

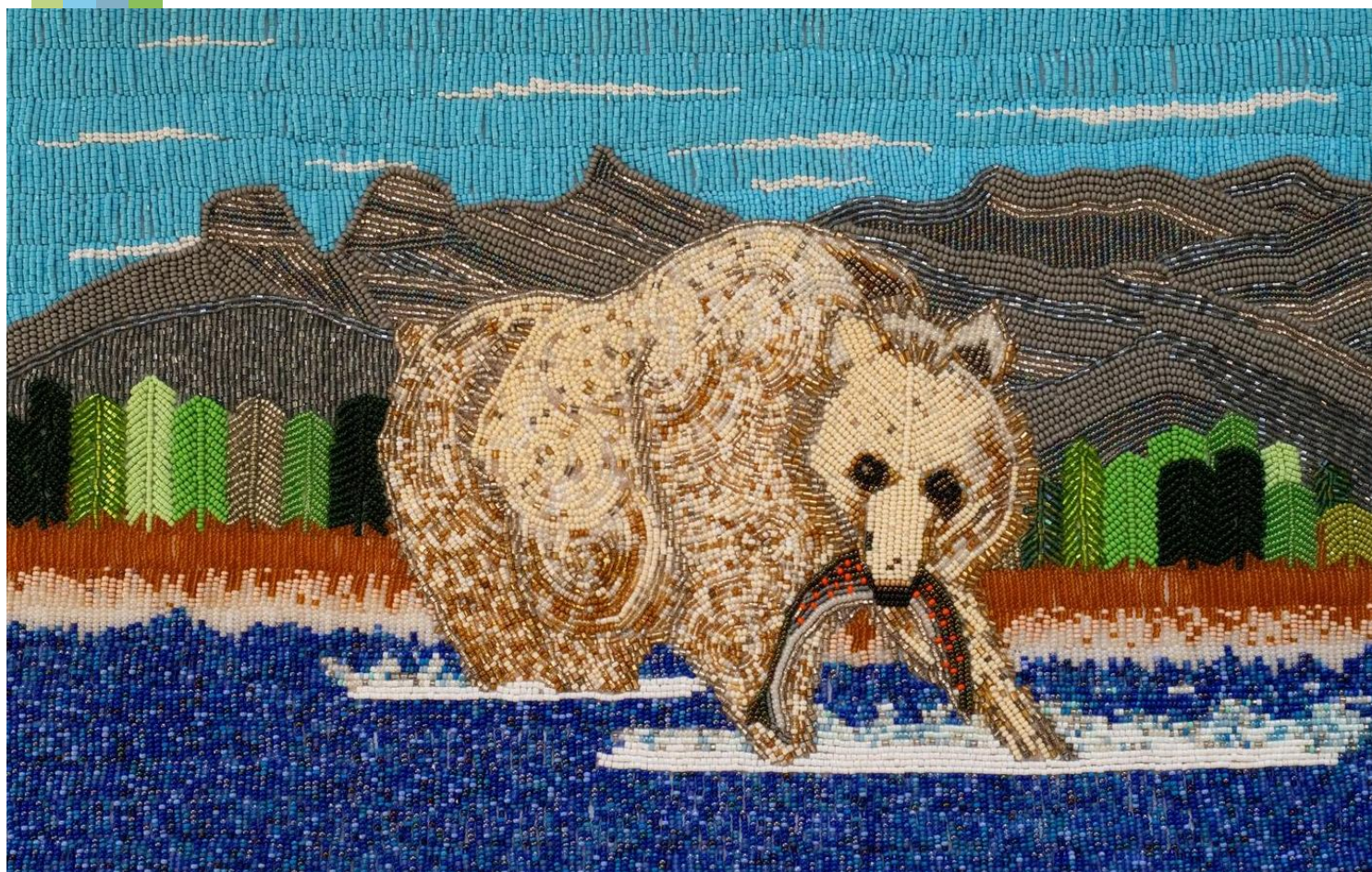


Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project

Cultural Assessment Report

Stoney Nakoda Nations

Prepared by: MNP LLP



June 2026



Acknowledgement

In the spirit of truth and reconciliation, the Study Team recognizes that primary data collection for this *Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project Cultural Assessment Report* took place in Îyăhé Nakoda Mâkoche, the traditional territory of the Stoney Nakoda Nations.

The Study Team expresses gratitude to the Stoney Nakoda Nations Elders and Knowledge Holders who participated in interviews and site visits, and shared their knowledge and stories to help the Study Team understand the Tînda Mîmân area and its relationship with people, animals, and plants.

The beadwork for this Report was created by Teresa Snow. We acknowledge with gratitude that permission was granted to include this artwork in the Report.

Stoney Nakoda Nations gratefully acknowledges Parks Canada's financial contribution through the Parks Canada National Program for Ecological Corridors, which helped support this Project alongside the contributions of other Project Partners.

OCAP®

In alignment with the principles of OCAP® (Ownership, Control, Access, and Possession), this Report remains the sole property of Stoney Nakoda Nations and is meant for use for the *Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project*. The First Nations principles of OCAP® establish how First Nations data should be collected, protected, used, or shared. They are the de facto standard for how to conduct research with First Nations. OCAP® principles reflect First Nation commitments to use and share information in a way that brings benefit to the community while minimizing harm. It is also an expression of First Nation jurisdiction over information about the First Nation and represents values that are intertwined and reflective of First Nations' worldview of jurisdiction and collective rights.

Through First Nation stewardship of First Nation data, First Nations can ensure that service contracts, data sharing agreements, licenses to use, and other forms of legal agreement whereby First Nations information is shared with other institutions, contain all the necessary provisions to protect First Nations data.

Limitations

As noted, the information gathered for this Report is exclusively owned by Stoney Nakoda Nations and is intended solely for application for the *Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project*. This Report has been prepared to present the results of the associated Study, and provide guidance for a future Cooperative Management Plan and supporting Stoney Nakoda Nations extended wildlife monitoring program for the Bow Valley Corridor. Any citation, use, or reproduction of the material contained herein for purposes beyond those outlined in this Report, and beyond the Project Study Area, is permitted only with the express written consent of the Stoney Nakoda Nations.



For further information, please contact:

Stoney Tribal Administration

PO Box 40
Mîni Thnî AB T0L 1N0
Canada



Photo 1: Eyagay Nakoda, credit: William Snow



Tribute

Nakoda, a female white grizzly bear, lived within the Rocky Mountains between Lake Louise and Yoho National Park. Nakoda was known for her rare beautiful blonde fur, her love of dandelions, and her agility to climb fences. On June 8, 2024, Nakoda was startled by a train and ran onto the Trans-Canada Highway where she was hit by a car. This occurred less than two days after Nakoda's two cubs were fatally struck by a vehicle on the same highway. Nakoda sadly succumbed to her injuries and passed away.



Photo 2: Nakoda, Bear 178, Source: Jason Leo Bantle (Bantle n.d.)

This Report is respectfully dedicated to Nakoda, Bear 178. This Report honours Nakoda by aiming to achieve safer wildlife movement through natural corridors. Goodstoney artist Teresa Snow (Anûka Thâ Wathte Wîyâ, "Pretty Eagle Woman") created the cover beadwork, which depicts Nakoda, the White Grizzly Bear, as we choose to remember her, living and thriving in the Bow Valley and harvesting trout from the Bow River.



Study Team

Stoney Nakoda Nations Consultation Office

Dr. William Snow (Sîktogêja Ohmîyâ, "Searching Wolf")
Cathy Arcega
Barry Wesley
Chris Goodstoney
Conal Labelle
Gavin Ear
Larry Daniels Jr.
Daron Holloway

Project Management Team

Bill Snow
Cathy Arcega
Shauna McGarvey
Stephanie Steckler
Megan Ibrahim
Alyssa Zorniak

Interviewers

Hannah McIntyre
Megan Ibrahim
Mabel Bin
Alyssa Zorniak
Jarred Griffith-Cochrane
Max Stretch
Sadie Arcega

GIS Mapping

Mabel Bin
Max Stretch

Report Authors

Megan Ibrahim
Alyssa Zorniak
Sadie Arcega

Senior Review

Dr. William Snow (Sîktogêja Ohmîyâ, "Searching Wolf")
Shauna McGarvey
Stephanie Steckler

Research Contributors and Project Partners Additional Project Partners

University of Victoria

Sam Bohlken-Hern
Claire Wright
Eric Higgs

Yellowstone to Yukon Conservation Initiative (Y2Y)

Adam Linnard
Nicole Olivier

Alberta Forestry and Parks

John Paczkowski

Parks Canada

Jesse Whittington
Tony Clevenger

Town of Canmore

Alberta Biodiversity Monitoring Institute (ABMI)

Athabasca University (AU)

Town of Canmore

MD of Bighorn

Îyethka to English Translations

Îyethka	English
Abe Tho Tan	Bull trout
Chaba	Beaver
Châdeden	Strawberries
Châpa	Chokecherries
Châptâ	Pine
Chârâziya	Willow
Chasî	Chewing gum derived from pine
Chuwaba rhtîja	Spruce
Chuwabatâga	Douglas Fir
Chuwapchîpchîyan Kude Bi	Canmore
Ebot An Yeh Yehn	Whitefish
Gahna Ûbin	Eden Valley
Ganutha Garhe	Wind Valley
Haṭṭa tâga	Huckleberries
Haṭṭa toton	Blueberries
Hora thaba	Brook trout
Horhtîja Temne	Spray Lakes
Horrem tisha	Cutthroat trout
Hubaṭṭhokâ	Saskatoon berries
Hûchathan	Gooseberry
Îhmu	Lynx/bobcat
Ihmûtâga	Cougar
Îyâhé Nakoda	"Mountain people", referring to the Stoney Nakoda people
Îyâhé Nakoda Mâkoche	Stoney Traditional Territory
Îyâhé Tîndâ	Ya Ha Tinda
Îyârhe Yamnî Ochiâ Îgach	Three Sisters
Îyethka	Stoney language
Îyethkabi	Stoney Nakoda people/members
Kâheja	Raspberry
Kay Nas Kay	Kananaskis
Kiska	Bighorn Sheep
Mâkuthkiya	Wild carrot
Mâstîy	Rabbit
Mastiyâ Mnen	Rabbit Lake
Mîni	Water
Mîni Rhpa	Banff
Mîni Rhpa Mâkoche	Banff National Park
Mîni Rhuwîn	Sulphur Mountain



Îyethka	English
Mîni Wakâ	Lake Minnewanka
Mnâzan	Wolverine
Monkooskua Wapta	Carrot Creek
Ohm tisha	Rainbow trout
Otiti Tî Mâkoche	Kootenay Plains
Pacheden	Elk
Pezirhoda	Mountain sage
Pezuda	Medicine
Poptâka	Cranberries
Rhâde	Cedar
Sîdawarhpe	Labrador tea
Sîktogeja	Wolves
Sijamnân	Wild onion
Sûwapta	Jasper
Suwatâga	Wild horse
Ta	Moose
Tâba	Birch
Tae Guh They Hunch	Dead Man's Flats
Tatâga	Bison
Thîde thaban	Mule deer
Thijupthân	White-tailed Deer
Wagiya	Eagle
Wapta Mnûtha	Big Horn
Warhtîja	Aspen
Watâga	Grizzly Bear
Wathabe	Black Bear
Wathtech	Beautiful
Wikchemnâ Valley	Valley of the Ten Peaks

Abbreviations and Acronyms

Abbreviation / Acronym	Definition
ABMI	Alberta Biodiversity Monitoring Institute
AU	Athabasca University
Contributors	Stoney Elders and Knowledge Holders who participated in information collection for this and former projects
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPR	Canadian Pacific Railway
Crossings	Wildlife crossings, wildlife overpasses and underpasses



Abbreviation / Acronym	Definition
Cultural Assessment	<i>This Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project Cultural Assessment Report</i>
IR	Indian Reserve
IUCN	International Union for Conservation of Nature
Management Plan	Cooperative Management Plan
MNP	MNP LLP
Monitoring Program	Îyethkabi Traditional Monitoring Program
NRCB	Natural Resources Conservation Board
OCAP®	Ownership, Control, Access, and Possession
PAT	Project Advisory Team
Program	The National Program for Ecological Corridors
Project	<i>The Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project</i>
PSA	The Project Study Area encompassing Tînda Mîmân/the Bow Valley Corridor
Report	<i>This Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project Cultural Assessment Report</i>
Stoney	Stoney Nakoda Nations
Study	<i>The Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project Study</i>
TCH	Trans-Canada Highway
TEK	Traditional Ecological Knowledge
The Park	Mînî Rhpa Mâkoche, Banff National Park
TLRU	Traditional Land and Resource Use
UNESCO	United Nations Educational, Scientific and Cultural Organization
VC	Valued Component(s)
Wildlife Crossings	Wildlife overpasses and underpasses
WTI	Western Transportation Institute – Montana State University
Y2Y	Yellowstone to Yukon Conservation Initiative



Contents

Acknowledgement.....	i
OCAP®	i
Limitations.....	i
Tribute.....	iii
Study Team.....	iv
Research Contributors and Project Partners	iv
Additional Project Partners.....	iv
Îyethka to English Translations.....	1
Abbreviations and Acronyms.....	2
Contents	4
List of Figures.....	7
1 Summary.....	8
2 Introduction and Overview	11
2.1 Project Study Area	12
2.1.1 Ecological Corridors	12
2.1.2 Project Study Area	13
2.2 Data Collection	16
2.2.1 Participant Selection.....	16
2.2.2 Knowledge Gathering	16
2.3 Project Partners	19
2.3.1 Overview of Project Partners and Contributions	19
2.3.2 Project Advisory Team	21
2.4 Valued Components.....	22
2.4.1 Indicators and Measurable Parameters	23
2.5 Stoney Nakoda Nations	26
2.5.1 People of the Mountains.....	26
3 Significance of Stoney Valued Components.....	33
3.1 Connections to Culture, Place, and the Land.....	33
3.1.1 Importance of Resources to Cultural and Spiritual Practices.....	33
3.1.2 Place-based Practices.....	45
3.1.3 Significant Cultural Places.....	54



3.2	Wildlife.....	62
3.3	Vegetation	63
3.4	Stewardship	64
3.4.1	Decision Making and Authority.....	65
3.4.2	Controlled Burning and Clearing.....	65
4	Anthropogenic Changes in the PSA.....	66
4.1	Stoney and Early Explorers.....	68
4.2	Stoney and Missionaries.....	69
4.3	Treaty 7 and the <i>Indian Act</i>	70
4.4	The Canadian Pacific Railway & Banff National Park.....	73
4.4.1	The Canadian Pacific Railway.....	73
4.4.2	Banff National Park	74
4.5	Park Restrictions.....	75
4.6	Highway 1 and Highway 1A.....	76
4.7	Town Sites.....	77
4.8	Industrial Development.....	79
4.8.1	Exshaw Cement Plant.....	79
4.8.2	Forestry	81
4.8.3	Hydroelectricity.....	82
4.9	Tourism.....	82
5	Impacts to Stoney Valued Components.....	84
5.1	Connections to Culture, Place, and the Land.....	84
5.1.1	Impacts to Cultural and Spiritual Practices	85
5.1.2	Impacts to Îyethkabi Connections to Place.....	95
5.2	Wildlife.....	103
5.2.1	Wildlife Sightings.....	104
5.2.2	Migration and Movement.....	107
5.2.3	Safety.....	110
5.3	Vegetation	121
5.3.1	Ecological Functions.....	121
5.3.2	Health and Shelter	122
5.3.3	Vegetation Changes – The Mountain Legacy Project.....	123
5.4	Stewardship	127



5.4.2	Existing Projects and Work	130
5.4.3	Opportunities for Îyethkabi Stewardship.....	131
6	Conclusion	133
6.1	Study Results	133
6.2	Stoney Management Plan Recommendations	134
6.3	Stoney Monitoring Plan Recommendations.....	135
6.4	Additional Recommendations	137
	References.....	139
	GIS References	147
	Appendix A – Project Partner Contribution Summaries	148
	Appendix B – Parks Canada-Provided Wildlife Identification and Fatality Locations.....	151
	Appendix C – <i>Using novel approaches to map land cover change in the Bow Valley for the Îyăĥé Nakoda ecological corridors project</i>	174
	Appendix D – Study Methodology	198
	Cultural Assessment Approach.....	198
	Mapping.....	198
	Limitations	200

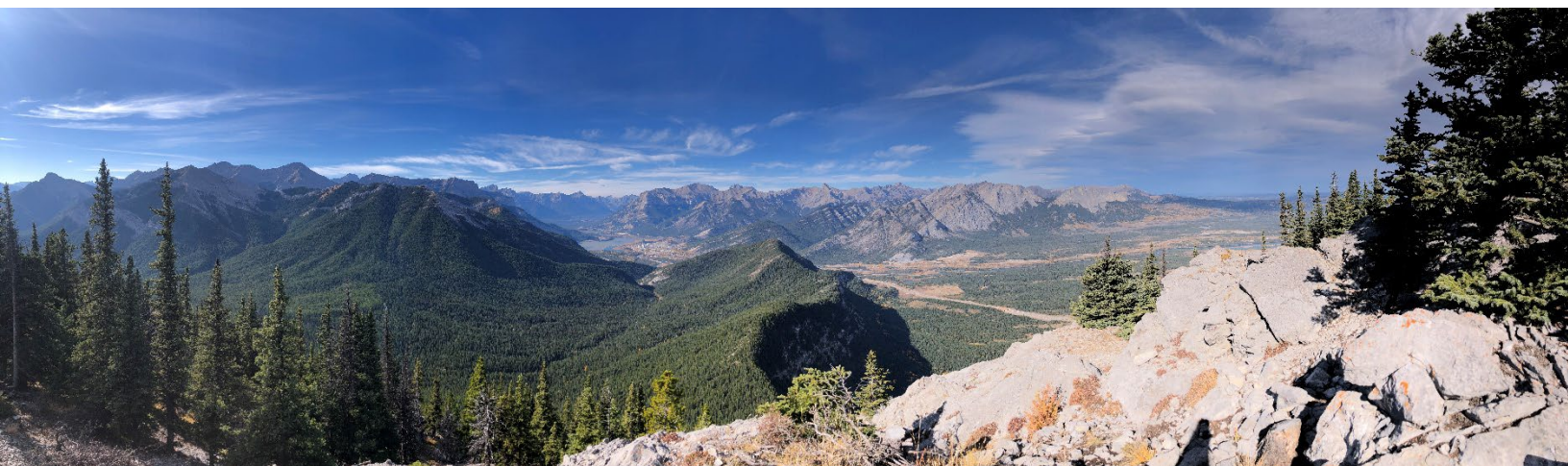


Photo 3: Highway 1 Overpass, Credit: Y2Y



List of Figures

Figure 1: Project Study Area	14
Figure 2: Valued Components	22
Figure 3: Indicators for Valued Components	25
Figure 4: Stoney Place Names Map (to be verified)	32
Figure 5: Disturbance Map	67
Figure 6: Traditional Land Use Map.....	94
Figure 7: Traditional Ecological Knowledge Map	102
Figure 8: Distribution of Fatal Animal Collision on Roads in the Study Area between 2017 and 2024.	112
Figure 9: Percent Distribution of Historical–Modern Land Cover Persistence across 1 km-wide Habitat Bands Spanning the Bow Valley	113
Figure 10: Railway Mortalities in the PSA. Source: Parks Canada	114
Figure 11: Wildlife Connectivity Infrastructure and Interactions Map.....	120



Photo 4: Mount Îyâmnathka, credit: William Snow



1 Summary

Stoney Nakoda Nations undertook the *Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project* to document and apply Stoney Nakoda Nations' Indigenous Knowledge and lived experiences to inform future stewardship and management approaches for the Bow Valley Corridor in collaboration with Parks Canada.

It is Stoney Nakoda Nations' experience that regulator decision making regarding the management of the Bow Valley Corridor is currently based on potential economic, social, and ecological impacts alone. Regulators may not have access to data on potential cultural or Section 35 rights impacts to inform decision-making and management processes. For Stoney Nakoda Nations, wildlife is deeply connected to culture, reflecting a sacred relationship where animals are respected as relatives, teachers, and integral to identity, traditions, and stewardship of the land. By focusing on wildlife habitats, wildlife quality and quantity, wildlife corridors, cultural spaces, and Stoney Nakoda Nations Section 35 rights, this Report aims to address the critical need for both wildlife connectivity and cultural continuity in the Bow Valley.

The Project Study Area encompasses the Bow Valley between Mînî Thnî and the Mînî Rhpa Mâkoche (Banff National Park) boundary, including the northern portion of Kay Nas Kay (Kananaskis). Tînda Mîmân, or 'Indian Flats' in English, is located within the Bow Valley Corridor, east of Dead Man's Flats. Meaning 'round open meadow', Tînda Mîmân refers to a flat meadow at the base of the mountains where Stoney members frequently camped and harvested resources during their travels. Îyethkabi (Stoney Nakoda people/members) frequently mention the area when discussing the wider Bow Valley. This Project Study Area was chosen as it is vital for wildlife connectivity in the Rocky Mountains and is central to Îyăhé Nakoda Mâkoche (Stoney Nakoda Nations Traditional Territory), where Îyethkabi exercise their rights and participate in cultural traditions.

The Project Study Area represents high conservation potential. Approximately 80% is within Bow Valley Wildland Provincial Park; however, a significant portion (more than 20% or 10,509 ha), remains as unprotected provincial Crown lands available for urban and industrial development. These remaining areas include critical wildlife habitat.

Stoney Nakoda Nations considered changes to lands and resources within the Bow Valley Corridor, and how they have affected Stoney Nakoda Nations' Section 35 rights, concluding that shifts in wildlife are crucial for grasping the wider changes throughout the corridor. As such, this Study focused on wildlife habitats, wildlife quality and quantity, wildlife corridors, cultural spaces, and Stoney Nakoda Nations Section 35 rights.



Tînda Mîmun

[TEEN-dah mee-MUN]

INDIAN FLATS



This is a story about the history of this place from the Îyârhe [ee-YAH-hay]. Îyârhe means "mountain people." We are a branch of the Sioux/Dakota/Lakota/Nakoda people, who are now called the Stoney Nakoda Nation.

Îyârhe (Stoney) — Thank you.

This story was shared by Chinski Elders of the Stoney Nakoda Nation. The artwork and text were provided by Stoney Nakoda Nation members, in a part 2017 Canada 150 project of the Chinski Elders Advisory Council and the Municipal District of Bighorn.

This initiative is made possible by the Community Fund for Canada's 150th, a collaboration between Banff Caribou Community Foundation, the Government of Canada, and extraordinary leaders from coast to coast to coast.



Top: Gordon Wesley,
Stoney Nakoda Artist.

Bottom: Charlize Wildman, Stoney Nakoda
Youth, Grade 12, September 2017.

This area was used by the Îyârhe Nakoda as a regular camping site on their annual seasonal journey between the Morley and Jasper areas. They travelled by foot and horse to hunt and pick medicinal herbs and berries. It was called **Tînda Mîmun** [TEEN-dah mee-MUN] meaning "round open meadow (comfortable for camping)."

The area stretched from Spray Lakes down across the valley, and later became a regular stopping point on the way to Banff Indian Days. The small mining town of Canmore never extended into this area known as Indian Flats, as it was recognized as Stoney land. **Tînda Mîmun** was also used extensively in the late 1950s while the Stoney people worked to complete clear-cutting for the new TransCanada highway. The Banff area was a meeting place to trade and have friendly competitions with the Kootenay people.

In 1889, due to a rockslide blocking the Canadian Pacific Railway, Banff Springs Hotel guests were unable to leave the area for several days. The Stonies were asked to welcome the guests and entertain them with their competitions. What was supposed to be a one-time event, turned into the annual Banff Indian Days, which continued until 1978. The last large Stoney camp at **Tînda Mîmun** saw nearly 200 teepees of participants on their way to Banff Indian Days. In 2004, Stoney people began working to rekindle those annual celebrations, and the event continues to this day.

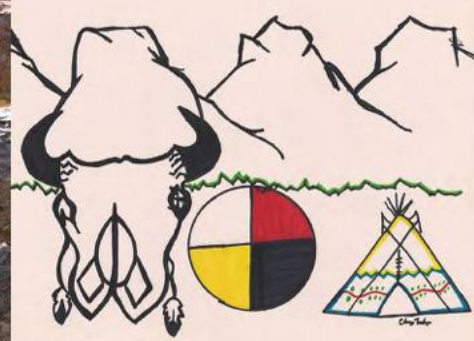
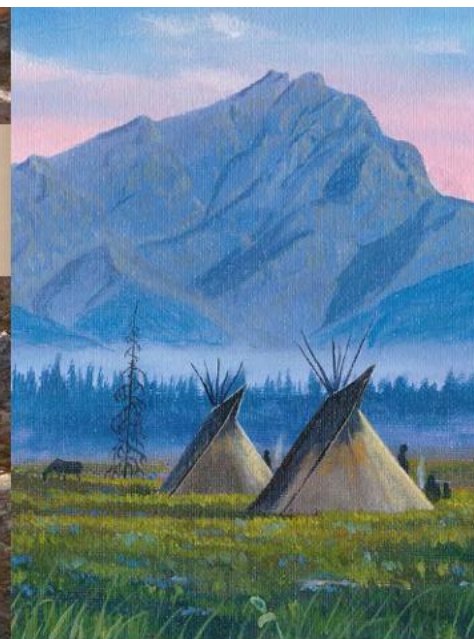


Photo 5: Stoney Tînda Mîmun Sign (Council and The Municipal District of Bighorn 2017)

In accordance with Stoney Nakoda Nations' established Cultural Monitoring process and Traditional Land and Resource Use methodology, the Project Study was formally initiated with a pipe ceremony held on May 7, 2025, to mark the commencement of the Study in a good way. Interviews were held throughout the fall of 2025 and spring of 2026 with Stoney Elders and Knowledge Holders to collect Traditional Land and Resource Use information, and information on wildlife movement and ecosystem health within the Project Study Area. Relevant information from past Stoney Nakoda Nations studies was also compiled to inform this Study.

During the Study, Contributors¹ identified Traditional Land and Resource Use sites, Traditional Ecological Knowledge sites, land use cover, vegetation cover, wildlife crossings (overpasses and underpasses), areas of ecological interest, and anthropogenic concerns. Stoney Nakoda Nations' information was reaffirmed and supplemented with scientific research collected from Project Partners, to contribute to the Study's two-eyed seeing approach. All information collected for the Study was then used to assess threats to

¹ "Contributors" are comprised of Stoney Nakoda Nations members who participated in this study and/or former Stoney Nakoda Nations' studies, whose information was used to inform this Report.



wildlife movement and habitat, and to determine Stoney management priorities and opportunities. Key findings, and Contributor recommendations to address the findings, are summarized below.

Study Key Findings

- The Bow Valley Corridor is critical to both wildlife connectivity and Stoney Nakoda Nations cultural continuity.
- The Project Study Area contains many culturally important harvesting and spiritual sites, including **306 Traditional Land and Resource Use** sites and **64 Traditional Ecological Knowledge** sites that remain central to Îyethkabi identity, wellbeing, and Section 35 rights.
- Development, tourism, and other anthropogenic changes have altered access to the Project Study Area and reduced the quality, availability, and preferred conditions of many culturally important places and resources.
- Barriers such as signs, gates, fencing, restrictions, and human presence discourage Îyethkabi Traditional Land and Resource Use, disrupt cultural practice, and contribute to loss of cultural connection.
- Wildlife availability, movement, and safety within the Bow Valley Corridor have been negatively affected by roads, rail, development, recreation, and other disturbances, with direct implications for Îyethkabi harvesting and cultural continuity.
- Traditional Ecological Knowledge remains foundational to stewardship, cultural practice, and rights exercise, but its transmission is increasingly threatened where lands, resources, access, and wildlife habitat are degraded or altered.
- Changes to vegetation and wildlife habitat are affecting the availability of culturally important plants and pezuda (medicines) that the Îyethkabi and wildlife rely on.

Contributor Recommendations

- Establish a **Stoney Nakoda Nations-led traditional monitoring program** grounded in both Traditional Knowledge and western science.
- Develop a **cooperative management framework** that supports Stoney Nakoda Nations leadership in corridor stewardship and decision making.
- Improve wildlife connectivity and safety through **targeted mitigation and monitoring**.
- Modify regulations to reduce access barriers** that affect Îyethkabi land use, rights, and knowledge transmission, so that Stoney Nakoda Nations can protect culturally and ecologically important areas.



2 Introduction and Overview

Parks Canada's National Program for Ecological Corridors ("Program") aims to collaborate with various levels of government, Indigenous partners, experts, and stakeholders to identify and maintain priority areas in which ecological corridors exist. The Program involves Indigenous land stewardship, conservation, restoration, and management (Parks Canada 2025).

In alignment with Parks Canada's Program, Stoney Nakoda Nations ("Stoney") undertook the *Understanding the Tinda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project* ("Project") to support a more holistic approach to protection of the Bow Valley Corridor including habitat and key wildlife corridors, cultural spaces, and the exercise of Stoney's Section 35 rights and cultural continuity.

It is Stoney's experience that regulator decision making regarding the management of the Bow Valley Corridor is currently based on potential economic, social, and ecological impacts alone. Regulators may not have access to data on potential cultural or Section 35 rights impacts to inform decision-making and management processes. Therefore, Stoney used their established Cultural Monitoring process and Traditional Land and Resource Use (TLRU) methodology (Appendix D), supplemented by biophysical research and wildlife monitoring data, to develop guidance that can support the future development of a cooperative management plan for the Bow Valley Corridor with regulators that is not only based in science, but also considers cultural context.

The Project also establishes a plan for an extended wildlife monitoring program that will contribute to wildlife data collection in the Bow Valley Corridor, which in turn can continue to support cooperative management efforts for the area.

This Report outlines the results of Stoney's Study, which assessed:

- wildlife habitat and key wildlife corridors,
- cultural and spiritual spaces and resources,
- ability of Îyethkabi to steward Îyắhé Nakoda Măkoche,
- the exercise of Stoney Section 35 rights and cultural continuity, and
- identification of impacts (industry, tourism, and government policies) on the environment and Stoney's Section 35 rights and interests.

This Study primarily addresses the protection of wildlife and their movements within the Project Study Area (PSA), incorporating perspectives based on Stoney interests and knowledge. The approach emphasises protecting wildlife not only for animal health and population viability, but also for the preservation of cultural traditions associated with these species.

Small and large game were selected for detailed study because they play a central role in Stoney's way of life. While Stoney also values birds and aquatic species, they were not examined in depth in this Project, not due to lack of importance, but because small and large game are more integral to Stoney way of life. References to birds and aquatic species are included where their interactions with small and large game within the PSA are relevant.



2.1 Project Study Area

2.1.1 Ecological Corridors

Ecological corridors hold value for humans, wildlife and plant species, and ecosystem functions

Ecological Corridors are areas of the natural landscape that maintain ecological connectivity. They permit species to move freely along large territories and between similar habitats (Parks Canada 2025; Clevenger 2005). Ecological corridors are often established between protected and conserved areas and can include terrestrial and marine/aquatic ecosystems (Parks Canada 2025). Ecological corridors often use wildlife crossings such as overpasses and underpasses in combination with fencing to promote safe passage for wildlife (Clevenger 2005). These corridors are managed long-term to “maintain or restore effective ecological connectivity” (International Union for Conservation of Nature 2020).

Parks Canada defines an ecological corridor as:

A clearly defined geographical space where governance, management and stewardship over the long term maintain or restore effective ecological connectivity while upholding Indigenous stewardship values (Parks Canada 2025).

This definition follows the International Union for Conservation of Nature (IUCN), which states that ecological corridors must be spatially defined areas with agreed and demarcated borders and must include land, inland, water (“mîni”), marine and coastal areas, or a combination of two or more of these areas (International Union for Conservation of Nature 2020).

