

Protecting Wildlife through Responsible Recreation

RESEARCH OVERVIEW, SUMMER 2024



Yellowstone to Yukon
Conservation Initiative



As people recreate in more places, more often, and go farther and faster than ever before, new approaches to outdoor recreation planning and management are needed. While the explosive growth in outdoor recreation can be positive for people and communities, it can unintentionally add pressure to wild places and species, as well as increasing tensions across user groups and affecting the quality of outdoor experiences.

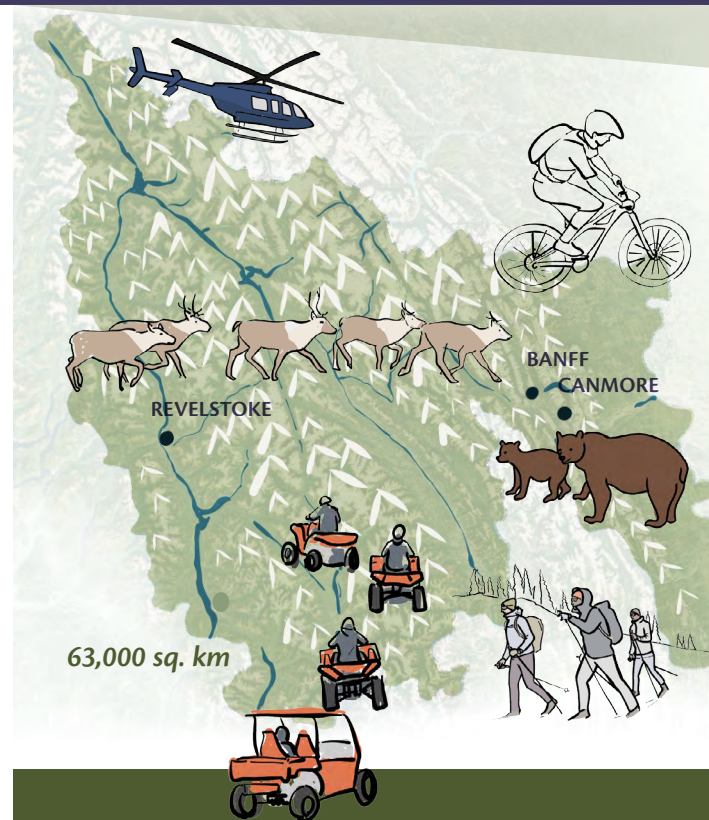
Recreation Ecology Research

Knowledge gaps expressed by land managers include a lack of recreation use and intensity data and an understanding of how recreation may be impacting sensitive wildlife species.

Y2Y worked with several partners to compile recreation and wildlife data to:

- Better understand the recreation footprint with respect to documented and undocumented trails and type of use, including motorized and non-motorized activities.
- Compare data from traditional and user-generated technologies for monitoring recreation and provide recommendations for managers.
- Produce seasonal maps of predicted motorized and non-motorized recreation use intensity.
- Produce seasonal maps of predicted wildlife habitat quality for grizzly bears, mountain caribou, and wolverines.
- Identify overlap of recreation and high-quality wildlife habitat for these three key species.

Recreation ecology research informs decisions to improve recreation experiences and habitat security for sensitive wildlife. This research highlights a growing need for creative approaches towards landscape-level recreation planning and management to limit impacts on wildlife in the Columbia and Rocky Mountains.



This research explored the intersection of outdoor recreation and wildlife in the Upper Columbia and Kananaskis-Ghost, important wildlife habitat within the territories of the Okanagan/Syilx, Sinixt, Ktunaxa, Secwépemc, İyāñhé Nakoda, Tsuut'ina, Niitsítapi, and district 4 of the Otipemisiwak Métis Government of Alberta.

Key Findings

Research indicates that outdoor recreation can have wide-ranging impacts on wildlife, both inside and outside protected areas. Recreation contributes to displacement of wildlife from key habitats and food sources, loss of important movement corridors for connectivity, and can lead to human-wildlife conflict.

Wildlife response to recreation varies by species, season, location, and recreation type and intensity. All three species are sensitive to human disturbance.

Essential data on outdoor recreation use and intensity is lacking and is often underestimated. This study found that 27% of the recreation trails assessed in the study area were undocumented and originated from non-government data sources.

