and CAFN. Overall, despite making potentially controversial changes to zoning and park management, the feedback on the draft plan was overwhelmingly positive. In particular, the *Canadian Parks and Wilderness Society* commented that this plan is as an example of tangible reconciliation action and hopes that it can be an example for other parks and land management processes across the country.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

A collaborative and iterative process was key to the success of implementing recreational offers while upholding ecological values. The SEA started in 2018, five years before the anticipated completion. Having early, casual conversation with park managers about conceptual ideas was key to identifying effective mitigations. Iteration and communication between park managers, the planner, park ecologist and the impact assessment scientist were also important. After reviewing drafts of the management plan, the draft SEA would be adjusted to refine mitigations so that they were more effective. In turn, many of these mitigations from the SEA would be developed as targets in the management plan. Alternatively, as the SEA analysis progressed, some initiatives lacked effective mitigations and were removed from the plan.

As a federal land manager, Parks Canada upholds both recreational and ecological values. That these values are not in question perhaps makes the process more straightforward than may be the case in other jurisdictions.

References

Canadian Environmental Assessment Agency (CEAA). 2017. Building Common Ground. A New Vision for Impact Assessment in Canada. The Final Report of the Expert Panel for the Review of the Environmental Assessment Process.

Côté, S. 1996. Mountain goat responses to helicopter disturbance. *Wildlife Society Bulletin* 24: 681-685

Frid, A. 1997. Human Disturbance of Mountain Goats and Related Ungulates: A Literature-Based Analysis with Applications to Goatherd Mountain. Whitehorse: Boreal Research Associates.

Frid, A. 2003. Dall's sheep responses to overflights by helicopter and fixed-wing aircraft. *Biological Conservation* 110: 387-399.

Goldstein, M. I., A.J. Poe, E. Cooper, D. Youkey, B.A. Brown, and T.L. McDonald. 2005. Mountain goat response to helicopter overflights in Alaska. *Wildlife Society Bulletin* 33:688-699.

Parks Canada Agency. 2017. Initial Assessment of Wildlife Around the Proposed Northern Iconic Experience Site in Kluane National Park and Reserve. Resource Conservation, Kluane National Park and Reserve, Yukon.

Parks Canada Agency. 2018. State of the Park Report, Kluane National Park and Reserve. Yukon Field Unit

Parks Canada Agency. 2021. State of Canada's Natural and Cultural Heritage Places.

Privy Council Office and the Canadian Environmental Assessment Agency. 2010. Strategic Environmental Assessment. The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals. Guidelines for Implementing the Cabinet Directive.

Slocombe D.S., Danby R.K., Lenton J. 2002. Kluane National Park and Reserve CEA Update. Waterloo: EDA Environment and Development Associates.

Wong, C.M. 2017. Status of Ecological Integrity in Kluane National Park and Reserve 2017 Technical Compendium to the State of the Park Report. Parks Canada, Kluane National Park and Reserve, Yukon.

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Participatory decision making and adaptive management used to implement and maintain recreation management plans

Presenters: Jen Bellhouse and Adrian Bostock, Shuswap Trail Alliance (STA)

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The STA operates in the traditional territory of the Secwepemc Nation and while attending the conference were also privileged to be in the traditional territories of the Secwepemc, the Sinixt, the Ktunaxa, and the Syilx.

Participatory decision making, adaptive management and the results of adaptive management guide us to make the changes that reduce the impacts to wildlife and ecosystems.

The Shuswap Trail Alliance exists as a collaboration of partners working together to create purpose built, sanctioned, and sustainable trails throughout the Shuswap region. Our vision is Connected Trails, Healthy Communities and through thoughtful collaboration, we develop, operate, maintain, and promote non-motorized trails throughout the Shuswap. Our core values include Proactive Collaboration, Cultural Respect, Community Building, and Care for the Land.

The Shuswap Trails Roundtable grew out of the work that we were doing collaboratively as the STA and Secwepemc Leadership Provided the direction to coordinate an annual meeting. Secwepemc title and rights staff indicated that there had to be a better way to be informed of trail projects prior to being submitted as a referral. The Roundtable was developed as a mechanism for multiple stakeholders, including motorized recreation groups, to work together. The Roundtable is an example of how a collaborative approach can be used to plan, develop, and maintain recreational trails in a sustainable and effective way, while ensuring the participation and inclusion of all stakeholders.

The Roundtable meets annually in early winter and has a working group of leadership that meets quarterly. The Roundtable is made up of Indigenous, municipal, regional, and provincial government staff and elected officials, leadership from motorized and non-motorized recreation groups, Shuswap Tourism, Environmental Stewardship and Naturalist organizations and more.

The Shuswap Regional Trails Strategy was developed by the Roundtable. The strategy is values based and includes appropriate acknowledgement of Secwepemc Nation territory, accountable protocols for planning and approvals, and a focus on ecology and access management priorities. The purpose of the strategy is to protect, enhance and recognize trails as an integral part of the

Shuswap lifestyle, culture and economy. The Shuswap Trails Strategy can be viewed here: <https://shuswaptrails.com/resources/trail-strategy-roundtable/> .

Our approach is to use a participatory, relationship-based, community-development model. Although Conservation and recreation are often viewed as competing interests, by developing recreation plans and managing recreation access through a participatory decision-making process it ensures we gain an understanding of the land and its resources.

Implementing a conservation goal that limits access to areas or activities which people are accustomed to is difficult without the buy in of recreation users. The capacity to enforce regulations and implement recreation management plans is a significant challenge. Changes in government leadership, or staff, can result in knowledge gaps, changes in priorities and policies which can compromise existing or developing recreation management planning. The goal of a participatory decision-making process is to develop a resilient plan through consensus and buy in from recreation users.

Structured decision making is one of the tools that enables us to evaluate what's working, what's not, and to make changes as required to reduce impacts to wildlife and ecosystems. By articulating values, we are able to start the process with what is important to everyone at the table and what makes us more alike – which makes it much easier to work through differences. Structured decision making includes clarifying the problem and context, articulating the values objectives and measures, developing options, evaluating consequences, evaluating trade-offs, and finally to take action.

Structured Decision-Making:



One of the working groups formed under the Roundtable is the Kel7scen (Mt. Ida) working group, which was formed at the request of Neskonlith Councillor Lewis Thomas and is being facilitated by the Shuswap Trail Alliance. Kel7scen has been identified as a priority planning area within the Shuswap Regional Trails Strategy by Pespesellkwe te Secwépemc and associated communities. Kela7scen has profound spiritual and cultural significance for the Secwépemc Nation and is an important recreation area for many Shuswap residents.

The process of participatory decision-making involves:

1. Identifying stakeholders:
2. Facilitating communication and dialogue:
3. Gathering and analyzing information:
4. Identifying options and alternatives:
5. Consensus Based decisions
6. Monitoring and evaluating: Adaptive Management

The first step was to form the Working Group comprised of an many recreational user group as we could organize, all government agencies and local Indigenous Governments. The Kela7scen Working Group is comprised: Neskonlith, Skwłāx, Adams Lake and Splatshin Bands, Shuswap Dirt Riders (moto), Shuswap Cycling Club, The Friends of Mt Ida (hiking group). Recreation Sites and Trails BC, City of Salmon Arm, Columbia Shuswap Regional District, BC Timber Sales, the BC Wildfire Service.

Over the last 40 years a substantial network of social trails has been developed on Kle7scén. These Trails are a mix of motorized and non-motorized trails, as well there are Rock-Climbing Craggs, off road vehicle access and hunting are all happening on the mountain. The north and west slopes of the mountain have been affected by a large wildfire which burned in 1998. Since then, many individual planning initiatives have been conducted for resource management, conservation, Indigenous interests, and recreation, without any cohesion, or on-going implementation.

The Shuswap Trail Protocol is uses on a Values Based Adaptive Planning Matrix. This matrix work by identifying Values, desired results, outcomes and behaviors, and indicators. As we articulate those shared values it is easier for all users to accept limits and alter behaviors.

The following are core concepts to be applied when developing Adaptive Management plans for Shuswap Trails:

- Secwepemc are affirmed as caretakers, stewards and decision makers of Secwepemc'ulecw
- Assess potential environmental impacts of proposed activities during early planning stages
- Ensure that federal and provincial legislation/standards are consistently followed
- Inform decision making (maps of trail network in relation to ecological information)
- Apply science-based understanding of species and habitats in a practical adaptive management approach

The Goal: to coordinate baseline information with protective legislation and guidelines that build effective mitigation and monitoring commitments into long-term adaptive management trail plans.

Strengths and Weaknesses:

Strength - flexible and responsive to changing conditions and new information, resilient.

Weakness - requires capacity from all users to participate.

Opportunities: can lead to more sustainable and resilient implementation of a management plan.

Threats: can be hindered by lack of resources and political will.

Once a recreation management plan is in place, we use Stewardship Advisory to continue the Adaptive Management of those plans. The South Canoe Trail Advisory is our most established Advisory Group.

The South Canoe Trail System is the most well used recreational trail systems in the Shuswap, developed over many years by recreation users, both formally and informally. The lower trails and parking lot are on City of Salmon Arm property and the upper network of trails is on Crown Land managed under a Partnership Agreement between RSTBC and the STA.

There is a community watershed, mule deer winter range and an Old Growth Management Area and a woodlot license all overlapping the trail network.

Recreation interests in the area include mountain bikers, trail runners, hikers/dog walkers, equestrian riders, winter grooming for Fat-biking, as well the local Nordic ski club grooms the FSR as a ski out from the main cross country ski area. There are also off-road vehicles, motorcycles, occasional snowmobile use, as well as hunting, and the local Rod and Gun Club who lease a piece of city owned property to the SW of the rec site. As well South Canoe is located at the SW end of Larch Hills and is a part of a much larger 4 season trail network.

While developing the management plan for this area an Environmental Assessment was conducted. This Assessment is foundational to the Planning process for all maintenance and development decisions.

The South Canoe Trail Advisory is based on the values of respect, cooperation, and stewardship. The South Canoe Trail Advisory's Role is to engage stakeholders and stewards in order to give direction to the development and maintenance of the South Canoe trails and encourage local users to take responsibility for their trails. Managing existing trails and guiding the creation of new trails for long-term environmentally sustainable use to ensure that new trail development follows appropriate consultation with all interested parties. Stewardship planning will also inform trail design and construction so that new trails meet current best practices and protective legislation.

Strength - help ensure that trails are developed in an environmentally sustainably way.

Weakness - can be onerous expensive and time consuming.

Opportunities – encourages users to take responsibility for their trails.

Threat - if users do not feel they are being heard, they will stop participating.

Participatory decision making and adaptive management take work, require capacity and engagement, even when it does not seem to be productive or that any individual group is going to get everything they want. The process requires substantial funding which is often hard to source. But if we keep showing up, the process is rewarding and ensure we manage recreation in an environmental and culturally sustainable. It allows a wide variety of values to be acknowledge and helps develop and strengthen relationships between recreation users, indigenous communities, and governments agencies.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

Working together is one of the key lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems. By working with a broad range of people, with multiple perspectives and differing strengths, we are better able to make informed decisions with respect to recreation and land management.

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Indigenous inclusion and recreation on the landscape: the Chase Harper Lake community management plan

Presenters:

Brad Arnouse, Neskonlith Indian Band

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Colin O’Leary, Colin O’Leary and Associates

Email: colin@olearyandassociates.ca

Background

Traditionally, land management and forestry in Canada has been dominated by the federal and provincial governments and major forestry companies with the financial and human capital to enter a complex industry. Most forest harvesting and management activities take place on the unceded lands of Indigenous Peoples who have called these areas home since time immemorial, making Indigenous involvement in the management process for these areas an essential and meaningful pursuit.

Neskonlith, Adams Lake, and Skwłāx te Secwepemcúlecw members have and continue to use the Chase-Harper Management Area for a variety of land and resource uses. There is strong interest and support amongst the communities to play an active role in the collaborative management of this area with the Ministry of Forest, Lands, Natural Resource Operations and Rural Development (FLNRORD). In doing so, it is envisioned that the Neskonlith, Adams Lake, and Skwłāx te Secwepemcúlecw interests, values and objectives with respect to this landscape would be incorporated into a collaborative management plan.

It is expected that this will allow for community driven land and resource management practices to be implemented. The Chase Harper Collaborative Management Plan (CCMP) will support a new and more collaborative approach to working with FLNRORD and other stakeholders, while providing opportunities for members and member-owned business to sustainably use the land and resources to support community well-being.

What is a Collaborative Community Management Plan (CCMP)?

Knucwetwecw Tellqelmucw “Helping each other for the people yet to come.”

It is a document that outlines a partnership between impacted Secwépemc bands and the BC Government's Ministry of Forests, Lands, Natural Resource Operations and Rural Development. The strategy outlined in the document is to have impacted Secwépemc bands, as Yucminté, jointly lead all forest and natural resource management for the land.

The goal of the CCMP is to create a strong working relationship between the provincial government and impacted Secwépemc bands, to respectfully pursue joint management of unceded Secwépemc territory and allow Indigenous peoples to partake in the stewardship and sustainable development of their ancestral lands.