The connection of various landscapes via ecological corridors promotes wildlife movement between ecosystems. Wildlife need to access habitats critical for lifecycle processes such as migration, reproduction, and feeding. The ability to move freely between key wildlife habitats also allows for species to adapt to climate change; the preservation and restoration of ecosystems ensures that specialized habitats for species remains intact (Parks Canada 2025).

Ecosystem function is dependant on all aspects of the ecosystem, not only wildlife and plant species; mîni and soil quality, including nutrients and regenerative cycles ensure that all species are capable of maintaining healthy lifecycles. When ecological corridors connect unique or diverse landscapes, mîni, air, and nutrients are allowed to cycle uninhibited. Species are also able to interact with the environment and contribute to the cycles through natural processes such as seed and nutrient dispersion.

Ecological corridors hold value for humans. They are spaces where humans and wildlife co-exist, and where humans have the opportunity to develop and implement stewardship/management practices.



These practices not only restore and preserve natural landscapes but can also foster connections between humans and nature (Parks Canada 2025).²



Photo 6: Landscape Connection via the Highway 1 Wildlife Overpass, Credit: Y2Y

2.1.2 Project Study Area

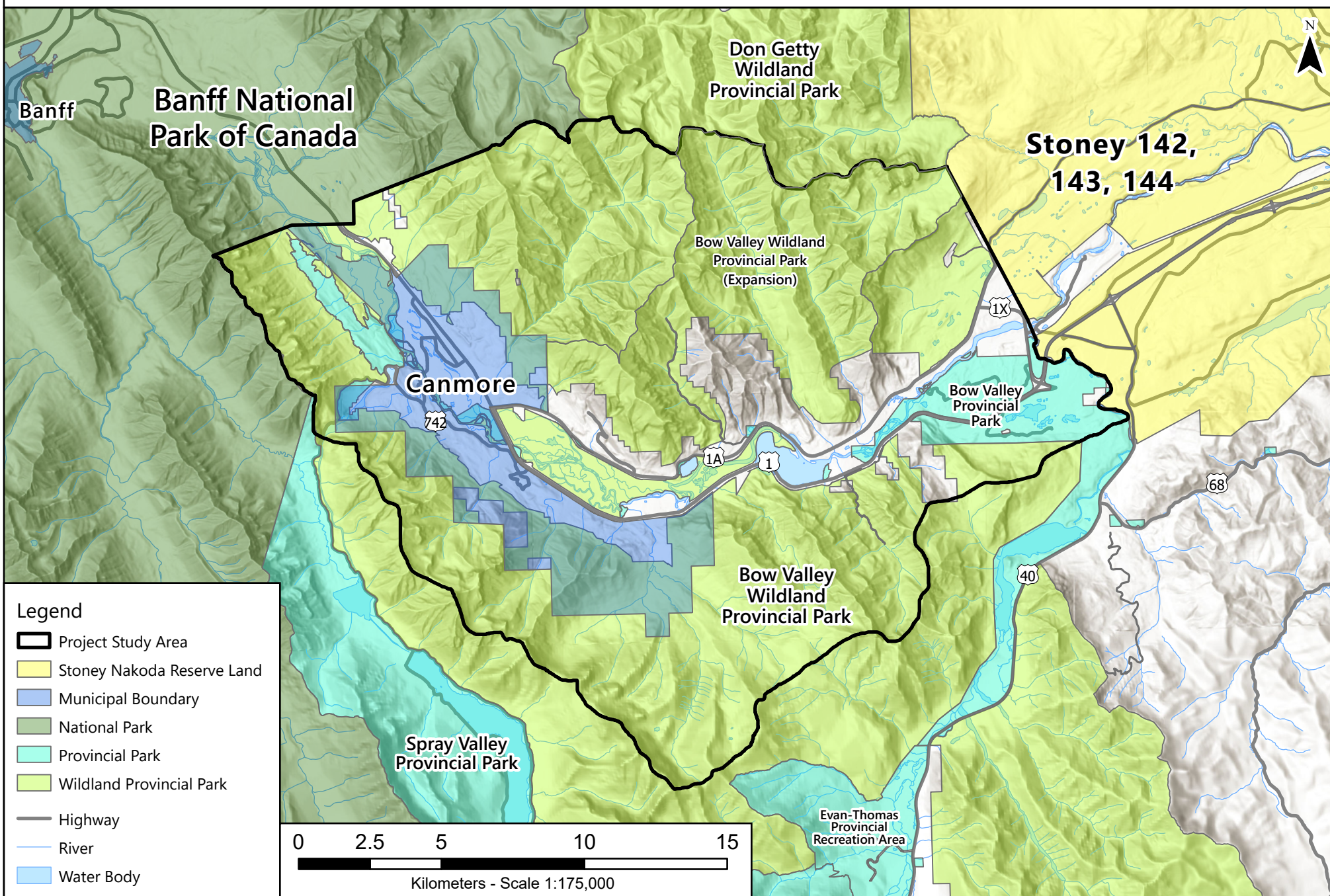
The PSA for the Project was chosen by Stoney because of its significance for wildlife connectivity in and around the Stoney Mîni Thnî reserve, and since it also acts as a wildlife migration route to Stoney's Gahna Ūbin (Eden Valley) and Wapta Mnûtha (Big Horn) reserves. Several animals within the PSA have geographically large habitats.

The PSA, as displayed in Figure 1, is located between Mîni Rhpa Mâkoche and Mîni Thnî, with Kay Nas Kay to the south. The PSA encompasses the Town of Canmore and a large portion of the Bow Valley Wildland Provincial Park, as well as provincial Crown land reservation.

² Soil, mîni, and air were not studied as part of this Project, and are only referred to where related to the general health of wildlife and vegetation. The Study includes vegetation for the purpose of understanding how wildlife depends on vegetation and how changes in vegetation affect wildlife.



Project Study Area



Date: March 19, 2026

Coordinate System: NAD 1983 UTM Zone 11N

Data Sources: Esri, NASA, NGA, USGS, Alberta Parks, Government of Alberta

DISCLAIMER: This map should not be considered a substitute for consultation with the Stoney Nakoda Nations. This map is the exclusive property of the Stoney Nakoda Nations. Any reproduction or distribution without written approval is strictly prohibited.

Prepared By:
MNP LLP



Prepared For:
Stoney Nakoda Nations



Figure:

1

The Bow Valley is home to Tînda Mîmân (Round Meadow), located in the Rocky Mountains of Alberta. Characterized as a low, flat, and narrow valley, it hosts warm, dry weather compared to other nearby regions (Yellowstone to Yukon Conservation Initiative 2020). Tînda Mîmân is characterized by mountain ranges, alpine and subalpine forests, rivers, and lakes.

The name Tînda Mîmân is given to the area by the Îyethkabi (Stoney Nakoda people/members) as a descriptor of the landscape; Tînda meaning 'open area' and Mîmân meaning 'circle'. It is a traditional camping area used by Îyethkabi since time of creation.

"...Tînda Mîmân is named after the land... Tînda Mîmân is sacred because it's named after the land." (11SN translated by 37SN)



Photo 7: Tînda Mîmân, credit: William Snow



2.2 Data Collection

As part of the Study, the Stoney Consultation Office (SCO) and supporting interviewers conducted primary research with Stoney Elders and Knowledge Holders through interviews and site visits.

2.2.1 Participant Selection

For the purpose of this Report, “Contributors” include Stoney Elders and Knowledge Holders who took part in Project interviews and site visits, as well as Stoney Elders and Knowledge holders who participated in previous projects with areas intersecting the PSA. Project Contributors were selected based on the following criteria:

- Member of Stoney
- Identifies as at least one of the following:
 - Hunter
 - Trapper
 - Fisher
 - Gatherer
 - Ceremonial Participant
 - Camper
 - Knowledge Holder
- Over the age of 18

Contributors were identified by Stoney Consultation Officers from Bearspaw First Nation, Chiniki First Nation, and Goodstoney First Nation.

2.2.2 Knowledge Gathering

2.2.2.1 OCAP® Protocols

The Study Team followed the principles of Ownership, Control, Access, and Possession (OCAP®) throughout the Study and Report process. OCAP® principles include:

- **Ownership:** The relationship of Indigenous peoples to their cultural knowledge, data, and information. Stoney owns all the information collected in this Study collectively as would an individual own their personal information.
- **Control:** Indigenous people, their communities, and their representatives have the right to control all aspects of research and information management processes that may impact them. Stoney maintains control over resources, review and planning processes, management of information, etc.
- **Access:** Indigenous people must have access to information or data about themselves and their communities (regardless of holding). Stoney has the right to manage and make decisions regarding access to their collective information.
- **Possession:** Affirms the right to physically control the data. Stoney maintains possession of all information collected for the Study and Report; Contributors have access and possession of their recordings and information shared. (First Nations Information Governance Centre 2025)



2.2.2.2 Informed Consent

Prior to participating in the Study, Contributors were provided details on the Study purpose and process and asked for verbal or written consent to participate. Contributors were informed that their consent can be withdrawn at any time prior to the delivery of the Report. Questions or topics that Contributors did not feel comfortable answering/discussing were not required and were omitted. Consent forms indicated that any information shared with Stoney may be used for future projects; Stoney data and knowledge gathered from previous studies underwent the same consent process as undertaken for this Study.

The Study Team reiterated that information shared during the Project interviews will remain the sole property of the Contributor and Stoney. It was also explained that all information shared is reported anonymously.

Permission was requested from Contributors to allow for voice recordings. Contributor quotes used for the purpose of the Report are displayed anonymously. Prior to information entry, the Study Team assigned each Contributor a number code (e.g., 2SN or 9SN) and all quotes or observations taken from Contributors were attributed to the assigned number code. Contributors who consented to recordings were offered the option to retain a copy of their recording.

2.2.2.3 Knowledge Gathering Process

The Study Team developed a Project-specific interview guide to collect information from Contributors. Contributors were asked questions regarding habitat, wildlife corridors, changes to the landscape, impacts on wildlife, cultural spaces, the exercise of Section 35 rights, and cultural connections. Connection to places within the PSA, place names, and histories were also discussed.

Contributors were shown maps of the PSA and were asked to identify cultural and ceremonial, wildlife, Traditional Ecological Knowledge (TEK), historical, and other sites where harvesting (including hunting, fishing, trapping, gathering, etc.) or travelling have occurred. This TLRU information was recorded and mapped according to the methodology described in Appendix D.

Rider Debriefs

Stoney riders conducted two site visits on horseback to document landscape conditions. One ride took place at Pigeon Mountain on August 21, 2025, followed by a rider debrief to learn what information the riders collected. An additional ride took place on September 4, 2025, at Harvie Heights; however, no formal rider debrief was conducted for this ride due to time constraints.

Riders took GPS points, notes, and photos during the rides. Members of the Study Team took notes during the rider debrief along with an audio recording. Audio was used to transcribe selected qualitative information.

Group Interview

One group interview session was held on June 10, 2025, with thirteen Elders, Knowledge Holders, and Consultation Officers. The interview guide was used to guide conversation for the group. Notes and audio recordings were taken by the Study Team for accuracy and to support the use of quotes.



Interviews and Site Visits

Thirteen interview sessions were held between June 11 and September 4, 2025, and one interview was held on February 11, 2026. The interview guide was used to facilitate conversation for interviewees. There were twenty unique Contributors, with some Contributors being interviewed more than once. Notes and audio recordings were taken by the Study Team for accuracy and to support the creation of quotes for the Report.

Other Information Collection

In addition to new data collected for this Study through Project-specific interviews and site visits, data collected by Stoney for other projects which relate to the PSA and context of this Report were used. This data includes:

1. Stoney 2018 Impact Assessment Survey
2. Oral Indigenous Evidence presented during the National Energy Board (NEB)³ hearing process for the NGTL West Path Delivery System Project
3. Oral Indigenous Evidence presented during the NEB⁴ hearing process for the NGTL 2021 NGTL System Expansion Project
4. Oral Indigenous Evidence presented during the Canada Energy Regulator (CER) hearing process for the NGTL Edson Mainline Expansion Project
5. Information collected for the *Section 35 Rights and Interest Impact Assessment Report* for NGTL West Path Delivery 2023
6. Oral Indigenous Evidence presented during the CER hearing process for the NGTL West Path Delivery 2023 Project
7. Information collected for the Trans Mountain Expansion Project Phase III and Post-Approval Consultation *Stoney Nakoda Nations Traditional Land and Resource Use Study*
8. Information collected for the *NGTL West Path Delivery 2022 Cultural Assessment*
9. Information collected for the *NGTL West Path Delivery 2023 Cultural Assessment*
10. Information collected for the *Sunshine Village Long Range Plan Stoney Nakoda Nations Cultural Assessment*
11. Information collected for the *Terrestrial Cumulative Effects Initiative Stoney Nakoda Nations Cultural Assessment and Traditional Land and Resource Use Study Report*
12. Information collected for the *Stoney Nakoda Indigenous Forest Guardian Program Final Report*
13. Information collected for the *Elk Valley Resources Fording River Extension Cultural Impact Assessment Report*
14. Information collected for the *Elk Valley Resources Greenhills Operations Cougar 8&9 Impact Assessment*

³ Hearing process occurred prior to transition of the NEB to the Canada Energy Regulator.

⁴ Hearing process occurred prior to transition of the NEB to the Canada Energy Regulator.

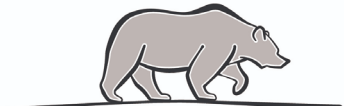


2.3 Project Partners

Stoney established relationships with several Project Partners, who provided funding and/or contributed data and other information for this Study. Stoney also established a Project Advisory Team (PAT) comprised of subject matter experts, municipal, provincial, and federal representatives from the Project Partners to provide advice and information for the Study and contribute to the Report.

2.3.1 Overview of Project Partners and Contributions

Stoney would like to recognize its Project Partners, who provided financial and/or in-kind contributions, research, and data to support this Study. An overview of Stoney's Project Partners and their contributions is provided below.

  Parks Canada Parcs Canada	Parks Canada-National Program for Ecological Corridors Financial and In-Kind Contributions, Project Data The Canadian federal agency that protects and presents nationally significant natural and cultural heritage for future generations by maintaining ecological and commemorative integrity (Government of Canada 2025). Parks Canada was the major financial contributor to the Project, and also provided data for the Study, including movements of GPS collared grizzly bears and wolves, their habitat quality by season, remote camera detection rates, and railway mortality information (see Appendix A for additional information).
 Yellowstone to Yukon Conservation Initiative	Yellowstone to Yukon Conservation Initiative (Y2Y) Financial and In-Kind Contributions, Project Data A non-profit organization that aims to protect and connect wildlife habitat from Yellowstone (United States) to the Yukon (Canada) (Yellowstone to Yukon Conservation Initiative 2025). Y2Y provided financial contributions, as well as research on wildlife movement in the PSA, wildlife crossing data, Report photos, and information for the Report (see Appendix A for additional information).
 Forestry and Parks	Alberta Forestry and Parks Financial Contributions, Project Data The provincial agency that oversees and maintains parks within Alberta's jurisdiction, connecting people with nature and heritage, developing and maintaining infrastructure to support nature-based recreation, and promoting stewardship (Government of Alberta 2025). Alberta Forestry and Parks provided financial contributions, their remote camera locations, a video and photos of wildlife using the underpass, and the Bow Valley Human Wildlife Coexistence Report to inform sections of the Report (see Appendix A for additional information).



	Alberta Biodiversity Monitoring Institute (ABMI) In-Kind Contributions An independent organization that monitors biodiversity to inform responsible resource management and land stewardship within Alberta (Alberta Biodiversity Monitoring Institute 2024). ABMI provided wildlife camera training to the Stoney Consultation Office.
	Athabasca University (AU) In-Kind Contributions Athabasca University is a Canadian post-secondary institution offering education online and in-person with barrier-free courses in various disciplines (Athabasca University 2025). Athabasca University representatives attended the Project kickoff meeting, and provided Project advice.
	Town of Canmore Financial and In-Kind Contributions, Project Data A municipality located within the Tînda Mîmân region. The Town of Canmore provide financial contributions, and also supported the Project through provision of land use information, and access to their GIS database.
	MNP LLP (MNP) In-Kind Contributions MNP provided professional services including Project management, Project planning, data collection, and Report writing support.
	MD of Bighorn Project Data A municipal district between Calgary and Mînî Rhpa Mâkoche, that oversees its towns and villages (MD of Bighorn n.d.). The MD of Bighorn participated in Project meetings, offered mapping data, and suggested that Stoney consider monitoring for weeds and invasive species in the PSA, due to their ability to impact wildlife movement.
 University of Victoria	University of Victoria Project Data A leading Canadian university recognized for leadership in research (University of Victoria n.d.). Stoney contracted the University of Victoria to analyze landscape change in the PSA over time by comparing historical and modern images of the Bow Valley. Their resulting report identifies how vegetation and land cover shifted, and relates their analysis to changes to wildlife movement and wildlife mortality along roads.

In alignment with the principle of biculturalism, Stoney incorporated several "partner spotlights" within this Report. These sections were authored by the respective Project Partners listed at the outset of each spotlight and were included without modification by the Report Team.



2.3.2 Project Advisory Team

Before conducting the Study, the Project Management Team initiated a Project Advisory Team (PAT) comprised of several Project Partners and Stoney Consultation Office representatives, including:

- Alberta Forestry and Parks
- Athabasca University
- MNP
- Parks Canada
- Stoney Consultation Office
- Y2Y

The PAT provided ongoing Project insights and met throughout the life of the Project:

Date	Objective	PAT Members in Attendance
April 14, 2025	Ceremony planning	MNP Parks Canada Stoney Consultation Office
May 20, 2025	Project kick-off	Alberta Forestry and Parks Athabasca University MNP Parks Canada Stoney Consultation office Y2Y
November 12, 2025	Cooperative Management Plan discussion	Alberta Forestry and Parks MNP Parks Canada Stoney Consultation Office
November 21, 2025	Progress meeting	MNP Parks Canada Stoney Consultation Office
December 10, 2025	Project update and next steps planning	MD of Bighorn MNP Parks Canada Stoney Consultation Office Town of Canmore
February 5, 2026	Report review	MNP Stoney Consultation Office
February 26, 2026	Discuss the University of Victoria's contributions	MNP Stoney Consultation Office University of Victoria
March 23, 2026	Project wrap-up	MNP Parks Canada Stoney Consultation Office



2.4 Valued Components

As noted, the purpose of this Project is to support a more holistic approach to protection of the Bow Valley Corridor, including guidance for future development of a Cooperative Management Plan (“Management Plan”) and extended wildlife monitoring program (“Îyethkabi Monitoring Program”, or “Monitoring Program”) for the area. To inform priorities and areas of focus for the Management Plan and Monitoring Program, Stoney values and interests related to the Project were identified based on the information shared by Contributors. Following the identification and confirmation of key themes from Contributors, the Study Team developed a list of Valued Components (VCs) to represent Stoney values and interests; they include environmental, social, cultural, and economic-based components.

VCs are most commonly selected during the environmental assessment or impact assessment process and assist with measuring change and impacts. As the primary focus of the Project is Stoney management and monitoring of the PSA, VCs will allow for Stoney and Partners to measure changes to these VCs, and identify management priorities. Several of these VCs and their respective indicators are interrelated, reflecting their interactions within their shared environment. The VCs Stoney selected are listed below.

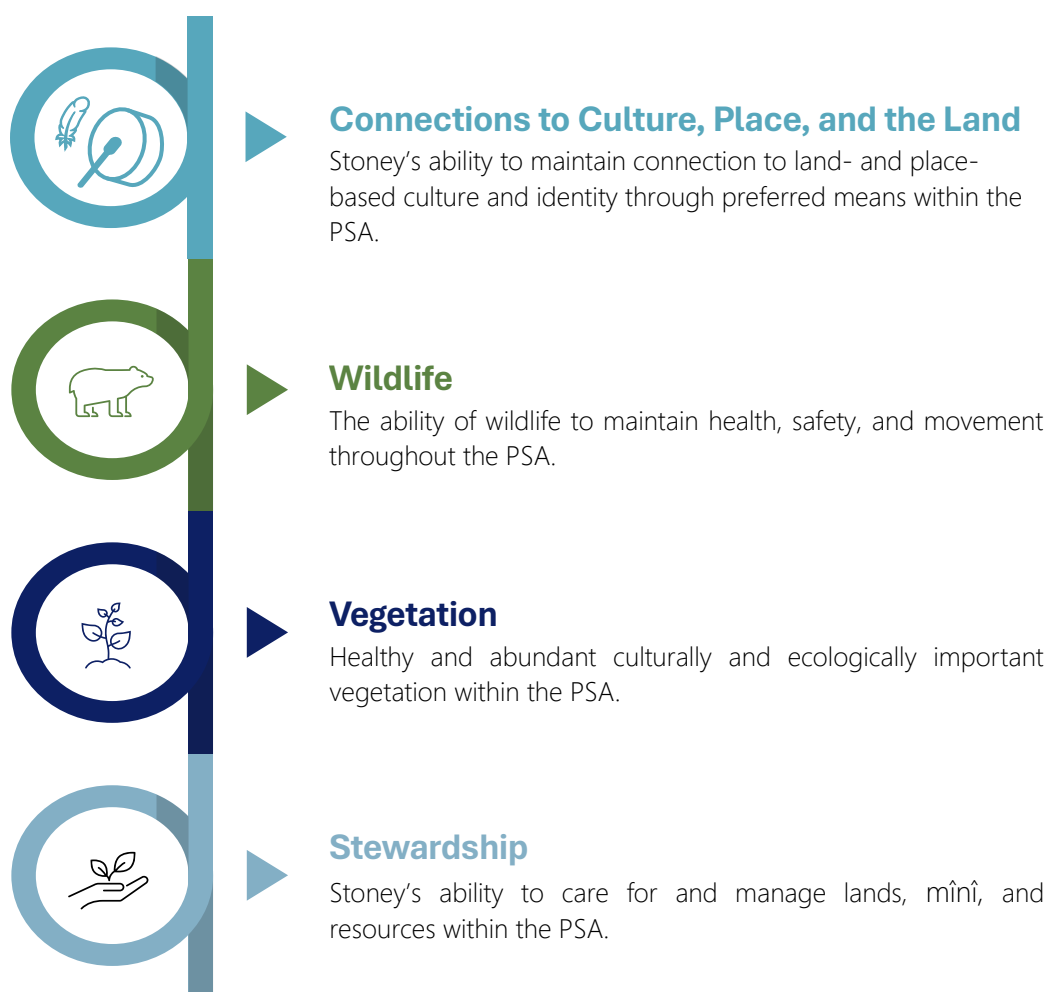


Figure 2: Valued Components



2.4.1 Indicators and Measurable Parameters

A component of VC selection is the development of indicators; these allow for the measurement of change to each VC. The indicators should measure both real and perceived changes since perceived change can function as a disturbance in the same way as a real change; if people view an area or resource as altered, unsafe, or unsuitable, their perception can limit its use just as much as a real physical change would. The indicators for each VC are detailed below, including measurements to determine change.

Valued Component	Indicators and Measurable Parameters
 Connections to Culture, Place, and the Land	Îyethkabi ability to harvest preferred wildlife • Changes in availability of wildlife for harvesting. • Changes in quality of, and access to, wildlife harvesting areas. • Changes in wildlife health. • Stoney-reported changes in spiritual and cultural connections to wildlife. Îyethkabi ability to gather preferred plants, berries, and pezuda (medicines) • Changes in availability of plants, berries, and pezuda (medicines) for gathering. • Changes in quality of, and access to, gathering areas. • Changes in the health of plants, berries, and pezuda (medicines). Îyethkabi ability to maintain spiritual and cultural connections to landscapes • Stoney-reported changes in the integrity of the spirit present on the land. • Stoney-reported changes in Stoney identification and use of traditional place names. • Changes in Stoney's ability to access spiritually and culturally significant areas. • Stoney-reported changes in Stoney transmission of stories about places. • Stoney-reported changes in the transfer of intergenerational knowledge.



Valued Component

Indicators and Measurable Parameters



Wildlife

Wildlife's ability to move throughout the PSA

- Changes in the number of overpasses / underpasses.
- Changes to the integrity of wildlife corridors.
- Changes in the amount of wildlife-friendly fencing and restrictions on wildlife movement.

Wildlife's ability to maintain health and safety in the PSA

- Changes in mortality strikes and accidents.
- Changes in wildlife health.

Wildlife's ability to conduct natural behaviours in the PSA

- Changes to the quality and quantity of resources required for natural behaviours.

Maintenance of natural habitats

- Changes to the trees and other vegetation wildlife use for their habitat.
- Changes in the number of wildlife sightings within urban and reserve settings.



Vegetation

Vegetation health and abundance

- Changes in the health and abundance of culturally and ecologically important vegetation due to disturbance and contamination.

Natural interactions with wildlife

- Changes in the quality and quantity of vegetation wildlife use for forage, cover, habitat, and seasonal behaviour.
- Changes in vegetation due to changes in wildlife maintenance.



Valued Component

Indicators and Measurable Parameters



Stewardship

Figure 3: Indicators for Valued Components

Ability to maintain access for stewardship

- Changes in the number of physical barriers to access areas for stewardship, such as gates, fencing, signage, closures, and development.
- Changes in perceived barriers to access such as uncertainty, avoidance, conflict with the public, or feeling restricted.
- Changes in legal barriers to access for stewardship, such as regulations.

Healthy, functioning lands, mîni, and resources for stewardship

- Changes in disturbances affecting culturally and ecologically important areas and resources for stewardship.
- Changes in the presence of contamination, litter, noise, or other signs of degradation or human presence.

Preservation of stewardship practice and knowledge transfer

- Changes in ability to teach and learn stewardship on the land.
- Changes to the continued transfer of language, oral history, and cultural knowledge tied to stewardship.

Recognition of Stoney stewardship authority

- Changes to the level of Stoney involvement in planning, monitoring, and management decisions.
- Changes in decision-making affecting lands and resources without adequate consultation with Stoney.



2.5 Stoney Nakoda Nations

2.5.1 People of the Mountains

Contributors repeatedly stated that Îyethkabi have resided in the Eastern Slopes of the Rocky Mountains since time of creation. Early written records also affirm Îyethkabi long-standing presence in the foothills and mountain regions. Explorers and fur traders with the Hudson's Bay Company documented Îyethkabi people as early as the 1640s. Henry Kelsey described traveling with Assiniboine-Îyethkabi groups along the Saskatchewan River basin in the 1670s, and by the 1740s Anthony Henday recorded their encampments throughout present-day Alberta (Anderson 1970; Getty 2006). When Christian missionaries entered the foothills in the 1840s, they observed that the Îyethkabi were firmly established along the Rocky Mountain front, maintaining longstanding patterns of mobility, harvesting, and spiritual connection to the region (Dempsey 1997).

The Îyăĥé Nakoda are "The People of the Mountains" and hold an inseparable cultural and spiritual connection to the PSA (Stoney Nakoda Nations n.d.). Since time of creation, the Îyăĥé Nakoda have lived in Îyăĥé Nakoda Măkoche and maintained a living archive of stories, ceremonies, and teachings that define Îyethkabi identity in relationship to the landscape.

"The Rockies protect us 'cause we live here. If something come up, the Rockies will push it up and land way over there so that Stoney will be safe. That's how it [was] told [to] us." (72SN)

Îyăĥé Nakoda sense of belonging is directly linked to the land and its sacredness; the mountains are understood as protectors, offering safety and spiritual strength. Îyăĥé Nakoda worldview frames the mountains, landscapes, and resources as living relatives and has guided Îyethkabi ways of life for generations.

"...the reason why we're on Morley reserve, it's underneath the mountains. The mountains protect us and the forest, so we don't have to go to the city to survive. In order to get wild meat, we provide our own meat, so we don't need to go to town. So, I'm safer up here where I am, [at] least we got lots of water, [the] mountains protect me and the sun, so I've got no fear, especially in Canmore." (80SN)

Peaks such as Îyărhe Yamnî Ochihă Îgach (Three Sisters) and Devil's Head carry spiritual significance, and places such as Mînî Wakă (Lake Minnewanka) are regarded as sources of healing. These landscapes shape identity by grounding cultural values in the natural world, and remind the people that their strength and safety come from maintaining harmony with these sacred beings.

"All of the areas are very sacred to us." (69SN)



"Îyârhe Nakoda, that means 'mountain people of this area'." (83SN)



Photo 8: Three Sisters, credit: William Snow

Among these sacred spaces, Tînda Mîmân serves as a cultural and spiritual anchor; it is a waypoint and place of gathering, harvesting, and ceremony. Tînda Mîmân is a historic camping and resting area, a hub along travel routes connecting Mîni Thnî to Mîni Wakâ, Kootenay Plains, and beyond.

Tînda Mîmân continues to embody resilience and belonging. It represents the principle that identity is lived through land-based practices such as ceremony, harvesting, and storytelling, and that these must endure for future generations. Protecting this place is not only about preserving geography; it is about safeguarding the heart of Îyethkabi culture.

2.5.1.1 Treaty and Reserve Creation

Îyâhé Nakoda are signatories to Treaty No.7, signed on September of 1877 at Blackfoot Crossing.

Present at the Treaty No.7 signing were the three Chiefs of Stoney:

- i. Chief Mas-Gwa-Ah-Sid, or Jacob Bearspaw
- ii. Chief Che-ne-ka, or John Chiniquay



iii. Chief Ki-Chi-Pwot, or Jacob or Jonas Goodstoney

These chiefs represented Bearspaw First Nation, Chiniki First Nation, and Goodstoney First Nation.

Îyăhé Nakoda oral histories make it clear that Treaty No. 7 was understood to be a peace treaty between Canada, Îyăhé Nakoda, and the Blackfoot (Treaty 7 Elders and Tribal Council 1996). Elder Lazarus Wesley recalled that the Treaty was an agreement to stop the horse stealing and other retaliatory practices noting the parties agreed “not to kill each other anymore – to have peace in the land” (Treaty 7 Elders and Tribal Council 1996, 118). For Stoney, Treaty No. 7 was an agreement to share the land with other Indigenous nations and the arriving settler populations. It was not an agreement to give up all their rights and title.

“Well, from the experience I have and the knowledge that I've been shared with by Elders over time, the Treaty is translated in many ways. It depends by who. You know, from our understanding, it was a peace treaty, and it was to share the resources of the land. This is what is passed on through some families and others may translate in a different way.” (CER 2020, para 734)

“...what my grandfather said to the representatives of the government, he said, “Yes, I will agree to sign to be part of this relationship building. Also, I will learn your language, your education, every technology you make. I will teach my children to make a living with your technology. But I will keep my traditional laws, tribal customs, my own language, and my way of life, and I will not give you my land. I will share my land with you”. (CER 2021, para 445)

During the historic treaty-making process, Crown Treaty Commissioners did not require Indigenous leaders signing on behalf of their nations to identify and declare their exclusive use areas or identify the extent of their traditional territories within the boundaries of their treaty prior to signing. Communal use of lands throughout the “tract surrendered” was promised by the Crown for use by all signatory nations to “pursue their vocations of hunting” (Government of Canada 2013). This clause was included in the text of most of the numbered historic treaties where the treaty area identified was for the use in common by all Indigenous collective signatories to that treaty, including Treaty No.7.

Îyăhé Nakoda Elders recalled that the Treaty Commissioner David Liard promised they would have a better life once they signed treaty. Elva Lefthand stated Canada assured them,

We will take good care of you, we'll always do as you say, we'll always look after you and your people, and we will always heed your words if you sign” adding that the government assured them Stoney will retain the “rights to live as they wished, nobody telling them how to [live] (Treaty 7 Elders and Tribal Council 1996, 122).



Conversely, Treaty No.7 states:

And Her Majesty the Queen hereby agrees with her said Indians, that they shall have right to pursue their vocations of hunting throughout the Tract surrendered as heretofore described, subject to such regulations as may, from time to time, be made by the Government of the country... (Government of Canada 2013)

Importantly, courts have found that the wording within Treaty No. 7 was not translated into Îyethka (Îyăhé Nakoda language). Signatory Indigenous nations did not understand that the written text of Treaty No. 7 included wording to surrender their lands, as Elder Bill McLean noted:

They did not know in the White people's language what surrender meant-they did not talk about giving anything up... The White people [government] had placed this term in the treaty but the Natives did not know or were not aware of it and thus did not talk about giving up anything (Treaty 7 Elders and Tribal Council 1996, 130).