Current monitoring does not match the pace at which recreation is expanding and creative efforts to centralize, share and standardize recreation data and monitoring approaches are required.

Accurate measurement of recreation use and intensity depends on a mix of traditional and user-generated tools.

Land managers must get pro-active about managing recreation on the landscape as outdoor recreation use and intensity increases in many areas. Actions need to be integrated across protected and non-protected areas.

To improve how managers measure, monitor and manage outdoor recreation in landscapes that are shared with at-risk and sensitive wildlife, our work provides relatively current trails data across an expansive area, flexible and adaptable approaches for modeling recreation intensity, and guidance on which monitoring tools to use for seasons and recreation types.

This research reveals several areas of concern and opportunities for better recreation management within the Columbia and Rocky Mountain study area.

Photo credit: C. Adams, US National Park Service.



Our Mission

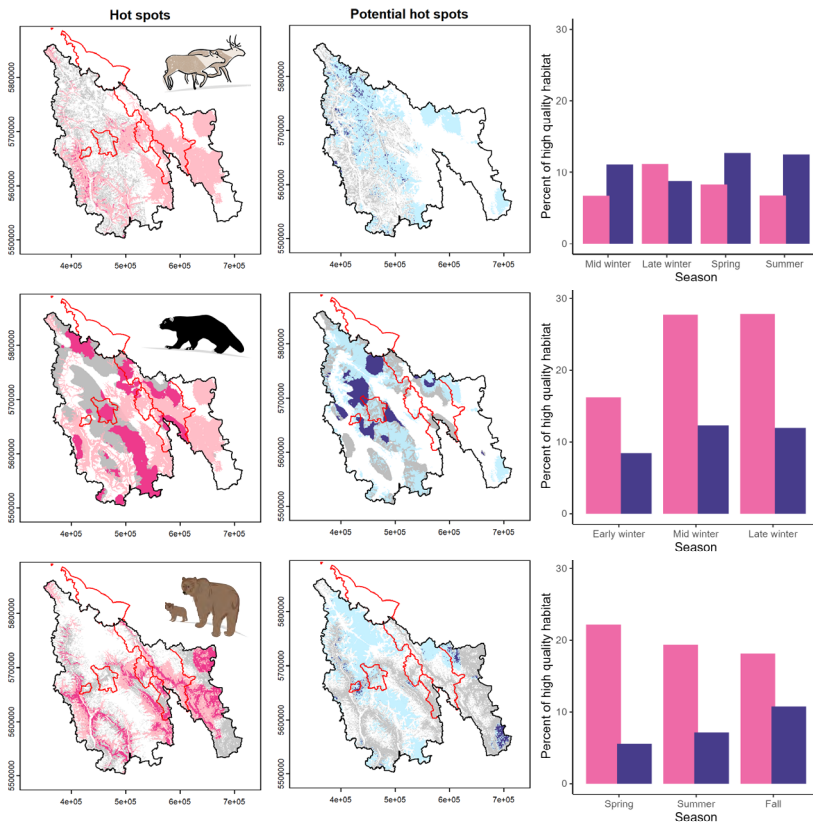
Y2Y's mission is to connect and protect habitat from Yellowstone to the Yukon so people and nature can thrive. We take a partnership-based approach, collaborating with agencies and organizations along 3,400 kilometers up the spine of the Rocky Mountains. Our work addresses the needs of wildlife and people, giving animals room to roam and promoting harmony between communities and these wild landscapes we call home.

Our Partners

Yellowstone to Yukon Conservation Initiative (Y2Y) and University of Northern British Columbia (UNBC) developed a collaborative recreation ecology research project with government partners, including Alberta, British Columbia, and Parks Canada, as well as Conservation Science Partners, Nature Conservancy of Canada, Braided Knowledge Environmental Consulting, and Biological Sciences – University of Alberta.