The Chase-Harper Collaborative Management Plan (CCMP) is a tool, in the form of a planning document, that will guide the governance of land and resource protection and activities within the Area representing true co-management with both the Province & Bands being equal partners in managing industry and how they harvest on the land.

The plan will be a living document that will evolve and develop over time to reflect the shared values of impacted Secwépemc bands in the area (Neskonlith, Adams Lake, and Skwłāx te Secwepemcúlecw) and FLNRORD, the landscape's ecological conditions and natural resource values (market and intrinsic).

Through discussions with CCMP area impacted Secwépemc bands and FLNRORD it is understood that the plan will recognize and incorporate Secwépemc knowledge, values and interests in watershed management practices to:

- Improve land and resource management practices in Secwépemc Territory;
- Promote unity and teamwork between governments by combining the strength of all engaged to reach the shared goals and objectives of the collaborative management plan;
- Develop sustainable forest management practices that support healthy and resilient forests;
- Potentially create opportunities for new business-to-business relationships for impacted Secwépemc bands;
- Improve the health and enhance the sustainability of the entire Area for the benefit of impacted Secwépemc bands and other users of the watershed.

Photo: Knowledge Keepers Forest Circle Meeting June 2022



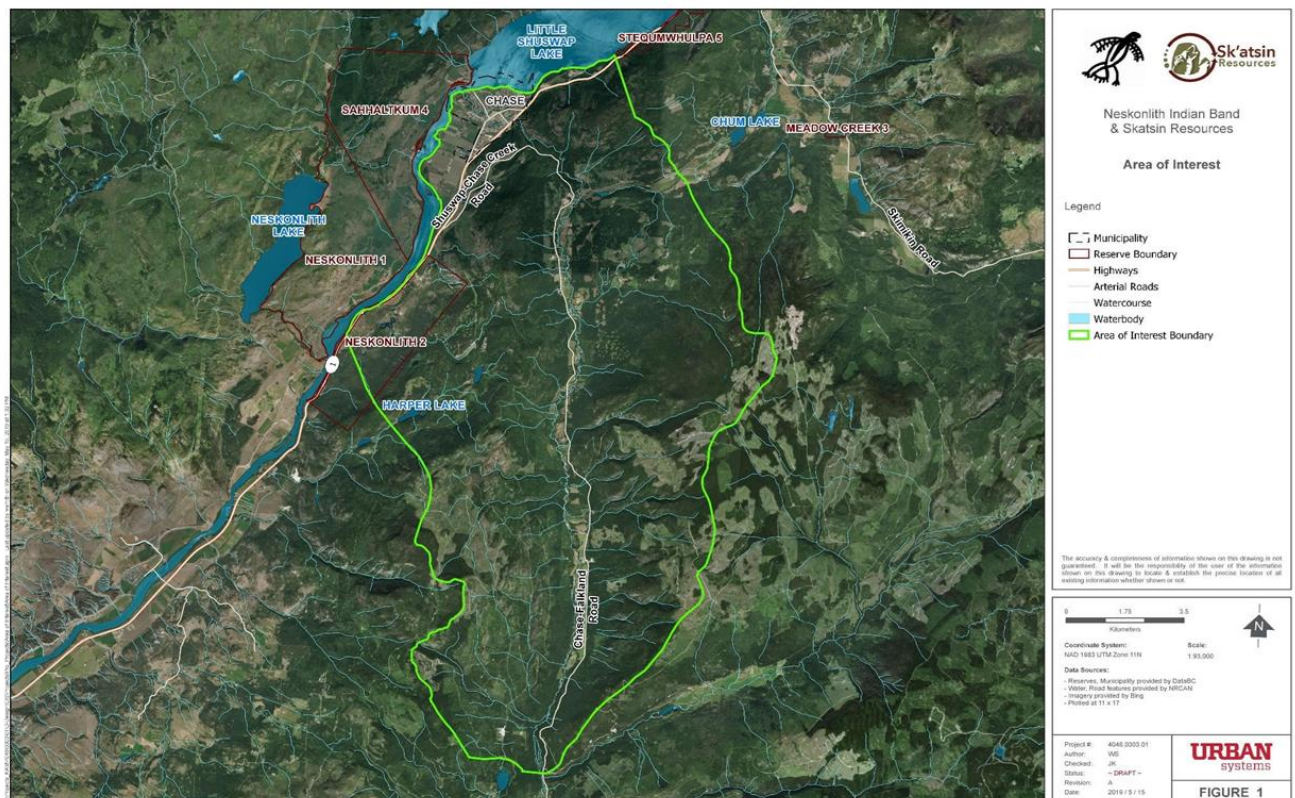
In Photo: left to right – back row left (Frank (Rock) Deneault, Gerry Thomas, Randy Narcisse, Colin O’Leary, Randy Sam, Kyle Runzer (Tolko), Councillor Brad Arnouse, Sonya Campbell, Front Row Left to Right: Elanie Jules, Minnie Kenoras, Jo-Anne Buffalo, Dianne Francois

Why Chase Harper Area?

The Chase Harper Management Area is a highly valued landscape of the Secwépemc people as it is host to ecologically and culturally significant areas and continues to be a significantly used landscape. The Area is located in a watershed area of importance and there is interest and support from communities to find a forestry harvesting model that supports a healthy watershed and ecosystem.

At the same time, there are longstanding interests to advance different land use and resource activities within the Area. Impacted Secwépemc bands (Neskonlith, Adams Lake, and Little Shuswap) are the closest local Yucminte of the Chase Harper Management Area to ensure it is sustainably managed for future generations, while ensuring community values and interests are incorporated into future planning efforts and resource utilization.

Figure 1. Map of the Chase Harper Management Area



What has been done so far?

It was determined early on that it was important to have this be a community led project. Much work done over the last four years is a reflection of the commitment of impacted Secwépemc bands to work collaboratively to produce a community driven plan that reflects their communities' values and traditions in the way the forest is managed.

2018 - Project Identified

- Sk'atsin and the Province (FLNRORD) agreed to explore the development of a collaborative management plan.

2019 - Chase Harper Collaborative Management Plan: Community Engagement Strategy

- Through this project, community leadership, knowledge keepers and users of the land had the opportunity to share their key values and interests with respect to management of the Area.
- Community members were invited to engage in discussions regarding the management of the Area through community engagement sessions, fireside chats, open houses, and door knocking.

2021 – 2022 Knowledge Keeper's Circle Created

- A "Knowledge Keeper's Circle" was created with participation of impacted Secwépemc band elders to refine management values and practices which were used to create the draft CCMP.
- Despite the challenges of COVID-19, the project team was able to hold a total of 9 Circle Meetings representing over 300 hours of Knowledge Keeper information gathering.
- Meetings and discussions with other experts including: FLNRORD, BC Timber Sales, Tolko Industries, Tsain-Ko Development Corporation, Kamloops Food Policy Council, Forsite, Vaagen Fibre Canada.

2022 - Drafts of the CCMP and its Operationalization Strategy completed

- Based on feedback and information gathered from the community and Knowledge Keepers, along with extensive review of existing land management plans, policies, and meetings with other experts, a draft CCMP and accompanying Operationalization Strategy has been developed to support the successful implementation of the CCMP.
- Secwépemc knowledge keepers have contributed their input on the draft plan and additional areas of consideration.
- Stakeholders like FLNRORD, BC Timber Sales and Tolko Industries were re-engaged in February 2022 and provided a draft of the CCMP for input and feedback.
- Wider community consultation is now ongoing to solicit feedback from impacted Secwépemc Nations.

Over the last 4+ years, despite the challenges of COVID, the project team was able to hold a total of **26 Circle Meetings** which were comprised of:

- Seventeen (17) 4hour in persons meetings in a boardroom
- Six (6) 5-7 hour in person meetings in the Management area.
- Three (3) in-depth online surveys.
- This time represented more than **500+ hours** of Knowledge Keeper engagement.
- In addition, there have been 50+ other planning meeting with technical experts

What are the next steps?

The next phase of the project is to put the concept of the CCMP from the report into practice and to make it a reality, which will be accomplished with our Demonstration Block:

- Field meetings and technical review by Tolko and BCTS to identify an ideal area: We picked our location after reviewing the whole Chase-harper area, narrowing it down to 6 options and then settling on one.

- The Forest Circle took the lead on determining the appropriate “treatment plan”: Tolko presented the options and technical background to the Forest Circle – we collected the vote online (results presented later today).
- The Summer and Fall of 2023 we will have the Forest Circle and technical team work together to create a demonstration block. Part of this process will include trail development and assess the potential of recreation values in the area.
 - Many old roads currently exist in the demonstration block which we will leverage.
 - Goal to create “self-guided” cultural tourism experience to showcase:
 - Innovative forest practices
 - Secwépemc Language, cultural practices and non-timber forest resources
 - Structures where cultural knowledge can be passed down to future generations

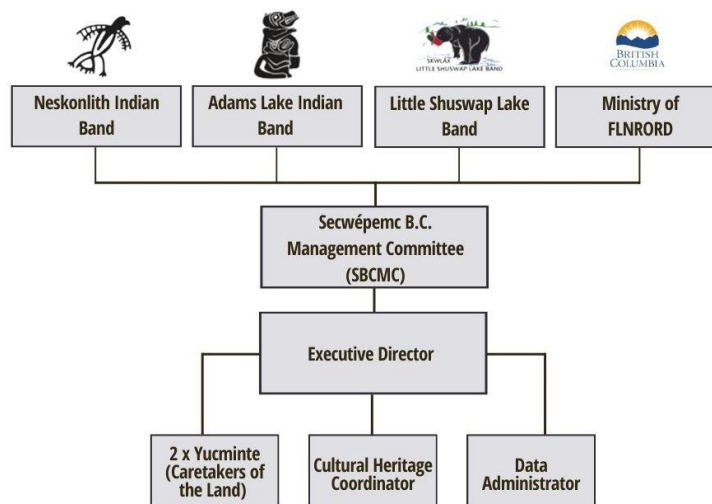
How will the CCMP be managed?

The first step is to create the Secwépemc B.C. Management Committee (SBCMC) to jointly lead all forest management activities for the Area.

The SBCMC is the entity that oversees management of the Area, providing leadership and expertise to the Executive Director and other staff members. The SBCMC, in principle, will consist of nine individuals. This will include eight SBCMC Committee Members, with two members appointed by each impacted Secwépemc band and two members appointed by FLNRORD to represent the Government of British Columbia, along with a SBCMC Chairperson that will be jointly appointed by impacted Secwépemc bands and FLNRORD.

Ultimately, the hope is that fostering a strong government-to-government working relationship between the provincial government and Indigenous governments will allow for BC to respectfully pursue joint management of unceded Secwépemc territory and allow Indigenous peoples to partake in the stewardship and sustainable development of their ancestral lands.

Figure 2. Draft SBCMC Organization Chart



What makes the CCMP unique and special?

A large portion of the strategies contained within the CCMP govern how operators conduct timber harvesting. These strategies consider existing Land Use Objectives (LUOs) regarding aquatic habitats, biodiversity, wildlife, forest reserves, rehabilitation of previously harvested areas, recreation resources and invasive plants and more. However, the protection of Secwépemc culture and traditional land use (hunting, fishing, trapping, gathering and occupancy) is the highest priority of the Secwépemc Nation. People want to ensure they will continue to have the opportunity to use the land as they always have. A culture based on people's relationship with the land requires regular opportunities to go out on the land to take care of it.

The CCMP meaningfully integrates Secwépemc Laws, Values, and Principles that support the protection of Secwépemc culture and traditional land use which sets it apart from a typical Forest Stewardship Plan.

These unique features were created based on input collected from traditional forest users and research into traditional forest management practices by Indigenous peoples. These traditional and cultural values for land use were then combined with existing current, non-traditional/cultural forestry best practice Land Use Objectives for the purposes of the Forest and Range Practices Act.

The CCMP goes beyond the contents covered within regional FSPs by also including specific strategies aimed at preserving Secwépemc Cultural Objectives. All the existing forest strategies are core to the stewardship of an area like Chase Harper, but often give no consideration to traditional forest management practices by Indigenous peoples. These traditional and cultural values for land use, called Secwépemc Cultural Objectives, provide for greater protection of Secwépemc culture and traditional land use (hunting, fishing, trapping, gathering and occupancy).

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Panel discussion: Responsible recreation education efforts – best practices for changing behaviours

Panelists:

Clara-Jane Blye, Leave No Trace

Brian Pratt, Four Wheel Drive Association of BC and Tread Lightly

Sandra Riches, BC AdventureSmart

Sherry Lu, BC Parks

Moderated by: Louise Pedersen, Outdoor Recreation Council of BC

Take home messages and the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems:

Clara-Jane Blye, Leave No Trace

- **Collaboration** is key to success, natural science, social science, and Indigenous knowledge and traditional ways of knowing all have a role to play in better understanding human behaviour and defining what "responsible" recreation is.
- **The need to move beyond "education"**. We can not rely on passive information to shift behaviours, we need consistent communication that also conveys significance, ethics, and a personal connection to WHY certain behaviours are desirable and others can be impactful.
- **Evidence based decision making requires a commitment to research**. We need to look for ways to support each other and share data whenever possible as well as commit to gathering more and deeper insights into human use of nature and nature-based recreation.