The discussions that took place around the signing of Treaty No. 7 were accompanied with verbal promises, many issued by trusted sources like the local Methodist missionary, Rev. John McDougall. It was the promises of the Crown, filtered through a trusted source, that led Îyăhé Nakoda to believe that the land, air, mînî, and wildlife would all be protected and their right to live as they always had would continue.

In addition to the many verbal and written promises including the communal use of lands throughout the tracts surrendered, Treaty No. 7 also promised the setting aside of lands for the occupancy of the Îyethkabi. In 1879 Canada surveyed around the mission site of Morleyville (today known as Mînî Thnî) setting aside almost 70,000 acres in 1889 for the Mînî Thnî Reserves (IRs 142, 143, 144).

Almost immediately following the establishment of the Mînî Thnî reserves, the Îyăhé Nakoda chiefs became frustrated by the imposition of the *Indian Act*, 1876 (R.S.C., 1985, c. I-5), and the draconian policies of the Canadian government. They also recognized that the lands set aside by the Canadian government were insufficient; failing to conform to the commitments made under the Treaty. In 1894, Wesley First Nation Chief Tă Othă (Peter Wesley) led a contingent of Nation members north, settling in the Kootenay Plains. Under Tă Othă and the other Îyăhé Nakoda chiefs, Nation members began the long process of advocating for additional reserve lands (Stoney Nakoda Nations 2013). In 1914, Mastiyă Mnen (Rabbit Lake) IR (IR 142b) was established.

In 1948 the Canadian government also allotted the Wapta Mnûtha IR (IR 144a) along the North Saskatchewan River to the Îyethkabi, primarily Wesley First Nation (now known as Goodstoney First Nation) members, living in the Kootenay Plains. That same year, following years of negotiation, they allocated the Gahna Ūbin IR (IR 216) to the Îyethkabi, primarily Bearspaw First Nation members.

2.5.1.2 Îyethka Language and Place Names

Îyethkabi identity as "People of the Mountains" is reflected in Îyethka; Îyethka demonstrates the Îyăhé Nakoda understanding of nature, culture and history. Traditional Îyethka names are based on the relationships to place, whether it is that of the Îyethkabi to place, or the relationship of the place to the rest of the landscape. Names are descriptive and reflect a unique historic event that took place in the area, describe the landscape or resources, or honour sacred importance.



"The town is, Canmore, that area has a different name too...Chuwapchîpchîyan Kude Bi, that's just southwest of Tînda Mîmân. So, there's areas that are specifically named, and Chuwapchîpchîyan Kude Bi is named after an event, but Tînda Mîmân is named after the land. So, it represents two different meanings there, how it's sacred, you know, Tînda Mîmân is sacred because it's named after land. The other [name] was after an event recently." (11SN translated by 37SN)

The interconnection of place names to the landscape is physically represented by travel routes and trails. These routes have long been essential for hunting and gathering, and they carried cultural meaning through place names and stories. Before roads and development, Îyethkabi families traveled throughout the Îyăhé Nakoda Mâkoche by horseback and wagon, using these trails to access berry patches and hunting grounds.

Like Îyethkabi landmarks, trails and travel routes are named based on their relationship to the land, representing storied history, travellers, and destinations. Often, travel routes host multiple names; these are based on the direction of travel to help identify direction and destination. These Îyethka names are well known amongst Îyethkabi and allow for people to meet mid-travel.

"...how they interpret these trails are like, if we go this way, they'll name this road, for an example, they'll call it Dead Man's Trail, because they were going over [to Dead Man's Flats]. But if you're coming back this way [towards Kananaskis], you'll call it Kananaskis Village Trail. The direction changes...when they tell stories, they'll know which way they're going." (67SN)

Îyethka trail names based on direction are important for storytelling and oral history. Travel routes and trail names provide deeper context when telling stories or history and relate the story to a specific location that can be revisited throughout generations.

"...in our language, when we tell stories...you'll know which way that person was going when he tells that story but it'll be the same place." (67SN)

As such, many of the place names within the PSA are based in Îyethka and reflect Îyăhé Nakoda relationships within the region. These relationships exist not only amongst people and the landscape, but the features within the landscape as well. Elders and Knowledge Holders have shared that many of the mountains visually resemble each other.

"... he [11SN] says that back in those days, yes, [Three Sisters] was reference to siblings. He doesn't say if it's males or female, but he says the way it's pronounced is



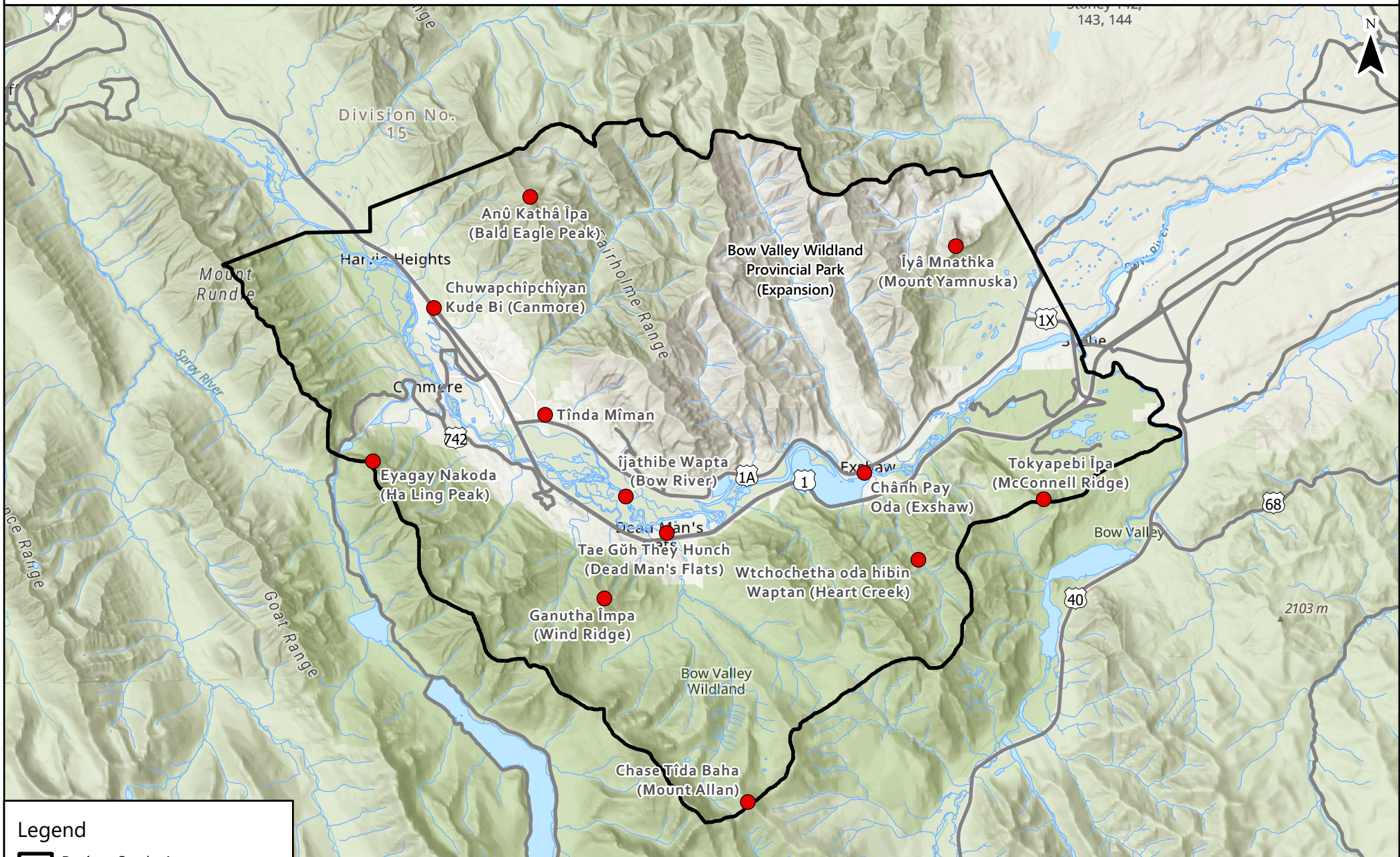
referencing three siblings, and that the other mountains in the area are also recognized as the relatives of these three siblings." (11SN translated by 37SN)

Given the large number of place names identified through this Project and previous research, Stoney has begun mapping these names. The latest working version of the map is shown in Figure 4; not all names have been verified by Stoney Elders and Knowledge Holders.

It should also be noted that Îyethka is not a standardized language. Many Indigenous languages are verb-based, while many Western languages are noun-based; as a result, translations do not always align one-to-one, and a single term or concept may have multiple possible translations or descriptions.

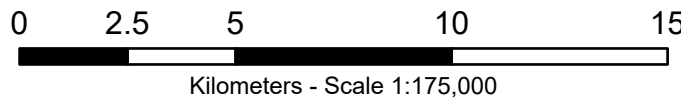


Stoney Place Names Map



Legend

- Project Study Area
- Stoney Place Name (to be verified)



DRAFT: Place names are preliminary and subject to verification. This information is not to be used or distributed without prior authorization from Stoney Nakoda Nations.

Date: July 7, 2026

Coordinate System: NAD 1983 UTM Zone 11N

Data Sources: Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, ©

DISCLAIMER: This map should not be considered a substitute for consultation with the Stoney Nakoda Nations. This map is the exclusive property of the Stoney Nakoda Nations. Any reproduction or distribution without written approval is strictly prohibited.

Prepared By:
MNP LLP



Prepared For:
Stoney Nakoda
Nations



Figure:

4

3 Significance of Stoney Valued Components

The following section describes in detail the VCs that guide Stoney's understanding of the PSA. These VCs - Connections to Culture, Place, and the Land; Wildlife; Vegetation; and Stewardship - reflect the core relationships, resources, and responsibilities that are essential for sustaining both ecological connectivity and the continuity of Îyethkabi culture. By understanding these VCs, Stoney can better support holistic management of the PSA.

While the significance of each VC is described distinctly in this section and in Section 5, the VCs are naturally interconnected. Changes to one VC often affect the others. For example, wildlife depends on vegetation and intact habitat and movement routes, while Îyethkabi connections to culture, place, and the land are maintained through access to wildlife, plants, and culturally important spaces. Stewardship supports the health and continuity of all these relationships. As a result, the VCs should not be understood in isolation, but as part of a connected system that together supports both ecological function and cultural continuity within the PSA.

3.1 Connections to Culture, Place, and the Land

Stoney connection to place is established through a longstanding history of time on the land; harvesting (including hunting, fishing, trapping, and gathering), ceremony, travel, and language all play a role in connection to the Îyăhé Nakoda Măkoche. The relationship between Îyethkabi and the environment spans the whole Îyăhé Nakoda Măkoche, including the PSA. Connection to place is built through daily practice and is passed down through generations.

"But, traditions and cultural events, I think that's very big. We teach our young people about areas when we travel, we talk about the history, when I go to Banff, I always talk about, 'Hey, you know what? There's an Elder buried here,' or, 'there used to be Sun Dances, a big pow wow.' There's stories up here behind Lake Minnewanka, it comes back to Ghost River and that's the old travel route." (94SN)

Ideal conditions for Îyethkabi harvesters or those seeking to be on the land, include conditions such as:

- quiet and remote, away from people and vehicles,
- undisturbed, without development or contaminants,
- intact and accessible, without physical barriers such as gates or signage,
- safe, without any potential physical threats, whether real or perceived, and
- familiarity, places they have been before or have been told about by family members.

3.1.1 Importance of Resources to Cultural and Spiritual Practices

Îyethkabi identity, culture, and ways of being involve culturally important resources found on the land. Garibaldi and Turner (2004, 4) describe such valued species as "culturally salient species that shape in a



major way the cultural identity of a people, as reflected in the fundamental roles these species have in diet, materials, medicine and/or spiritual practice.”

From Stoney’s perspective, culturally important species are understood not only as “resources,” but as relatives, sustainers, and teachers within Îyăhé Nakoda Mâkoche. They carry spirit and are part of a living relationship with Îyethkabi that includes stewardship responsibilities, protocols, and reciprocity. Continued access to, and the health of, these resources is central to the practice and intergenerational transmission of Îyăhé Nakoda laws, knowledge, language, ceremonies, and harvesting practices, and are therefore necessary for the continuity of Îyăhé Nakoda culture and the meaningful exercise of Section 35 rights.

Contributors reported that the PSA is important for accessing wildlife for hunting and trapping purposes and maintaining cultural connections such as teachings. When Contributors hunt in the PSA, they also find the plants and pezuda (medicines) they require, and fish along the Bow River. Animals also require these plants and mînhî for their survival.

“I used to hunt before, [in the] Spray Lakes area...just until Canmore. Elk, if you didn't find them down here, you'd go to Spray Lakes...bears too, that area is a good country for anything, medicine, roots, herb medicine all over, and a lot of that too.”
(02SN)

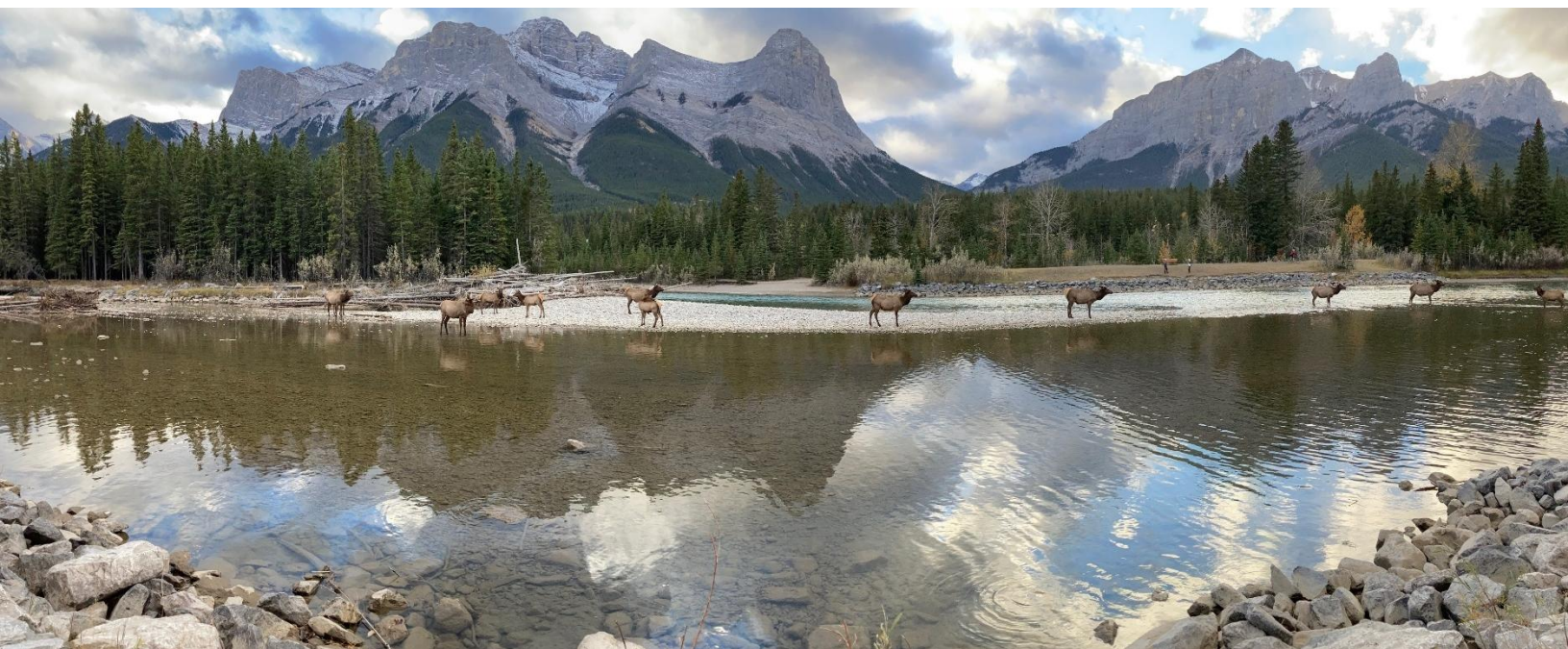
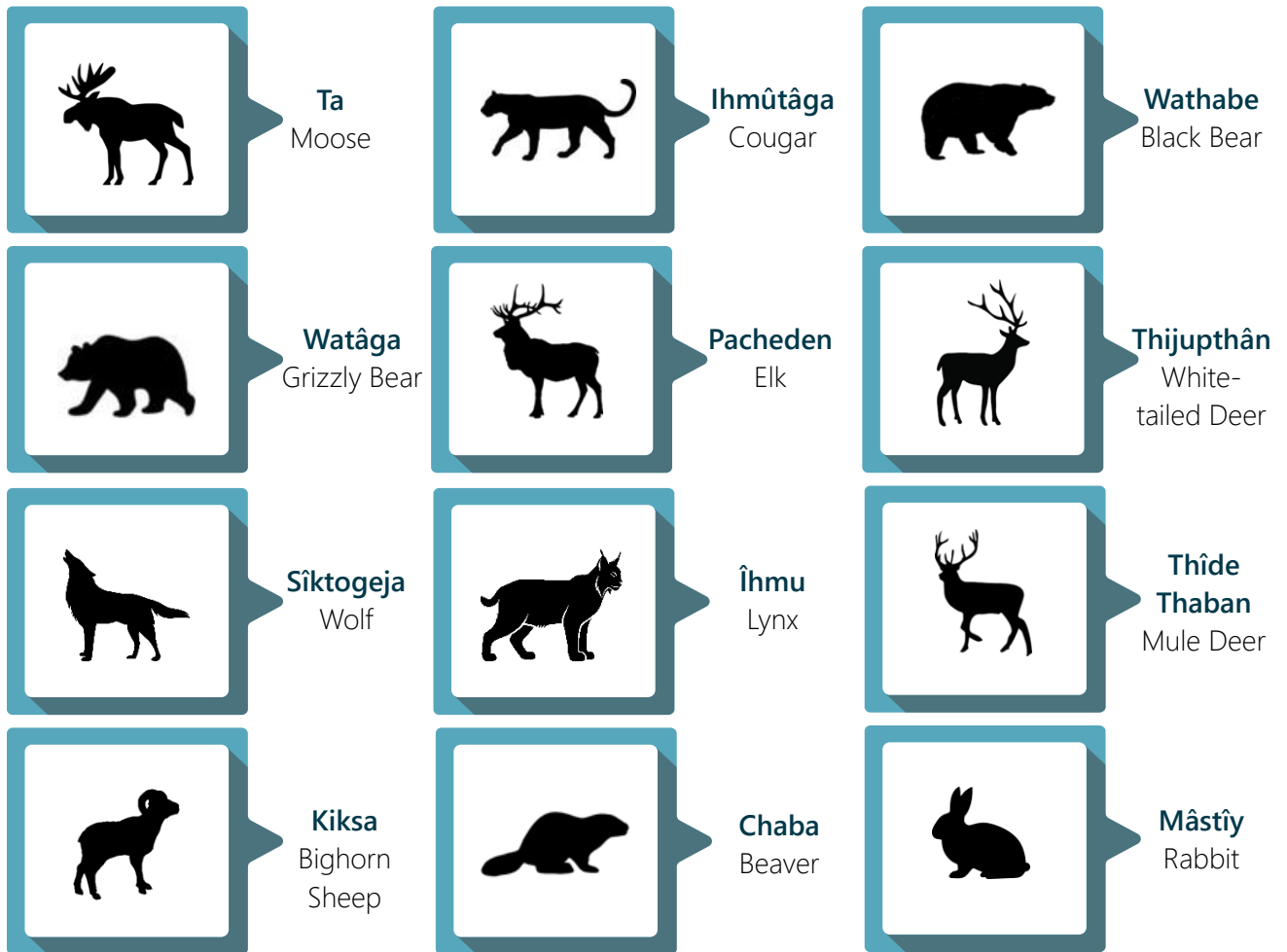


Photo 9: Pacheden in Canmore, Credit: Y2Y



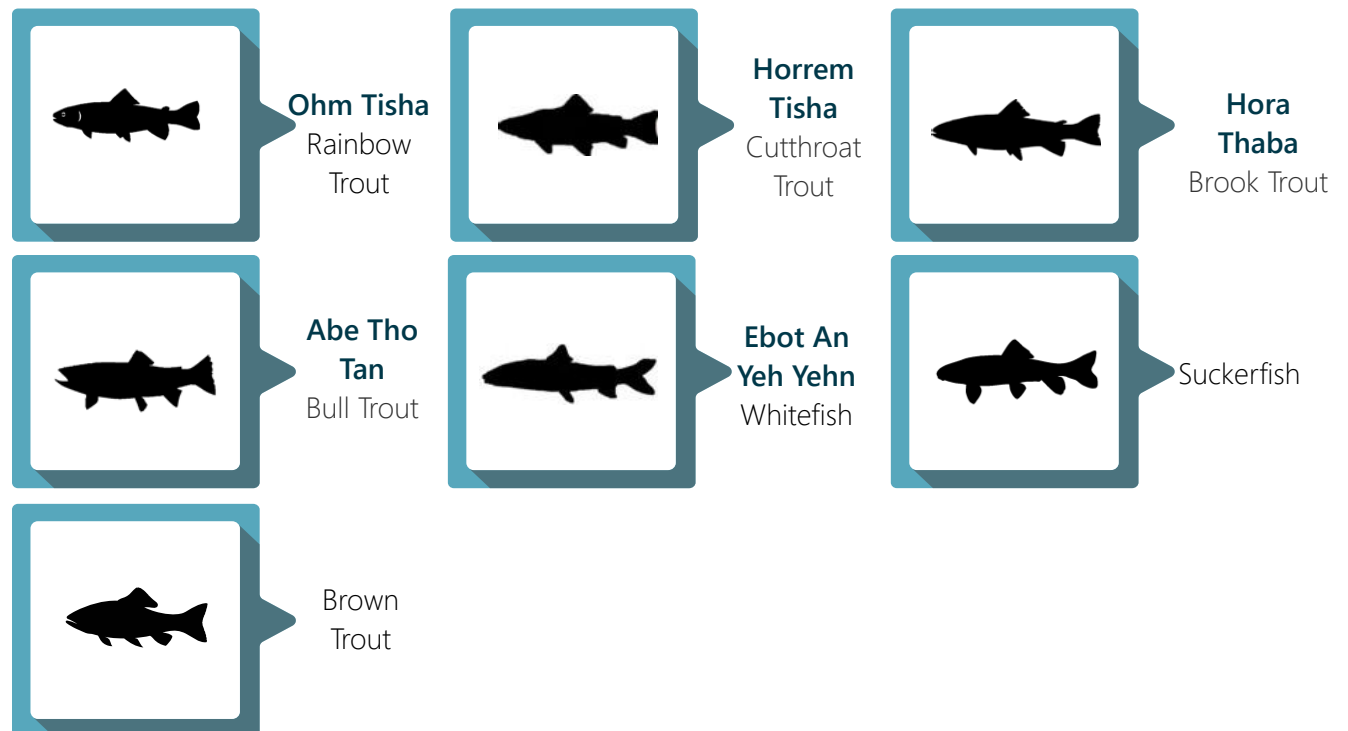
Culturally important wildlife Contributors either spoke of, or indicated that they hunt or trap in the PSA include:⁵



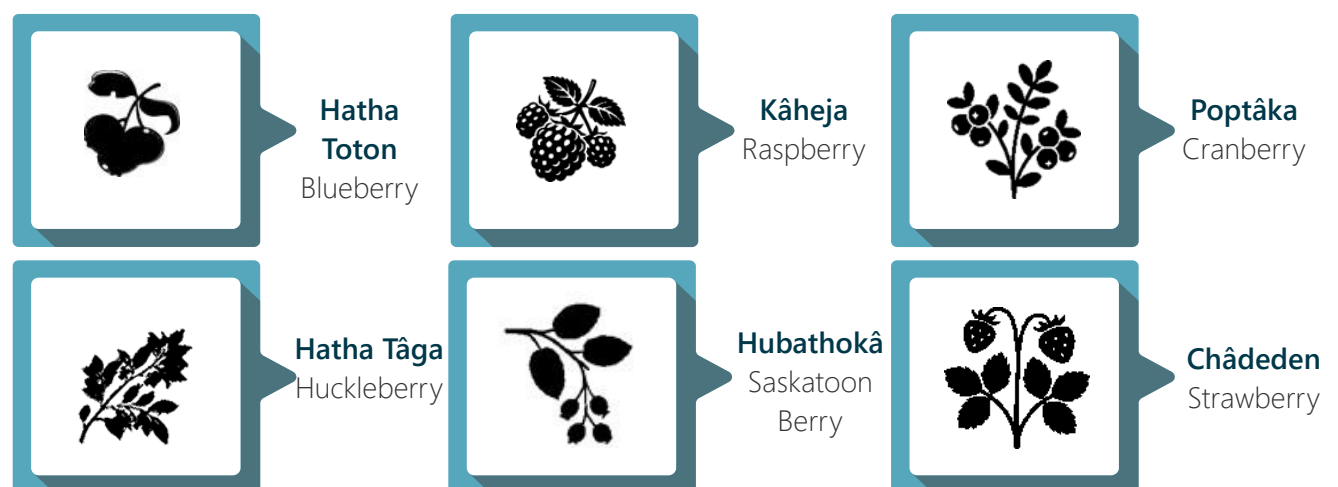
⁵ Grizzly bear is considered an endangered species in Alberta and of special concern federally (Alberta Conservation Association 2010; Committee on the Status of Endangered Wildlife in Canada 2012).



Culturally important fish Contributors either spoke of or indicated that they fish in the PSA include:⁶



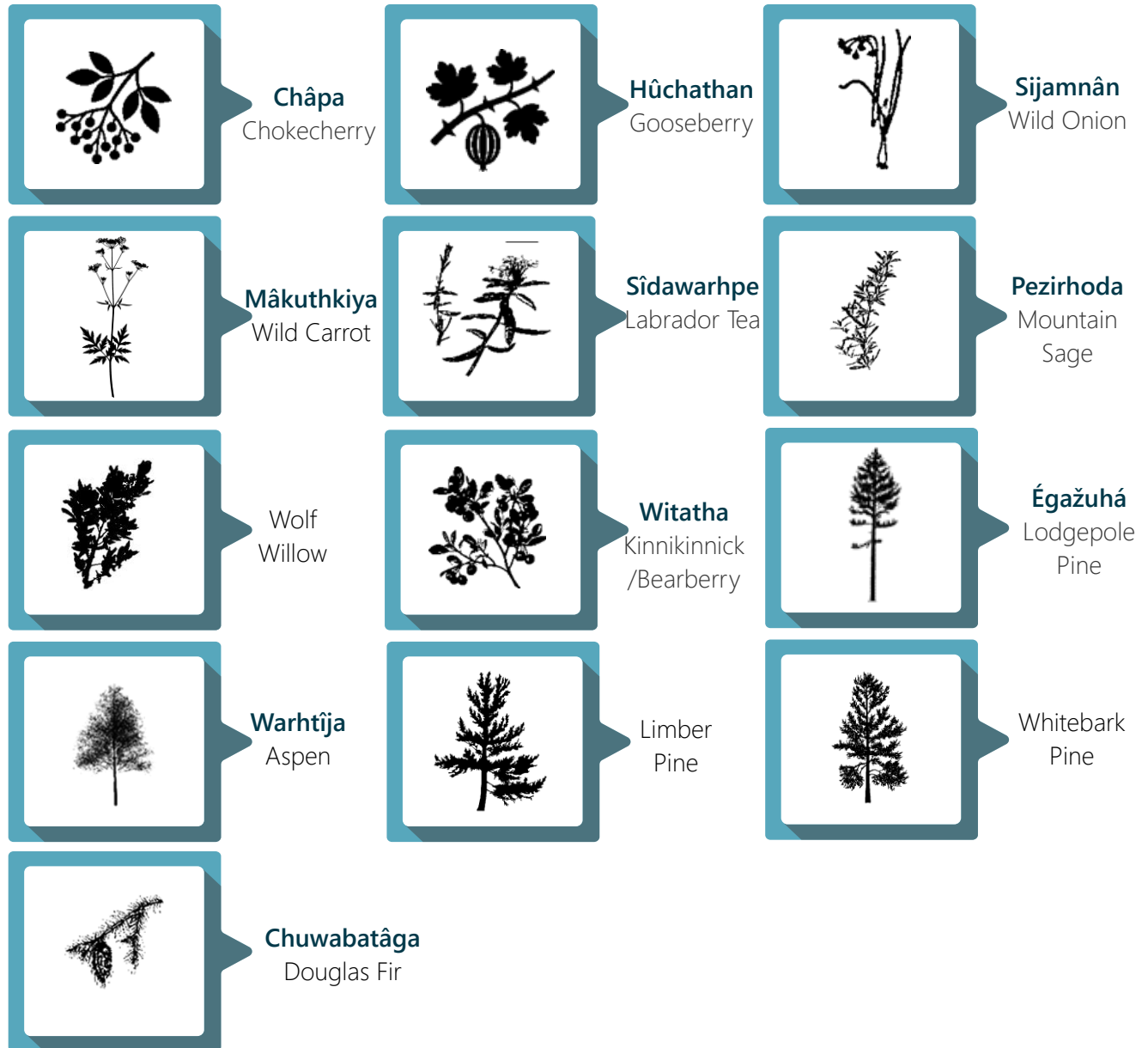
Culturally important vegetation Contributors either spoke of, or indicated that they gather in the PSA include:⁷



⁶ Westslope cutthroat trout is considered endangered in Alberta, and as a threatened species by the federal government (Alberta Conservation Association 2006; Committee on the Status of Endangered Wildlife in Canada 2018). Bull trout is considered an endangered species in Alberta (Alberta Conservation Association 2009).

⁷ Limber pine and whitebark pine are considered endangered species in Alberta (Committee on the Status of Endangered Wildlife in Canada 2010; Government of Canada 2022).





The following sections provide additional detail on how culturally important species and resources found on the land are linked to Îyethkabi identity and cultural practices.

3.1.1.1 Harvesting

Hunting and Trapping

Some of the common species Îyethkabi hunt within the PSA include thîde thaban (mule deer), ta (moose), pacheden (elk), and kiska (bighorn sheep). Common trapped species include beaver, rabbit, wolf, lynx, cougar, marten, short- and long-tailed weasels, and mink.



"Well, we hunt elk, moose, deer, or sheep, but usually, mostly elk and deer...Elk are raised like cattle, all in herds, too. They're one of the herd animals in wildlife, elk. You see, deer are herd too, but not quite often. You want to see two or three together, but sometimes you can see ten together. Deer, white tailed deer, they're always alone. We don't like white tailed deer... Tastes different... Mule deer is the best, the best...we call them thîde thaban. That means...'black tip animal', thîde thaban. See a mule deer has a tail with black tip at the end. That's a mule deer. See, a white-tailed deer is all white, that's the difference." (01SN)

Contributors described trapping as an important harvesting practice requiring knowledge of animal behaviour, seasonal movement, habitat, weather, and travel through the mountains and valleys. Trapline maintenance also helps Îyethkabi maintain human and horse trails, observe wildlife, teach younger generations, and carry out stewardship responsibilities. For some Stoney members, trapping also provided income through the sale of furs.

Hunting also provides opportunities for teaching and knowledge transmission, the use of Îyethka, and practice of other land-based activities such as horseback riding. The practice of hunting is earned through age and respect; prior to coming of age, young Stoney boys spend time in community, learning related activities and protocols. When it is time to hunt, Îyethkabi youth take on the role of hunting.