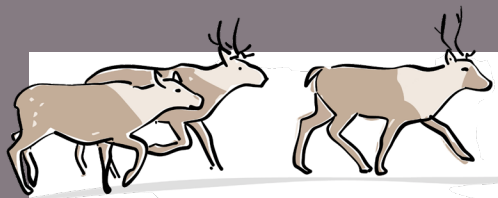
Recreation Wildlife Overlap



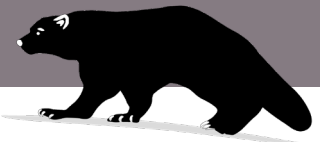
Spatial overlap of high-quality wildlife habitat (grey) with high and low intensities of non-motorized recreation.

Hot spots and potential hot spots are where high-quality habitat overlaps with high (dark pink) and low intensity (dark blue) recreation.

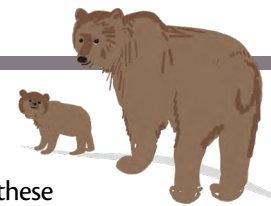
The study area boundary line is black and national park boundaries are red.



Mountain caribou have specific habitat requirements. The species had the lowest proportion of high-quality habitat relative to available habitat, making them at-risk to disturbance. Areas with overlap between caribou and recreation were dispersed, and caribou had the highest overlap with areas of low intensity recreation across seasons. Climate change-induced shortening of the recreation season and shrinking of the areas available for skiing and snowmobiling risks further straining winter caribou habitat, **as well as wolverine denning areas.**



Wolverine are sensitive to even low levels of human disturbance. Wolverine overlap with high-intensity recreation in late winter occur at high-elevation areas, particularly in the Selkirk Mountains and in Banff National Park. Wolverines are particularly sensitive during their winter denning season.



Low-elevation valley bottoms are important habitat for grizzly bears in the spring, but also coincide with easy to access recreation areas. In these areas there are overlap of grizzly bear high-quality habitat and high-intensity non-motorized recreation in the spring. Management can focus on these areas to improve human-bear coexistence.

Check out the interactive maps of relative recreation intensity and wildlife habitat quality across seasons: y2y.net/recreationmapping.

Contact Y2Y for data in your area of interest.

Recommendations

Outdoor recreation is a strong socio-economic driver in the Columbia and Rocky Mountains, so it is important to maintain quality nature-based experiences for residents and visitors. It is also critical to maintain large landscape connectivity and habitat security for species like grizzly bears, mountain caribou, and wolverine.

Land-use planning, and appropriate recreation access and management, are essential components of mitigating the cumulative impacts humans have — particularly as we prepare for increases in population and visitation over time. Recommendations from [this research](#) include:

Use a mix of traditional tools (e.g. trail cameras, trail counters) and user-generated tools (e.g. Strava Metro) to better measure recreation.

Incorporate recreation data from a variety of traditional and user-generated tools into wildlife habitat models to improve evidence-based planning and management. Different sources of data account for biases in data and fill data gaps, especially in areas with little recreation use but where sensitive species live.

Conduct ongoing research on species-specific responses to recreation activities and recreation thresholds to provide seasonal and activity specific guidelines, especially for sensitive species like wolverine.

Initiate and support the collaboration of wildlife researchers and outdoor recreation leaders to centralize, standardize and share data, and jointly explore monitoring and management solutions.

Harness the power of digital outdoor and fitness apps (e.g. All Trails, Trail Forks) to better understand recreation use and reach people with messages about responsible recreation.

Establish evidence-based management practices and policy to protect sensitive wildlife from potential recreation impacts.

Incorporate findings of this recreation ecology research into planning and decision making for new recreation proposals and current agreements.





Get the Data for Your Region

Our research contributes solutions to the growing challenge of measuring, monitoring, and managing outdoor recreation on landscapes where sensitive wildlife also live.

We offer data, maps, and tools to inform planning and support decision making for land and recreation managers. By tackling the issue now, governments and communities can stay ahead of challenges.

Contact us for detailed information and to discuss solutions.

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Visit y2y.net/RecEcology

This work has been generously supported by: Animal Welfare Institute, Audain Foundation, Calgary Foundation, Donner Canadian Foundation, Eco Canada, Habitat Conservation Trust Foundation, MITACS, RBC Foundation, The Volgenau Foundation, and Wilburforce Foundation. Thank you to all the partners and people who have helped make this happen. Infographics by Loosen Studio. Graphic design by Emily Morton. Photos sourced from Canva, iStock and Shutterstock, except where credited otherwise.