Brian Pratt, Four Wheel Drive Association of BC, and Tread Lightly

- The sharing of knowledge is vital in the understanding of our affects upon the wildlife and wilderness in the areas that we recreate.
- To TREAD Lightly wherever we go!
 - Travel Responsibly
 - Respect the Rights of Others
 - Educate Yourself
 - Avoid Sensitive Areas
 - Do Your Part

Sandra Riches, BC AdventureSmart

- Industry affiliates **working together** more to share best practices to reduce impacts on wildlife
- Industry affiliates **sharing 'consistent' messages** to the public
- Industry working towards **using data** driven insights, many of which were shared at the conference, to work with strategic **partners** to build out/create/produce

special **projects** to increase awareness of outdoor enthusiasts with goals of reducing impacts on wildlife

- Conference participants learned, in my opinion, that we need to be better **connected to ‘each other’** to provide the reliable information needed for the public to clearly understand best practices and where resources can be found.
- **Behavioural change** takes time.
- **Collectively working together**, ie as BC Parks and BC AdventureSmart do (MOU), using data, working with strategic partnership and creating/building/producing special projects (ie our trail specific safety videos as one example [SEE HERE](#)) bodes well for outdoor enthusiasts and adds to the culture of safety and ultimately inspires behavioural change.
- **Case studies** (BC AdventureSmart almost 2 decades of outdoor education) can help the industry by organizations sharing provincially provided safety messages/programs/messages/etc. in their work, adding value to their organizations and building upon the theme of recreating responsibly by residents, visitors, new comers and travellers.
- **Opportunities**; there’s a wealth of opportunity for all organizations that attended this conference to collaborate with BC AdventureSmart (as one example), offering chances to synergize, share best practices and with the public’s safety forefront, building upon BC’s outdoor recreation industry with the responsible recreation attitude and approach as top priorities of all enthusiasts.

Sherry Lu, BC Parks

- Behaviour change is a systemic issue that BC Parks can’t single handedly solve
- We leverage partnerships to amplify our responsible recreation messaging. Some examples of our ongoing partnerships:
 - Discover Parks Ambassadors with the BC Parks Foundation that allows for face to face interactions with park visitors
 - BARE campsite program with WildSafeBC- currently in place at E.C. Manning and Mount Fernie Parks
 - Library hiking backpacks with Richmond, Prince George, and Northwest libraries that creates access and provides education to community members
 - Collaborative videos and social content (with partners like BC AdventureSmart, Canucks Autism Network, etc.)
 - [Camper’s Code](#)

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Posters & Displays

It does not take much: recreation impacts on wolverine habitat use in protect areas

Presenter: Mirjam Barrueto, Department of Biological Sciences, University of Calgary, 507 Campus Dr NW, Calgary, AB T2N 4V8, Canada.

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See full paper [here](#)

Co-Authors:

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Marco Musiani, Dipartimento Scienze Biologiche Geologiche Ambientali, BiGeA, Università di Bologna, Bologna, Italy.

SEE POSTER HERE

Protected and unprotected natural areas are important in species conservation, but high rates of human-caused mortality, improved access for and increasing popularity of recreation can negatively affect wildlife populations. Consumptive recreation (e.g., trapping, hunting) directly affects wildlife survival, which can directly impact population trends. Non-consumptive recreation (e.g., hiking, skiing, sledding) can cause habitat loss, and humans may be perceived as a threat by wildlife, causing stress. Avoidance of people can also reduce connectivity among populations and fragment their habitat. All four factors can impact reproduction and survival and affect population trends. We quantified wolverine (*Gulo gulo*) population trends from 2011 to 2020 in > 14,000 km² protected and non-protected habitat in southwestern Canada. We conducted wolverine and multi- species surveys using non-invasive DNA and remote camera-based methods. We developed Bayesian integrated models combining spatial capture-recapture data of marked and unmarked individuals with occupancy data. Wolverine density and

occupancy declined by 39%, with an annual population growth rate of 0.925. Density within protected areas was 3 times higher than outside and declined between 2011 (3.6 wolverines/1000 km²) and 2020 (2.1 wolverines/1000 km²). Wolverine density and detection probability increased with snow cover and decreased near development. Detection probability also decreased with human recreational activity. The annual harvest rate (with a mean of 13%) was above the recommended sustainable rate of 4% in all years. We conclude that humans negatively affected the population through a combination of direct mortality through unsustainable harvest, and sub-lethal effects and habitat impacts due to recreation and accompanying development. Because the population was so small, harvest was unsustainable despite low absolute numbers of animals taken annually. Recreation disturbance thresholds were also surprisingly low: Wolverine strongly avoided trails with as few as 2-3 groups of hikers or skiers per two-week period (footfall) and had lower population densities near developments (footprint).

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Wolverines avoid areas with surprisingly low levels of disturbance from recreation.
- Wolverine harvest needs to be tightly regulated as harvest rates may be highly unsustainable despite seemingly low numbers of animals taken.

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Responsible recreation in small BC communities and its challenges: A look into Burns Lake, Fernie, Revelstoke, Squamish and Tofino

Presenter: Ximena Diaz Lopez, Outdoor Recreation Council of BC

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SEE POSTER HERE

Access to full report: <https://www.orcbc.ca/s/The-Impacts-of-Outdoor-Recreation-in-Rural-BC-Communities.pdf>

Summary

Introduction

The Outdoor Recreation Council of BC (ORCBC) sought to better understand the impacts of outdoor recreation in rural B.C. communities. At the time of designing the study, there had been limited or outdated research and exploration into the impacts of B.C.'s outdoor recreation sector. This study aims to broadly explore and record observed impacts. The initial data suggests that there are significant challenges and opportunities in B.C.'s outdoor recreation sector that merit further discussion and studies. The study reflects the circumstances and challenges present at the time of the interviews between October 2022 and November 2022. This study does not provide a statistically significant sample or measurable impacts.

Methods

The research is exploratory and qualitative in nature. Interviews (30 minutes to 1 hour) are the main form of data collection. Interviews were conducted primarily with community leaders who could provide perspectives on behalf of community members and who would understand the community's outdoor recreation sector. A thematic analysis of the interviews was used to identify the themes.

Community Selection: Five communities with known outdoor recreation sectors were selected. Other considerations included rural classifications, population size, geographic region, and outdoor assets among others.

Interviewee Selection: Interviewees were selected to provide perspectives on behalf of the community or of a group in the community. Leadership roles and professional practitioners were selected as they were more likely to have oversight on the sector.

Interviews and Analysis: Interviews included general questions and questions on economic, community, equity, and environmental topics. A thematic analysis of the interview data was conducted. The interview data is the main source of data in this study.

Results and Discussion

D. 3 Key Elements of Outdoor Recreation

There were three key similarities in all five of the communities that can provide insights about the development of the outdoor recreation sector. The first is the existence of **outdoor assets**. The second is **access** to outdoor assets. The third, are the **people** that access the outdoor spaces. The research revealed how community members in the five communities protect outdoor spaces, create access, and protect access –all of which enables outdoor recreation opportunities and drives people to participate. The research also revealed that there are observable increases in participation of outdoor recreation thought to be accelerated by promotion and by the COVID-19 pandemic

E. Impacts

The interview data suggests that impacts of outdoor recreation are widespread, positive and negative, and include direct or indirect impacts to the land and to the community. The research identified recurring themes from the interview discussions. The themes highlight what the interviewees observed in their communities. There are themes that may exist beyond what emerged during the interview process of this research.

Largely discussed were impacts to the land. “Land impacts” refers to impacts in outdoor spaces or that are closely related to the outdoors. In other word, they are directly related to outdoor spaces. Table 1 summarizes the main land impacts discussed in the interviews.

<i>Table 1: Land impacts discussed in the interviews</i>		
	Theme	Description
1.	Human-Caused Damages to the Land and Its Values	Individual action can intentionally or unintentionally cause damages to the land and associated values such environmental or cultural ones. Too many people leads to overuse which can also cause damages. The table provides an overview of how and where damages were discussed.
2.	Connection to nature	People who participate in outdoor recreation can form personal connection to nature which can motivate responsible recreation, stewardship and education.
3.	Environmental Stewardship	There is active environmental stewardship directly linked to outdoor recreation. The table below provides an overview of the different ways environmental stewardship was discussed.

4.	Knowledge and Skills	Participation in outdoor recreation or the existence of an outdoor recreation sector opens learning opportunities.
5.	Inclusivity and Accessibility	In all five communities, there are initiatives geared towards inclusivity and accessibility with a desire to do more.
6.	Indigenous Involvement	Indigenous involvement can be an important aspect of outdoor projects which may take place as consultations or as unique relationship building between Indigenous Peoples and non-indigenous organizations or governments.
7.	Natural Resource Values	Outdoor recreation influences how natural resources are valued. E.g. the co-existence of extractive and non-extractive values, competition for resources, or transition of resource uses.
8.	Destination Marketing and Management	Destination marketing can motivate people to participate in outdoor recreation however, too many visitors can strain community resources which is leading some tourism organizations towards destination management.

Also discussed were impact to the community. “Community impacts” refers to effects that take place in the community or for residents. Table 2 illustrates the community impacts that emerged.

Table 2: Community impacts discussed in the interviews

	Theme	Description
1.	Community Culture and Identity	Interviewees described the significance of the outdoor recreation sector economically, socially, and culturally. It was identified as an important part of their community.
2.	Lifestyle and Wellbeing	Easy access to outdoor recreation motivates lifestyle and wellness choices such as increased physical activity.
3.	Social Connection and Community Engagement	Outdoor recreation opportunities can motivate social connection and citizen engagement.
4.	Economic	Every community observes economic activities directly linked to outdoor recreation. Outdoor recreation is also used a selling point and as an economic diversification strategy.
5.	Housing & Migration	The interviews showed that outdoor recreation is a reason that people stay in the community and a reason for people to move into the community.

6.	Strain on Community Infrastructure	Small, rural communities are not always able to keep up with demands caused by outdoor recreation such as with emergency services.
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F. Barriers, challenges and other discussions

In all the communities, there was extensive discussion about the barriers and challenges to the outdoor recreation sector. Often, they emerged within the first ten minutes of an interview as interviewees spoke about their work.

The interview data illustrates that land or resource managers, organized outdoor groups, Indigenous Peoples and destination management play an essential role in minimizing or eliminating the negative impacts of outdoor recreation such as human-caused damages. The interview data also demonstrates that the benefits of outdoor recreation such as environmental stewardship, Indigenous involvement, inclusivity, and education are largely enhanced by the work of these groups. As such, the role of land or resource managers, organized outdoor groups, Indigenous Peoples and destination management are essential to maintaining a healthy outdoor recreation sector. Challenges to these groups are a direct challenge to the continued existence of the sector.

The main challenges discussed were:

8. Limited capacity for land managers namely Recreation Sites and Trails BC and BC Parks
9. Limited funding for land managers, outdoor recreation groups, Indigenous Peoples and destination management.
10. Complex issues and complex processes that are faced for outdoor recreation projects.
11. Over-reliance on volunteers as they play a vital role in maintaining and building outdoor recreation infrastructure and providing opportunities.
12. The need for more planning and visioning as a tactic to improve the outdoor recreation sector and address issues.
13. Limited research and data as a barrier to, economic development, fundraising efforts, understanding wildlife impacts, and understanding the carrying capacity of outdoor spaces.
14. What is Outdoor Recreation? The definition of the sector was questioned as it related to cultural practices, sustenance activities and industry definitions.

Concluding Message

The study illustrates the many positive aspects to arise from the outdoor recreation sector but at the same time, without adequate support, there can be several negative outcomes. There is often limited or no additional support when the load goes beyond the capacity of those caring for them which can be alarming because it could mean the loss of outdoor spaces and their associated values. The study also provided a lens on how the outdoor recreation sector operates and extends. The experiences of the five research communities and the cases in this study can serve as lessons learned for communities looking to develop their own sectors. They also illustrate the different direct and indirect roles of outdoor recreation stakeholders and the different functions of the sector. For people currently in the outdoor recreation sector unfamiliar with the activities of other stakeholders, it may provide insights on what others do and avenues for collaboration.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

5. There are far-reaching and widespread impacts that are both positive and negative. They require a careful balancing.
6. There are people who are passionate about the outdoors in every community who are already doing their best to support outdoor recreation and outdoors spaces, including associated values like ecosystems and wildlife.
7. A majority the positive impacts are provided or enhanced by the organized sector. The organized sector also plays an important role in mitigating negative impacts. The organized outdoor recreation sector includes the people and organizations who are doing on the ground work such as outdoor recreation organizations, land managers, First Nations and destination managers. By supporting them and addressing numerous barriers they face, we will also be supporting the better management of outdoor spaces.
8. People in every community are facing similar stories despite the details differing. With the re-emerging patterns, there is an opportunity to learn from each other so that the outdoor recreation sector can develop in a way that is positive for people, communities, and nature.

References

This is an interview-based project that mostly relies on primary data from interviews. The full study is available at www.orcbc.ca

Acknowledgements

This study would not have been possible without the generous support and time from many people. A special thank you goes to all the advisors and friends that provided

recommendations for the initial design of the project and to all the interviewees who shared their time and experiences with us.