"There's certain age where you don't get to hunt, until you get to teenager. In the meantime, you look, you're here with the women village. But they teach you things at a certain age when you're becoming a man, that's when you start picking up behind horses. You don't get to shoot either. You know, there's steps...And then after you learn how to [butcher], then you have [to] shoot, but you don't shoot for you. You shoot for all the family. You don't get nothing. Then you are left with whatever - the meat goes to all the Elders...They take whatever they want, and you take it to your uncles or your brother or sister first... and whatever is left you take it home." (94SN)

Îyethkabi follow longstanding protocols based in the connection and knowledge of species that have been passed through generations while hunting and trapping. These protocols are followed to preserve hunted and trapped species, ensuring quality and quantity for future harvests. Animals are harvested at certain points in their lifecycles, with preference for males during most seasons and females outside of their reproductive season.

"See, if you were to hunt for real good meat right now, this time of year we only kill the two-year olds and three-year olds, elk and moose, all of them, elk and moose and deer. Because they're the only ones that are tender and they're not full of bugs or anything. We don't shoot cows or adult males." (01SN)



"Yeah, [we hunt] the ones that are not pregnant and the younger ones that haven't rut yet. Like the younger ones, there's certain types that we know like, I was taught from my grandpa and [my father], certain time of year, certain animals we shoot, we hunt ...so, they're probably done calving now, but the young, they're with the young, so we leave that alone." (94SN)

"They go after the buck deer cause they're big, big enough. But there's certain times they can't shoot the animal too, right? The female, they can't shoot at when they're calling...they really study the animal, because some of them have a lot of, what do they call those bugs, or ticks. So, they don't bother trying to get those either, you know. And there's a lot of that in some of [the] moose..." (78SN)

Most Îyethkabi trap in the late fall and winter months depending on the species and weather conditions. Hunting is completed during early fall in preparation for winter; the weather during this time also still supports camping. Fall is also a time in which species are mating but not yet rearing young.

"...all of the Stoneys, during that hunting area, you'll see them camp like this and about, two or three, four miles down the road, you'll see another camp and they all know each other. And they all tell each other who's gonna hunt...So, all these valleys are hunted during the hunting season, August, September, October." (94SN)

"Hunting season is open right now [August], in our traditional way of life. We don't hunt in the wintertime, barely hunt. If we hunt in the wintertime, we're looking for either a dry cow or a young male that's maybe two or three years old. At four years old, like deer, elk, moose, they're adults, they go after their females. But...one, two, and three years old, they don't, and their meat is just tender and nice. But when they become adults, the only time we hunt those kind of deers are probably before August...But right now, elk, the male elk right now is really nice. But we won't hunt it after August, end of August, the meat is no good. So, right between now and end of August you can hunt elk, moose and deer and everything. But in September, September 15th is when the moose are rutting. So, from September 15th to October 30th, you don't shoot them because their meat tastes different, because they're rutting. So, we don't eat them. So, sometimes in November, then we can hunt elk, the moose or deer that's finished rutting. You give them a month time to get pure, to hunt them. When they're rutting and everything their meat's- they stink." (01SN)

Contributors shared stories of hunting in Tînda Mîman and nearby locations. Historically, Îyethkabi harvesters travelled over a wide territory to access wildlife.



"Yeah, we travel a lot, like, where the animals are, we go down there, we harvest. That time in like, chasing them back and forth and, from United States border to back up here." (83SN)

There are certain long-standing sites within the PSA that are important for harvesting certain species.

"...back in those days that there were a lot of elk, and that's what they mostly hunted in this area. It's not to say that there wasn't another game, but more primarily elk, all the way from here, along the mountains to Ya Ha Tinda is where they hunt. And then back in those days, there's rarely any goats alongside of the roads. Yet if you want to go, you have to go in their areas, in their territory, which is higher in the mountains. And that they would hunt those as well." (11SN, translated by 37SN)

"Yeah, my son is the hunter. He'd go up there and way up south...Porcupine Hills...behind Coleman, or Castle Mountain, we call it over there. That's where he'll go hunting. Up here." (02SN)

Fishing

Fishing is equally important for craft making, ceremonies, health, and other cultural activities as it is for consumption. Even if an individual does not physically fish, they often receive fish from other community members and rely on fished species. Îyethkabi fishers often report fishing for horâ ptisa (brown trout), horâ thkan (whitefish), horrem tisha (westslope cutthroat trout), and ohm tisha (rainbow trout). Like other harvesting practices, fishing supports teaching and transmission by bringing youth to the mînî, where they learn fishing skills and protocol.

"There's a lot of fish, but the most that I ever heard about, the Rainbow." (78SN)

Contributors described fishing as a year-round practice, including ice fishing in the winter. Fishing is generally avoided during spawning periods, and harvesters pay attention to fish condition, mînî levels, and seasonal movement when choosing where and when to fish. According to Contributors, the mînî in the PSA used to be exceptionally clear because of mountain runoff, and lacked contamination prior to development, which in turn enhanced the quality of both the fish, and the animals that fed on them.

Fishing areas are also tied to broader patterns of land use, with families combining fishing trips with camping, berry picking, travel, and other harvesting activities. Time spent fishing allows Îyethkabi to maintain relationships with waterways, fish habitat, and associated plants and wildlife, while also teaching younger generations how to use the land and mînî in a respectful way.



Gathering

Contributors reported that the PSA contained an abundance of plants, pezuda, trees and tree products, minerals, mîñî, and other resources, which serve as sources of food, pezuda, ceremonial and sacred materials, and building materials.

Îyethkabi gather intentionally, for example, they go out specifically to gather berries or pezuda, or they may gather during other activities like hunting. Just as with hunting, plant harvesting is often closely connected with camping.

Îyethkabi are currently able to gather medicines and plants on provincial Crown lands within the PSA. In 2012, Îyâhé Nakoda conducted a "Park Pass" signing ceremony with Parks Canada and received lifetime park passes that allow Îyethkabi unimpeded access to Banff National Park to gather herbs and pezuda for personal use.

Gathering predominantly occurs during the end of the growing season, before fall and winter, but starts with spring, when species like wild spinach are fresh and available. Berries like haṭṭa toton (blueberries), hubaṭṭokâ (Saskatoon berries), châdeden (wild strawberries), châpa (chokecherries), poptâka (cranberries) and haṭṭa tâga (huckleberries) are ripe, and grasses and pezirhoda (mountain sage) are collected before wilting during the late summer and early fall months.

"August and September is probably when blueberries are really good, ripe, time to eat..." (01SN)

"...we do go berry picking, starting from August. All month of August is berry picking, berry, blueberries, raspberries, Saskatoons and chokecherries, they're all ripe, right now, they're ready to be harvested. That's when our picking berry starts." (01SN)

Contributors reported that they have long gathered foods and pezuda from the PSA mountains and valleys, including (but not limited to) wild spinach, mâkuthkiya (wild carrots), and various berry species.

Locations such as Îyârhe Yamnî Ochiâ Îgach, Tae Guh They Hunch, Chuwapchîpchîyan Kude Bi, and the park boundary of Mîñî Rhpa Mâkoche are specific locations within the PSA that are frequented by Îyethkabi harvesters.

"...like the only berries you can pick is on the west side along the mountain region on the Bow Valley here, Canmore...under Three Sisters, around the other side of Three Sisters, lots of blueberries. Used to ride a horse, back around it and get there, you can't drive in there. If you're hiking in there, there's a lot of blueberries, and then you go past Dead Man's Flats...there's a lot of huckleberries there." (01SN)



Select Îyethkabi are Medicine Holders, honoured with the knowledge of medicinal uses, pezuda locations, and the ability to use pezuda to heal Îyethkabi. Pezuda knowledge is passed down generationally to those who earn it by gaining an intimate knowledge of plants and their spirits. Contributors noted that Îyethkabi used to gather an abundance of pezuda in the PSA, including herbs, berries, saps, and other plants. Pezuda is used to make teas, balms and salves, smudge, inhalants, or ceremonial resources.

Contributors spoke about the strict protocol Medicine Holders follow when collecting pezuda.



Photo 10: Example of Tipi Poles Resting Up Against a Tree, Dutch Creek

"Berries, herbs, natural herbs [are] not like before, back in time, when our own tribe, they used to have medicine mans and, they used to use natural herbs, the one that was growing off in mountain area, stuff like that. They brew it and then somehow that person gets cured." (83SN)

In addition to species for consumption, Îyethkabi gather trees, roots, grasses, resin and stones for tools, ceremonial purposes and building materials. Tree products that are harvested for building materials include chuwabatâga (Douglas fir), chuwaba rhtîja, châptâ. Chuwabatâga bark is used for burning; it is preferred for its use in tipis and small spaces as it does not spark and burns better than coal. Chuwabatâga has long been used for carpets and flooring in tipis and structures. Chuwaba rhtîja is a popular species for constructing log structures such as cabins and tipis; châptâ is also used for tipis and sweat lodges.

Tree products from tâba (birch) and chârâziya (willow) and roots from chuwabatâga have long been used to make bows for Îyethkabi hunters. These materials are known to be pliable and strong, although it can be difficult to find the perfect materials as knots in the wood can compromise the strength and accuracy of the bow.

Resins and gums are common supplies for crafting. Châptâ (pine) contains a gum-like glue that has been used to repair canoes; there is also chewing gum derived from châptâ that is called chasî (pine chewing gum). Tree resin was historically used for tool and weapon making. Grasses are used for



preparing arrowheads by boiling mînî, grass, and rocks. Once the rock is hot, cold mînî is added and the rock can be chipped away to shape the arrowhead as desired.

Although many Stoney hunters now use guns, traditional weapons and hunting tools are still made by hand for ceremonial, spiritual, cultural, and educational purposes.



Throat Antler Weapon



Arrows



Warhammer



Cane

Photo 11: Stoney Weapons, Courtesy of Elder O5SN

3.1.1.2 Mînî

Mînî (water) is one of the four elements in Traditional Knowledge, which also include fire, earth, and air. Mînî has long been and remains to this day, of the utmost importance to Îyethkabi. Mînî is used for medicinal and cultural practices and holds a strong spiritual presence. Most of the Mînî within the PSA is sacred. Mînî is also recognized by Stoney as being important for fish, wildlife, and plant health. There are also certain pezuda that can only be collected in aquatic environments.



"There's even medicines that come from the water." (71SN)

There are several key Mîni gathering locations throughout the PSA used for drinking and cleansing.

"...our water, I love drinking water every day. I love drinking water. I go to the, we talk about Canmore, there's a place, spring water, I go there. It's, I do have well-water at home, but instead I go there to get types of water there. And there's one over in Kananaskis, too." (100SN)

3.1.1.3 Non-Consumptive Species & Uses

There are several wildlife species that are not hunted, but hold importance for Stoney, or that are hunted, but serve purposes other than subsistence. Non-consumptive wildlife are frequently mentioned in Îyethkabi stories and oral histories. One Contributor shared generational stories of Îyethkabi Elders who would witness animals dancing and 'crisscrossing' in valleys within the mountains during seasonal times of celebration. Another Contributor shared that the sound of bear paws, pacheden, and ta hooves dancing on the ground are the sources and inspiration for many of the drumbeats in traditional Îyethkabi songs.

Wagîyá (eagles) are a non-harvested animal that hold great sacred importance. One Contributor noted that wagîyá (are frequent Tînda Mîman, returning seasonally:

"There's a lot of eagle nests [in Tînda Mîman]...Was a few, quite a few of them, wasn't just one...Look[s] like they just come back every year, they migrate." (75SN)

Îyethkabi have a close connection to wagîyá, they harvest their feathers for ceremony and cultural purposes such as for regalia, and the knowledge of the behaviours and habits of wagîyá are passed down through generations. The importance of wagîyá is represented through Îyethka and place names.

"Because one time we took some kids over here [area near Kananaskis]... And that guy he said he counted 4,800 eagles. That's the number... That was February, we call that 'Eagle Month' in our language...it's the Eagle Moon. That's what we call it because this is the route, and that's when they come back in February... That's why they call this one mountain Ūbithka Îyârhe." (67SN)

In addition to wagîyá feathers, additional animal products are harvested throughout the PSA and the Îyâhé Nakoda Mâkoche. One Contributor shared knowledge of how antlers were historically collected



throughout the PSA for the purposes of making weapons; Îyethkabi call this 'shed hunting'.⁸ Thijupthân (white-tailed deer) shed their antlers in early spring (around March) in Indian Flats and Cougar Creek. Today, antlers are collected for educational or regalia purposes.

Watâga (grizzly bears) are a species of high importance for Îyethkabi. Bears are not commonly harvested by Stoney, unless necessary for cultural or spiritual purposes, or requested by an Elder. Bears provide resources for ceremony, pezuda, hide tanning, and other spiritual and cultural practices.

"Mostly elk in this area, and deer. But in the upper Spray Lake Valley area, we get moose, and we don't hunt bears...we don't just go out and kill a bear. We might be asked from another elderly person to get a bear for...spirituality, for ceremonial purposes." (43SN)

When Îyethkabi do harvest bear, strict protocols must be adhered to. Similar to bears, calves and young are only to be harvested at the request of an Elder.

3.1.2 Place-based Practices

As noted, for Îyâhé Nakoda, time on the land fosters knowledge transmission and cultural connectivity; it is vital for Nation members to be on the land to build connection to place and maintain cultural practices. These practices are reenforced through teachings, language and names, stories, and ceremonies.

"...how names and knowledge is passed on, a lot of us have to explain that, when I say that land and culture go hand-in-hand, what we mean is that we need to be on the land to be taught the name, to be taught what the land provides, like, what certain medicines, what certain animal. A lot of us are taken to these areas to be taught this knowledge so we can remember it. Stuff happens out there, like, say, we go hunting [at] Ya Ha Tinda, something will happen, something will be said, [and] it just sticks in your mind, it'll come back to you...Knowledge is passed on that way, you know. Like it, just stuff happens where you will remember, but being out there on the land is better than being taught what the name is from a map. You know, that's not what we do. What we do is, we're taken to the land and then we're taught these names, what animals go through here, you know what's more present there"
(37SN)

Time on the land promotes learning of place, names, and activities such as harvesting. Teaching and learning on the land have occurred for generations within the PSA and the entire Îyâhé Nakoda Mâkoche.

⁸ Many ungulates shed their antlers on a seasonal basis, typically after rutting, including ta, pacheden, and deer.



"...springtime was one of the times we hunt beaver, and beaver was one of our main [hunted animals]...you want to eat the meat [during] a certain time of the year, and beaver was one of that [in the] springtime. [If] we got [a] pelt, of course, we[d] sell it." (43SN)

The following section further describes the importance of land and place to Îyethkabi identity and cultural practices.

3.1.2.1 Ceremony

Tînda Mîmân and the surrounding valleys have long been central to ceremonial life for the Îyăhé Nakoda. These spaces hosted Sun Dances, sweat lodges, pipe ceremonies, and vision quests, affirming the Îyethkabi's connection to Creator and to each other. Protocol such as offering tobacco express gratitude and respect, reinforcing the belief that the land itself is alive and responsive. Even as modern access challenges arise, these practices continue as they are essential to Stoney identity.

Ceremony begins with intention and care. Stoney families enter the forest with quiet purpose, preparing spaces that honour the sacred balance of life. Cloths dyed in the colours of the four directions (Medicine Wheel) are tied to trees and tobacco is offered to the earth as acts of living prayers, affirming harmony with Mother Earth and the spirits of mînî, wind, and forest. Such practices have endured since the time of creation, continuing today - a testament to Stoney's resilience and faith.

"We tie colours on trees. So, if you see colors on trees out there in the forest, yeah, it's our people that need to do that. We tie up for the four directions, for mother earth, the trees, the life, the berries, you know, spiritual things that we do in the whole forest area from all the way around Highway 40, all the way down." (78SN)

Ceremony thrives in community. Seasonal gatherings bring families together in sacred valleys like Horhtîja Temne (Spray Lakes) and Kay Nas Kay (Kananaskis). These events mark spiritual renewals, marked by feasts, sweats, and teachings shared around fires. These spaces, chosen for their tranquility and spiritual significance, have hosted gatherings since time of creation.

"...Tînda Mîman, it's a popular area, there. That's where they're gathering after sweats there, some in Spray Lakes, some towards Banff. So, it's quite a place like, you know, especially around Dead Man's Flats, too, so, they have quite a bit in Kananaskis, too, so, that's where they all go. We used to gather the families, about 20 families, getting together for Easter in Kananaskis. That's where they have the feast." (80SN)



Contributors participate in Sun Dances and pow wows in valleys and mountain clearings for spiritual and ceremonial purposes. They also present moments of instruction, where Elders share stories of the land and its spirits, ensuring that younger generations understand their heritage. The locations themselves (such as Sunshine Mountain, Mîni Wakâ, and Ghost River) carry layers of meaning, connecting ceremony to ancestral travel routes and burial grounds.

"There's a few Sun Dances been held in these valleys. I only know of one, there's one on Sunshine Mountain on the other side of the Park..." (94SN)

Sweat lodges are sanctuaries of healing and prayer. They are built not only for ceremonial occasions but for health, purification, and spiritual balance. Within the lodge, heat and steam cleanse the body while songs and prayers cleanse the spirit. These ceremonies are deeply personal yet profoundly communal, offering strength to individuals and harmony to the collective. Sweats are erected in response to need, whether for an Elder's health, a family's grief, or a community's renewal.



Photo 12: Stoney Cloth Prints



"It's a very sacred places where, you know they do Sun Dances and sweats... you know, it's very sacred and very spiritual and to us it's our religion." (01SN)

"There may be a camp, a clan camping near maybe one Elder or another person's not feeling well and everything, they'll put up a sweat for him..." (01SN)

"Sweats are not made just for occasions. It's set up for health reasons or any other ways that they can be used, even for breathing stuff like that. Sweats are used for that." (01SN)

Pipe ceremonies and smudging are acts of reverence, connecting people to spirit and land. These rituals often take place in secluded mountain areas like Heart Mountain and Highway 40, chosen for their quiet and sacred energy. The pipe, along with pezuda like pezirhoda, sweetgrass, and rhâde (cedar tree), becomes a vessel for prayer, carrying intentions to the Creator.

"Now for the sacred pipe, that's when I use it. You only need four, eh. This is one of them, rhâde, sage, tobacco, and sweetgrass. Those four you need for smudge... [Rhâde], it's good for like, the sweet pine really helps out too, because...we know that everything has spirit, the wood, trees, all the grass, yeah, that's all we asked them to help us." (103SN)

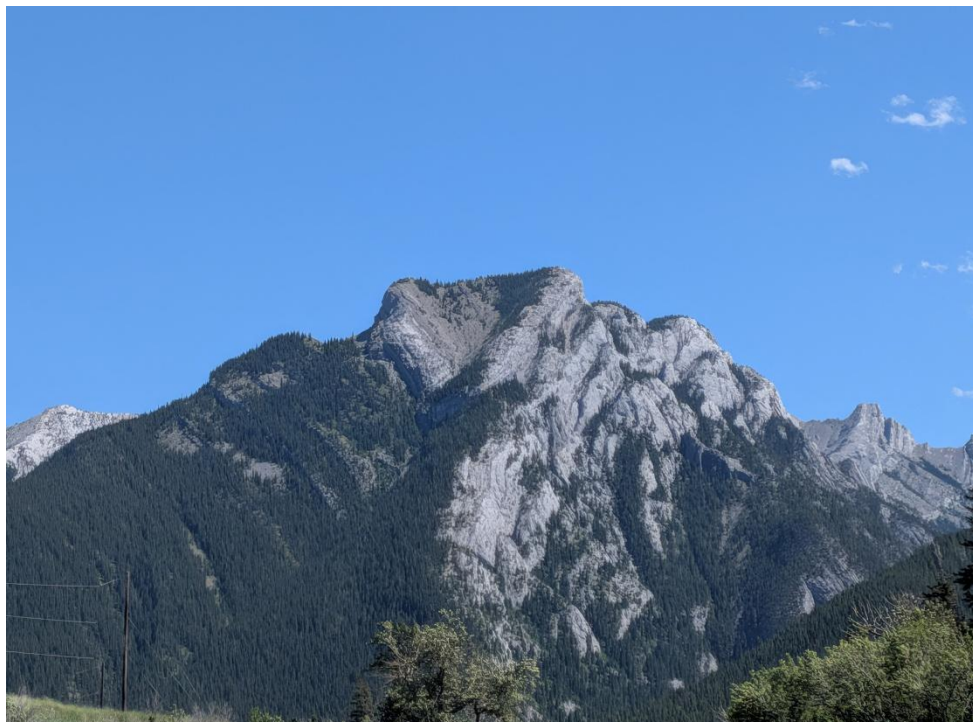


Photo 13: Heart Mountain, credit: William Snow



3.1.2.2 Camping

Historically, camping was part of everyday life. Families organized camps with care; they built fires for warmth, used chuwaba rht̓ja (spruce) boughs for flooring and insulation, and prepared food communally. These practices reflected a worldview where land and people exist in a reciprocal relationship, each sustaining the other.

*"We camp all over here, all through [the PSA], in different areas, different spots...During August, end of August into September they camp everywhere here."
(01SN)*

*"We used to camp on that side a lot of times, Kananaskis, the Spray [Lakes area]...people camped before the Lodge, Kananaskis Lodge. They used to camp on the other side of, on the south side of the Kananaskis Lodge, too. That's where they hunted, that's where they harvest[ed]."
(69SN)*

Îyethkabi camps would shift on a seasonal basis, following wildlife and access to plants and pezuda. Families would have multiple camps (summer and winter) within the Îyăhé Nakoda Mâkoche which they would travel between. Family camp locations were known and respected amongst all Îyethkabi.

*"Like our grandfathers [said], like, it's [Tînda Mîmân] a resting, a camping area for a night on their travel. And sometimes they kind of, the way I heard is that they live in there for quite some time, for harvesting and whatnot. And between Banff and Morley and whatever, you know, that's some kind of a truck stop for back then."
(65SN)*

Although camping is no longer a daily practice, it still occurs seasonally and follows wildlife and vegetation availability. Families use their ancestral camps and host harvesting camps in the fall.

3.1.2.3 Teaching

Knowledge of hunting, pezuda, and ceremony is passed to children through lived practice. These intergenerational ties ensure cultural resilience amid external pressures and restrictions. Land-based learning is crucial for youth to identify animal tracks, habitat, potential dangers, vegetation, and to learn the landscape. Îyethka place names are given to landscapes and are recognized by unique identifiers that can only be viewed on the land. Grant MacEwan's account of former Stoney Chief Tatana Mani (Walking Buffalo) similarly emphasizes land-based education and the value of learning directly from the outdoors:

On the subject of education, the chief made a philosophical observation from his own experience. "I didn't get as far as high school," he said, "but the Great Spirit gave me something I could never have found in the classroom-the heart



and will to understand. I'm anxious for our young ones to want to be searchers for truth as nature is prepared to reveal it to those who truly seek. Lots of educated people have very little understanding of the wonders of the Great Spirit's community, just as lots of uneducated people do have that understanding. I didn't go to your high school, but I attended the best university of all, nature's great university of the outdoors (MacEwan 1969, 175-176).

Learning is not confined to words but rooted in experience on the land. For example, boys observe and listen in their early years, and by around eight years old, accompany older siblings and men on hunting trips. This gradual involvement teaches practical skills and cultural responsibilities, reinforcing identity through participation.

"We learned growing up. By the time, in our culture, by the time you're eight years old, you reach eight years old, you start going out with your older brothers. Start going out with the men. Before eight years old, you stay home, you listen. By the time you reach eight years old, you start, now you start doing the, the men work."
(43SN)

As youth mature, teachings expand beyond technique to include values such as respect for Elders, discipline, and spiritual protocols. Hunting is a way to learn patience, humility, and the importance of community in addition to acquiring food. Similarly, those who earn the gift of gathering pezuda are given careful instruction from Medicine Holders, who demonstrate how to identify plants, when to harvest them, and the protocols, including prayers and offerings required to maintain balance with the land. These practices are seasonal and immersive, requiring extended time in camps where families hunt, harvest, and hold ceremonies together.

"...my uncle, late uncle, liked medicine. He passed on medicine to me, herbs. So, to this day, I still treat people [with] traditional medicine. That's one thing that you don't just go out and take. You gotta' learn, pass down from generation to generation. And...that's very important. For me, when it's my time, you know, that I like to teach one of my grandkids to keep it going, make sure that, keep it alive. It's Stoney, that's who we are." (25SN)

The process of teaching is deliberate and relational; the passing of responsibility is to ensure these traditions endure, as knowledge must be handed down so future generations can keep it alive. Time on the land is central to this continuity; every lesson, whether about tracking animals or preparing for ceremony, is tied to place and season. Through these experiences, cultural knowledge is not only preserved but lived, shaping identity and resilience for generations to come.



3.1.2.4 Travel and Tracking

The PSA is home to Îyăhé Nakoda historic travel routes. Îyethkabi knowledge of these routes made the Îyethkabi indispensable as guides during the era of exploration and early tourism.

"Yeah, he [11SN] says that he remembers as a child, using these trails to get to Minnewanka and then going north to what they call Kootenay Plains and to get to Big Horn reserve. And his mother grew up around Big Horn area, he's one of them, that tribe there, in that they traveled north a lot because he had relatives in the Cree... So, they always traveled more, and they always use these trails." (11SN, translated by 37SN)

Expertise ensured safe passage through rugged terrain where outsiders often faced starvation or injury. Historical accounts describe how Îyethkabi families provided food, shelter, and care to explorers in distress, later guiding them through mountain passes and naming many of the region's iconic landmarks (Spry 1995; Whyte and Harmon 1982).

One notable Stoney guide supported the Dr. James Hector during the 1858 Palliser Expedition. The Îyethkabi, whose skills were legendary, tracked ta by reading saliva on chârâziya tops and half-chewed leaves, demonstrating a deep understanding of animal behavior. His expertise saved lives when explorers neared starvation; he hunted ta to feed early explorers and organized large-scale kiska hunts with other Îyethkabi hunters (Erasmus 1976). These accounts also reveal cultural practices during camp; Îyethkabi women prepared shelters lined with pine foliage, cooked traditional foods like ta nose and boiled blood, and maintained protocols of care and hospitality.

"...everything they did back in those days were out of necessity, hunting, fishing, harvesting, medicines, bears, everything they did, this land provided that as well.... They're basically doing what their ancestors did for a long time. So, that back in those days, they didn't ask permission or anything, they just lived as they did and as what was promised at treaty. It was just that they were just living their daily lives. So, doing these things... wasn't a rare thing back then, it was something that they did daily, that it was just our way of life. (11SN, translated by 37SN)

Guiding reflected generosity, ecological knowledge, and spiritual responsibility, qualities that continue to define the Îyăhé Nakoda as "People of the Mountains" (Stoney Nakoda Nations n.d.).

3.1.2.5 Oral Teachings and Stories

Oral teachings and stories are learnings, histories, and spiritual connections woven into words. Passed down through generations, these narratives carry the wisdom of Elders, offering guidance on how to live with respect and resilience.



"So, I believe what I've been told by my Elders, you know, it's some Elder's history...They know it, they face it, that's how you come through." (14SN)

The land itself speaks through these stories. Mountains, rivers, and animals are active contributors in the narrative. Stories explain the rhythms of nature, the length of seasons, and the balance of life.

"Well, there's the history of that beaver...they asked the beaver, 'How many months of winter is suitable for you?' And he said, 'Count my marks on the tail'...the frog said...He keeps seven, so there's seven months of winter.... Otherwise, he can't survive after seven months.... That's the history we were told by Elders way back." (14SN)

This story ties the cycle of winter to the wisdom of animals, showing how survival and seasons are interconnected. Similarly, the mountains themselves hold spirit and presence, and certain areas are especially sacred.

"And a long time ago, my dad was born 1905, my grandfather, 1800. He used to tell me...he's travelled [with] his horse, suddenly, the Rockies are moving, stopped him, he took a good look, and [within] these Rockies is a big, giant old man sitting...He said, 'Grandson, don't, don't scared, don't worry. I've been watching you guys for a long time.' That's what he told them." (72SN)

These narratives remind Îyethkabi that the land is alive, watching, and teaching. They are the roots of the Îyethkabi worldview that nature is sacred and animated.

Stories also carry lessons about respect: for life, for spirit, and for the unseen relations that dwell in the land. They warn against arrogance and carelessness. One Contributor recounted a story about a man who ignored cultural teachings and paid the price.

"Even one elder was telling me this one guy was walking on a trail, and he came to a riverbank, those deep banks, you know. Before he got there, there's a buffalo skull sitting there...that guy doesn't believe in the culture. He walked by and he came back and went, same place, still sitting, and he said to the skull, 'You're sitting here, I'm going to do something to you. You're not supposed to be sitting here.' So, he went by and he came back, same thing, so he took it, and he threw it over the bank, and right into there, and got part of his horn, and horn is broken, and a buffalo came to this guy, 'What happened here? You did wrong for yourself. I'm gonna kill you.' He said that to this guy. Then this guy, he took off. He was running, and the



buffalo was, he can easily catch him up, but just followed, he scared him off. Then he came to a big cliff, and this, he's got no other way. And this guy, he jumped, he jumped...he went in that kind of sandy spot...he ran into something, and he got up, and there's antlers, elk antlers, and this guy, he turned around and he faced that buffalo. And that buffalo said, 'You're lucky. You got into the skull, and from now on, don't ever fool around with our skull, buffalo skull.'...He tried make a poplar split...he went in there to hide from that buffalo. And that buffalo horn got into [there] before it closed. So, he turned, and he almost broke his back, and this guy gave up, and that's when he told him, 'Don't ever fool around with our skull.'" (14SN)



Photo 14: Fire Pit, Kootenay Plains

This story teaches humility and reverence, reminding listeners that every object, creature, and place carries meaning and spirit, and respect is not optional.

Through these narratives, Stoney maintains a living relationship with the land. Stories are not frozen in the past; they continue to guide present and future generations. They teach survival, respect, and identity. They affirm that the land is not something to conquer or exploit, but something to honour and



respect. In this way, stories are both memory and map. These stories and teachings are all based on locations and represent Stoney's connection to these places.

3.1.3 Significant Cultural Places

The following section provides further detail on specific locations within the PSA that are significant to Stoney in terms of culture, identity, and wellbeing.

3.1.3.1 Chuwapchîpchîyan Kude Bi (Canmore valley)

Chuwapchîpchîyan Kude Bi (Canmore valley) is located east of the Mîni Rhpa Mâkoche boundary. Founded in 1884 and known historically as a mining town, it is currently home to approximately 16,000 people (Statistics Canada 2023). Prior to the establishment of what is now the townsite, the land and surrounding area were long used by Îyethkabi. Chuwapchîpchîyan Kude Bi contains vital vegetation and wildlife, pezuda and herbs, along with ta and pacheden that are central to Îyethkabi diet and way of life.

"Well, this valley is called Chuwapchîpchîyan Kude Bi. The Chuwapchîpchîyan Kude Bi here, there's all kinds of different herbs and medicines and roots all over in this valley, right to Banff, right to Lake Louise, right up through to probably Jasper maybe, and on and on...medicines from here that reaches out through the Bow Valley and the overpass through Bow Lake, you're going to Columbia Ice Fields, right to Jasper, all through there, the herbs [are] about the same." (01SN)

The Stoney place name 'Chuwapchîpchîyan Kude Bi' means 'shooting at the stump' or 'shooting at the willow', and was named after a Nation member who mistook a chârâziya for an enemy in the dark.