We gratefully acknowledge the financial support from the Four Wheel Drive Association of BC, ECO Canada, and the Province of British Columbia through the Ministry of Environment and Climate Change Strategy.

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Environmentally responsible trail planning within Whistler's Recreational Trails Strategy

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As the Resort Municipality of Whistler's (RMOW) non-motorized recreation trail network and its use have grown over the past decades, it has become clear that in the absence of a formal trail strategy or master plan, there is no defined methodology to assess potential environmental impacts related to trail development and management. Cascade is currently engaged with the RMOW to develop a Recreational Trails Strategy that specifically addresses this by developing an Environmentally Responsible Trail Planning (ERTP) component that will better inform and guide recreation trail planning and management and reduce impacts on important wildlife and ecosystems.

Based on institutional knowledge of the Whistler valley, literature reviews and collaboration with local environmental experts and community stakeholder groups, environmentally valuable resources (EVR's) were identified with associated sensitivity rankings to establish environmentally sensitive areas (ESA's) across the study area. General mitigation strategies and best practice guidelines will be proposed for each ESA ranking level, and specific guidelines developed for each individual EVR. Spatial mapping data will then be compiled to create a tool that allows users to analyze trail development plans against mapped EVR's/ESA's and guide decision making as related to environmental values.

The project is in progress and currently completing stakeholder and public consultation. This tool will provide baseline data for consideration within a future Trails Master Plan which will also help inform a Limits of Acceptable Change study.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

Potential impacts to sensitive wildlife, ecosystems and the environment from outdoor recreation use requires a landscape level approach to identify these features for consideration in recreation planning. Through collaboration with community knowledge holders and available data, ESAs, best practice guidelines can be established. Land planners can ensure mitigation strategies are implemented to reduce impacts from trail development or maintenance. Access to this data must be readily available by land planners in an easy-to-use format to provide timely and effective analysis and management to trail development proponents.

The project is currently engaging trail interest and the public. This tool will provide baseline data for consideration within a future Trails Master Plan which will also help inform a Limits of Acceptable Change study.

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Movement ecology of southern mountain caribou in response to COVID-19 lockdowns

Presenter: Ryan Gill, University of British Columbia and Wildlife Science Centre
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Southern mountain caribou are a species at risk occupying mountainous regions of the southern and central interior of BC. During late-winter they become resident in high elevation, deep snow environments where they largely subsist on arboreal lichens. These habitats overlap temporally, and spatially with heli-skiing activities. We examined the movement ecology of collared individuals within the North Columbia, Central Selkirks and Hart Ranges herds in response to the COVID-19 mediated travel restrictions, which resulted in an almost complete cessation of heli-skiing in 2021. We compared home-range use, movement rates and habitat selection in the COVID-19 lockdown year to the two years prior to the travel restrictions (2019, 2020), and the year post travel restrictions, when heli-skiing resumed (2022). Our results indicate that caribou home-range size and daily movement rates increased significantly during the COVID-19 induced cessation of heli-skiing, as compared to years of normal heli-ski operations. In addition to ranging over much larger areas when heli-skiing was paused, we found evidence that caribou spent more time on lower angle slopes than during normal heli-ski years. These results suggest potential implications for caribou fitness and survival in areas where heli-skiing overlaps late-winter home range and can be used to inform the management of winter recreation within caribou late-winter habitat.

Biographical notes

Ryan Gill is a wildlife biologist and GIS analyst based in Revelstoke, BC. He has lived in the Columbia Mountains for the past 20 years where he has worked on a broad range of ecological topics – from the nesting ecology of birds to predator/prey interactions within southern mountain caribou habitat. Most recently he has been examining the movement ecology of southern mountain caribou.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

Ryan's response to the event's guiding question can be found in the write-up for [Panel 1](#).

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Addressing the risk of non-motorized watercraft as a vector for spread of aquatic invasive species in the mountain national parks

Presenter: Megan Goudie, Parks Canada

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Canada's mountain national parks sit atop the continental divide and contain the headwaters of several major watersheds including the North and South Saskatchewan, Athabasca, and Columbia rivers. Over the past decade, aquatic recreation in the mountain national parks has increased dramatically, with some popular waterbodies seeing hundreds of non-motorized watercraft per day. As more visitors are moving through the parks with aquatic recreational watercraft and gear there is an increased risk for the introduction and spread of aquatic invasive species (AIS). Adding to this risk is the relatively short distance between the boundaries of major watersheds. Parks Canada has the responsibility to protect the ecological integrity of these sensitive aquatic ecosystems. In 2020, five mountain national parks were awarded five years of funding to develop and implement a collaborative, multi-function approach to AIS prevention, early detection, and rapid response. Parks Canada is building on existing programs in neighbouring jurisdictions, with a focus on non-motorized watercraft. The risk of AIS spread via non-motorized watercraft is considered lower relative to motorized watercraft. However, there are compounding factors that increase this risk in the mountain parks including; the increased sensitivity of these protected aquatic ecosystems, the high and increasing volume of non-motorized watercraft usage, the potential downstream impacts of AIS introduction into headwaters, and the increased risk of movement of AIS across the continental divide. As part of the mountain parks AIS strategy, Banff, Yoho, Kootenay and Waterton Lakes national parks have implemented a permitting system for non-motorized watercraft. This permitting system is aimed to increase education for non-motorized watercraft users and decrease the risk of introduction and spread of AIS into and between parks. This system will provide data on the use of recreational use of waterbodies in the parks to inform adaptive, risk-based management decisions.

Megan Goudie Background

Megan is an aquatic biologist with Parks Canada in the Lake Louise, Yoho and Kootenay Field Unit and lives in Golden, British Columbia. She worked for several years in the environmental consulting industry in Alberta and British Columbia before joining Parks Canada in 2016. She's worked on various Parks Canada aquatic ecosystem projects in

this time, including restoration of native trout, water quality monitoring using the Canadian Aquatic Biomonitoring Network, aquatic invasive species monitoring and the co-development of an Aquatic Stewardship Plan for Yoho and Kootenay national parks. Over the past year she's been coordinating the efforts across five mountain national parks to develop and implement a collaborative and comprehensive aquatic invasive species prevention program.

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Public lands reimagined: Bettering the relationship between wildlife and recreation across Washington State

Presenter: Kurt Hellmann, Conservation Northwest, Seattle, WA

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Outdoor recreation opportunities and participation have exploded in recent decades and the effects of recreation on wildlife behavior, fitness, and species populations is a growing conservation concern. Washington contains a myriad of unique ecoregions, diverse wildlife communities, and remarkable opportunities for recreation, highlighting the importance of a holistic understanding of the connections between wildlife and recreation. Conservation Northwest and Home Range Wildlife Research produced a report titled *Recreation and Wildlife in Washington: Considerations for Conservation* to provide a species-specific synthesis of the scientific literature on recreation impacts for animals in Washington. The scope of this report is focused on the effects of year-round, land-based motorized and non-motorized recreational activities on certain terrestrial mammal and bird species. The report finds that recreation can impact wildlife in multiple ways depending on the interaction of numerous variables, including wildlife species, habitat type, and recreational activity. The report also collates Washington-specific knowledge gaps to aid conservation practitioners in identifying and protecting habitat that supports robust wildlife populations, while still accommodating outdoor recreation activities. The findings identify key areas where conservation practitioners in Washington can focus management and policy efforts. These include knowing the extent of wildlife-recreation overlap, measuring the thresholds at which varying levels of recreation intensity affect wildlife populations, protecting critical spatial and temporal refugia from recreation, and implementing management actions to mitigate recreation impacts.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

Think about and plan for recreation in a 'bigger' sense—across entire landscapes—but implement management strategies on a 'smaller' scale to accommodate local and specific wildlife and habitat needs. We also need to acknowledge other cross-cutting topics like climate change, habitat loss, human development that also affect wildlife conservation and recreation management.

ALL need to be at the table. First Nations, in particular, should have a seat at the table, especially at the government-to-government level, to collaboratively find workable recreation management strategies. Recreation stakeholders should deeply consider Tribal knowledge and perspective, even when First Nations are not able to be present during recreation planning discussions.

This is frankly really hard stuff. There's no silver bullet solution. There are many opinions and strong feelings. But at the end of the day, we all want the land and its resources to persist and thrive. Capitalize on that FACT.

Science is good. Communicable science is key. We need to better connect the "WHY" to recreation rules and regulations, so recreationists have a reason to follow them.

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Guidelines near wolverine dens in the montane regions of Western North America

Presenter: Doris Hausleitner, Seepanee Ecological Consulting and Selkirk College
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Wolverines den in snow associated with boulders or woody debris at or below treeline in alpine environments in montane western North America. They have naturally low reproductive rates, a fidelity to denning areas and a sensitivity to disturbance during the reproductive period. Our goal was to synthesize existing information on wolverine denning areas and provide guidance on managing human activity in denning habitat and thus minimize disturbance on wolverines, especially breeding females. Denning areas can be identified by a concentration of tracks over multiple weeks from 15 January to 15 May and all activities should be avoided during this window when denning areas are occupied. A buffer area of ≥ 4 km around known dens should be applied to reduce risks of disturbance. When activities can't be avoided completely, best practices are to limit groups and concentrate movement on existing trails or roads. Wolverines are sensitive to disturbance at a very low intensity of use and are at greatest risk of disturbance when movement is dispersed and unpredictable. Mechanized use is more disruptive to reproductive females, as it can occur at a greater intensity and across a larger spatial footprint.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

Here are some behaviours and actions that recreationists can voluntarily do that will make a big impact on wolverine reproduction:

If recreation users can report wolverine sighting and den sites to us in relation to recreation use, we will have a better idea of tolerance. Also, this way we can selectively close denning areas instead of the home range of a female wolverine (approx.

340km²). Some individuals may be very tolerant of disturbance. If we know this, we may be able to relax measures. If we do not have this information, we need to apply the most conservative approaches. We need to build a culture of respect around den sites- some areas need to be off limits to recreation or industry. Tracks and wolverine sightings can be reported: www.wolverinewatch.org

- If you see a concentration of wolverine tracks in a drainage near treeline mid-January to mid-May, go ride somewhere else, and please take a photo and report it.
 - If you see this concentration of tracks twice in a season- this is a good indication that there is a female denning here- go ski or ride elsewhere for the rest of the season.
- If you see a wolverine disappear or pop out of a hole in the snow mid-January to mid-May, likely a denning female-leave the area, report it and do not return for that season.
- If you see a linear movement of tracks- no problem, wolverine travel great distances, and this is likely a wolverine on one of its epic movements. Take a photo, report it.
- Areas which have had denning activity in previous years are likely to have repeated use and should be treated as denning areas.

Biographical notes

Doris Hausleitner is a consulting wildlife biologist operating from Nelson BC. She has studied wolverine in the British Columbia in partnership with her coauthors Andrea, Mirjam and Bill. Their work has translated to on the ground conservation, a moratorium on wolverine trapping in the region, and conservation measures applied to denning areas. She is constantly awed and humbled by this incredible animal.

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Caving, climbing and Chiroptera (bats!)

Presenter: Mandy Kellner, Bat Conservation Coordinator, BC Ministry of Water, Land, and Resource Stewardship

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Bats make up a large, under-recognized component of BC's mammalian biodiversity. Many of our 15 species use rock crevices and/or caves at some point in the year. However, both summer and winter roosts (hibernacula) are dispersed across landscapes and are largely undocumented.

Bats in BC face many threats, from disease to habitat loss to direct persecution, and outdoor recreation activities can inadvertently impact local bat populations. The two key pathways for impact are 1. Disturbance and displacement or even possible roost destruction (from route development/cleaning) during hibernation and the maternity period, the most critical times of the year, and/or 2. Human transport of fungal spores, primarily *Pseudogymnoascus destructans* (*Pd*). *Pd* is the fungus responsible for white-nose syndrome, a fatal bat disease spreading across North America.

To reduce impacts of recreation on bats in BC, there are provincial best management practices for caving and climbing, outreach efforts such as the BatCaver program run by Wildlife Conservation Society Canada, and established decontamination protocols to reduce the risk of spreading *Pd*.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

Lessons learned from our work to-date is that reduction of impacts relies on relationship-building and education to encourage voluntary stewardship.

There is a need to continue and expand outreach to raise awareness of bats within the recreation community, including how to reduce impacts, where to get more information, and how to report bat observations to contribute to conservation efforts. BC can learn from organizations such as the Colorado-based Climbers for Bat Conservation, which aims to make recreationists into bat ambassadors and allies.

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Invasive species, the tourists we don't want - What you can do to prevent the spread

Presenter: Megan MacPhee, East Kootenay Invasive Species Society

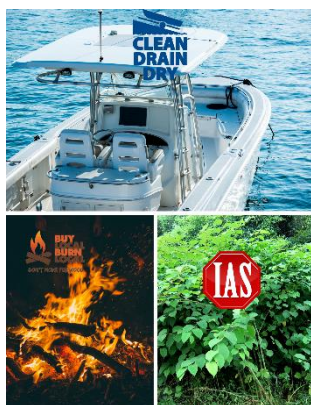
Jessica Booth, Columbia Shuswap Invasive Species Society

Kalena Olynyk, Central Kootenay Invasive Species Society

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[This is the same summary as appears under Jessica Booth's talk summary.]