"...we heard about from different storytelling and all that, and some say there's a target shooting at the time, and some say somebody mistaken a tree stump or whatever, like some encounter from the Blackfeet and they took a shot at that stump... That's how we know, if they said in Stoney, Chuwapchîpchîyan Kude Bi...to me, it's a historic place..." (65SN)

"He [11SN] was just retelling the story, I don't know if you heard how Chuwapchîpchîyan Kude Bi came. It's when people were camped at Tînda Mîman area there. This was a time when the...area was heavily protected by our people, and during those times, this was part of treaty, in those times, some Stoney people camped here, Stoney Nakoda were camped here at Tînda Mîman and that there...our people knew that there would be trespassers periodically. And that one evening at this camp, one of the men there, an older guy looked out his tipi, looking around like, just checking as they did back then...he saw...something dark standing a few hundred meters away and it resembled a human, human figure. So, he went in his tipi and grabbed his rifle, and then he pointed at that dark figure and then shot



at it, and then he figured, 'Yeah we got it, ya' know, worry about it tomorrow morning.' And morning came, when he went to go check, there's this large willow bush standing there, right, and then he thought it was a human, but it wasn't, and he ended up shooting this willow bush and that is what Chuwapchîpchîyan Kude Bi is, 'shooting at the willow'." (11SN, translated by 37SN)

Îyethkabi used the travel routes within Chuwapchîpchîyan Kude Bi, which formed part of a vast network that extends from the Town of Canmore through Mîni Rhpa to Sûwapta (Jasper) and north toward Îyăhé Tînda (Ya Ha Tinda). These trails were vital for linking family clans, hunting, gathering, and visiting relatives. Families traveled on foot in earlier times, later adopting horses, and eventually wagons and trains to attend events like the Banff Indian Days.

"Before there was a town...there were quite a few trails in this area that they used that took them deep into the mountains, like Banff to Jasper, and then further north, towards Ya Ha Tinda. Like there's this whole network of trails that came, that was through here, that they were still using." (11SN)

Îyethkabi camped seasonally in Chuwapchîpchîyan Kude Bi and surrounding areas. Protected by the mountains, Chuwapchîpchîyan Kude Bi was preferred for its warmer winter locations. Îyethkabi avoided deep snow by setting up tents on hillsides where wind swept the slopes clear, leaving patches of grass for horses and easier living conditions.

"Deadman's Flat, Canmore, Banff that area, they'd stay through along the valley this, this area...in the wintertime they'd come down over here, after to go back, they moved back up the hills or around the Canmore or whatever. But wintertime, where it's easier down here but there's lot of snow, so they stay on the hillside where the rain reach[es] and not enough snow blow it away and throw the tent up, and some grass..." (02SN)

3.1.3.2 Mîni Rhpa Mâkoche (Banff National Park)

Although Mîni Rhpa Mâkoche is not located within the PSA, the PSA provides access to this area, and Stoney's TLRU in Mîni Rhpa Mâkoche are linked to the broader PSA. Mîni Rhpa is located in the valley of Tunnel Mountain, Mount Rundle, and Cascade Mountain in the Eastern Rocky Mountains. Mîni Rhpa is on the northwestern border of the PSA, and is located approximately 70 km from Mîni Thnî. Established in 1885 as Canada's first national park, Mîni Rhpa Mâkoche is a tourist destination for locals and international visitors.⁹ The Park is included within the Canadian Rocky Mountain Parks UNESCO

⁹ Mîni Rhpa Mâkoche (Banff National Park) was initially established as "Rocky Mountains Park".



World Heritage Sites and is home to natural hot springs. The Town of Mîni Rhpa is located at the base of Mount Rundle and Cascade Mountain.

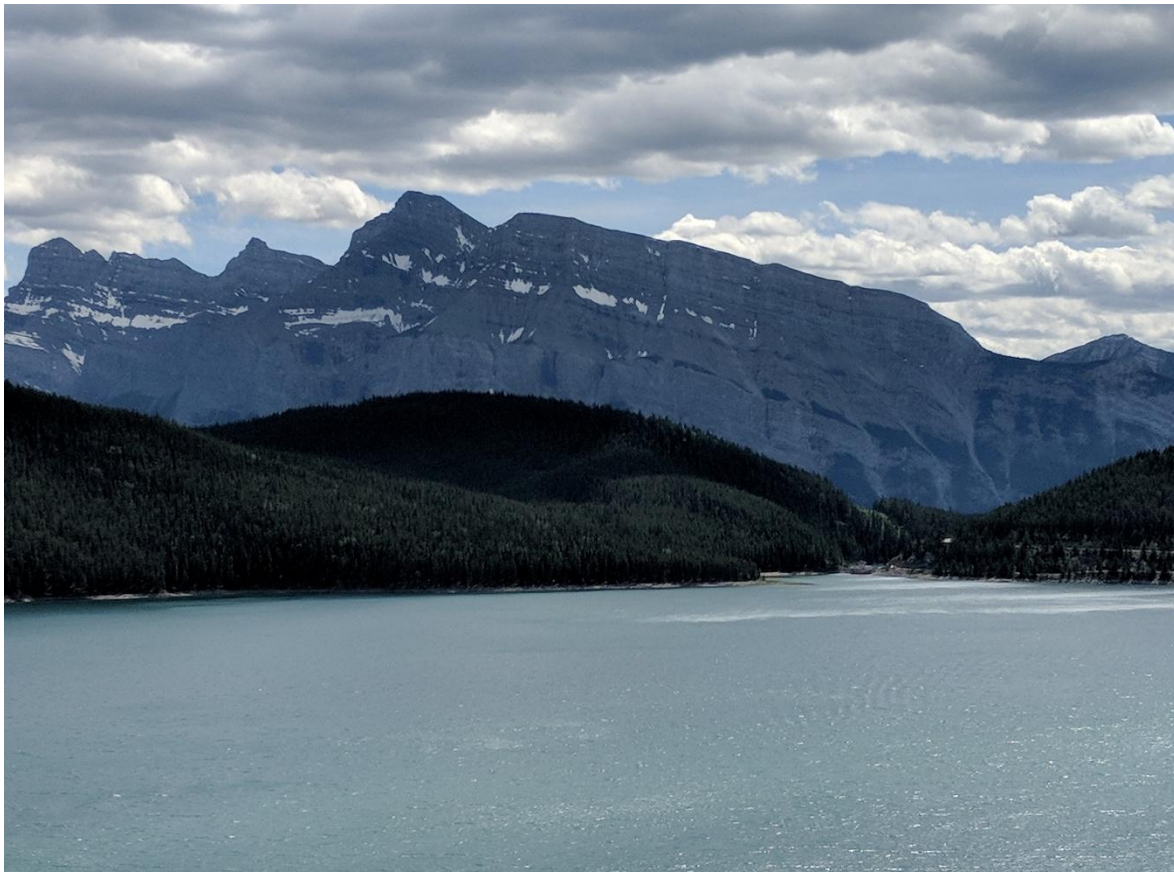


Photo 15: Mount Rundle, credit: William Snow

Prior to the arrival of European settlers, Îyăhé Nakoda were the occupants of Mîni Rhpa and the broader Mîni Rhpa Mâkoche, using it as a primary location for camping, hunting, gathering, and practicing ceremonies since time of creation.

Mîni Rhpa means powerful, sacred waterfall, in honour of the waterfall on Cascade Mountain. Îyethkabi have used the waterfall for sacred and cultural purposes since time of creation. Contributors noted that it is a protected Îyăhé Nakoda sacred site and was named through ceremony.¹⁰

The travel routes through Mîni Rhpa and the Banff Indian Grounds were central to Îyăhé Nakoda life, extending from Mîni Rhpa to Sûwapta and north toward Îyăhé Tîndâ, and used for hunting, gathering, and visiting relatives. Before the creation of Mîni Rhpa Mâkoche, families camped near Mîni Wakâ and traveled on foot or horseback along these paths, later incorporating wagons and trains during events like Banff Indian Days. These routes were both practical and deeply tied to identity and survival, enabling movement for ceremonies, trade with BC Nations, and kinship.

¹⁰ Further details on the waterfall are protected due to its sacredness to Îyethkabi.



"If you want to go back thousands of years, there were no horses...in the early 19th century, wagons started coming in, horses started coming in, then the train, of course, and then the vehicles. But I remember even in the mid-1960s, Banff Indian Days, a lot of people come on horseback." (43SN)

Îyethkabi held ceremonies in Mîni Rhpa and the Banff Indian Grounds that were connected to their seasonal rounds. These ceremonies were both spiritual and social, bringing families from vast distances together. The land and resources in Mîni Rhpa such as the hot springs, valleys, and open spaces, are central to ceremonial and spiritual practices, offering places for prayer, feasting, and renewal.

The Banff Indian Days were created in 1889, when tourists experienced travel delays in Mîni Rhpa, prompting the Canadian Pacific Railway (CPR) to invite Stoney to share their traditions with those tourists. During these gatherings, Îyethkabi engaged in traditional dances, narrated stories (e.g., re-enactments of trading with Simpcw First Nation), and shared their culture with the visitors (Luxton Museum of the Plains Indians n.d.). By showcasing Stoney guiding skills, horsemanship, and cultural knowledge, Banff Indian Days highlighted the expertise that underpinned the Stoney's relationships with prominent local outfitters such as Tom Wilson, Claude Brewster, Norman Luxton, and Jimmy Simpson.

Over time, Îyethkabi increasingly took part in the activities such as a horseback parade to the Banff Springs Hotel, dancing, demonstrations, and in later years rodeo and relay events. The hallmarks of the Banff Indian Days, Indian Village, Indian parade, and Indian activities and races laid a successful foundation for tourism in Banff National Park. However, the Banff Indian Days organizers preferred that Stoney perform for tourists, and the event became a major tourist attraction with strict regulations and contracts that stipulated tourist access to Stoney tipis. With Stoney recognizing their cultural appropriation, the Banff Indian Days were boycotted by Stoney in 1971 and ended by 1978 (Burgess 1993).

In 2005, working with Parks Canada, the late Rolland Rollinmud and Îyethkabi families established the Stoney Nakoda Family Camp on the Banff Indian Day Grounds near Mîni Rhpa, revitalizing Stoney connections to Mîni Rhpa Mâkoche. What was once a spectacle for outsiders now serves as a foundation for cultural reclamation, affirming that Îyethkabi identity endures in the heart of the Rockies (Mason 2015).

3.1.3.3 Tae Guh They Hunch (Dead Man's Flats)

Tae Guh They Hunch (Dead Man's Flats) is located within the Bow Valley Wildland Provincial Park along the Bow River and Highway 1. It is situated in the valley below Pigeon Mountain and Mount Lougheed. Tae Guh They Hunch is approximately 36 km west from Mîni Thnî townsite and has long been a camping spot for Îyethkabi.

Îyethkabi have harvested, hunted, camped, and travelled through Tae Guh They Hunch since time of creation. Tae Guh They Hunch remains a prominent site for harvesting berries, including haṭṭa toton and haṭṭa tâga, which are often not found elsewhere in Tînda Mîmân in such abundance. Animals such as pacheden and kiska also frequent the area.



"I think from Dead Man's, here...across the highway, that little open[ing]. I think [Stoney] camped there. And there's, they're hunting [in] this area here... for the mountain sheep and ram, that kind, and the elk." (79SN)

The Îyethka name 'Tae Guh They Hunch' comes from the story of a Îyăhê Nakoda harvester playing dead to evade a ranger. There are slight variations in the story based on the storyteller, but the premise remains the same.

"You know the Banff Park, it came to the edge of our reserve, the National Park boundary, it went, this area, Canmore area, one of our hunting grounds. Of course, all these valleys, Kananaskis Valley, one of our hunting grounds. But when the Park came, we couldn't hunt here...[a Stoney] guy from Morley, he came there. He wanted to get beaver, but he knew he wasn't allowed, but he, if he got caught, he knew [he] would go to jail, but he knew what to do. He came, caught a beaver, he was retrieving it, ready to take it home, but he saw a game warden coming through. He hid the beaver and had no way to run. Plus, when he starts running, he will be spotted, so he played dead, and the game warden was coming, a young game warden sees this dead guy. He tricked the game warden. The game warden got up to him and when he saw him, I guess he must have been scared, too, "ooh, a dead person." You could tell if he's dead, if you walk up to a person if he's not breathing. I guess game warden didn't pay attention to those things, the way he figured he was dead. Without getting off from his horse, he quickly turned and went back to his post and reported, "ohh there's a dead man over there." He came back with a crew, and there was nothing, nothing...[the Stoney man] got away with his beaver. He retrieved his beaver, he got on a horse, too. He had to cover his tracks, too. He went through Dead Man's Flats pass towards the Mount Allan...he came up on the encampment of Stoneys. There, he took the beaver there and he butchered it, he smoked it, and then we had, that's why it's called Dead Man's Flats, 'Stoney guy playing dead'. Others, you might hear some others, but that's the way I heard it. That's-I'm presenting it the way I heard it." (43SN)

Tae Guh They Hunch was historically a key waypoint along the PSA, connecting Mîni Thnî to Mîni Rhpa and Kay Nas Kay. These trails supported seasonal hunting and berry picking and were part of a larger network extending to Horhtîja Temne and beyond. Before modern roads, Îyethkabi families traveled by horseback and wagon, using these routes for subsistence and cultural continuity. While at Tae Guh They Hunch, Îyethkabi would camp and gather.

"...Dead Man's Flats is a camping area for our people, way back in time, time in eternity, camped there all the time, to hunt, and to get other things, fruit, and



there's a lot of picking on that, if you go on top of this mountain, there's a lot of huckleberries up there..." (01SN)

Îyethkabi also practiced ceremony, including sweat lodges, while camping at Tae Guh They Hunch.

"That's where they're gathering after sweats there... ..especially around Dead Man's Flats, too." (80SN)

3.1.3.4 Îyârhe Yamnî Ochiâ Îgach (Three Sisters)

Îyârhe Yamnî Ochiâ Îgach, known as Three Sisters in English, is a set of three distinct mountain peaks located within Tînda Mîman. They are located within Kay Nas Kay, south of the Town of Canmore and across the valley from Grotto Mountain. In one story, the Stoney place name was also chosen after three Stoney sisters were born here.

"Back in the 1800s, while they [the MacLean family from Morley] were camped in this area, there was a baby girl born to these people. Then the next year and years later two more sisters were born. That is how they named this [sic] three prominent peaks the Three Sisters, after this family." (Report p. 7094; PDF p. 65)

The name Îyârhe Yamnî Ochiâ Îgach reflects the visual characteristics of the peaks.

"In our language we don't use 'Three Sisters'. They say, Îyârhe Yamnî Ochiâ Îgach, means 'three mountains', so like this. Like, ochiâ means like, in a line." (67SN)

These peaks are featured in various Îyăhé Nakoda stories. Some Contributors shared that the peaks themselves are sisters, with the surrounding mountains as relatives. Other stories include that the name represents three women who were lost within the mountains never to be found.

"... he [11SN] says that back in those days, yes, [Three Sisters] was reference to siblings. He doesn't say if it's males or female. But he says the way it's pronounced is referencing three siblings, and that the other mountains in the area are also recognized as the relatives of these three siblings." (11SN, translated by 37SN)

Îyethkabi camped seasonally near Îyârhe Yamnî Ochiâ Îgach to support berry picking and hunting trips. Families camped in clans during late summer and early fall, creating temporary villages that



reinforced cultural ties and knowledge transmission. One Contributor recalled stories of horseback riding into these camps for harvesting.

Kan-Alta applied (application #9104) to the Natural Resources Conservation Board (NRCB) to expand the Kananaskis Country Golf Course at the base of Îyârhe Yamnî Ochiâ Îgach. A public hearing was held in June 1992 to assess its impacts. Stoney intervened, stating the area is used for hunting, trapping, and spiritual practices, and that they were not consulted on the original golf course. They argued the project would restrict access, reduce wildlife, and disrupt their cultural relationship with the land.

"The Three Sisters development in Wind Valley, no doubt will have a tremendous impact upon the spiritual relationship that we have enjoyed and we are still fighting for." (Natural Resources Conservation Board 1992, 7081)

Stoney requested mitigation measures such as employment opportunities, cultural recognition, and compensation (Natural Resources Conservation Board 1992). The NRCB approved the expansion after the hearing.

"...like the only berries you can pick is on the west side along the mountain region on the Bow Valley here, Canmore...under Three Sisters, around the other side of Three Sisters, lots of blueberries. Used to ride a horse, back around it and get there, you can't drive in there. If you're hiking in there, there's a lot of blueberries." (OTSN)

Ganutha Garhe, meaning Wind Valley, is the Stoney place name given to the valley at the bottom of Îyârhe Yamnî Ochiâ Îgach. Contributors stated that Ganutha Garhe was used for camping, and for teaching youth.

"Ganutha Garhe, or the Wind Valley region, is an outdoor classroom in which to study life, weather patterns for forecasting, growth of the forest and foliage, follow animals' tracks, wisdom and lessons from nature." (Natural Resources Conservation Board 1992, 7072)

Îyârhe Yamnî Ochiâ Îgach and Ganutha Garhe were crucial for TLRU, including hunting and gathering, as well as conducting ceremonies and visiting sacred sites, with key travel routes for accessing other areas. Watâga and other large bears frequent the area, along with kiska. It is important to follow traditional protocols to ensure safety and protection due to the sacredness of these mountains - only the strongest and bravest hunters would use this area.

"The relationship the Stoney people have always had with the land goes far beyond hunting and gathering for food and clothing. The Stoney people did not merely camp in various locations, including the Wind Valley area, rather they were of the land they slept upon and still are today. They found solace in the valley, in the valley or at the foot of a mountain. They sought and found define [sic] guidance at the top of a mountain. "Ganutha Garhe" means Wind Valley in the Stoney language. This whole area was camped in as a relay area to other destinations. It is considered a



spiritual and medicinal territory. It continues be used as a gathering area for herbs, plants, berries, rocks, minerals, and mosses. Not only do the Stoney's still hunt for food, but the furs are still used for hair ties for little girls at naming ceremonies and rights of passage ceremonies." (Natural Resources Conservation Board 1992, 7071-7072)

"This area, Three Sisters, Wind Valley, and the Indian Flats, Canmore, this whole area was used as a winter homing area where they lived because of the warm winds and chinooks, and the river never froze. They could drink from it. It was clean and pure." (Natural Resources Conservation Board 1992, 7092)



Photo 16: Three Sisters, credit: William Snow

3.1.3.5 Kay Nas Kay (Kananaskis) and Châsî Tîda (Kananaskis Village)

Kay Nas Kay is a large region south of Tînda Mîman along the eastern slopes of the Rocky Mountains. Today, it is home to several parks and protected areas including Peter Lougheed Provincial Park, Bluerock Wildland Provincial Park, Elbow-Sheep Wildland Provincial Park, and Spray Valley Provincial Park, among others. Kay Nas Kay has long been a vital region of Îyăhê Nakoda Mâkoche and remains important to Îyethkabi today.



The English name 'Kananaskis' is rooted in a translation of a historical Îyethkabi story, in which the Kay Nas Kay valley received its name. Long ago, Star, an Îyethkabi warrior, was travelling home from the Kootenays and was mauled by a bear. In an attempt to survive and return home, Star tied the ligament of his arm ('kâ aîgaski' means to 'tie a knot') but unfortunately did not survive his injuries. Îyăhê Nakoda travellers found Star and carried him back to what is now known as Boundary Ranch for his burial.

"That valley through here, is called kâ aîgaski because...when they were camping here, that guy went out hunting, he came...between that grizzly mama and the cubs. And he fought off that grizzly mama. In the process of fighting, he [sic] hands got ripped up...he got away, but his hands [were] bleeding and this vein was, blood was coming, pouring out. So, he tied that vein, so he won't bleed to death. And he went back to camp and he told the story. So, they call this area kâ aîgaski. Kâ means vein, aîgaski means tied...when there were surveyors come through here and they were calling these names, they're saying kâ aîgaski. So, they're trying to translate that, they came up with Kananaskis." (67SN)

Kay Nas Kay is also often referred to as the Burnt Timber Hill area, in Îyethka called Châsî Tîda, which refers to the way a fire burned through the valley and left the trees standing – 'châsî' refers to those trees, and 'tîda' means meadow.

"There's was a big fire here long ago, and the dead, the burnt trees are still standing up, that's what, Châsî is." (90SN)

Îyethkabi have long harvested in the Kay Nas Kay and Châsî Tîda region. To this day, Îyethkabi harvesters still hunt and fish in the Kananaskis River and the Upper and Lower Kananaskis Lakes for abe tho tan (bull trout), horrem tisha (westslope cutthroat trout), and ohm tisha (rainbow trout).

3.2 Wildlife

Section 3.1 describes Stoney's relationship to wildlife as a cultural connection grounded in identity, survival, teachings, and reciprocal responsibilities. Building on that foundation, the following section describes wildlife as a VC from an ecological perspective, focusing on its relationships with habitat, vegetation, movement, and ecosystem function within the PSA.

Like the Îyăhê Nakoda, wildlife hold strong relationships to vegetation. Wildlife supports vegetation by modifying and promoting vegetation growth, thereby acting as stewards of certain vegetation. For instance, animal diets have positive impacts on the biodiversity and health of plants. Birds, herbivores, and omnivores play a large role in vegetation disbursement. These animals consume fruits and seeds and spread them via droppings/scat and food waste. Bears who consume fish from local waterbodies leave food waste in nearby forests, providing nitrogen for trees and shrubs, promoting growth.



Large animals like tatâga (bison) promote vegetation growth by acting as keystone grazers that stimulate grass regrowth, suppress dominant species, and create space for a wider range of native plants to thrive. Tatâga grazing habits are influenced by vegetation availability which promotes heavy grazing in some areas and lighter grazing in others. Their dung and urine recycle nitrogen and other nutrients back into the soil, increasing plant productivity, while trampling and wallowing disturb soils in ways that improve mînî infiltration and create microhabitats for new vegetation. Overall, tatâga create a diverse productive grassland that is resilient (Truett et al. 2001).

Ungulates also graze on chârâziya saplings in the winter, causing them to branch out. Suwatâga (wild horses) eat the natural grasses within the region, and Stoney has witnessed the ways in which suwatâga have been able to keep wildfires low due to their grazing (Snow 2005).

At the same time, wildlife depends on vegetation for their own health and wellbeing. Larger animals such as bears and ungulates use trees for various purposes. Îyethkabi have long witnessed claw marks and fur from bears as they groom themselves and mark trees as part of their territory. Pacheden use certain abrasive trees like warhtîja to remove the velvet from their antlers during rutting season. Larger forms of vegetation also serve as wildlife habitat.

Like Îyethkabi, wildlife also use pezuda, and benefit from the spirits they hold. Berries are common pezuda for wildlife, especially for bears.

"...there's always berries in there for the animals. The berries, different types of berries in there that are-the bears and they used to cleanse their own body, in their own bodies, and what, like medicine and stuff. [They are] raspberries, I think strawberries, too, hey, the wild, the ones on the ground. I know there's a lot of berries in the bushes that they use... They want the little green berries that are on those rose buds that are in the mountain areas. I know they use those too, but they know how to take care of themselves just like we use them. And they're the ones [that] knew about it first, before even us." (78SN)

3.3 Vegetation

Îyethkabi hold connection to the land through vegetation. Since time of creation, plants have provided resources for Stoney including food, shelter, building materials, pezuda, and ceremonial and spiritual items. The following section considers vegetation as a VC from an ecological perspective, focusing on its role in habitat, wildlife support, biodiversity, and broader ecosystem function within the PSA.

Plants in the PSA depend on each other, working together to keep the ecosystem healthy and strong by sharing mînî, nutrients, and protection. During site visits, Contributors found châdeden (wild strawberries) and explained that certain trees retain mînî, supporting nearby plants. Vegetation grows in cycles, and moisture-retaining trees help surrounding plants survive dry periods by sharing mînî through their roots. Additionally, fallen leaves and other organic matter from trees enrich the soil, promoting undergrowth vegetation. Certain shrubs and berry plants benefit from the shade provided by larger trees. These plants also attract wildlife that assists in seed dispersal and soil enrichment.



Some vegetation is only available within certain areas of Îyăhé Nakoda Mâkoche. Within the PSA, many of the culturally important species are found high, within the mountain ranges; the strength of the pezuda (medicines) and spirits carried within these plants is often stronger than that in valleys and prairies.

"[Medicinal plants will] probably be in a lot of high spots throughout the mountains, not only in that area but the entire, the mountain range on top of it because, some of those berries only grow up high, and some of them...they grow in the bottom area [prairies]. But it's, most of the medicines they use grow up higher where [there are mountain] peaks, some of them you can't see them, only the people that can pick them see the medicines. And so, if I go there, I won't know the difference at all but, gifted people...like medicine man and medicine woman that are gifted, she, they will find it." (O1SN)

Roots from the chuwabatâga are found near the Bow River and similarly, mâkuthkiya (wild carrots) are sweet and often found near bodies of mîni, 'Monkooskua Wapta' (Carrot Creek) is named after the vegetables that grow near it.

Contributors reported that historically, the PSA had few trees and bushes, more open terrain, and larger grasslands throughout the area. These environments enabled increased sunlight penetration to the surface, promoting the growth of grasses and improving conditions for wildlife mobility. These conditions supported natural fire cycles and fostered ecological processes such as grazing and nutrient cycling.

Vegetation free from contamination and disturbance is essential not only for sustaining traditional harvesting practices, but also for supporting the animals that depend on these plants for food and habitat. When the integrity of vegetation is preserved, both humans and animals can safely use vegetation, ensuring the perseverance of cultural practices related to both vegetation and wildlife within Îyăhé Nakoda Mâkoche.

3.4 Stewardship

One of the ways Stoney exercises their Section 35 rights is through their governance practices in Îyăhé Nakoda Mâkoche, such as stewarding lands and resources. Stoney's stewardship practices are grounded in their connection to the land and its beings through natural law.

"Preservation, all my relations which includes, like... the bugs...the bears, grizzly bears, they are in the two-leggeds. We can say two-leggeds, four-leggeds, and the wingeds...For us, it's not just here, it's up in the stars, Star Nation, what happens up there happens here. What we do here, happens to the birds." (103SN)

"...our way of life as Indigenous people, we always try to preserve, we respect nature. But today, we use nature... We have to understand that, too. But still, we respect it



through natural laws. We learn everything with our beliefs, too. Our beliefs [are] important to us." (43SN)

Stewardship is closely related to Îyethkabi cultural practices such as language, teaching and knowledge transmission, harvesting, and ceremonial protocols.

3.4.1 Decision Making and Authority

Before the imposition of colonialism, Stoney lived nomadically throughout their entire traditional territory, managing the lands, mînî, and resources in a self-determined manner. This included travelling through passes in the Rocky Mountains to form and maintain relationships with other nations in a mutually agreed upon and culturally specific manner. Today, these rights of self-determination and stewardship of the land exist through Stoney's rights to self-government.

Stoney's stewardship and protection of the land and mînî in Îyắhé Nakoda Mâkoche are founded on principles of respect for the land and preservation of resources for future generations.

3.4.2 Controlled Burning and Clearing

A form of Îyethkabi stewardship is the traditional practice of controlled burns. Since time of creation, Îyắhé Nakoda have used controlled burns throughout the Îyắhé Nakoda Mâkoche including the PSA, as a way of clearing and regeneration. Controlled burns were conducted during the fall or spring, the safest seasons to ensure that fires remained in control, and the grasses and underbrush were dry. Burning is an act of rejuvenation that promotes new growth in the spring and attracts wildlife. With controlled burns, the Îyắhé Nakoda were able to open up the landscape for travel (human and wildlife) and attract game to new growth for harvest.

Hand clearing was also a form of stewardship carried out by Îyethkabi travellers. While using trails throughout the Îyắhé Nakoda Mâkoche, Îyethkabi would clear debris, trees, and underbrush to maintain trail conditions and improve travelling, monitor wildlife movements, and maintain camping areas. Îyethkabi would use this cleared wood for various purposes such as burning.

The hand clearing and controlled burn methods were not only positive for cultural reasons, but they also reduced wildfire fuel and risk. Contributors recalled hearing that the landscapes were much more open with less trees prior to the 1900s, and there were very few wildfires that resulted in catastrophic impacts. However, from 1885 to 1961, repressive Indigenous policies, including the Pass and Permit system, limited Îyethkabi ability to continue these practices, which increased forest fuel loads, contributing to greater wildfire risk.



4 Anthropogenic Changes in the PSA

Throughout the last several centuries, the PSA has undergone significant change, much of which is anthropogenic. For this Study, anthropogenic change is understood not only as the physical disturbance or alteration of land (e.g., clearing, infrastructure development, or resource extraction), but also as the disruption of longstanding relationships between Stoney and the landscape. This disruption can arise from industry-driven changes (Sections 4.4-4.9), as well as shifts brought about by colonial interactions (see Sections 4.1-4.3).

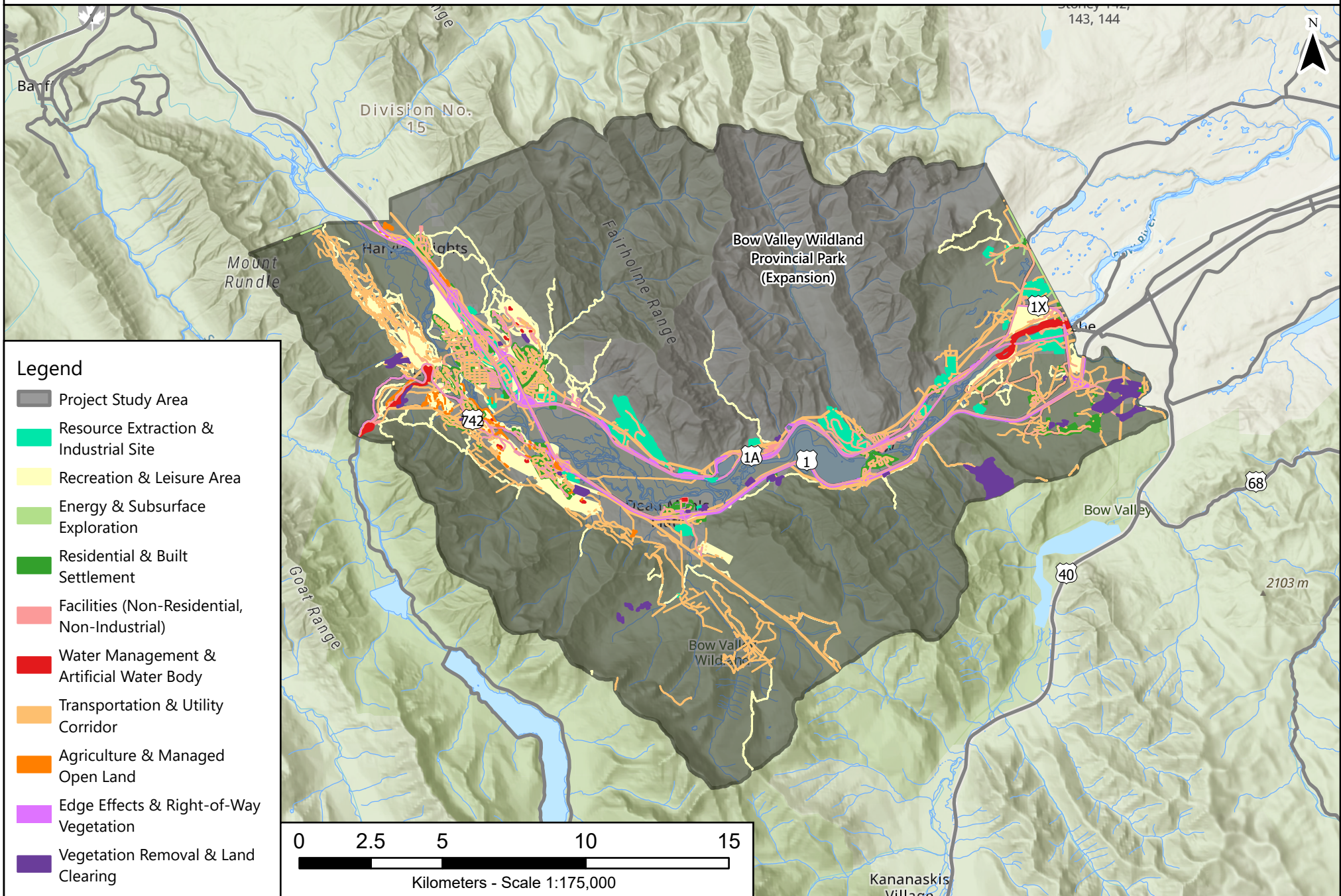
Anthropogenic changes in the PSA have resulted in the displacement of people, the interruption of cultural practices, and the alteration of patterns of land use, stewardship, and mobility that shaped and sustained ecological conditions since time of creation. The removal of Indigenous governance and stewardship systems, such as the use of controlled burning, seasonal harvesting practices, and place-based knowledge transmission, has had detrimental effects on wildlife, vegetation, and the ecosystem.