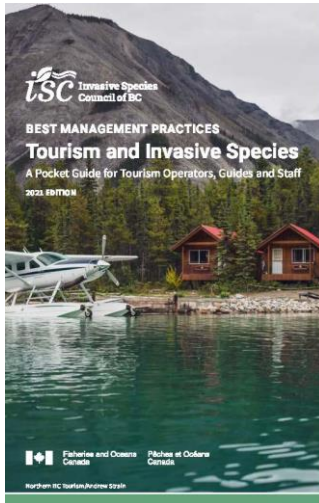
The presentation answered the question “*What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?*” by demonstrating the negative impact of invasive species and the meaningful and simple action recreationalists and tourism operators can take to reduce the impact of invasive species.



We explained the significant impact invasive species have within a recreational context, including reducing biodiversity, damaging infrastructure and changing the ecosystems and food webs that support the landscape and recreational opportunities in the Columbia Mountains. We explored how recreation can act as a major pathway for the introduction and spread of invasive species. Activities such as boating, off-road driving, mountain biking, hiking and remote weddings can result in the accidental introduction of invasive species, if gear and vehicles are not cleaned properly.

However, we explained simple and effective practices that can be followed by everyone, to prevent the introduction and spread of invasive species during recreation. We explored best practices such as arriving with clean gear, encouraging guests to arrive with clean gear, staying on designated trails, reporting invasives, and cleaning your gear following an activity.

Online training, webinars and best practices are available via the Invasive Species Council of BC, to help recreators and tourism operators reduce the spread of invasive species and the subsequent impacts to wildlife and ecosystems. The presentation aimed to empower tourism operators with the knowledge and tools needed to actively prevent the introduction and spread of invasive species. This proactive approach contributes to safeguarding BC's rich biodiversity and ecosystems, ensuring that invasive species remain unwelcome tourists in our beloved province.



Acknowledgement: CSRD- Columbia Shuswap Regional District, Tourism Revelstoke, Columbia Basin Trust, Invasive Species Council of BC, BC Parks, The Shuswap Trail Alliance, Fish and Wildlife Compensation Program, Habitat Conservation Foundation, Parks Canada, Shuswap Watershed Council and various other funders and partners across the Columbia Basin

Sources: Canadian Columbia Basin Regional Framework for an Aquatic Invasive Species Program, Invasive Species Council of BC, Tourism BMP Booklet

British Columbia's tourism industry is ranked as the most important sector to the economy - generating billions of dollars annually. Much of the industry's success relies on BC's amazing biodiversity and wide variety of healthy natural landscapes. Invasive species can impact ecosystems, landscapes and native wildlife—the very things that attract visitors and make BC such a wonderful place to live. This presentation was developed to support tourism operators in adopting simple best management practices to prevent the introduction and spread of invasive species and protect BC's rich biodiversity and ecosystems.

Background

Invasive Species groups throughout the province and the Columbia Mountains have been working collaboratively to mitigate the negative environmental, social, and economic impacts of invasive species. For 20+ years, Invasive Species groups have been providing invasive plant management, treatment and education to local communities. This presentation is in partnership with the Columbia Shuswap Invasive Species Society, East Kootenay Invasive Species Society and the Central Kootenay Invasive Species Society.

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Recreation in bear country: towards understanding spatio-temporal overlap of recreation and grizzly bear habitat

Presenter: Brynn McLellan, Yellowstone to Yukon Conservation Initiative

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Outdoor recreation is booming and is increasingly recognized to have wide-ranging negative impacts on wildlife and their habitats. The growth in intensity and spatial extent of recreation, coupled with changing environmental conditions, proposes concerns for grizzly bears (*Ursus arctos*), whose habitats are often frequented by people recreating. Managers often face the difficulty of balancing demands for recreational opportunities with grizzly bear conservation. In western Alberta and eastern British Columbia, a better understanding of the effects of outdoor recreation on grizzly bears has been highlighted as a priority for grizzly bear conservation. We combined 20 years of grizzly bear GPS locations from five research and monitoring projects to assess the cumulative effects of ecological and human factors on grizzly bear seasonal habitat selection in Alberta and British Columbia. Here we report preliminary results on grizzly bear relative probability of use for 49 males and 45 females for habitat quality (land cover, waterbodies), topography (elevation) and human disturbance and recreation access (protected areas, human light intensity, roads and trails) in protected and non-protected areas. In the next stages, we will incorporate grizzly bear habitat and recreation use models to identify areas of overlap between recreation and high-quality grizzly bear habitat. Collectively, these results will provide insight into grizzly bear habitat selection across large spatial

and temporal scales that can help inform recreation management and access planning to minimize negative effects of recreation on grizzly bears.

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Managers often face difficulties balancing demands for recreational opportunities with wildlife conservation and ecosystem preservation
- Understanding how human activities impact wildlife communities underpins recreation and conservation planning and is increasingly highlighted as a priority for managers, planners and researchers
- Understanding how recreation impacts populations across spatial extents meaningful for large landscape management, planning, and connectivity is critical for wide-ranging mammals, such as grizzly bears. This grizzly bear research project highlights the importance of collaboration and combining data from multiple monitoring projects to assess human recreation impacts to wildlife communities at meaningful scales.

Biographical Notes:

Brynn is a conservation science intern with Yellowstone to Yukon Conservation Initiative. She recently completed her Master of Science at Trent University where she studied environmental and human attributes linked to spatial patterns in black bear densities across Ontario. She has also worked on grizzly bear, bird, amphibian and human-coyote coexistence research and monitoring projects across British Columbia.

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Seasonal trail restrictions to reduce grizzly bear-human conflict in Banff, Yoho and Kootenay National Parks

Presenter: Steve Michel, Parks Canada Agency

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Co-Authors:

Kimo Rogala, Brianna Burley, Hal Morrison (retired), Derek Petersen (retired): Parks Canada Agency

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During a two-decade period in Banff (BNP) and Yoho National Parks (YNP) of Canada, numerous serious grizzly bear-human conflict encounters occurred on popular backcountry trails in four specific areas. These incidents included eight bear attacks that resulted in grievous injuries to park visitors. Six of them involved female grizzly bears with cubs during the summer berry feeding season. Park managers trialed a variety of seasonal trail restrictions over 18 years in BNP and YNP. Annual fixed restriction dates and specific seasonal trail restrictions have varied depending on the area but have included the following suite of management actions: 1) hikers must travel in tight groups of 4 or more; 2) hiking groups must carry bear spray; 3) mountain biking is not permitted; 4) dogs are not permitted; 5) backcountry campgrounds in some of the restricted areas are closed. Following implementation of seasonal trail restrictions, non-conflict grizzly bear sightings increased, aggressive conflict incidents declined, total visitor disturbance events declined, and contact encounters were eliminated. Monitoring indicated broad visitor acceptance of the seasonal trail restrictions, with higher rates of compliance during legally enforced trials versus periods where only voluntary restrictions were recommended. After public consultation and review, these management trials have been adjusted to longer-term seasonal trail restrictions and adaptive management lessons are being applied to other bear-human conflict areas within Canada's Mountain National Parks.

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Recreation use patterns and grizzly bear den site encounters in Alberta national and provincial parks

Presenter: Steve Michel, Parks Canada Agency

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Bohart: Alberta Forestry, Parks and Tourism

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The probability of encounters at grizzly bear denning sites is very low, but over the past decade six incidents of bears being disturbed by winter recreationists have occurred in Banff National Park (BNP) and Peter Lougheed Provincial Park (PLPP), AB, one resulting in human injuries. Although these incidents are isolated and rare, it may be evident of an emerging trend. Den site data from GPS-collared grizzly bears were collected in BNP, indicating potential overlap with both ski touring terrain and ice climbing access and egress routes. Increased encroachment of recreationists into quality denning terrain could impact human safety, increase physiological stress to bears, and reduce habitat security for bears at a critical time of year. Data analysis of additional den site locations in BNP and PLPP could be analyzed to determine den site habitat selection using resource selection function (RSF) models. Locations of popular ski touring and ice climbing areas need to be GIS-mapped and similar measurements of their characteristics collected. These data would allow for confirmation of the overlap of human use and denning sites, to help inform proactive management actions to ensure grizzly bear habitat security.

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Skiing in the trees: Collaborative Whitebark Pine recovery in ski tenures

Presenters: Randy Moody, Whitebark Pine Ecosystem Foundation of Canada
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Natalie Stafl, Ecologist Team Leader, Mount Revelstoke and Glacier National Parks
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Whitebark pine (*Pinus albicaulis* – SARA listed Endangered) and limber pine (*Pinus flexilis*— COSEWIC recommended Endangered) are key components of forested and subalpine ecosystems in the Rocky and Columbia Mountains. Both pines are experiencing population declines and are at risk due to the combined effects of non-native white pine blister rust (*Cronartium ribicola*), fire and fire exclusion, mountain pine beetle and climate change.

Both whitebark and limber pine forests are found in recreation areas, particularly overlapping with ski areas and ski area tenures. The Whitebark Pine Ecosystem Foundation of Canada (WPEFC) and Parks Canada have encouraged ski areas to participate in the WPEFC “Whitebark Friendly Ski Area Certification Program” to increase public education and awareness and minimize impact to endangered high elevation pines.

A number of ski tenure holders including resorts, backcountry lodges, cat, and heli-ski operations are actively participating in whitebark pine recovery efforts. Progress to date and next steps will be presented.

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Observe and report! Collecting valuable biodiversity data while recreating

Presenter: Lara Phillips, Invasive Species Council of BC

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Did you know that you can make meaningful contributions to conservation efforts while recreating? Learn about the importance of community science in conservation initiatives, including those in your own backyard. By observing and reporting the flora and fauna you see while adventuring and exploring, you can make a big difference in the world of invasive species management. Snapping a photo and uploading it to a user-friendly database helps land managers across the province identify priority invasive species issues and devise effective management strategies. We'll show you the simple steps to observe and report, whether you're out for a bike ride with your kids or hosting guests on an overnight hike. Conservation and recreation go hand in hand when you observe and report!

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

- Engaging community members improves availability of data to inform management decisions about wildlife, ecosystem conservation, and invasive species issues.
- Improving community interest and connection to wildlife and ecosystems leads to increased capacity for local environmental stewardship.
- Initiating *and* maintaining meaningful connections with local organizations, community members, First Nations and Indigenous groups, enables collaboration and can greatly increase effectiveness of stewardship objectives.
- Increasing public awareness about environmental issues and responsible practices is necessary to reduce impacts to wildlife and ecosystems – tailored messaging is key!
- Self-reflecting on our perspectives and intentions is incredibly important as we move forward, as is using the principles of Ethical Space and recognizing that diverse perspectives and knowledge systems are needed to strengthen our collective ability to care for the land.

Lara Phillips Background

Lara has a leadership role on several projects and programs at the Invasive Species Council of BC that include on the ground management, community outreach, partnership building, and program development, all aimed at preventing and reducing the introduction and spread of invasive species. Lara works with numerous partners and organizations, local government, and members of the tourism, recreation, and firewood sectors. Lara has a background in operational forestry and is deeply committed to stewarding ecosystems in British Columbia and raising awareness about invasive species and their detrimental impacts. You can find her adventuring around the North Okanagan, on the traditional territory on the Syilx people of the Okanagan Nation. The Invasive Species Council of BC is the largest organization working to address invasive species issues in Canada, with team members located across the province.

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On the positive side: Outdoor recreation as a source of commitment toward conservation – a compelling real-world example

Presenter: Yann Troutet, Association Eaux-Vives Mingaine
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The role of Outdoor Recreation as a springboard for conservation advocacy is a hotly debated subject. There is substantial literature describing this relationship, and while the rationale often holds true, a growing body of research questions whether mass outdoor tourism truly benefits conservation. Here, we present case where ‘participation in outdoor recreation’ has indisputably played an instrumental role in fostering deep-seated commitment toward conservation advocacy by First Nations, local citizens, and a regional Government in northeastern Québec. Long unknown to the western world, the large rivers of Québec’s Middle and Lower North-Shore have nonetheless served as major inroads for generations of Innu people. First explored for their recreational potential in the 1980’s, these rivers soon attracted the attention of an American outfitter pioneering commercial recreation on rivers deemed ‘unraftable’, in turn bringing international attention to their wilderness values.

One river stood out remarkably from these early explorations: the Magpie River. *Having paddled the Magpie*, Robert F. Kennedy Jr. described it as the ‘Mona Lisa’ of rivers. By the mid-2000’s, local paddlers and Québec-based outfitters had also begun frequenting the Magpie. This small collection of river enthusiasts formed a core group of deeply committed advocates acting to promote the protection of this river. In 2009, the provincial government announced the Plan Nord, a sweeping set of proposals for industrial developments in Québec vast North. A neighbouring river was slated for an 8-billion-dollar hydroelectric complex, and the Magpie was singled out as the possible site for further large dams. By then, however, the exceptional nature of the river had become well-known in recreational circles. The National Geographic had the Magpie on its Top-Ten List of the world’s best rivers for whitewater expeditions. Comparing river-running maps from around the country and the continent, local paddlers were able to quantify the river’s exceptional nature, convincing a Joint Federal-Provincial Panel to formally recommend the protection of the river.

Starting in 2010, the regional Innu Nation began organising novel rafting expeditions down the Magpie River, introducing its youth to the sport, notably as a means to connect with the land. Through this introduction, some members of these expeditions grew to, in

turn, themselves become dedicated advocates for the protection of the river. Partnering with local paddlers and with conservation organisations, the Innu Nation rallied the support of the regional government, forming Alliance Muteshekau-shipu. *Through the adoption of parallel resolutions by the Innu Council of Ekuanitshit and the Minganie Regional County Municipality*, the Alliance announced the granting of legal personhood to the Magpie River. The announcement, made in partnership with *International Observatory on the Rights of Nature*, was a first in Canada. The Alliance will now bring the case of this river to the attention of the *United Nations Environment Programme - World Conservation Monitoring Centre* (UNEP-WCMC), as a proposed *Indigenous and Community Conserved Area* (ICCA), again a precedent-setting initiative. Arguably, and interestingly, much of the motivations and justifications behind this ongoing and promising story can be traced back to the transformative powers of meaningful nature-based recreation.

Biographical notes

Following stints as a graduate student and national park warden, Yann Troutet pursued a career as an *Ecosystems Scientist* with Parks Canada. From 2005 to 2015, Yann lived, worked and recreated in northeastern Québec. There, he was introduced to some of the area's large whitewater rivers, a number of which are now being considered for future large-scale hydroelectric developments.

Over the course of over two decades, Yann has observed the key role played by outdoor recreation in fostering deep-seated commitment toward the conservation of rivers – providing one of very few effective counter-messages regarding the advance of the industrial complex in this wilderness.

Today, Yann teaches courses in Geomatics and Outdoor Recreation Management at Selkirk College in Castlegar, BC.

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Workshops

Workshop 1: Responsible recreation and ethical space

Facilitated by: Moe Nadeau, Moe Nadeau Consulting

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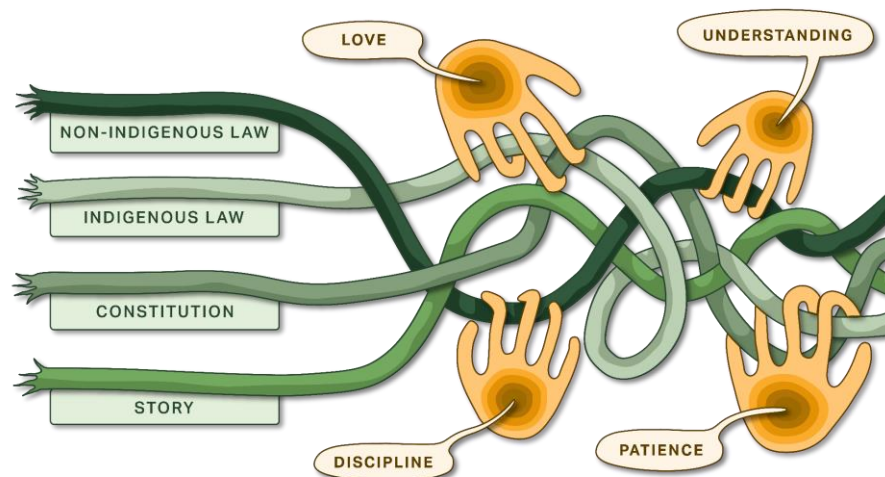
Workshop description

In 2019, British Columbia (BC) adopted Bill 41: *The Declaration on the Rights of Indigenous Peoples Act (DRIPA)*. *DRIPA* committed BC to develop a new planning framework, modernized land use planning, that involves ethical collaboration with Indigenous Peoples. However, planning policy and practice is missing clear frameworks to implement ethical decision-making. In particular, the Upper Columbia region of BC is a growing concern among many groups. The Upper Columbia is facing threats from climate change, the inundation of human uses including forestry, mining, and commercial and public recreation, and little understanding of how to respectfully engage Indigenous neighbours. Ethical Space, a conceptual approach used to balance power between Indigenous and non-Indigenous people, proves to be a promising framework to support this need. This research reveals key insights regarding current government interests in addressing the cumulative effects of backcountry recreation. Applying Ethical Space, this research provides recommendations for Upper Columbia governments to build relationships through mutually identified recreation goals.

Workshop Objectives

- Build an understanding of Ethical Space - What is it? How is it used?
- Share innovative research and recommendations on responsible recreation approaches in the Upper Columbia
- Generate new ideas and tangible steps to engage in Ethical Space-based approaches to responsible recreation in the Upper Columbia
- Foster knowledge sharing and relationship building between individuals with an interest in responsible recreation and reconciliation

Time	Activities	Notes
12:50pm	Room Open	
1:00pm - 1:15pm	Welcome, housekeeping	Welcome <ul style="list-style-type: none"> • Introductions • Workshop objectives • Grounding Exercise
1:15pm - 1:45pm	Introduction	Ethical Space Foundations <ul style="list-style-type: none"> • What is it? What does it mean? Research Findings and Recommendations <ul style="list-style-type: none"> • Upper Columbia government priorities • Recommendations for Ethical Space-based approaches
1:45pm - 2:05pm	Breakout Groups	Ideas Generator <ul style="list-style-type: none"> • What does responsible recreation look like with an Ethical Space-based approach? • What first steps could you take to prepare to enter Ethical Space with others interested in responsible recreation?
2:05pm - 2:20pm	Share Back	<ul style="list-style-type: none"> • Participants share ideas generated from their small teams
2:20pm - 2:30pm	Closing Circle	Moving Forward <ul style="list-style-type: none"> • Closing Comments
2:30pm	Adjourn	



Group Takeaways

A collection of brainstormed thoughts from workshop participants during the Ideas Generator.

- Ethical Space is a journey
- Do your homework and ask questions. Don't make assumptions
 - Who is in the room?
 - Who is not in the room?
 - Who should be in the room?
- Ask yourself
 - What are you seeking?
 - What can you give?
 - What can you commit to?
 - What can you give up?
 - Traditional systems? Power? Control? Timeframes and deadlines?
- Spend time to reflect on your own ethics
- "Paddle down the river in the same direction"
- Consider how you present information (visuals, reports, stories)
 - Is this inclusive to all? Are there other ways to share information?
- No one way will be good for all
- Transparency is fundamental to a strong, lasting foundation
- Take time to get on the land
- Set an intention and stay true to it
- Find connections and shared interests - start there first
- Use a facilitator (dedicated lead who has the trust of the group, is non-partial, and remains on the project long-term)
- Is recreation the right frame for this work? Recreation is a non-Indigenous, capitalist, settler-based industry. Should we instead come together to discuss respecting and connecting with the land?
- An Ethical Space and safe space might not be the same
- Acknowledge you will not always agree - this is not the objective



- Agree on a shared timeline for working together
- Speak your truth from a place of neutrality
- Practice active listening
- Recreation or RE-creation?

What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

My thoughts on the question "What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?" from an Ethical Space perspective: Ethical Space can be an important mechanism to collectively work towards reducing impacts on wildlife and ecosystems. In Ethical Space, decisions must be made collectively. Indigenous Peoples have long been stewards of the land, working in relationship with all inhabitants, living and non-living. If we approach this work from a holistic perspective, we have an opportunity to ground ourselves in a collective vision that reduces impacts to wildlife and ecosystems. Not only can this work support wildlife and ecosystems, but it supports reconciliation and shared understanding. We must consider whole systems healing when we think about our collective work.

Workshop lead biographical

Moe Nadeau (she/her) is a passionate and innovative community-based professional, with experience in natural resource and planning fields. Specializing in Ethical Space, Moe considers how collaborative processes support equitable governance and decision-making. She holds a bachelor's in Environmental Science and a master's in Resource Management. Moe's interests lie at the intersection of equity, climate, and outdoor recreation. Moe is a skilled facilitator and presenter, who loves bringing people together. Her passion for systems thinking and promoting Ethical Space dialogue, creates a positive and approachable space for understanding complex issues.

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Workshop 2: Loving our parks to death? Exploring proactive and systematic approaches to visitor management

Facilitated by Clara-Jane Blye, RC Strategies, University of Alberta

Co-Authors and support

Justin Ellis, RC Strategies

Michael Goodyear, Trans Canada Trail

Though visitor management issues have been on the rise throughout Canada's parks systems for the past decade, the recent rise in outdoor recreation has taken visitor management challenges to a new level. While these increases in visitation can be detrimental there are simultaneously important benefits to connecting more people with nature and fostering stewardship behaviours. There has never been a more important time for outdoor recreation organizers, guides, tourism operators and municipal, regional, provincial, and national park and protected area land managers to invest in visitor management meaningfully and strategically. This workshop will focus on how land managers and outdoor recreation providers can use the Visitor Use Management Framework (VUMF), a flexible process for managing visitor use across public lands, protected areas, and outdoor recreation destinations (IVUMC, 2016). This approach is collaborative and seeks to develop long-term strategies for providing public access to trails and natural spaces, protecting environmentally sensitive areas, and managing recreation impacts. The purpose of the framework is to provide cohesive guidance. It is also intended to provide a legally defensible, transparent decision-making process that ensures agency accountability, and provides sound rationales upon which to base management decisions and actions.

Through this interactive workshop, participants will be better prepared for proactive, effective VUM with an enhanced understanding of visitor impacts, strategies, and tools to anticipate, avoid, reduce, mitigate, and manage visitor related issues. We will introduce and apply the key steps in the VUMF so that participants have the opportunity to apply the VUMF and leave with systematic approaches and practical skills that can be immediately applied to facilitate high-quality visitor experiences and proactively manage visitor impacts.

Workshop lead biographical

Clara-Jane Blye is an Instructor of Recreation Management at Dalhousie University and a senior PhD candidate at the University of Alberta, in the Faculty of Kinesiology, Sport, and Recreation. She studies environmental psychology and focuses on Leave No Trace behaviours, nature relatedness, and connecting new and diverse populations to Canadian parks. Not only is she passionate about her work in the recreation and parks industry, she also believes strongly in giving back to her community. CJ is currently a board member of Leave No Trace Canada and is the vice president of the board with Free Play for Kids.

Michael Goodyear brings more than two decades of experience in the trail sector to his role as Director of Policy & Stakeholder Relations with Trans Canada Trail. He works with local Trail groups, destination marketing organizations and government stakeholders to explore opportunities to improve the experience of Trail users and make the Trans Canada Trail more attractive to national and international visitors.

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Workshop 3: Measuring and managing: Recreation planning in the Columbia and Rocky Mountains

Facilitated by:

Nadine Raynolds, Yellowstone to Yukon Conservation Initiative,

Annie Loosen, University of Northern BC and Yellowstone to Yukon Conservation Initiative

Jeff Zukiwsky, Zumundo Community and Environmental Planning

This interactive workshop will share approaches to measuring recreation use and intensity across the Columbia and Rocky Mountains and lessons learned from recreation planning in the Kootenai area of BC. Recent research and planning projects offer insight to support quality recreation experiences while reducing impacts on wildlife and people. We will explore knowledge and data gaps and how recreation and access planning processes can be improved for our own backyards. And, without a formal planning process underway in your region, what can you do to get a head start?

The workshop discussion (30min) was focused on the following questions:

What does the ideal public recreation planning process look like?

- How do we make decisions about public recreation use and access?
- What data and information do we need?
- Who should be involved and in what role?
- What other resources are needed?
- What lessons have we learned at this conference that can be applied?

Word cloud from the workshop notes

- Important to know the recreation demographic, including user groups, activity types, and relevant environmental changes (e.g., flooding, avalanche activity, etc.)
- A full scoping of recreation values including wildlife, water access, habitat, and existing infrastructure will help
- Good examples or best practices for recreation planning can inform our work
- We need realistic timelines with sufficient funding resources

Workshop leaders:

Nadine Raynolds has lead a variety of environmental and social well-being initiatives – from creative community projects to national education programs and advocacy campaigns. Nadine has been an organizer, educator, youth mentor, researcher, local government official, and is now a Manager with the Communities & Conservation team with the Yellowstone to Yukon Conservation Initiative (Y2Y). Based on the shores of Slocan Lake, Nadine works with local, provincial, and Indigenous organizations, businesses, and governments to achieve the vision of people and wildlife thriving together across this vast geography. Nadine is an avid mountain biker, split boarder, mushroom hunter, and dog walker.

Annie Loosen is an applied ecologist with over two decades of experience working in the US, Canada, Europe, and Russia. Annie is interested in the intersection of wildlife and human development, and how wildlife abundance, movements, and human-wildlife conflicts are influenced by altered landscapes. In addition, Annie has worked with provincial, federal, and local and international governments to standardize monitoring methods to reach common goals and objectives. Annie is a Registered Professional Biologist in BC and currently leads the collaborative research project with Yellowstone to Yukon Conservation Initiative and the University of Northern British Columbia on recreation ecology in western Alberta and eastern BC.

Jeff Zukiwsky is a Professional Planner based in Fernie, B.C., with 15 years' experience focused on strategic community and environmental planning. He has worked on a broad range of projects from small community plans to national strategies and assessments. Jeff holds Bachelor of Tourism Management degree and Master of Resource Environmental Management with a focus on tourism and recreation management. Over the past eight years, he has worked with government, First Nations and stakeholders to develop and implement recreation management strategies in the Koocanusa reservoir area in BC.