Photo 17: Trees Near Pigeon Mountain



Disturbance Map



Date: March 19, 2026

Coordinate System: NAD 1983 UTM Zone 11N

Data Sources: Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, ©

DISCLAIMER: This map should not be considered a substitute for consultation with the Stoney Nakoda Nations. This map is the exclusive property of the Stoney Nakoda Nations. Any reproduction or distribution without written approval is strictly prohibited.

Prepared By:
MNP LLP



Prepared For:
Stoney Nakoda Nations



Figure:

5

4.1 Stoney and Early Explorers

During the mid-19th century, early explorers and mountaineers were drawn to Îyăǎhé Nakoda Mâkoche seeking routes through the Rocky Mountains. Their ability to travel, survive, and understand the mountain landscape depended heavily on Îyethkabi knowledge of trails, passes, wildlife, camps, mîñî sources, and harvesting areas. Îyăǎhé Nakoda were recognized by these visitors as skilled mountain guides, rescuers, hunters, and allies. Because of their intimate knowledge of the foothills and mountains, Îyethkabi were sought out to assist Dr. James Hector and the Palliser Expedition, A.P. Coleman, Tom Wilson, and other early mountaineers. Hector acknowledged that Îyăǎhé Nakoda provided “a wealth of information about his chosen route into the mountains,” (Lakusta 2007, 67) including a birchbark map sketched by an elderly Stoney described as “an invaluable aid in our search for a pass” (Lakusta 2007, 67). Hector also relied on Stoney trade and support, exchanging tobacco and ammunition for leather and pack saddles needed by the Palliser Expedition (Lakusta 2007, 67).

Napûge Gaskide (“the one with the thumb like a blunt arrow”, or “cut thumb”), whom Hector called “Nimrod”,¹¹ was one of the best-known Îyethkabi guides associated with the Palliser Expedition and “one of the best hunters in the tribe” (Lakusta 2007, 47–48). Through his assistance, he demonstrated that Îyethkabi contributions to early exploration involved not only route-finding, but also hunting knowledge, animal tracking, and the ability to sustain travel through difficult mountain terrain.

Hector’s journals also demonstrate the importance of Tînda Mîmân as a practical camping, harvesting, and travel area within the Bow Valley. The Palliser Expedition stopped at Tînda Mîmân, referred to in Hector’s account as “Indian Flats”, because it offered access to game and suitable grazing for horses. Lakusta recounts that, “” Wishing to give Nimrod a chance to get us some meat, of which we already stood in need,” Hector remained at “Indian Flats” for three days, while the surrounding prairie grass provided fodder for the expedition’s horses.” (Lakusta 2007, 77) Hector’s account provides an important example of the Îyethkabi practicing their hunting rights in the Bow Valley.

The same records also show that Îyethkabi knowledge connected Tînda Mîmân to a much larger geography of mountain passes, lakes, rivers, fishing areas, and travel corridors. Lakusta recounts that Hector learned about important mîñî sources, fishing areas, and travel routes from Îyethkabi knowledge holders:

The old Stoney, “from the Indian camp we had left at the old Bow Fort, joined us this evening,” wrote Hector “having come through the first range by a pass to the south of the ‘Devil’s Head,’ in which he says there is a lake the length of half a day’s march, where they catch the finest trout and whitefish in the country. At the upper end of the lake which send [sic] a stream to the Bow River just below where we are camped, he says there is a ‘height of land’ to be crossed, and from the other side of which rises Deadman’s [Ghost] River.” This was the traditional route into the mountains past lake Minnee-wah-kah, the Stoney term for “Lake of the Water Spirit”. (Lakusta 2007, 78)

¹¹ Hector used the name Nimrod because Nâpûge Gaskide’s Îyethka name, meaning “the one with the thumb like a blunt arrow”, or “cut thumb” was difficult for him to pronounce.



This account demonstrates that Îyethkabi long understood the region through its connected waterways, fisheries, passes, and seasonal travel routes, knowledge that non-Indigenous explorers relied on to move through and interpret the mountain landscape.

The vulnerability of the early mountaineers is also evident in Lakusta's account of the Kicking Horse incident. On August 29, 1858, Hector was seriously injured after being kicked in the chest by his horse while the party was already without food. Hector wrote that "we had seen no tracks of game in the neighbourhood, and were now without food," and that he was so injured the party could not continue that day (Lakusta 2007, 91–92). Lakusta further recounts that Hector was believed dead and nearly buried before regaining consciousness, a story later associated with the naming of Kicking Horse River and Kicking Horse Pass (Lakusta 2007, 92).

On many occasions the Îyethkabi provided rescue and support for early mountaineers. Members of the Palliser Expedition explored much of Banff and the Great Divide and recounted several instances where their group had run low on food and were fed and provided mînî by Îyethkabi (Spry 1995). Hector and his party were also rescued by the Îyethkabi when they faced starvation and injury during the Palliser Expedition (Spry 1995). From his relationships with the Îyethkabi, Hector regarded the Îyethkabi people as old friends:

[The Palliser Expedition] came in sight of the Rocky Mountains that afternoon. The next day, finding the ice on the river too open for travel, they turned off on the track of [the Stoney], which led them to the camp of Hector's old friends, the [Stoney] who had been so good to him that autumn when he had come starving out of the mountains (Spry 1995)

In September of 1858, when members of the Wildman family provided food and pezuda to Palliser Expedition members who were facing starvation and illness while camping near where the Pipestone River joins the Bow River, Îyắhé Nakoda members further supported these visitors by identifying river crossings, creating maps, and teaching them hunting basics (Spry 1995). The Îyắhé Nakoda's knowledge of the land, the wildlife, and their medical assistance proved invaluable to the survival and success of the Palliser Expedition. This reliance on Îyethkabi knowledge continued beyond the Palliser Expedition and into later mapping, tourism, and mountaineering in the Canadian Rockies. A.P. Coleman's expeditions depended on Nakoda guides and route information from Jimmy Jacob, Mark Two-young-men, Job Beaver, and Chief Jonas Goodstoney, while Tom Wilson, a Canadian outfitter and guide, learned about places such as the hot springs near present-day Banff and the area now known as Lake Louise through Îyắhé Nakoda Knowledge Holders and companions, including Chief Hector Crawler, Jimmy Three-Toes, and Edwin Hunter (Robinson and Slemon 2022). In Robinson and Slemon's *The Shining Mountains* (2022), these examples show that Stoney knowledge and labour remained central to non-Indigenous travel and tourism in the Rockies, even as later written histories and place names often centred and credited Euro-Canadian explorers and failed to recognize long-standing Indigenous relationships with the mountain landscape.

4.2 Stoney and Missionaries

The Îyắhé Nakoda have long recognized that different groups have different interpretations of spirituality based on their relationships with other Indigenous peoples on Turtle Island (Snow 2005).



...in creating so much diversity in nature the Great Spirit revealed his love for diversity: the diversity of peoples, cultures, and languages, of animals large and small, birds of all colours, fish of all sizes, plant life so numerous, rocks as huge as the mountains and as small as the sand of the seas. Surely Creator would accept more than just one religion (Snow 2005, 23).

When missionaries arrived in the mid- and late-19th century, the Îyăhé Nakoda did not question their religious beliefs, nor isolate them for these beliefs. Reverend Robert Rundle was the first to arrive in 1840, with (Methodist) Father George, and son John McDougall arriving in the 1870s. The McDougalls initially began their mission work in what is now Edmonton but chose to make permanent mission in what is now Mînî Thnî (then, Morleyville) (Snow 2005). In the 19th century, many missionaries who travelled to the Treaty 7 area often did not survive. The McDougall missionaries' survival in Southern Alberta was largely due to the security and generosity of the Îyăhé Nakoda.

The establishment of the mission resulted in many changes for the Îyethkabi who long wintered in this location. It seemed that there were alliances between the missionaries and the federal government, with the intention of westernizing the Îyăhé Nakoda (Mason 2014, 26). A school and a church were built in Morleyville, with the goal of bringing Christianity to the Îyethkabi. The missionaries pressured the Îyethkabi with Christian teachings and practices and western ways of life (Snow 2005). Over time, the influence of western culture grew with the hands of the missionaries; eventually the North West Mounted Police became established in the region, followed by land agreements, development, residential schools, and subsequent business (Snow 2005).

4.3 Treaty 7 and the *Indian Act*

Contributors described how the combined pressures of disease, the arrival of settlers, and the extermination of the tatâga (bison) fundamentally altered life for Stoney. In response to these changes, Îyethkabi entered into Treaty 7 in 1877, guided by the encouragement of missionary Reverend John McDougall. Stoney Nakoda Nations' Chief Jacob Bearspaw, Chief Jacob Ketchepwat (Goodstoney), and Chief John Chiniquay served as signatories at the Treaty signing. Contributors further explained that both the Chiefs and Îyethkabi were assured that, by agreeing to the Treaty, their traditional way of life would not be disrupted; they could continue living as they had for generations (Snow 2005). The primary commitments made under Treaty 7 included:

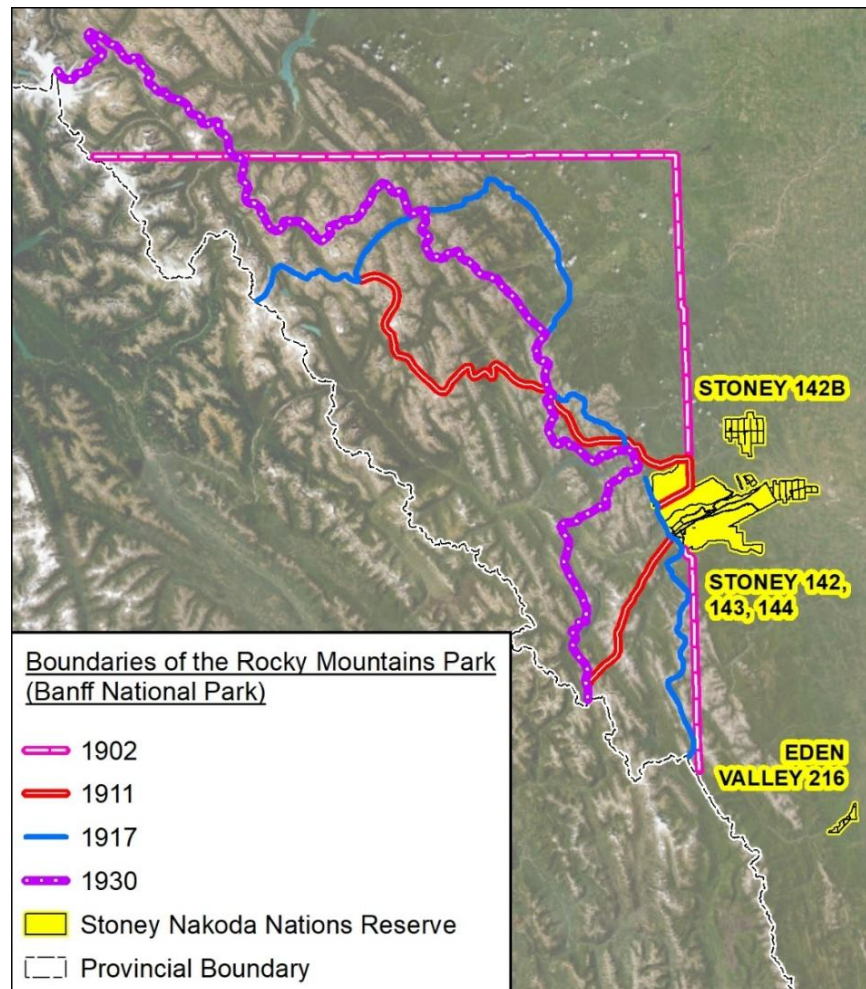
- Ability to continue to live and travel throughout Îyăhé Nakoda Mâkoche
- Hunting
- Fishing
- Trapping
- Reserve land
- Education
- Annual treaty payments
- Rifles for chiefs
- New clothing for chiefs and councillors
- Payment for teachers
- Money for ammunition
- Various tools
- Cows and plows (Duhamel 1966)

However, in 1876, Canada enacted the *Indian Act*, intended to exert control over Indigenous peoples. The Act facilitated ongoing dispossession of Indigenous lands, criminalized traditional spiritual and religious practices, and forcibly separated children from their families for placement in residential schools. The improvements and opportunities promised by the Treaty instead resulted in further hardship and loss for the Stoney, with the anticipated 'better life' never becoming reality.



While the Morley Reserve was subsequently surveyed in 1879, Canada almost immediately failed to honour its Treaty obligations. For example, in 1885, the Banff Hot Springs Reserve, Canada's first protected park area and precursor to Rocky Mountains Park (later Banff National Park), was established (Canadian Pacific n.d.). Stoney access to the Park, lands where they had lived and travelled for generations, was actively prohibited through the *Indian Act* Pass and Permit system, also established in 1885. The Park borders were deliberately expanded to the Morley Reserve boundaries to keep Stoney harvesters and hunters from entering the Park area. From 1885 to 1930 the Rocky Mountains Park boundary was changed four times, and hunting prohibitions were strictly enforced (Barron 1988, 25-42) (see Section 4.4.2 for more information on the establishment of the Park).

Stoney found the reserve restrictive, as despite Treaty assurances, they were prohibited from hunting beyond its boundaries (Snow 2005, 48). In September 1895, in an attempt to preserve their hunting rights in British Columbia, the Îyăhé Nakoda signed a Memorandum of Agreement between the Shuswap Indian Band, the Ktunaxa Nations, and the Government of Canada at Lake Windemere. This agreement is still recognized today by the Îyăhé Nakoda who continue to practice their hunting rights in British Columbia.



4.4 The Canadian Pacific Railway & Banff National Park

4.4.1 The Canadian Pacific Railway

The Canadian Pacific Railway (CPR) was constructed to link Canada's East and West Coasts, with service starting in 1886. Passing through Îyăhé Nakoda Mâkoche, including the PSA, the railway transported goods and people (The Canadian Encyclopedia 2023; Canadian Pacific n.d.).

The Îyăhé Nakoda contributed their knowledge and time to the development and construction of the CPR. They worked as surveyors and guides during its construction, recommending the easiest mountain passes for construction (The Canadian Encyclopedia 2006; Mason 2014, 90). After the railway was completed, Stoney men worked for CPR maintaining the trails such as those found around Lake Louise (Mason 2014, 91). While Tom Wilson was working for the CPR in the Banff area, he was guided to Lake Louise by Stoney guide Edwin Hunter, on August 24, 1882, (Whyte and Harmon 1982, 8-9, 14-15, 24).



Photo 18: CPR Advertisement for the Banff Springs Hotel (Canadian Pacific n.d.)

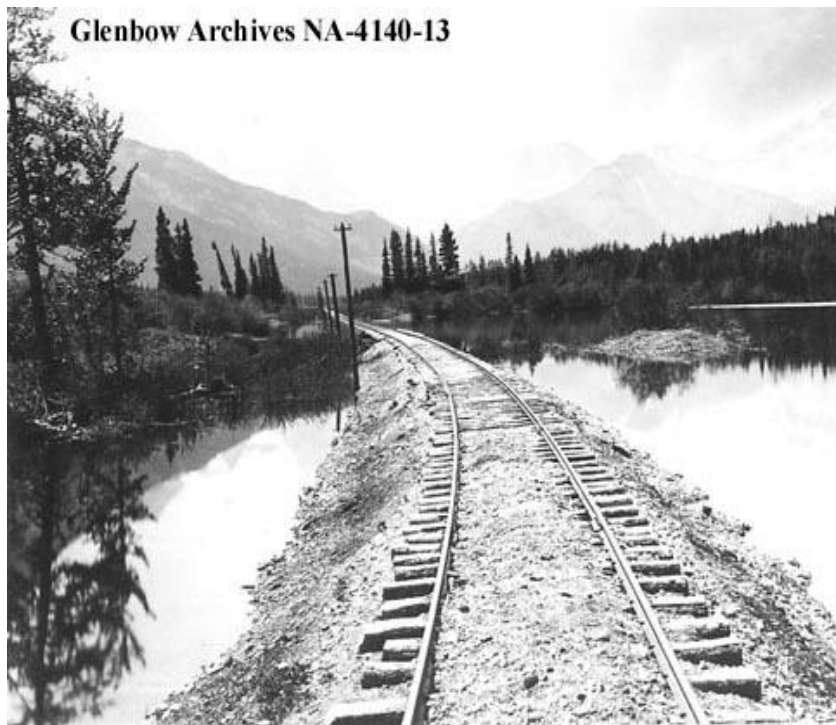


Photo 19: Canadian Pacific Railway track, Alberta, 1886 (Glenbow Archives 1886)

As the railway developed, CPR expanded its operations by introducing a range of businesses and services. These included telegraph lines running parallel to the railway, steamship operations on the Great Lakes, land settlement and sales ventures, and hotels and tourism (Canadian Pacific n.d.). The Rocky Mountains' first hotels were established to serve travelers (Canadian Pacific n.d.). Since the mountainous terrain made it challenging to use heavy dining cars safely, these hotels provided both meal services and overnight accommodations (Canadian Pacific n.d.).

What started as small hotels in 1886, soon became grand establishments like the Banff Springs Hotel in 1888, and Chateau Lake Louise in 1890, to attract tourists and promote railway use (Canadian Pacific



n.d.). These hotels drew wealthy visitors, offering activities such as hiking, skiing, fishing, swimming, and golf.

Today, the railway mainly transports goods, including grain, coal, lumber, and manufactured items, while passenger service is less common than it was in the 20th century.

4.4.2 Banff National Park

During the construction of the railway, CPR employees incidentally learned of the hot springs located at Mîni Rhuwîn (Sulphur Mountain), known today as the Cave and Basin Hot Springs (Canadian Pacific n.d.; Robinson 1978). At the urgency of CPR, Prime Minister John A. Macdonald set aside 26 km² of land around these hot springs in 1885, known as the Banff Hot Springs Reserve (Canadian Pacific n.d.). These hot springs were not first discovered by CPR, as they had long been known by Îyăhé Nakoda and used as healing mîni.

Eventually, the Banff Hot Springs Reserve was expanded to 674 km² under the *Rocky Mountain Parks Act*, 1887, and became Canada's first national park (Canadian Pacific n.d.). The Park boundaries shifted throughout the early part of the 20th century. In 1902, the boundaries were expanded and included the watersheds of the Bow River, Red Deer River, Kananaskis River, and the Spray River (Robinson 1978). Between 1911 and 1930, the Park boundaries shifted to follow watersheds and natural patterns on the landscape along with Park criteria and was renamed to Banff National Park (Robinson 1978).

The Park was modeled after Yellowstone National Park in the United States, which had been established 15 years prior (Robinson 1978). The intention of establishing the Park was to preserve the land for the enjoyment, benefit and advantage of settler-Canadians (Robinson 1978). The federal government administered the Park, and as per the *Rocky Mountain Parks Act*, 1887, there would be no leases, permits, or licenses that would inhibit such enjoyment and recreation (Robinson 1978). Although the Park was established with the aim of conservation, timber harvesting and coal mining activities were conducted within its boundaries (Robinson 1978; Lothian 1977).

Further, when the Park was created and expanded, Îyăhé Nakoda were excluded from its borders via the *Indian Act* Pass and Permit system, preventing Îyethkabi hunters and harvesters from accessing it (Barron 1988). Parks Canada viewed Îyethkabi harvesting practices as counter-productive to tourism despite the fact Îyethkabi and their harvesting practices were often used in Park marketing (Mason 2014, 86). Throughout the history of the Park, there have been exceptions to wildlife harvesting restrictions, although the Îyethkabi remained excluded for unsubstantiated fear of overharvest (Snow 2005).

"The Whitcher report, as it was known, directly implicated the hunting practices of local Nakoda peoples, as well as depredations by foxes and wolves in the decline of the large game mammals in the region. In addition, the report recommended the establishment of limited hunting seasons and the hiring of police officers and forest rangers who would strictly enforce regulations with fines and penalties.." (Mason, Spirit of the Rockies: Reasserting an Indigenous Presence in Banff National Park 2014; Foster 1978)



"...Indigenous peoples became the main target of sport-hunting organizations of the period. These organizations were powerful advocates that at the time outweighed any conservation voices in the region. As a result of their influence, sport hunting groups were able to lobby the federal government to increase hunting and fishing restrictions on local Indigenous peoples." (Mason, Spirit of the Rockies: Reasserting an Indigenous Presence in Banff National Park 2014, 55)

4.5 Park Restrictions

Prior to 1951, the Îyăhé Nakoda faced significant restrictions under the *Indian Act*, which limited travel and prohibited cultural practices such as ceremonies, traditional songs and dances, and the wearing of regalia. Access to Banff National Park was further constrained through the Indian Pass System until the 1940s. Even after those restrictions were removed, visiting the park remained difficult for many Îyăhé Nakoda families due to entry fees and the lingering impacts of earlier exclusionary policies. At the same time, during Banff Indian Days, which began in 1889, where many of these same cultural practices were publicly showcased to promote Banff National Park to visitors from around the world.

Restrictions on the gathering of medicines and other plant resources persisted much longer. Under national park regulations that prohibited the harvesting of natural resources within park boundaries, Indigenous gathering practices remained restricted until 2010, when Parks Canada began lifting these limitations and creating opportunities for the Îyăhé Nakoda to reconnect with and exercise cultural practices within their traditional territory. Banff Indian Days continued until 1978.

In 2010, Parks Canada and Stoney signed a Memorandum of Understanding (MOU) that expressly permits Stoney to conduct ceremonies and gather plants and pezuda within the Park. This was followed by a 2012 "Park Pass" signing ceremony, where Îyethkabi received lifetime park passes allowing them to access Banff National Park. Though hunting, trapping, and fishing are still prohibited in the Park, Stoney have continued to conduct ceremonies and gather plants and pezuda as permitted under the MOU as well as take part in the Bison Harvest in the Bison Reintroduction Zone since 2024.

Additional parks and wilderness reserves have been established in the southern Îyăhé Nakoda Mâkoche since the creation of Banff National Park. The parks and wilderness reserves within and around the PSA include:

- Bow Valley Provincial Park (1959)
- Evan-Thomas Provincial Recreation Area (1982)
- Bow Valley Wildland Provincial Park (1998)
- Spray Valley Provincial Park (2000)



- Don Getty Wildland Provincial Park (2001)

In addition, Kananaskis Country – a provincially managed park system with multiple provincial parks and wildland parks – is located within the southern portion of the PSA. Îyethkabi are permitted to harvest and practice ceremonial and other spiritual activities within these parks, but are subject to public and seasonal closures and restrictions, and conservation designations (Alberta Government 2016).

"Indians may not hunt in provincial parks, recreational areas, ecological reserves and other similar lands where no hunting is allowed. They also may not hunt in wildlife sanctuaries, including road corridor wildlife sanctuaries. Hunting or possessing an uncased firearm is not allowed within 365 meters (400 yards) of the centre line of a road that is designated as a road corridor wildlife sanctuary." (Alberta Government 2016, 2)

4.6 Highway 1 and Highway 1A

Before Highway 1 was constructed, the Bow Valley became an important east–west route through the Rocky Mountains, due to its low-lying terrain and proximity to the Bow River. Narrow valley roads followed the Bow River closely, and motorists also relied on park and regional roads created in the early 1900s. The Banff–Windermere Highway opened in 1923, connecting Mînî Rhpa to the Columbia Valley via Castle Junction and Vermilion Pass, making it a key transport hub, shaping future highway development in the Bow Valley (TransCanadaHighway.com n.d.).

The Bow Valley Parkway (Highway 1A) was the principal road between Mînî Rhpa and Lake Louise prior to the development of Highway 1. The placement of the 1A, on the northern side of the Bow River, reflected early park road design priorities that focused on maximizing scenic access rather than facilitating long-distance, high-volume travel (TransCanadaHighway.com n.d.).

Highway 1 was constructed through the Bow Valley in the 1950s after the *Trans-Canada Highway Act*, 1949, as a two-lane, undivided road. By the mid-1950s, Highway 1 became the main east–west route from Chuwapchîpchîyan Kude Bi (Canmore) through to Mînî Rhpa, Castle Junction, Lake Louise, and up to the Alberta–British Columbia border at Kicking Horse Pass (Government of Canada 2024; Government of Canada n.d.a).

As traffic grew in the mid-20th century, sections of Highway 1 were modified to reduce community disruptions and increase safety. In 1965, it was rerouted around Chuwapchîpchîyan Kude Bi's downtown, and the old route became Highway 1A, separating local traffic from the main highway (TransCanadaHighway.com n.d.).

Contributors recalled stories their parents and grandparents told them about Îyethkabi working as early guides and providing geographic knowledge for explorers, using historic trails to travel and move equipment. Without their guidance, the most ideal route along the river and valleys would most likely have not been chosen by explorers and early highway developers. Îyethkabi also were employed to clear for the highway.

*"I was about 15...we camped with the, at that time, they'd do clearing for this highway...clearing and burning at night, that was during the summer."
(14SN)*



Banff National Park began upgrading Highway 1 in 1979 in response to increased traffic and wildlife collision concerns. Parks Canada started twinning the highway, expanding it from two to four lanes, with phased construction progressing west from Minî Rħpa and completed in sections through the 1980s toward Sunshine, Castle Junction, and Lake Louise (TransCanadaHighway.com n.d.; EBA and McElhanney Consulting Services Ltd. 2011). The Bow Valley twinning program included wildlife mitigation infrastructure, including exclusion fencing, underpasses, and Canada's first wildlife overpass, built in 1996 near Minî Rħpa to combat habitat fragmentation and reduce wildlife mortality (Discovery APEGA n.d.). The final major phase of Highway 1 twinning in the Bow Valley was completed in 2014 (Government of Canada 2024). Further, the Peter Lougheed Wildlife Overpass was completed in the Fall of 2024; the Îyăĥé Nakoda conducted a cultural study related to the overpass in 2023. The Îyăĥé Nakoda viewed the Government of Alberta's construction of the Bow Valley's first wildlife overpass favourably.

Highway 1 currently functions as a high-capacity freeway through the Bow Valley, supporting regional, national, and international transportation. In contrast, Highway 1A currently functions as a lower-speed scenic and heritage route.

4.7 Town Sites



Photo 20: Highway 1 Wildlife Underpass, Credit: Y2Y

The towns of Banff and Canmore were both established in the late 19th century, and have become attractive places to live for Canadians and newcomers.¹² The Town of Banff was originally founded as a tourist destination for Canada's first national park. Today, it welcomes more than 20,000 visitors daily and has about 8,000 permanent residents (Town of Banff n.d.).

¹² Banff, established in 1885; Canmore, established in 1884.



The Town of Canmore was initially established as a coal mining town until mine closure in 1979 (Tourism Canmore Kananaskis 2026). Similar to the Town of Banff, the Town of Canmore is a popular destination for those seeking to live amongst the mountains with almost 16,000 residents (The Town of Canmore n.d.).



Photo 21: Canmore Area, Credit: Y2Y

Three Sisters Mountain Village is proposing residential and commercial housing developments in west Canmore that could double the Town of Canmore's population to over 30,000 residents. This development may also impact the movement of wildlife in the PSA.

The municipalities of Exshaw, Lac des Arcs, Tae Guh They Hunch, and Harvie Heights were established as hamlets in the 20th century.¹³ Exshaw was initially established as a company settlement for mining. Still a location for industrial work, Exshaw is home to 362 residents (Municipal District of Bighorn n.d. a).¹⁴ Lac des Arcs and Harvie Heights were both established in the mid 20th century as recreational, seasonal cottage communities; today Lac des Arcs has 144 permanent residents and Harvie Heights has 175 permanent residents (Municipal District of Bighorn n.d. c; Municipal District of Bighorn n.d. b).¹⁵ Tae Guh They Hunch was developed primarily as a commercial centre for the Bow Valley Corridor; it remains a popular stop along Highway 1 with several business and accommodations for locals and visitors. The current population of Tae Guh They Hunch is 121 people (Municipal District of Bighorn n.d.).

¹³ Exshaw, established 1906; Lac des Arcs, established in the 1960s; Tae Guh They Hunch (Dead Man's Flats), established in 1985; Harvie Heights, established in the late 1950s.

¹⁴ Based on the 2011 Census.

¹⁵ Ibid.



4.8 Industrial Development

The PSA has experienced industrial growth over the past 150 years due to the area's abundant natural resources. The Rocky Mountains contain significant thermal and metallurgical coal deposits (Robinson 1978), as well as extensive old-growth forests and glacial minê sources.

Early industrial development cleared the route for and supported the construction of the CPR through the Rocky Mountains. Logging provided railway ties, and along with mined coal, provided fuel. Workers lived off harvested wildlife and fish (Robinson 1978).

4.8.1 Exshaw Cement Plant



Photo 22: Exshaw Cement Plant, Credit: Y2Y



The Western Canadian Cement & Coal Company opened the Exshaw Cement Plant in 1906. The plant became the largest industrial plant in the country, using limestone from Grotto Mountain (Heritage Collaborative Inc. 2011; Robinson 1978). Îyethkabi, particularly Chiniki families, were employed by the plant to harvest Douglas fir from the PSA. They cut the trees into six-foot lengths and transported the wood to the plants, where it was used as fuel to heat limestone, which was then crushed to produce cement (Tyler 2022).

The Stoney place name for Exshaw is Chânh Pay Oda, which means 'many stumps'. The name comes from the numerous tree stumps that were left by Îyethkabi who harvested Douglas fir trees for the cement plants (Tyler 2022).

While the Western Canadian Cement & Coal Company benefitted from Stoney labour and resources, Stoney did not own or profit from the mine or cement infrastructure, or gain proper recognition for their involvement. However, the company, which operated in a colonial economy, relied on Stoney labour; without Stoney's contribution, the colonial economy would not have thrived (Tyler 2022).

Chânh Pay Oda

[chahm-PAY OH-dah]

EXSHAW



This is a story about the history of this place from the Îyârhe [ee-YAH-hay]. Îyârhe means "mountain people." We are a branch of the Sioux/Dakota/Lakota/Nakoda people, who are now called the Stoney Nakoda Nation.

Îyârhe [ee-yah] — Thank you.

This story was shared by Chiniki Elders of the Stoney Nakoda Nation. The artwork and bench were provided by Stoney Nakoda Nation members, in a joint 2017 Canada 150 project of the Chiniki Elders Advisory Council and the Municipal District of Bighorn.

This initiative is made possible by the Community Fund for Canada's 150th, a collaboration between Banff Centre Community Foundation, the Government of Canada, and extraordinary leaders from coast to coast to coast.



In this place, there are very sacred mountains that were used by the Îyârhe Nakoda for vision quests. Deeply spiritual pictographs, drawn by our ancestors, are also in this area.

This area was used regularly as a seasonal camp for hunting, fishing and collecting medicinal and sacred herbs and berries. Some of these plants were, and still are, used for smudge ceremonies.

The Stoney name for this place, Chânh pay Oda [chahm-PAY OH-dah], means "many stumps." This name comes from the many stumps that were left by the Stoney who harvested Douglas fir trees in the early 1900s. They were employed by cement plants around Exshaw to harvest the wood and cut it into six-foot lengths. The wood was transported to the plants, where it was used for fuel to heat the rocks which were then crushed to make cement.

Top: Gordon Wesley,
Stoney Nakoda Artist.

Bottom: Drebin Goodstoney, Stoney
Nakoda Youth, Grade 6, June 2019.