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Conversation Cafe

The final session of the conference was an opportunity to synthesize and discuss ‘nuggets’ of learning. In small groups with designated discussion leaders, participants discussed: ***What are practical ways we can better manage public and commercial recreation in BC?*** Below are consolidated and summarized notes, organized in themes. These notes include feedback received from online attendees as well.

Thank you to Nadine Reynolds with the Yellowstone to Yukon for organizing this final session.

Information and data:

- need better data to understand present situation
- use existing apps and/or cell phone data
- need to bring all data together, BC cumulative effects framework template to pull the right type of data together (finish what we started!)
- AllTrails is a great pilot project solution to mitigate the issue of not knowing where to look. Land managers can now edit trails (but not delete).
- Avenza maps - you get maps as a member of their group
- concept of *industrial recreation* - need a better understanding of the economic impact of recreation in comparison to other industries to be able to clearly communicate the positive impact of responsible recreation
- need to bring together data on use (heli- where, when; trails- how/use), values, and other stuff (mining, power, etc.)
- fill data gaps in recreation, in fish/wildlife inventory
- data sharing, consolidation and make it accessible
- need to understand the carrying capacity, land use, values. What are the thresholds?
- information needs: adding social, cultural and economic values of recreation
- more support from behavioral (human) specialists
- public and decision makers need to be able to access scientific papers easily to understand why decisions are being made and to recreate responsible and make responsible choices
- how we take info to community clubs?, simplified open access to recreation and wildlife data
- incentivize sharing recreation and wildlife data from users to bypass STRAVA and other programs
- make human use/wildlife use data more accessible for planning for both NGOs and Govt
- include commercial statistics/data

- centralized repository for multiple data sources
- reciprocal sharing of information
- Are there quad/OHV data sources? BC 4wd association website?
- external heli companies will not share flight tracking
- retaining information, because they would have to release info to all industries
- looking at better sources of information (STRAVA, TRAK), cost of cell phone data
- thresholds: understanding people side, even if we don't have all animal data
- commercial operators could be more sharing with researchers (ex. wolverine researchers)

Communication and education:

- need more education on recreation impacts; public education to help change attitudes and behaviours
- targeted education
- training for community groups
- use our collective power to advocate that different online apps (e.g., Trailforks, AllTrails) to promote best practices
- removal of unsanctioned trails from websites/apps to prevent users going to these places
- host experts at local recreational planning committees (where they exist) to make informed decisions
- Sustain the Stoke – marketing to residents and tourists a good example
- need more messaging about impacts and solutions. Need to communicate best practices
- challenge the sense of entitlement of the outdoor sector, opposite of entitlement is to share the sense of gratitude (spotlight it and have it amplified). Help users empathize/feel (ideas: storytelling, shock factor, educational).
- opportunity with the next generation, “Give a hoot, don't pollute” *opportunity to focus a lot of our energy there
- on site/on trail ambassadors/staff
- wildlife education: trail managers educate, biologists talking to the “people”
- “if not you, then who” → how to message effectively
- education at early stages (biodiversity, indigenous perspectives, responsible recreation) – need curriculum change
- leverage important society themes to get political support (ie. climate change, biodiversity, consider adding money values, identify direct effects/themes, broaden the net: food security, fishing, hunting)
- tell good news stories of responsible recreation
- many languages in Canada – better representation with graphics and QR codes
- improve communications between all NGO, GOs, media, funders

- get public to care: target specific user groups based on the impact by their activity. Balance doom and gloom with hope and joy.
- Camper's Code
- virtual connections are experiences (i.e., GIS, trail cams...)
- targeted and intentional education – good intentioned people doing bad things inadvertently
- strategic outreach for marketing, promotion (Destination BC!) (destination marketing offices separate)
- alignment of entire marketing machine and agencies to manage recreation
- need to focus less on visitor/recreation experience, more on impacts to the ecosystem
- people need to understand the scale/amount of recreation happening and the impact on productivity of the landscape

Recreation management:

- make decisions in this order: 1) land, 2) water, 3) wildlife, 4) people (people are last!)
- put the land first, doing recreation better could look like enhancing what we already have rather than always building new. Do we need to have every run, space, access into everywhere. What can we improve that already exists?
- management can be dynamic, use modern technology
- use permit systems
- could have an annual pass / license for all backcountry access activities (like fishing licenses). Each type of activity (snowmobiling, ski touring, motor biking, mountain biking) has its own unique annual pass and fee structure. Income from fees covers costs of keeping system going.
- support local groups/clubs
- co-management of areas
- enforcement is important in some areas
- divide usage by type (mechanized areas) or by days
- use technology for closure enforcements to ID who is going into closure areas
- consistent standards across all jurisdictions and activities (ski trails, hiking trails, mtb trails, motorize trails): facilities // amenities // accessibility of trail / construction standards; ecological values integrated included in building a trails / refreshing trails
- closures and maps! Not always the right solution, how do we effectively close things; modernizing /automating closures
- if you close things, provide an alternative // diversion
- need to employ best practices based on science
- develop guidelines to help self-regulate
- tax incentives → for good behavior, share data, good practices/code of conduct
- collaborative decision making

- all user groups to have a spot, otherwise they will find their own space (which may be sensitive)
- user pay system (e.g., snowmobiling): pay staff, communication to members, “beer” science
- monitoring and enforcements: new vs. old rules; up to date data (e.g. wolverines)
- adaptive management!
- use practical ways to incentive / reinforce good behaviors
- mandatory orientation: through passes, club memberships, trail forks app, campers code
- make recreation use predictable for wildlife
- slow down recreational users (speed)
- self-enforcement through stewardship groups and recreation partners
- need BMPs for trail design for wildlife impact
- precautionary approach is the responsible approach
- need to look holistically at all related impacts when working on outdoor recreation
- recognize complexity and cumulative effects → intersectionality
- limit uses at dawn/dusk
- try closures a few days a week/season, rotating closures
- direct user fees for maintenance for recreation sites/trails (trail and park passes)
- commercial operators are open to changing practice
- IPCAs as an opportunity for creative co-management
- reconnect with design professionals, BC Society of Landscape Architectures
- help trail societies plan their so trails are wildlife wise, like IMBA does for trail building and sustainability, make it a requirement for funding
- lottery systems as a tool for access management

Land use / recreation planning:

- need to update land use plans from 20 years ago
- may need areas that are sacrificed (people and/or wildlife)
- recreation sites need clean up
- more on-site stakeholder meetings; connect people, brings people to shared understanding
- intentional planning: meet user demand, refresh trails rather than build new trails (improvements or decommission); develop trail options for all levels
- need a land use plan, and in the meantime stop any new applications
- ensure all stakeholders are invited (assume you don’t know and move beyond the obvious ones)
- need an integrated land use plan, with community engagement, user group/stakeholders, time
- land is a stakeholder, and so are future generations
- meet on site to connect to place. Boots on the ground.

- transparency in planning processes, catching up from legacy of lack of large land use planning
- we need interim solutions, while we plan
- “every important decision should be made on a mountain”
- open and visible communication with all stakeholders in equal consideration in pre-planning
- standard protocols for recreation planning
- need comprehensive land use planning, articulating end goals/values/success/in collaboration with partners/stakeholders/citizens/community
- engage diverse users → not sure how, but try incentives?
- progress in fits and spurts: hard to keep everyone on the same page (timelines are SO long, delay/implication is that it’s not meaningful engagement or collaboration (front counter BC :/))
- huge demand for crown land use: need a moratorium on recreational land use tenures until we feel like we’re caught up

Government actions:

- make it easier to find appropriate government contacts (ex. for commercial and public users)
- interagency collaboration needed to know what areas are open or closed
- need a new policy framework → clear, collectively create
- moratorium/pause on new commercial tenures
- re-visit existing tenures
- need better clarity of process - whether we’re talking about recreation or conservation with consultation and establishing a shared expectation for processes
- need enforcement, boots on the ground (effective communication, LD no capacity!)
- restrict access to sensitive sites (maybe endangered species legislation, other legislation?)
- value ecological goods and services (recreation, values, include ILUP)
- regulation change → so government can easily restrict/permit access and use
- need a government agency responsible for managing public recreation (with money)
- improve transparency with recreationists for better investments
- have government data publicly accessible, communicated
- mandatory orientation: through parks passes, camping reservations, etc
- reform existing recreational industry and associated legislation
- could create a tourism-based website as a clearinghouse for trails data
- need more transparency – more public access to decisions/input, practical = web based, not practical = too lengthy, lack of leadership, lack of experience apathy, too difficult to navigate

- enforcement to ensure users abide by rules/guidelines
- need political will to make changes needed
- opportunity for public recreation recognition; could this be government?
- why are commercial and public recreation managed differently? - one branch has oversight on both, disentangle commercial/public recreation
- rec sites and trails work with biologists → no enforcement, mini parks, should they be organized like parks? Rebuild for modern day.
- Province's commitment to DRIPA: need to filter through what is "best for the land, the water, the things that are wild, and the people"; need to start thinking of ourselves (humans) as last
- need an evolution / reboot of RSTBC
- need a new recreation act
- Rec, sites and trails, public land outside of PAs → no mandate for conservation (need one!)
- we have regulations for consumptive recreation (ex. hunting) but need for "non-consumptive"
- invest in carbon sequestration (old growth, healthy ecosystems, watershed security)

Indigenous involvement/relationships:

- indigenous inclusion is important - excellent models shown at the conference (e.g., Forest Stewardship Plan, Shuswap Trails Alliance)
- involvement of indigenous communities with landscape monitoring and educating community
- relationship building priority; co-existing: rec users could use a protocol in how to introduce ourselves to FN; USA perspective: difficulty to make contact with FN because they usually only deal with Nations to Nation relationship
- practical document for relationship building with indigenous groups
- ethical/safe spaces to promote collaboration
- land ethics, cultural, environmental best practices, safety
- promote ecotourism, bridging adventure tourism with conservation and cultural understanding
- improve capacity for community and FN stewardship
- share information and resources, co-management
- Indigenous ceremony and prayer need to be part of responsible recreation
- continue indigenous involvement/integration (decisions)

Community based:

- need more opportunities for communities to learn this ecological knowledge
- collaborate where you least expect it!
- value volunteers – they are real assets and they get a kick out of it

- utilize federations for user/public communications new info (i.e., closures) and compliance
- social license plays a role in behavior change
- community needs to be bought in before any money is spent / wasted
- identify community superstars to enhance buy-in
- community watch dogs (ex. Ranchwatch, Wilderness watch, Rangewatch) - empower recreationists to self-report
- community, ground-based governance and oversight
- care for underrepresented people and people of color - their voices were not represented here
- use peer pressure to ensure users abide by rules/guidelines

Working together:

- create an umbrella organization or coalition to bring templates and best practices together
- we need more collaboration (not enough sharing of ideas and resources)
- we won't all agree but need to come forward in a place of respect for one another
- need diversity in the room, collaborative dialogue
- conference had more than only economic voices which is important (and uncommon)
- Working towards shared values. Share ownership/working together.
- How do we promote consistency in messaging?
- intentional space for collaborative – in person (or hybrid, sometimes)
- collaboration, more dialogue, academic, recreation managers
- need meetings of managers and scientists
- shifting from assumptions to more collaborative thinking
- more partnerships and pooling energy of resources
- work with Outdoor Recreation Council of BC
- work collectively vs. silos, working in isolation unnecessarily creates animosity

Need for resources:

- groups need funding for leading and maintaining, also for managing relationships
- need more capacity for relationships between rec groups/trails alliances and land managers
- lack of capacity from stakeholders, topic specific experts
- consistent funding and flexibility in funding (as priorities change)
- create multi-year opportunities
- funding for operations and maintenance planning. Sustainable. Trail passes.
- fund data collection, increase data collection, user data/impacts
- most orgs are underfunded and under resourced (BC parks, COs, others regionally) → Why?
- endowment would help → foundations

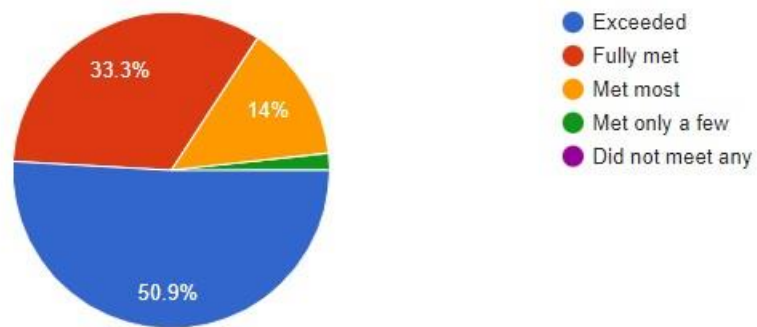
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Summary of forum evaluations

There were ~140 people in attendance at the conference over the two days and 40 people registered for online delivery (with an average of 32 in attendance at any given time for live delivery). We received 59 responses to the event evaluation. Below is a summary of evaluation responses.