Photo 23: Stoney Exshaw Sign (Chiniki Elders Advisory Council; MD of Bighorn n.d.)



The plant expanded over the next century, and still remains one of the largest industrial presences within the PSA. Contributors spoke about the impact that the plant has on their health.

"But, I always share, shared with my relatives in Morley, "Hey, you know that Exshaw plant, you'll see that white smoke come in and it blows into, right into the valley there." And that's where a lot of people got sick from asthma...you're breathing that, you know, toxic or whatever. And that's where people get sick a lot..." (65SN, Elk Valley Resources Fording River Extension Project Cultural Impact Assessment)

4.8.2 Forestry

Commercial logging in the Bow Valley region began when Ottawa lawyer Kutusoff MacFee hired experts from Eau Claire, Wisconsin (recognized as a major logging centre in the United States), to assess timber stands west of Calgary. After positive reports, MacFee secured rights to 100 square miles along the Bow, Kananaskis, and Spray Rivers. The Eau Claire and Bow River Lumber Company was subsequently established in 1883 and was tasked with harvesting timber from these newly acquired lands. By 1886, the company had constructed a sawmill in Calgary to process the logs and set up two logging camps to support their operations, one situated near the Kananaskis River and another on the Bow River at Silver City, located west of Minî Rhpa (University of Calgary Archives 2018). Commercial forestry continued through companies such as Spray Lake Sawmills, which was founded as Mjolsness Brothers in Sundre in 1943, and became a major forestry operator in the Spray Lakes area south of Chuwapchîpchîyan Kude Bi in 1954, later establishing its permanent mill site in Cochrane in 1969 (Cochrane Eagle Staff 2013; Edey 2023).

As detailed in Section 4.8.1, the Exshaw Cement Plant made use of the forestry industry for the purposes of supplying fuel for the plant in the early 20th century. In the 20th century, commercial logging expanded for industrial use and timber was transported by river and rail to the Eastern Slopes and Calgary (Lee 2024). Log drives continued until 1944, and the Calgary mill ceased operations in 1945 (University of Calgary Archives 2018).

Contributors often speak about the impacts of logging during interviews, stating that the industry, especially the chemicals it uses, destroys everything. Glyphosate, a common broadleaf herbicide used by forestry companies in forest cut blocks, right of ways, and access roads, to control competing vegetation and support conifer regeneration, has been proven to cause short- and long-term changes in plant communities. The chemical persists after application, affecting plants, wildlife, and insects. Ongoing use of herbicides is linked to negative effects on wildlife health (Seneff 2021).¹⁶

¹⁶ At the time of writing Stoney could not confirm whether glyphosate is used in the PSA.





Contributors reported that their parents and/or grandparents were employed in various positions in the logging industry. In addition to clearing for the purpose of building the railway and highway, they were employed at logging camps for various positions.

You know, like our grandfathers [said], if you do logging...it's going to affect that environment, the nature, because there's the trees... there, it's medicine for the Earth...When they cut that tree, it kills everything. (65SN, Elk Valley Resources – Fording River Extension Cultural Impact Assessment)

4.8.3 Hydroelectricity

The first large-scale hydroelectric facility in Alberta was the Horseshoe Plant, built by Calgary Power Company in 1911 on the Bow River near Seebe, adjacent to Mînî Thnî. The plant used the natural flow of the Bow River to generate electricity for Calgary's growing population and industries. As Calgary expanded, the Horseshoe Plant marked the beginning of larger-scale hydroelectric development on the Bow River system (Brown 2024).

In 1941, the Canadian Federal Government constructed the Cascade Dam, the only hydro plant located in a national park, by flooding Mînî Wakâ, which reduced a branch of the connecting Cascade River to a trickle and formed Cascade Creek (Struthers 2024). This led to higher sediment levels and caused native trout populations to decline, while non-native hora thaba (brook trout) populations increased, as they prefer sediment-rich environments. TransAlta acquired the Cascade Plant in 1942, constructed a new dam, power plant, and later added a second generating unit in 1957 (TransAlta Corporation n.d.). Cascade Dam still operates today.

Parks Canada is currently working¹⁷ on a multi-year project to restore the ecological integrity of the Cascade Creek as part of its 2010 Banff Park Management Plan. This project includes restoring the creek and native aquatic populations (Struthers 2024). Most recently, Cascade Creek successfully became habitat for culturally significant species like horrem tisha (Chini 2024; Fisheries and Oceans Canada 2025).

4.9 Tourism

Since 1889, the Îyăhé Nakoda supported tourism to Banff National Park and the PSA, through their participation in cultural events like the Banff Indian Days, and in theatrical films set in the Banff National Park area and PSA¹⁸. These efforts assisted visitors in coming to these bio-diverse, culturally significant, mountain landscapes.

CPR hotels like the Banff Springs Hotel and Chateau Lake Louise were built to attract visitors to the Rockies, but tourism grew significantly after World War II (Robinson 1978). Increased wages and mobility, combined with interests in leisure after the Great Depression, prompted an influx of tourism within Mînî

¹⁷ In collaboration with Trans-Alta, the Town of Banff, and the Department of Fisheries and Oceans Canada.

¹⁸ See *Stories We Have Earned: The Stoney Nakoda Film Project* (2024). Produced and directed by Bears paw First Nation member Cody Lefthand.



Rhpa Mâkoche (Robinson 1978). Much of the area's infrastructure and attractions were built out and expanded during the mid-20th century, including roads, cabins, ski resorts, and the Banff Gondola (Robinson 1978).

Bow Valley Corridor, Kay Nas Kay, Mîî Rhpa, and Chuwapchîpchîyan Kude Bi are major tourist spots. Each year, over four million people visit Mîî Rhpa and Mîî Rhpa Mâkoche (Banff National Park), with 4.23 million visitors recorded in 2024-25 (Town of Banff n.d.; Government of Canada 2025). About 70% of Mîî Rhpa Mâkoche visitors are local day-users (Colgan 2026).

Tourism is mainly promoted using social media and websites like Banff & Lake Louise Tourism, Travel Alberta, and Explore Canmore. The Bow Valley attracts visitors throughout the year with its mountain views, wildlife, outdoor adventures, and special events. Popular activities include hiking, canoeing, fishing, horseback riding, skiing, snowshoeing, relaxing in hot springs, and camping. There are four golf courses, a cross-country ski lodge, nine campgrounds, and numerous trails for hiking and cycling.¹⁹ Several downhill ski resorts²⁰ are located near Tînda Mîman. These resorts offer winter recreation options such as skiing, snowboarding, and tubing, along with summer activities like cycling, hiking, or fishing. Although these resorts are outside the PSA, reaching them requires travel through the PSA. Many out-of-town visitors to these resorts also spend time at local attractions and businesses within the PSA.

¹⁹ Golf: Silvertip Resort, Stewart Creek Golf & Country Club, Brewster's Kananaskis Ranch Golf Course, and Canmore Golf & Curling Club; Cross-country ski lodge: Canmore Nordic Centre; Campgrounds: Wapiti Campground (Canmore), Bow River Campground, Three Sisters Campground, Lac Des Arcs Campground, Exshaw Community Campground, Elk Flats Campground, Bow Valley Campground, Willow Rock Campground, and Quaite Valley Backcountry Campground.

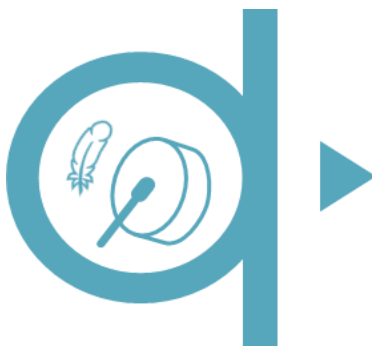
²⁰ Lake Louise Ski Resort, Nakiska Ski Area, Sunshine Village Ski & Snowboard Resort, Mount Norquay, and Fortress Mountain Resort.



5 Impacts to Stoney Valued Components

Anthropogenic changes affect each of Stoney's VCs (Connections to Culture, Place, and the Land; Wildlife; Vegetation; and Stewardship) in different ways. Together, these impacts alter ecological connectivity, cultural continuity, and Stoney responsibilities to the land within the PSA. By examining changes to each VC, this section describes the conditions, pressures, and priorities to inform holistic management of the PSA.

5.1 Connections to Culture, Place, and the Land



Connections to Culture, Place, and the Land VC

Stoney's ability to maintain connection to land- and place-based culture and identity through preferred means within the PSA.

Îyethkabi ability to harvest preferred wildlife

- Changes in availability of wildlife for harvesting.
- Changes in quality of, and access to, wildlife harvesting areas.
- Changes in wildlife health.
- Stoney-reported changes in spiritual and cultural connections to wildlife.

Îyethkabi ability to gather preferred plants, berries, and pezuda (medicines)

- Changes in availability of plants, berries, and pezuda (medicines) for gathering.
- Changes in quality of, and access to, gathering areas.
- Changes in the health of plants, berries, and pezuda (medicines).

Îyethkabi ability to maintain spiritual and cultural connections to landscapes

- Stoney-reported changes in the integrity of the spirit present on the land.
- Stoney-reported changes in Stoney identification and use of traditional place names.
- Changes in Stoney's ability to access spiritually and culturally significant areas.
- Stoney-reported changes in Stoney transmission of stories about places.
- Stoney-reported changes in the transfer of intergenerational knowledge.

This section outlines how Contributors described present-day Îyethkabi relationships with culture, place, and the land within the PSA, including changes to access, language, harvesting, ceremony, and the condition of culturally important sites and resources. It builds on the historical and cultural context



provided in Sections 3 to show how anthropogenic changes such as those described in Section 4 are resulting in conditions that do not meet Stoney's preferences, affecting contemporary land use, cultural continuity, and the exercise of Section 35 rights.

5.1.1 Impacts to Cultural and Spiritual Practices

Cultural and spiritual practices are crucial to Stoney identity and way of life. However, Contributors reported that many of these practices have been impacted by disturbances to important sites and resources, which in turn have impacted Stoney preferred conditions.

Contributors reported that development and increased human activity have resulted in Îyethkabi avoidance of certain high traffic areas in the PSA. Barriers such as signs, gates, fences, pollution, and the presence of people also discourage Îyethkabi from hunting, fishing, gathering, and conducting other spiritual and cultural activities, as they prefer quiet, accessible, and clean locations.

Contributors reported that they see more non-Stoney harvesters, including people from other Indigenous nations and the general public, harvesting within the PSA.

"Well, everybody's hunting right now, not just the Native people, the white people also use bow hunting year-round..." (02SN)

"Through my ancestors, this area, before the Europeans came, Stoney's been in this area. All things, a lot of animals, fishing, harvest... and there's bears, medicinal herbs... Now, it seems like, getting overpopulated...you used to go harvest your berries or medicinal herbs, stuff like that. Sometimes there's a sign there that says, 'No Trespassing'. Gate, and there's a gate there locked up where we used to go in there freely and, you know, do all our activities whether it's hunting just berry picking or medicinal herbs." (25SN)

Often, visitors who are harvesting within the PSA do not follow practices that align with Îyethkabi harvesting protocols. For example, non-local hunters have been known to hunt for sport, often taking animals in a manner that does not align with Îyethkabi stewardship practices. Contributors indicate that visitor harvesting results in over-harvesting, and pressure on the availability of resources for Îyethkabi.

Further, wildlife share the same preference as the Îyethkabi for undisturbed habitats that are quiet and free from human presence. As a result, wildlife are vacating the PSA, making them less available to Îyethkabi harvesters. Anthropogenic barriers, including transportation routes and residential and industrial development, can also restrict wildlife movement, affecting wildlife health, habitat quality, and reduce genetic diversity over time.

"Now there, you hardly see any elk in Kananaskis area, because of developments and too many tourists. Too many people go out there." (43SN)



"... there's not very many animals in the mountains back here, then, it used [to] be. Now, I don't know whether it's all those tourists and all the vehicles. Seems like most of the animals are moving down further, down into the foothills, the ranches...That's where we kind of have a problem harvesting our game you know...So, that makes it very hard for our people to hunt, harvest meat, or herbs, berries, stuff like that."
(25SN)

"I haven't picked berries or harvest anything in the last 25-30, years in general, because there's nowhere, everybody lives everywhere. Too many people where all the berries used to be. Just go across over here, just this side of Dead Man's Flats, that new development, used to pick blueberries and huckleberries in there, it's all residences, nothing there no more." (01SN)

"And I say that gathering is more than that, goes deeper. That's where you're on the land, land-based learning. That's where you retain your language. There's where you know you speak your language. Seasonal languages are taught there." (CER 2018, para 1166)

The following sections provide additional detail on specific impacts affecting each type of Stoney TLRU practice. TLRU sites for each activity as reported by Contributors are also included. Note, some Contributors could not identify precise areas previously used by their parents and grandparents, primarily due to anthropogenic changes. The limited identification of specific sites should not be interpreted as an absence of use or diminished significance, as Contributors reported that the entire PSA is important, and would be used if it met their preferences (refer to Appendix D for further Study limitations).

5.1.1.1 Hunting and Trapping

When discussing current relationships to wildlife, a Contributor shared that his dad taught him about a prophecy from the "old days"; it predicted that there would be a time in which the people would coexist with the animals differently. This prophecy stated that the animals will also forget the old ways, live in new environments (cities) and eat different foods (see Section 5.1.2). Information gathered from Contributors appears to align with this prophecy.

With increased human presence in the PSA, wildlife have become desensitized and are no longer as wary of humans. Îyethkabi do not hunt habituated animals, viewing it as immoral and believing the meat is lesser quality since those animals likely ate human food. Habituated animals do not meet the requirements of Stoney's traditional hunting protocols, which teach discipline, humility, and gratitude. If an animal cannot live independently on land and lacks the option to stay away from people, it is not given the opportunity to avoid being hunted. This undermines a respectful hunt and prevents Stoney from fulfilling ethical responsibilities toward wildlife.



"Well, I mean, it's very important for me, our[selves], our kids, our boys hunt all [the] time. We pretty well eat wild game, meat, pretty near every day, or every three days. We used to eat those meat all the time when I was young, especially those days, there's a lot of-not too many people around, there used to be good hunting, but those days, all the games seems like it's very wild. It's not like today...Those days, one shot if we're lucky, we get one shot, we have to hit 'em. If we missed him, it's gone. That's another change [I've] seen, animals became very tame, they're in the town. In our, in my time that's '70s, '60s, animals [were] pretty hard to get, they run all the time, run away from you. If they spotted you, they seen you, they took off...but now, you go to about 10 feet or something, they still there, you'd get a chance to pick which is a good one...That's a change I've seen-all animals became very tame. I know elks like that, and the deer, close to, mostly in the city, moose is kind of a little bit wild I guess, I didn't see the moose that much along here...I go through Kananaskis for moose hunting." (O2SN)



Photo 24: Kiska (bighorn sheep) on Highway 1A, Credit: Y2Y

Contributors spoke about the importance of vegetation in relation to wildlife, and how the wildlife they rely on have been impacted by changes to vegetation required for their survival and behaviours. When animals can no longer find the vegetation they require, whether it be for food or for behaviours and seasonal purposes, they are forced to look elsewhere, or they are unable to survive.

Several Participants spoke about their family members having held provincially regulated traplines in the Bow Valley in the past and the economic benefits that used to be associated with trapping. This



changed as demand for fur declined and trapline maintenance became too labour-intensive to justify the limited financial return. Trapping also declined due to experiences with, and fear of persecution.

"...[a Stoney member] was trapping beaver, and when the warden came, he saw that warden coming, so he pretended to play dead, that guy. So the warden came there and he saw-found a dead man, so he went back to his headquarters...[the warden] went back over here [to the area where the dead man was], but that guy, he already was gone..." (67SN)

Despite this overall decline, trappers including Lenny Wesley, members of the late Garry Ear's family, and members of the late Rolland Rollinmud's family continue to practise traditional trapping methods in the PSA.

Despite the pressures on wildlife and wildlife habitat, and the resulting impact to Stoney's hunting practices in the PSA, most Contributors stated that they are resilient and will continue to exercise their hunting rights. Contributors reported **81** hunting and **2** trapping sites within the PSA as listed below and displayed in Figure 6.

Hunting Sites

- 2 chaba (beaver) hunting sites
- kiska (bighorn sheep) hunting sites
- 2 wathabe (black bear) hunting sites
- 9 deer hunting sites
- 15 pacheden (elk) hunting sites
- 2 goat hunting sites
- 28 general hunting sites
- 1 îhmu (lynx) hunting site
- 10 ta (moose) hunting sites
- 1 potential future hunting site
- 2 mâstîy (rabbit) hunting sites
- 2 thijupthân (white-tailed) deer hunting sites

Trapping Sites

- 2 traplines

Non-Consumptive Wildlife

In addition to hunted species, Contributors also spoke about important wildlife species that are not harvested. Contributors expressed concern over having observed non-Stoney hunters hunting bears. Bears are regarded as sacred and are only harvested by Stoney when necessary or at the request of an Elder, with a formal ceremony preceding any harvest.

"Only in the old days we'd kill 'em [bears]. Before they kill 'em, they do ceremonies. They just, we don't just go there and shoot 'em. They got medicine in the body. So, they give tobacco or something to give ceremonies, pray. That's one way it can die easier." (72SN)



One Contributor shared a story a of non-Stoney hunter hunting a collared bear.

"Even these American hunters, they come with helicopter and everything, and there was a trophy grizzly bear that they got, and, you know, we're halfway back to where Canada is. South from there, this rancher buddy of mine, they lived there. Then the tracking device kept going in a beeping sound...it was the collar that was [the] collar of the grizzly bear. They took the body and everything, but they just threw away the collar while it was still in here." (83SN)

While it is not illegal to hunt a collared or marked animal in Alberta, it is required to report and return the collar/device to Fish and Wildlife Enforcement (Province of Alberta 2025). Collared animals help provide a better understanding of wildlife behaviour, species health, and territorial movement. As part of harvesting protocols, Îyãhé Nakoda do not harvest collared animals. The loss of a collared animal, specifically a bear, is seen as a disrespect to the spirit of the animal.

5.1.1.2 Gathering

Contributors described the number of traditional Îyethkabi gathering sites as limited and continually diminishing. They reported that some of the remaining traditional gathering sites are either over-harvested or have been destroyed by non-Indigenous people.

"You go through Spray Valley during July and August, you see people walking all over the place. And berry picking is-there's nothing, no. 'Gonna go pick blueberries through there, used to be lots. We went through there, go pick blueberries last year, where there used to be a blueberry patch, there's nothing, all gone. People, too many people." (01SN)

Contributors also expressed concern over the berries and pezuda (medicines) that are cut down during clearcutting or tree removal activities (i.e., for forest management to reduce the impacts of potential wildfires).

Contributors reported that they continue to gather in the few areas that meet their preferences. Where species are not available in the PSA, Îyethkabi travel and trade for these species, such as rhâde (cedar).

While Contributors know they are allowed to gather within parks (subject to permits and restrictions), they are often harassed by the public while gathering. During an interview session at Pigeon Mountain, a tourist filmed Contributors with a drone as they collected châdeden (wild strawberries). The interaction became unpleasant when the tourist started swearing and claiming the Contributors were doing something wrong, and that he was going to report them. This type of interaction is frequent for Îyethkabi, and can cause lasting fear of returning to those areas to gather again.

Although Îyethkabi have experienced challenges with gathering, gathered species are required for healing and related teachings of passing sacred medicinal knowledge. Specific pezuda, herbs, and



berries are also required for ceremony or spiritual practices. Without these species it becomes difficult to keep Îyethkabi healthy and maintain gathering knowledge and protocol.

Contributors reported **110** gathering sites within the PSA as listed below and displayed in Figure 6.

Gathering Sites

- 6 bear berry gathering sites
- 10 berry gathering sites
- 9 haṭḥa toton (blueberry) gathering sites
- 12 châpa (chokecherry) gathering sites
- 1 poptâka (cranberry) gathering site
- 9 general gathering sites
- 6 hûchathan (gooseberry) gathering sites
- 12 haṭḥa tâga (huckleberry) gathering sites
- 1 mâkuthkiya (wild carrot) gathering site
- 1 sîdawarhpe (labrador tea) gathering site
- 13 pezuda (medicines) gathering sites
- 1 pezirhoda (mountain sage) gathering site
- 1 sijamnân (wild onion) gathering site
- 10 kâheja (raspberry) gathering sites
- 2 Hubaṭḥokâ (saskatoon berry) gathering sites
- 8 châdeden (wild strawberry) gathering sites
- 2 tipi pole gathering sites
- 6 wolf willow gathering sites

5.1.1.3 Fishing

Similar to other harvesting practices, Contributors reported that development within Îyăḥé Nakoda Mâkoche has made it more difficult for Nation members to access preferred fishing locations, and to share related teachings. Contributors explained that even where fishing may still be technically possible, the presence of disturbance (e.g., traffic, recreational crowding, visible development, or evidence of heavy use) can reduce the sense of safety and comfort that supports meaningful fishing.

Contributors expressed specific concerns with changes to the mînî quality and quantity due to contamination pathways associated with industrial activity, including dust and debris entering waterbodies. Contamination which can affect fish health and habitat, and fishing success, impact Îyethkabi health.

Despite ongoing pressures impacting access and mînî quality, Contributors indicated that fishing remains an important practice for Îyethkabi and a continued expression of Section 35 rights and cultural continuity within the PSA.

"Right to the Exshaw area, they fish, [Stoneys] do fishing..." (78SN)

Within the PSA, Contributors reported fishing at **28** sites as listed below and displayed in Figure 6.



Fishing Sites

- 2 brown trout fishing sites
- 11 general fishing sites
- 7 ohm tisha (rainbow trout) sites
- 2 sucker fishing sites
- 2 trout fishing sites
- 4 whitefish fishing sites

5.1.1.4 Habitation

Like harvesting sites, camping areas in the PSA and across Îyăhé Nakoda Mâkoche are now frequented by many non-Nation visitors. Îyethkabi are no longer able to camp as sporadically, and are forced to share camping areas with other people. Contributors reported this as the most significant impact on camping.

"...before, even our people used to go hunting, camp, in September down by Chain Lakes area, west, used to be about lot of camp, 30 campers, something like that, we used to all camp there, we'd go hunting all over, walking, trucks, four-by-fours. We just put our tents like a village there, and we'd go hunting all over down to Porcupine Hills, down on Coleman Road, down this way, not too much. We'd go mostly south. We used to ask the permission, some of the landowners, the ranchers, they gave us permission, they used to trust us, long time ago, but now those young people, they keep this hunting, guiding or something like that for themselves, so they don't allow us hunting anymore." (02SN)

Camping is critical to teach and transmit language, stories, history, and share practical knowledge and skills that promote Îyethkabi culture and identity. Îyethkabi often camp to facilitate successful harvesting and while conducting other spiritual or cultural activities. Therefore, an inability to camp also results in a reduced ability to conduct those activities.

As described in Section 3.1.3.2, Stoney boycotted the Banff Indian Days due to the misappropriation of Stoney's culture. Today, Stoney is revitalizing the Banff Indian Days in the form of the annual Stoney Nakoda Family Camp as a place for cultural and spiritual connection where Îyethkabi come together, camp, and participate in celebration and events, and cultural and spiritual practices. Contributors spoke about the camp as an event they look forward to every year. Similarly, several Îyethkabi are conducting more cultural and hunting camps within Îyăhé Nakoda Mâkoche despite ongoing barriers to access and use.

Contributors reported **34** camping sites within the PSA as listed below and displayed in Figure 6.

Habitation Sites

- 29 camping sites
- 2 family camps
- 1 family/friend gathering sites
- 2 winter camps





Photo 25: Kelton Lefthand (l, holding the MD of Bighorn flag), Conal Labelle (c), and Danny Labelle (r, holding the Stoney flag) on a Trail Ride to Banff Indian Days. Credit: William Snow

5.1.1.5 Transportation

Îyethkabi used to rely on trails and travel routes to visit family members and friends, and to access TLRU sites. The knowledge of many of these routes has been lost due to vegetation overgrowth, or the routes themselves have been impacted or destroyed by development. Impacts to travel routes and trails has resulted in avoidance by Îyethkabi. Many of the remaining trails are now used by tourists and recreational users for purposes including hiking, running, cycling, climbing, and horseback riding. Îyethkabi avoidance of impacted trails has made it difficult for some Nation members to recollect certain trails and travel routes, to maintain them, and to pass the knowledge of these trails on to younger generations.

"So, he [11SN] says people are using it [trails], but not our people. And that today, many of our young people, majority of them, wouldn't know where these trails are because they were never, there was never an opportunity to take them on these trails. There's always restrictions and permits or whatever that prevented our people from using our old trails. He [11SN] says that today, you see houses and hikers like, it's just not the way it was back then, you know. And a lot of-we don't know what trails are undisturbed, what trails are disturbed and what they look like, today. Because there's too many rules to go exploring and that he's at an age where he



can't go. But it's unfortunate that young people...don't know what their trails are."
(11SN, translated by 37SN)



Stoney's *Stoney Nakoda Indigenous Forest Guardian Program Final Report* makes a recommendation to Parks Canada, Alberta Forestry and Parks, and local municipalities to involve Stoney in controlled burns to regenerate culturally important plants, **improve wildlife habitat, maintain travel routes**, and reduce fuel loads. These burns, as they were done historically, would be conducted under appropriate seasonal and environmental conditions, guided by deep knowledge of local ecosystems, and would contribute to wildlife connectivity within the PSA.

Impacts to Îyethkabi trails and travel routes also results in impacts to and loss of Îyethka language, and the names, stories, and histories associated with trails and travel routes. Remaining trails and travel routes are still used by Îyethkabi today, specifically to access more remote TLRU sites.

Contributors reported **6** trails and travel routes within the PSA as listed below and displayed in Figure 6.

Transportation Sites

6 travel routes

5.1.1.6 Spiritual and Ceremonial Practices

Contributors reported that spiritual and ceremonial areas within the PSA are increasingly affected by anthropogenic pressures. Increased development, public presence, and physical barriers (signage, gates, fencing) can discourage Nation members from accessing ceremonial areas or maintaining privacy needed for spiritual practice.

Contributors explained that spiritual places can be impacted when there is frequent disturbance or when visitors do not understand or follow Stoney protocols. Contributors recalled hosting ceremonies in areas that were not quiet or free of other people. Often, members of the public are curious, and take photos or try and join ceremonies, which takes away their sacredness, and the willingness of Ceremony Holders to conduct future ceremonies in similar areas.

Contributors described that when a sacred place is disturbed, the spirit in that area may be threatened, or leave in cases of ongoing disturbance, and when that occurs, the place may no longer function as intended for spiritual purposes. One couple described the impact that tourism has had on their favourite spiritual site at Heart Lake, and expressed sadness that they can no longer return, as the spirit has left the area, rendering any further spiritual use ineffective.

"Heart Lake, we used to go over there for prayers. And he'd [husband] go smoke his pipe...[other] people [go there now]-we can't get up there anymore." (78SN)

Contributors emphasized that the continuation of ceremony is a responsibility carried forward from ancestors. Given the historic criminalization and suppression of these practices, maintaining ceremony



today is both an act of cultural continuity and an expression of resilience. Protecting spiritual and ceremonial sites within the PSA supports Stoney cultural survival, stewardship responsibilities, and the ability to pass knowledge to future generations.

"We have to honour our ancestors. They are the ones who went through a hard time, and that is why we're here. They are the ones [who] preserved. They kept the preservation going for us, like the ceremonies. At one time we were, our ceremonies were outlawed. But they kept it, they kept it going, they preserved for us. Now it's our duty to keep it going.... we have to hand it down to our next generation." (43SN)

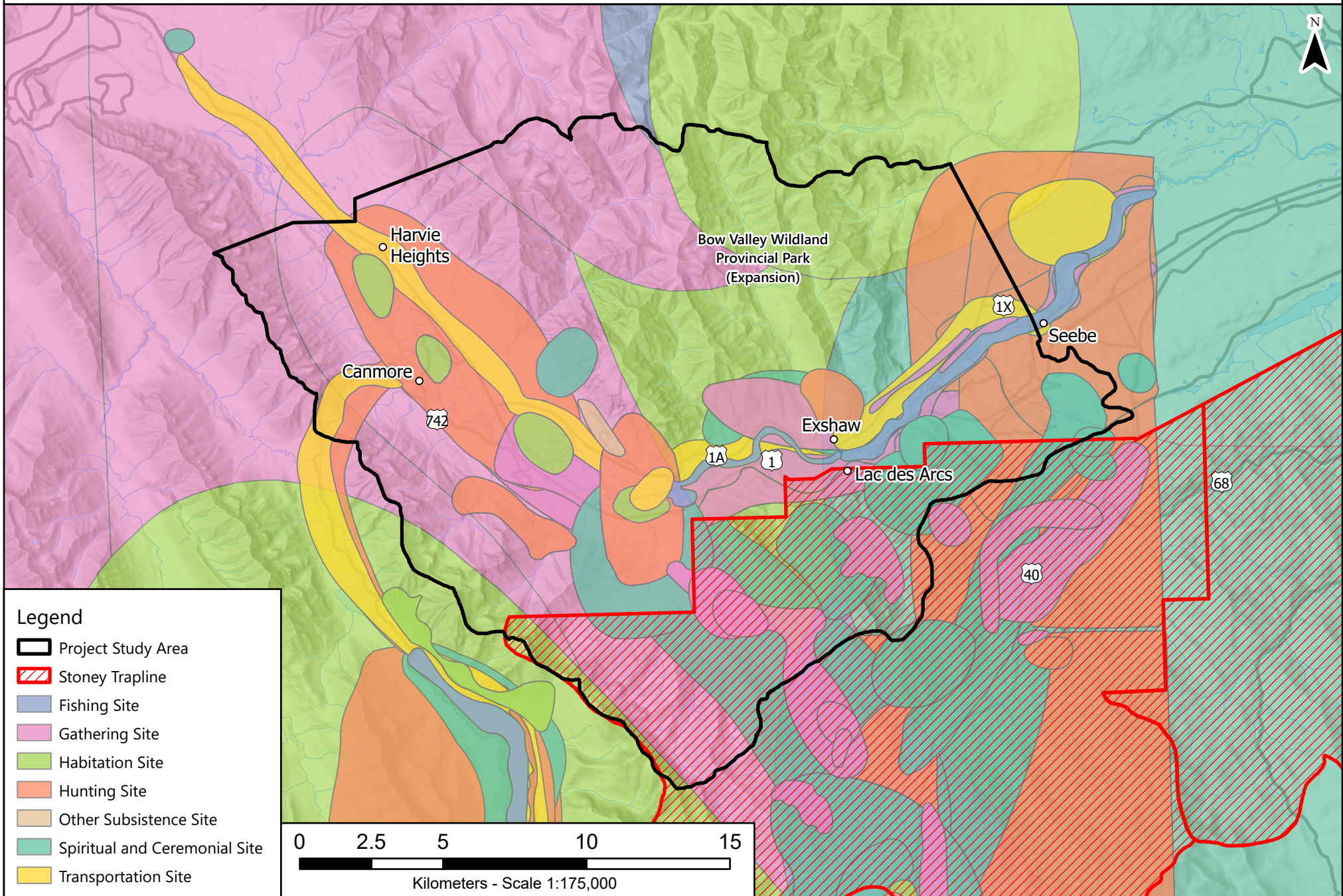
Contributors reported **26** spiritual and ceremonial sites within the PSA as listed below and displayed in Figure 6.

Spiritual and Ceremonial Sites

- 2 burial sites
- 12 ceremonial sites
- 8 sacred sites
- 1 sun dance site
- 3 sweat lodge sites



Traditional Land Use Map



Legend

- Project Study Area
- Stoney Trapline
- Fishing Site
- Gathering Site
- Habitation Site
- Hunting Site
- Other Subsistence Site
- Spiritual and Ceremonial Site
- Transportation Site

Date: March 19, 2026

Coordinate System: NAD 1983 UTM Zone 11N

Data Sources: Esri, NASA, NGA, USGS

DISCLAIMER: This map should not be considered a substitute for consultation with the Stoney Nakoda Nations. This map is the exclusive property of the Stoney Nakoda Nations. Any reproduction or distribution without written approval is strictly prohibited.