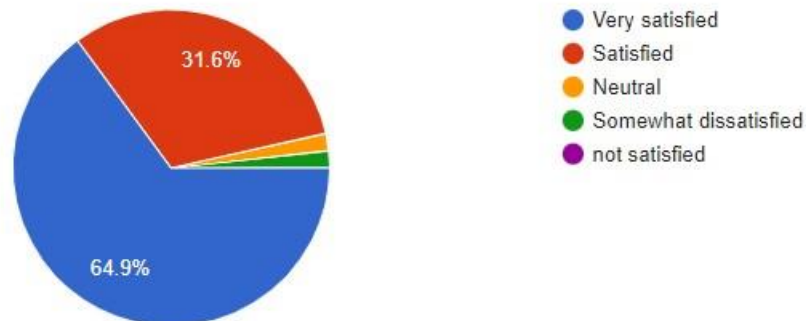
How well did the event meet your expectations?

57 responses



Overall, how satisfied are you with this event?

57 responses



If you attended the online version of this conference, how was your experience? This was CMI's first real attempt at a hybrid style event.

- It was very well done and I am impressed with the options to try to engage the online participants in the coffee break out rooms.

- I think it was as good as possible for a hybrid online event! They are always hard to be engaging and I know many people end up multi tasking with work responsibilities. I would have loved a participant list for the online bit and a better idea of who was in the room on the attendee side. This just makes participating feel a bit easier and helps foster connection.
- I was beyond impressed at how well it was done. I've been a part of other virtual conferences that were done poorly and this renewed my perspective on a well run conference, so thank you.
- I really appreciated the opportunity to be able to participate online when travel times/costs didn't allow for me to be there in person. I did miss the in-person conversations that would have happened at the in-person event, and wonder if there might be opportunity for improvement on a few things - 1) can posters (PDF or photos) be made available to online participants 2) is there a way to encourage better attendance for the conversation cafe portion?
- It was very well done and worth the cost. There were only a few glitches which were solved quickly and professionally.
- Thank you for offering the conference online. I was very happy to have this option. Without I would not have been able to attend. And the experience was as I expected. Some difficulties hearing the presenters at times, but this was always dealt with quickly. I would have loved to have access to the keynote speakers. That was really my only disappointment.
- Definitely a few moments with technical glitches (losing audio, losing video). There was a couple speakers that only had slides in person and you couldn't see maps they were referring to etc. [This is because those speakers changed their slides last minute.] It was also difficult to hear some of the speakers at some times.

What major take away learnings are you leaving this event with? Is there any action you will take as a result of this event?

- Complex issue but there are tools to help support a balanced use of the landscape.
- Lots of great people doing excellent work in this field.
- I really appreciated the presentations from Shuswap Trail Alliance and the Chase-harper Collaborative Community Management Project and the great examples of forward-thinking management strategies - I'd like to investigate if there are similar initiatives happening in my local area.
- There are some useful resources I will be sharing with Yukon's tourism industry that do not exist in the Yukon such as the Invasive Wise Tourism Checklist.
- How many land managers care
- Lots of great networking. Hoping to be able to teach VUMF concepts to college students.
- Learnt how important it is to proactively figure out what manager partners need from me.

- The importance and opportunities of DATA about recreation use and wildlife behaviour. The Caribou collaring and collaboration with snowmobilers
- More collaboration
- The importance of connection!
- Collaboration
- Opportunities to work together.
- Indigenous wisdom throughout the conference needs to be incorporated
- Too many to mention.
- We need to keep working together
- Allow more time for planning
- Make all big decisions on a mountain!
- So many. Will send my summary notes
- Bringing conservation together with rec management was so important. There is so much opportunity to collaborate.
- Will use the VUMF online tool
- We can't mitigate for all at all time
- This is just the beginning of the conversation. I will continue to consider my role in ethical spaces
- Conservation ecology needs more social science and psychology!
- Collaboration!
- A deeper appreciation of the details of conservation
- An understanding of available tools, resources, and understanding of approaches
- Continue to speak of the lack of funding and subsequent enforcement of violators in all sectors.
- Industry partner collaborations for synergies and outdoor education
- Its a complicated subject. Stakeholder, values of interest are complex and need time to sort out. Cumulative effects are an important piece - the whole conference is really about cumulative effects planning
- Intentionally love the land, seek opportunity to develop and foster ethical space
- There is more collaboration needed on our complex land involvement
- How timely and critical this topic is. I will likely make some changes to the way I personally recreate, and at work, there are additional resources and a number of different way thought processes I will consider when working on certain project.
- There are ALOT of folks concerned about the same things I'm concerned about. The biggest takeaway wasn't necessarily any particular research or specific illumination about the science, it's really more so the energy around responsible recreation that I'll take with me. We all care deeply about recreation and the protection of resources and we all do so through different and diverse lenses—that was absolutely rejuvenating for me to witness and participate in. This energy will translate to a renewed sense of confidence and positivity as I continue this work across Washington state. And of course, it definitely does not hurt to have a new treasure trove of ideas and new partners from this conference!

- Planning needs to happen, or needs to be inclusive, but difficult decisions need to be made
- Yes. For our org to be better at being stewards of the land! Rotating trail closures, no trail use during dawn to dusk. All decisions should be made at the top of a mountain!
- Consultation with stakeholders/team approach to finding equitable and practical solutions to manage impacts on wildlife and ecosystems. I will seek to enhance my working relationships with FLNRO/First Nations and other stakeholders in the area I am interested in working in.
- It was great to hear about projects and studies that I was not aware of. The Wolverine work was of special interest to me. I intent to reach out to the presenter to see if there is a desire to add their dens to the BCSF interactive map as areas for snowmobilers to avoid.
- Very interested in the ongoing research on wildlife, including carrying capacity and other such things that guide recreational uses.
- There is a push from all non-provincial governments for more defined and increased capacity for how recreation should be managed. Organizations are experiencing burnout and struggling to support new trails and really want to understand cumulative effects prior to establishing more recreation trails, etc. An action I will take as a result includes working with my local recreation groups to establish a larger organization that we can all collectively work to manage recreation.
- The same things that have been discussed for decades, sort of like the HBO series 'the wire' - the people change but the conversation/issues stay the same
- Make science available to land managers
- Some interesting topics for sure - I work in government, it would be nice if we had a framework for evaluating cumulative effects that could be integrated in our decision making but it seems like while we're thinking about these things, it's not quite at the stage where it's actionable.
- One major takeaway is that there are a lot of things to consider in decision making, and that some of us approach those with a very narrow mind. I have been speaking with my recreating friends and colleagues, spreading word on some of the cool things that we learned.
- Convincing recreationists and users of the landscape to listen to the science and follow the guidance that grows from it is key
- New connections / collaboration opportunities. New understanding of Indigenous perspectives and Ethical Space.
- There are many people working at various levels and stages on mitigating the effects of human recreation on ecosystems. It was clear that there is a strong need for ongoing communication and sharing of knowledge on recreation ecology. It requires a strong human dimensions component that involves destination and marketing groups. The process for small groups to adequately consider all aspects seems very challenging but the presentation by Jeremy Ayotte and Shuswap Trails seems very promising as a template to share. Organizations like ORCBC and CMI are good hubs for providing resources, future knowledge hubs and forums to exchange information. Tourism and recreation are huge

sources of revenue. There should be a way to identify revenue streams to further support research, identify and close data gaps, engage citizen science, and increase stewardship of the land by user groups and First Nations. Developing tools and communication strategies that are consistent but tailored to each group will be important moving forward. Still pondering the action piece.

- Responsible recreation is a lot about education and respecting the land and other resources.
- That there are many other people with the same concerns/passion and it opens the door for more people to work together.
- I was glad to spend more time exploring the recreation planning space and discovering the depth of issues that are present when taking on those types of projects/initiatives. I found the workshop and the conversation cafe to be valuable components as they allowed for open discourse and debate in a controlled environment. Time for networking was adequate and good to see booths displaying projects and initiatives to contribute to idea sharing and networking opportunities.
- I will watch for any possibilities to engage in another backcountry use conference of this type and petition legislators that some regulations need to be made to control use of backcountry areas like permits or licences for different categories of use.
- Need to align research, education and marketing. Current education initiatives could be improved by indigenous perspectives and stewardship principles. We are still lacking a good understanding of what the best data sources are... had hoped for some clarity from participants. However, more recreation data options out there to explore... will be looking into these various data sources.
- We need to plan! and we need to work together. So wonderful for a diverse group of people to discuss this very important topic and come up with some ideas for action. Also obvious that Government needs to do more to better manage recreation on the landscape and that many stakeholders are willing.
- More data is needed.
- I enjoyed learning about the interesting research currently being conducted around the impacts recreation has on wildlife. I also enjoyed learning about the research being gathered on trail use and how to track recreation. I also realized there is a gap in legislation when it comes to considering the environmental impacts of recreation, especially during the planning stages. A document like the TEST document (developed by the Shuswap Trail Alliance) could be a useful tool to be required under legislation during the planning phases of recreation projects. This (seemingly) simple step could help to create a more harmonious relationship between recreation, wildlife and sensitive environments.

Do you have any other general comments you'd like to make about this event?

- So well done it exceeded my expectations

- Thank you for offering a virtual option! Would've loved to have attended in person but we did not have the budget for it.
- A beautiful way to connect lots of different groups
- I was impressed with the breadth and depth of participation. As is so often the case, the speakers could use a bit of training in using a microphone effectively... The screen was. Bit small for the size of the room; hence maybe the tables could have been pulled closer up. The food and snacks were great! The whole organization was clearly well oiled and ran smoothly.
- Very dense program. But good job for leaving so much space for conversation.
- Break out rooms would have been good
- Delegate list was a major draw and big success. Good mix of govt and public.
- Most speakers went over time and they were not controlled or stopped
- Well done. Hope the conversations can continue.
- Thank you putting this together!!
- Would be great to see more non-white participants in the future! Particularly those who are newer to the outdoors.
- Thank you!!
- This is such an important conversation to keep having. I hope the institute would consider hosting this bi-annually at least
- Good all around conference. As we discussed during planning while there was some good motorized sector attendance would have been nice to see more.... But still great event!
- Make all important decision on the land. May be more break out groups on the 1st day.
- Great event!
- Spectacular conversations! I really appreciated the respect shown by all to difficult and perhaps controversial conversations!
- Great speakers!
- It was very full. A lot of (great info), a lot to digest. I enjoyed 2nd day more. All good though based on your theme.
- More Indigenous content would be good. More breakouts would be good.
- Great mix of presentations and appropriate length of time for each
- So grateful
- I found the two presentations on the groups working with the First Nations very inspiring and great examples for us all to work towards.
- The sheer amount of research and information and learning can be a bit overwhelming—if this event were to be repeated I'd suggest an additional workshop or conversation cafe opportunity. It's a lot to process and having another few moments to take stock and inventory our learning would have been welcomed from my end.
- The event was really great, the venue choice could have been improved - often difficult to hear or read slides from the back
- It was so great to have so many different recreational groups in 1 room. Our org has not been supportive of motorized use and this shifted my mindset.

- I have been to a lot of CMI's courses and conferences over the years and have never been disappointed with the learning and networking opportunities that take place! They always bring a top-notch product to those attending the events!
- I personally found that the event was a one-way direction of information. I would have loved to see an opportunity for the people in the room to contribute. We had almost all the leaders in the recreation space. While it was great to receive information, I believe that the room also had a lot to contribute and with such a rushed agenda there was little opportunity for the people in the room to ask questions.
- Appreciated the longer networking breaks.
- Such a great job, Hailey! What an incredible amount of work went into this. I really enjoyed the conversation cafe and workshop. I wonder if some of the evening events could be moved to an additional day? Day one was a bit long. Although so full of rich information I really really appreciated.
- Bias is a growing issue in our community and in these events, if you want the content to have impact/traction find ways of balancing political/ideological positioning against rationality.
- Hailey is awesome, so is Mia
- I think it's interesting that reps from RSTBC were invited to speak and considered as part of this conference but crown lands wasn't really talked about or considered in the conversations surrounding land management. Crown Lands is responsible for authorizing adventure tourism/commercial recreation activities under the Land Act. Might be a perspective to consider if you ever run another event.
- The food and atmosphere were great! I greatly appreciated the indigenous prayer for the caribou.
- Well organized; enjoyed the discussion panel format a lot
- This event was incredible! Loved the interactive aspects of day 2, kept it engaging.
- Good mix of presentations and facilitated workshops. The proceedings will be an important reference doc. I hope this conference is held again and more groups come that were absent. The timing can be tricky for some to attend so holding earlier may be easier (such as April after fiscal).
- The food was excellent!
- I think that the event was really well put together. The food was the best I have had at a conference and I really appreciated all of the healthy options.
- Very well put together - adequate space, good time management and flow between presentations. Speakers were appropriately chosen and engaging. Glad to see that food was provided - great caterer.
- Well organized, great presenters and so nice to have the good lunch be part of it.
- I attended workshop 3, would have preferred less time for presentation and more on workshopping ideas specific to data sources and approached to measure / assess recreational impacts.

- Very well organized. Great food. Good mix of presenters. Could have had more discussion time on first day. Really liked the Conversation Cafe as a final session.
- It was very professional and well done. Food was incredible!! I would have liked more time to formally collaborate at the breakout sessions on day two. Only 25 min was scheduled to discuss some big broad topics - didn't feel like enough to hear from a group of people I would have like to speak with more closely
- Very well ran and professional!

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