Prepared By:
MNP LLP



Prepared For:
Stoney Nakoda
Nations



Figure:

6

5.1.2 Impacts to Îyethkabi Connections to Place

Contributors discussed how changes in the PSA's landscape and resources, especially due to increased development and visitors, have altered Îyethkabi's connection to Îyãhé Nakoda Mâkoche. These changes affect time spent on the land, place names, stories, travel, wildlife, and plants. While the lands and resources in the PSA may not fully align with Stoney preferences, or access may be restricted, Contributors noted that Îyethkabi are resilient in maintaining their culture and ways of being, and will always be proud to be from the Eastern Slopes.

"Yeah, back in time, Europeans came, we were the first ones to be here. Stoney Nakoda First Nations, 'from the mountains' Nakoda. We're from there, we're from this area." (83SN)

5.1.2.1 Barriers to Access

What was previously a clean, quiet, undisturbed landscape is now home to signs, fences, gates, and people. One Contributor commented that they no longer can access an area in the PSA they once frequented for pezuda and herbs due to installation of fences.

"...in that area notice there's a lot of hiking trails, and I hike up to Elbow Lake... it's like a town up there you know. And now, let's say, 15 years ago, it was very peaceful, quiet, you know, trapping the highways. But now weekends off, on that turn off east, right through the S.N.R. [Stoney Nakoda Resort], big, big line of slow traffic. And, you know, it was never like that before...but it affects us a lot..." (65SN)

Historically, Îyethkabi harvesters had longstanding relationships with leaseholders and landowners to access their land for the purposes of TLRU. However, these relationships have become strained with new generations of leaseholders and landowners making it more difficult for Îyethkabi hunters and gatherers to gain access.

"[It's] not like it used to be. Maybe, generation, couple generations back, those rancher[s]... we haven't had any kind of problems. We don't have to ask and back then we just go where they don't see you. But a few generations now, greedy, I think. They want the land, everything to themselves. And it's hard, you know, our people put on an Indian reserve, especially Eden Valley is really small. You can't raise cattle, there's not enough grazing, so it's hard to make a living." (25SN)

"Signs like this ['No Trespassing'] in our area, around Banff. That's kind of like a threat. That means you're in range to be shot." (25SN)

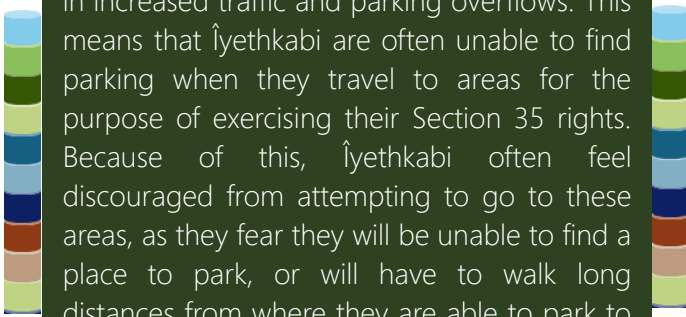


Contributors observed that frequent changes in land classifications, such as new parks being added, and ongoing updates to hunting and access regulations²¹ within the PSA have led to uncertainty about land access, even when it is permitted. These perceptions can have the same or similar restrictive effects as physical barriers to access, and Contributors have reported that these barriers last for generations. While these restrictions are felt across all TLRU, this was particularly noted as having a large impact on hunting, as it is the TLRU type that is most frequently restricted.

"...I know we never hunt in this area, you know, like ever since Banff National Park [was established], it cuts off everything. Seems like us people, we just keep it quiet, we never fight it back. And at least, they should give us a little 'Hey, during this couple months, you should allow us to harvest.' ...even from Morley, going south along Highway 40, I remember when we used to hunt through there and now you can't, because Peter Lougheed Provincial Park and all [those] restriction[s]..." (65SN)

When asked whether they can harvest within provincial parks, some Contributors responded that they can, while others were uncertain. One couple noted they were wrongfully forced to pay for a Kananaskis Pass. Îyethkabi aged 18 and older can register their vehicle at no cost at any Kananaskis information centre by presenting their Indian Status Card, with registration remaining valid for five years at a time.

"Even going into Kananaskis, there's a parks gate there that we had to pay for to get a pass... I said, 'Why do we have to pay for land? It's supposed to be ours.' " (78SN)



The amount of tourism in the PSA has resulted in increased traffic and parking overflows. This means that Îyethkabi are often unable to find parking when they travel to areas for the purpose of exercising their Section 35 rights. Because of this, Îyethkabi often feel discouraged from attempting to go to these areas, as they fear they will be unable to find a place to park, or will have to walk long distances from where they are able to park to their destination, which is especially difficult for Elders with mobility challenges.

Contributors reported difficulties with accessing areas that still meet their preferences, and have even started avoiding some areas mainly due to the increase in development and tourism, which has affected the spirit in those areas. When spirits are impacted, the sacredness of the land is also impacted, and Îyethkabi are often no longer able to connect to those areas for spiritual purposes.

Some Contributors spoke about how modern ways of living, such as vehicle travel, technology, and work demand, have

²¹ Including the historical legislative barriers to access that existed during the development of the reserves, including the pass system, and the changing boundary lines for the Otiti Tî Mâkoche (Kootenay Plains).



impacted the amount of time they spend on the land. Contributors noted they now have to make a greater effort to find accessible areas they can spend time on with their families to preserve Îyâhé Nakoda Mâkoche culture and identity.

"...driving with my kids I tell them the areas...you remember [cultural knowledge] better when you're on the land. Talking at the house, they won't understand some of these valleys are called in our language, [they ask] "Where's that? Where's that?" They have to, well, look in their phone or look them up like this." (94SN)

Past experiences with exclusion, uncertainty regarding current regulations, and the presence of signs, fences, gates, and other barriers to access often results in Îyethkabi avoidance of areas once used for cultural activities such as harvesting, ceremonies, travel, and camping. This has resulted in an inadvertent lapse in vital inter-generational teachings, reducing knowledge and connection to the lands and resources within the PSA over time.

5.1.2.2 Changes to the Landscape

Contributors spoke about the increase in littering and graffiti in the PSA, which alters the visual quality of lands and resources. When hiking along Chuwapchîpchîyan Kude Bi, Mîni Rhpa, or Îyârhe Yamni Ochiha Îgach trails, Contributors have witnessed carvings in trees or rocks, wooden structures, and rock piles.

"They make symbols of their country. Maybe on the wood or sometimes they put rocks together, like a shape thing, people from other countries." (69SN)



Photo 27: Inuksuit Made with Stones, Jura Creek

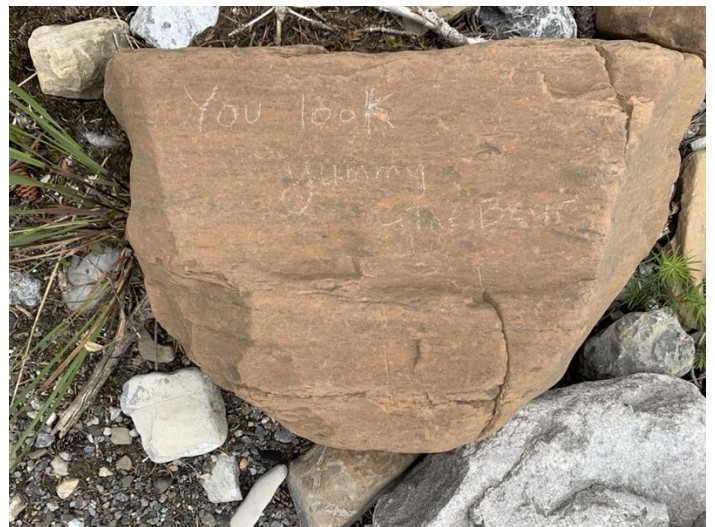


Photo 27: Graffiti on Stone, Jura Creek



Alterations to the landscape, especially within culturally and spiritually significant areas, result in negative impacts to Îyethkabi connection to place; they do not align with Stoney's protocol of respect and stewardship. When Nation members spend time on the land, littering and graffiti act as visual cues of human disturbance and can subsequently cause Îyethkabi a sense of discomfort or detachment from their relationship with that site.

"Too many people, they don't respect what's out there on the land." (105SN)

5.1.2.3 Language and Place Names

As settlers moved west into the Rocky Mountains, many of the traditional Îyethka places names were altered to suit English speakers. Some Îyethka places names were roughly translated or transliterated from their Îyăhé Nakoda meaning into English, and others were replaced altogether with names of prominent (local or otherwise) figures. For example, the English name for Îyârhe Yamnî Ochiâ Îgach has been interpreted in various ways.

"The first European settler came across, they call it Three Nuns. That's what they said. But in the years, they changed it to Three Sisters." (83SN)

"...Three Sisters is three mountain peaks in a row. Three Sisters came after colonization, or from the white people, or through the stories being misinterpreted. Because I'm pretty sure there are some stories about three women, about three sisters." (43SN)

Some English names for geographical landmarks in the region are disrespectful of Îyăhé Nakoda history, and other Îyethka place names have been severely misinterpreted. For example, the mountain formerly known by the derogatory English name "Squaw's Tit" has since been renamed Bald Eagle Peak (Anû Kathâ Îpa), a shift to culturally appropriate naming.

"At that time, I guess none of them speak English, and they don't really know how to say that word in English. So, I guess the, whoever interview them, probably thought that it's the devil. That's why it [is] called [Devil's Head Mountain], but to us, it's not...It was named after some sort of Sasquatch, but the white people misunderstood. That's how they name it Devil Mountain. But the mountain itself say that it didn't like that name... it's spiritual, sacred, its life." (69SN)





Photo 28: Bald Eagle Peak (Anû Kathâ Îpa), credit: William Snow

The translation or replacement of Îyethka place names impedes the use of Îyethka among Îyethkabi and the teaching and transmission of language to future generations, and risks gradual anglicization of Stoney culture. Language is present in all Îyethkabi cultural and spiritual practices, and place names are given to specific places and landscapes for specific reasons, such as a memorable event. When Îyethka place names are not accurately preserved, it becomes harder for Îyethkabi to link oral traditions to specific locations.

"Today's young people are, us Elders, too, have made a mistake, big mistake because of the fact that children...grandkids all don't understand Stoney, and my great-grandkids don't understand Stoney. They can hear it and know some of the words, but we forgot to teach them because of this technology." (01SN)

Contributors identified **19** story and place name sites within the PSA as listed below and displayed in Figure 6:



Historic Sites

- 10 story sites
- 9 place name sites

5.1.2.4 Traditional Ecological Knowledge

Contributors described Traditional Ecological Knowledge (TEK) as land-based knowledge that guides how younger generations learn to care for, use, and show respect to lands and resources within Îyắhé Nakoda Mâkoche. This knowledge reflects Stoney understanding of the interconnected nature of ecosystems, in which humans, plants, animals, insects, fish, mîî (water), minerals, amphibians, birds, air, and rocks each have their own spirit and purpose. Contributors emphasized that harm to one part of the system affects the health and balance of the whole.

Contributors explained that TEK supports Îyethkabi sense of identity and wellbeing, and the continuation of Stoney knowledge, cultural practice, stewardship responsibilities, and the exercise of Section 35 rights. Time on the land, and the ability to apply and share knowledge, were described as healing and as a way of maintaining connection to ancestors and traditional ways of life. Contributors noted that when TEK is not passed down, younger generations may lose important cultural teachings, connections to land-based practice, and opportunities to support their own wellbeing through that relationship. Contributors further explained that exposing younger generations to TEK sites, including migration areas, habitat sites, salt licks, and other ecological features, supports a bicultural understanding of the PSA by connecting Îyethkabi knowledge with ecological observation. At the same time, sharing TEK is becoming more difficult where the lands, resources, or conditions tied to that knowledge have been altered or are no longer accessible because of declining quality, reduced quantity, or physical and perceived barriers to access. Contributors identified industrial and other development-related disturbances as particular threats to TEK sites, causing habitat loss, destruction of salt licks and dens, wetland drainage, and contamination in the PSA.

Contributors reported **64** TEK sites within the PSA, identified through oral history and lived experience. These sites may not always reflect direct harvesting by the individual Contributor, but rather knowledge shared across generations about migration routes, habitat areas, plant locations, salt licks, and other important ecological features. Together, these sites reflect Îyethkabi long-standing experience on the land and their knowledge of the ecological conditions that support cultural continuity, harvesting, and the exercise of Section 35 rights. The reported TEK sites are listed below and displayed in Figure 7.

Animal Migration

- Ihmûtâga (cougar) - 2
- Current wildlife corridor - 2
- Pacheden (elk) - 3
- General - 2
- Ta (moose) - 2
- Thîde thaban (mule deer) - 1
- Kiska (bighorn sheep) - 1
- White Tail Deer - 1

Animal, Bird or Fish Habitat

- Watâga (grizzly bear) - 6
- Kiska (bighorn sheep) - 4
- Chickens - 1
- Deer - 1
- Eagles nest - 1
- Pacheden (elk) - 3
- Goat - 2
- Historic pacheden (elk) - 2
- Ta (moose) - 1
- Ohm tisha (rainbow trout) - 2



- Salamanders - 1
- Kiska (bighorn sheep) - 1
- Mâstîy (rabbit) - 1
- Mnâzan (wolverine) - 5

Plant Habitat

- Châpa (chokecherries) - 1
- Diamond Willow - 1
- Pezuda (medicines) - 1
- Kâheja (raspberries) - 1

- Hubaṭhokâ (saskatoon berries) - 1
- Châdeden (wild strawberries) - 1

Salt Licks

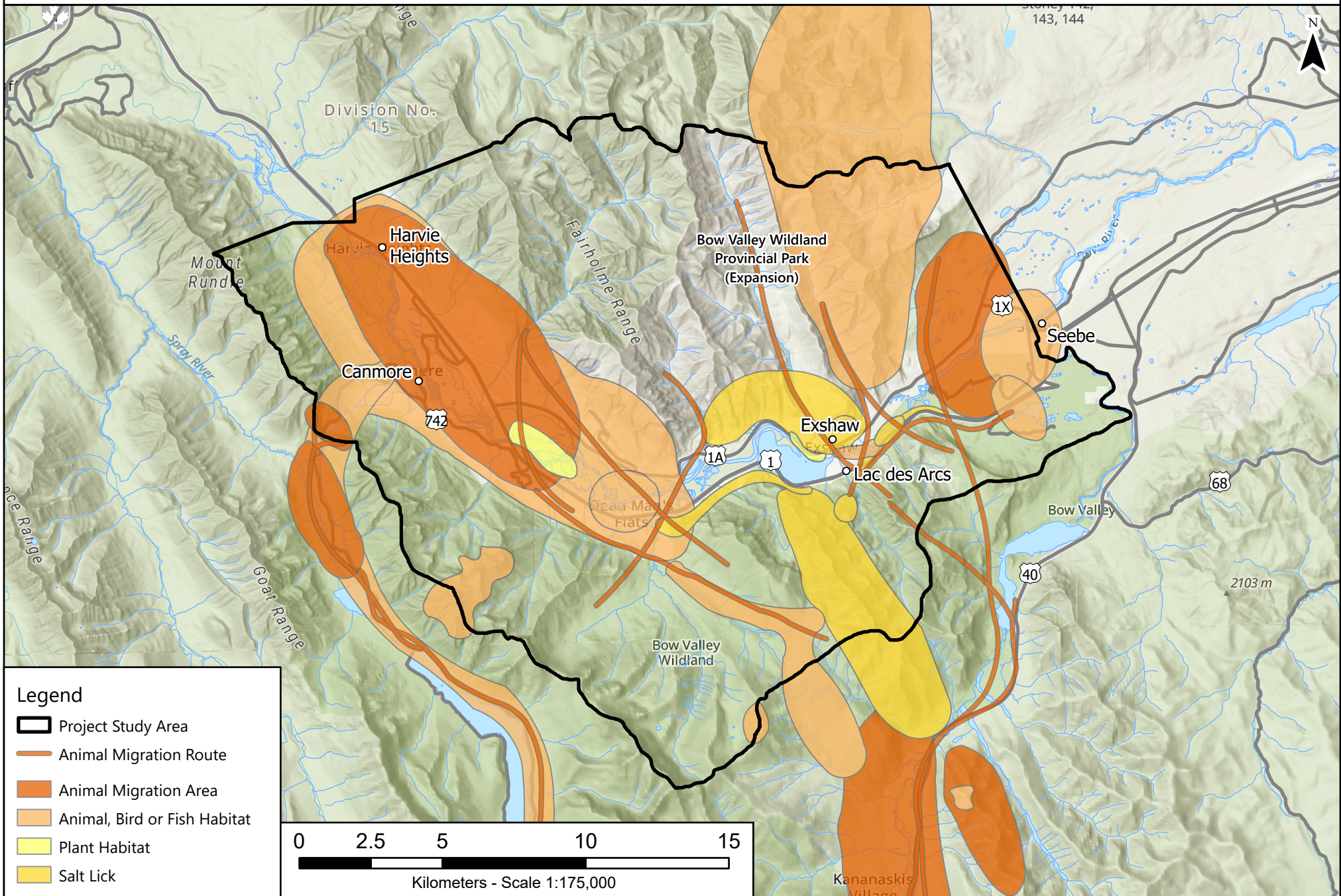
- General - 7
- Kiska (bighorn sheep) – 4

Gathering Site

- Pezuda (medicines) - 2



Traditional Ecological Knowledge Map



Legend

- Project Study Area
- Animal Migration Route
- Animal Migration Area
- Animal, Bird or Fish Habitat
- Plant Habitat
- Salt Lick

0 2.5 5 10 15
Kilometers - Scale 1:175,000

Date: March 19, 2026

Coordinate System: NAD 1983 UTM Zone 11N

Data Sources: Esri, NASA, NGA, USGS, Sources:
Esri, TomTom, Garmin, FAO, NOAA, USGS, ©

DISCLAIMER: This map should not be considered a substitute for consultation with the Stoney Nakoda Nations. This map is the exclusive property of the Stoney Nakoda Nations. Any reproduction or distribution without written approval is strictly prohibited.

Prepared By:
MNP LLP



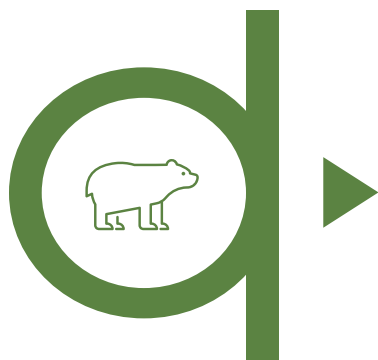
Prepared For:
Stoney Nakoda
Nations



Figure:

7

5.2 Wildlife



Wildlife VC

The ability of wildlife to maintain health, safety, and movement throughout the PSA.

Wildlife's ability to move throughout the PSA

- Changes in the number of overpasses/underpasses.
- Changes in the integrity of wildlife corridors.
- Changes in the amount of wildlife-friendly fencing and restrictions on wildlife movement.

Wildlife's ability to maintain health and safety in the PSA

- Changes in mortality strikes and accidents.
- Changes in wildlife health.

Wildlife's ability to conduct natural behaviours in the PSA

- Changes to the quality and quantity of resources required for natural behaviours.

Maintenance of natural habitats

- Changes to the trees and other vegetation wildlife use for their habitat.
- Changes in the number of wildlife sightings within urban and reserve settings.

As previously mentioned, small and large game was chosen as a main area of focus for this Study since changes to game has a significant impact on Stoney's Section 35 rights within the PSA.

While there are several cumulative effects impacting wildlife movement, health, and resilience in the PSA, these have not triggered a regional cumulative effects assessment. Therefore, the next section covers a limited number of changes in wildlife habitat, movement, health, and behavior throughout the PSA, as documented by Contributors and academic sources. The changes noted within this section are ecologically focused, but also tie to impacts on Stoney's other VCs of Connections to Culture, Place, and the Land; Vegetation; and Stewardship.

Project Partner Spotlight: Bow Valley: Wildlife, Habitat and Human Impacts, Y2Y (2026)

The Bow Valley is a broad, productive low-elevation landscape that provides important habitat and movement corridors for ungulates and large carnivores (Minister of Supply and Services Canada 1996; Bow Valley Human-Wildlife Coexistence Roundtable 2018). It also functions as a key east-west linkage near the center of the Yellowstone to Yukon (Y2Y) region, a 3,400-



kilometre corridor extending along the Rocky Mountains from Yellowstone National Park in Wyoming to the Arctic Circle in Yukon Territory that is one of the world's most intact mountain ecosystems (Theobald et al. 2024)

Valley-bottom systems with gravel-bed river floodplains, including the Bow Valley, have experienced disproportionate human disturbance (Hauer et al. 2016). Alongside Banff National Park and several provincial protected areas, the valley contains two major highways, a railway, two towns, three hamlets, and expanding residential, industrial, and recreational development.

Connectivity modeling indicates that human development has reduced the Bow Valley's connectivity by roughly 85% from historical conditions for grizzly bears and grey wolves (*Canis lupus*) (Whittington et al. 2022). Despite this, major proposals continue, including a sightseeing gondola in Canmore with associated resort and casino facilities; a large residential and commercial resort expansion; a novel passenger rail line between Calgary and Banff; and a gondola linking Banff to an existing ski area. Although each project requires environmental review, none has triggered a regional cumulative effects assessment within formal planning processes (Yellowstone to Yukon Collective 2026).

5.2.1 Wildlife Sightings

Contributors have observed notable changes in wildlife sightings throughout the PSA. Several species are now less commonly spotted than they once were, with fewer pacheden (elk) and antelope compared to earlier times. In contrast, Contributors noted that they are spotting more deer as they become more acclimated to urban settings. Siktogeja (wolves) and mnâzan (wolverines), meanwhile, have either left the region or grown more cautious and difficult to find, keeping their distance from people. Appendix B includes maps prepared by Parks Canada, depicting the GPS collared watâga (grizzly bear) and siktogeja movement throughout the PSA, and wildlife camera detection rates of medium to large mammals.

"There's bears, elk, deer, and coyotes, and there's the odd wolf come along, go by. I don't know if there are any wolf dens around here, I don't think there is. Wolf dens are probably way back in the hills, this way, [there] used to be one wolf den over on the Spray Lakes Road, but it was 'bout five years ago they disappeared, you know, denned, because of too many hikers. They leave their area and make their dens in a different area." (01SN)

"Now there, you hardly see any elk in Kananaskis area, because of developments and too many tourists. Too many people go out there." (43SN)





Photo 29: Bow Valley Sheep, Credit: Y2Y

Contributors are seeing wildlife on neighbouring ranches and even in Mîni Thnî. Local clearcutting activities caused changes in vegetation, forcing wildlife to seek new habitats. Contributors spoke about how the removal of large parcels of habitat have forced wildlife out of the PSA.

"...clearcutting, that's what kills everything, right. But even the hunting areas, when they start the clearcutting, the animals disappear there. For a few years now, four or five years, there's hardly any wild meat around. For instance, we went out, hunting, camping, two years, barely did anything." (80SN)

When wildlife can no longer find the types of vegetation they need for consumption or habitat, they are forced to look elsewhere. This contributes to changes in wildlife movement and migrations, and results in ecological changes, such as the overgrowth of trees reported by Contributors (see Section 5.3 for further details). This results in impacts to Stoney's ability to find wildlife to harvest, and to culturally important vegetation.

Studies have determined that wildlife are forced up into the mountains, out of normal habitat range (Carlson et al. 2022). Increased development and human presence in the PSA have pushed watâga



away from rivers and traditional habitats, upslope to the mountains (Carlson et al. 2022). Appendix B includes habitat conditions per season as provided by Parks Canada.

Whittington et al. found that human activity and development in the Bow Valley, including towns and areas such as Three Sisters Mountain Village, affected how watâga and sîktogēja moved through the landscape. Both species tended to avoid towns when moving slowly, even where food sources such as elk were nearby (Whittington et al. 2022, 34 ,56). Watâga generally avoided areas within 200 to 300 metres of towns, while sîktogēja avoided areas within 400 to 500 metres (Whittington et al. 2022, 33). This avoidance was lower at night and was limited for sîktogēja moving quickly through the area. Overall, the study suggests that towns and development have a stronger effect on foraging and resting habitat than habitat connectivity (Whittington et al. 2022, 15).



Photo 30: Black Bears in Canmore, Credit: Y2Y

Parks Canada monitoring further supports Contributors' observations that wildlife availability and behaviour are changing in response to roads and human activity. Recent remote camera monitoring across the mountain parks found that several large carnivores, including watâga, sîktogēja, and mnâzan, had lower occupancy rates near paved roads, and that watâga, sîktogēja, and mnâzan were less likely to be detected at sites with higher human use. Monitoring in the Sunshine area (outside the PSA, but within Banff National Park) similarly found that detections of watâga, sîktogēja, mnâzan, and other carnivores declined as the number of hikers increased, while some species such as wathabe

(black bears) appeared more tolerant of human presence. Together, these findings reinforce Contributor observations that wildlife are being displaced, becoming less available in some parts of the PSA, and increasingly concentrated in places where human use is lower (Whittington et al. 2024).

Wildlife presence has also been altered due to the historical culling of large predators, such as ihmûâtâga (cougars) and sîktogēja. Today, the culling of predatory species is normally done as a last resort safety measure, and as such, game animals experience increased predators in their habitats, resulting in game animal movements out of the PSA.



"Like what he said, you know that, when you go down there, there's already houses surround[ing] that area, and I don't think the wildlife would come back in that area the way it is. You know, with the people around, and that's how-they used to be abundant, lots of them, you know. But now it's, with all things changing, it's a big effect on the wildlife, you know, like even the big games, like elk, whatever, deer...they [could] extinguish cougars and wolves way back, 50 years ago, maybe more, but now they're coming back, and that's what's scaring away all them wildlife towards the east and the foothills and creat[ing] problems for the ranchers, farmers now....things have changed a lot. Like even my dad used to say there's antelopes along these foothills, whatever, but [they are gone] because of those cougars."

(65SN)

While some species evade humans, Contributors mentioned that several species have begun to seek out humans. Contributors reported that coyotes, deer, hares, and foxes are more common in towns like Canmore and popular tourist sites. Contributors referenced the prophecy told by their Elders (see Section 5.1.1.1), where it was predicted that animals will be living in spaces they have never previously lived. Foxes were once elusive and hard to find; now, these animals are frequently seen and approach humans.

Animals have adapted to seeing humans and have started teaching their young how to interact with humans; some wildlife have become more aggressive in attempt to protect their habitat and young, while others have become domesticated and seek out humans for food. During interviews, a Contributor shared that collared bears grow accustomed to the smell of humans (as a result of the collars) and seek them out, often resulting in aggressive interactions.

Shifts in natural habitat for wildlife and the increased possibility of interactions between animals and humans pose great risk to both groups. Researchers and Contributors agree that frequent interactions between wildlife and humans pose dangers such as wildlife attacks and risk of disease. When animals feel unsafe in their environments, they can have stress responses which can result in higher aggression towards humans, especially with bears (Carlson et al. 2022). Chuwapchîpchîyan Kude Bi (Canmore) serves as a case study illustrating the severe decline of its wild hare population due to disease. According to Contributors, Parks Canada confirmed that the hare population within the Town of Canmore experienced significant losses attributed to disease, which is likely linked to their close proximity to human activity.

Despite several reports of a general decrease in sightings, one Contributor noted that presence of some species have not changed. This Contributor stated that sightings of chaba (beaver) within the PSA has remained relatively stable.

5.2.2 Migration and Movement

Elders and Knowledge Holders noted that the ways in which wildlife travel within the PSA have changed. Typically, wildlife follow seasonal patterns based on weather, food availability, and mating seasons. Some wildlife, such as ta (moose), typically travel alone or in small groups; others such as sîktogēja move in larger packs. There are two sîktogēja packs known to Stoney within the PSA. These sîktogēja packs are



known to cross through Skogan Pass and travel south. Contributors have witnessed sîktogēja travel through the PSA south to Montana in the United States. Some wildlife are known to have small travel radius, while others are known to travel long distances; Contributors noted that bears and sîktogēja (wolves) have 25-mile migration routes or longer. Most animals migrate to the foothills during the winter season and spend summer seasons in the mountains.



Photo 31: Canmore Wildlife Corridor, Credit: Y2Y

"Elk in the winter, they use those south facing slopes, sheeps, and, you know, moose in the valley. Grizzly bears, bears, black bears all along here. But I think now, it's hard for them to move around because of the roads. So they can get hit. Some of them, some animals don't want to cross, so they're confined to one area...that's not a good thing." (25SN)

"...in the winter they [animals] move down where there's less snow. They move down into the foothills, migrate, and then they come back in the spring. And sometimes, nowadays, I wonder they have lot of obstacles to go through." (25SN)

Several Contributors spoke specifically to the ways in which pacheden migrate through the region. Pacheden travel north from Gahna Ūbin (Eden Valley) through Tînda Mîman, staying low and away from highways. During rutting season (fall), pacheden are vulnerable and head to the mountains for protection.

Contributors are concerned for pacheden and other wildlife; the abundance of fencing, roadways, community development and people within the PSA have the potential to limit natural travel routes.



"Well, they [elk] move around, once in a while, I still see them, not shoot them, see them crossing the highway before the fence, or they'll be west of the Rafter Six Ranch, there's no buildings there, now..." (02SN)

"...this big hill they, elk migrate right over to Sibbald Flats...They just come right through over Kananaskis across Barrier Lake and through the valleys." (94SN)



The *Bow Valley Human-Wildlife Coexistence Technical Report* found that human activity in the Bow Valley often overlaps with important wildlife habitats and movement routes. The report noted that increased human presence reduces habitat security, displaces animals from corridors, and raises the chances of wildlife entering developed areas. It highlighted habitat security, wildlife in developed zones, and cross-boundary management as crucial for sustaining wildlife movement and minimizing conflict (Bow Valley Human-Wildlife Coexistence Roundtable 2018).

Parks Canada's monitoring shows that wildlife movement in the Bow Valley is still limited despite restoration. Snow tracking near Minî Rhpa reveals carnivores use corridor transects less than nearby areas, indicating reduced connectivity due to human activity, roads, and terrain. Key movement constraints include Mount Rundle's west end, Middle Springs, Fenlands-Indian Day Grounds, and the lower slopes of Mount Norquay and Cascade (Whittington et al. 2024). These findings match Contributors'

While not designated, the Canmore wildlife corridor prioritizes wildlife movement, limiting people to low-impact use on designated trails with strict controls like dog leashing. Development and off-trail recreation are restricted, and seasonal closures are implemented to maintain continuous, functional habitat connectivity.



observations in the PSA, that wildlife are navigating more obstacles and narrower paths.

Y2Y also found that watâga movement has shifted from their preferred river habitats to mountainous areas as detailed in the spotlight box below.

Project Partner Spotlight: Grizzly Bear Movement and Conflict Risk in the Bow Valley: A Cumulative Effects Model, Y2Y (2025)

In 2020 and 2021, Y2Y and the ecological modeling group ALCES developed and executed a model estimating the most likely paths of grizzly bear movement in the landscape from Castle Junction to the Kananaskis River. We used grizzly bear location data from Alberta Parks and Parks Canada to set known start and end points and added obstacle layers to the landscape based on historical development dates and recreation patterns, attempting to re-create the Bow Valley as it was before colonization, in 1970, and in 2020, as well as what we would expect in different development scenarios for 2050. We then ran 100,000 theoretical grizzly bears through these virtual Bow Valleys and tasked them with making choices about where to go by instructing them to mostly avoid what grizzly bears are known to mostly avoid (roads, developments, heavily used recreation areas, and steep or densely forested terrain) and to mostly choose what grizzly bears are known to mostly choose (good food and water sources, open spaces, quiet trails, and crossing structures).

Our findings included: grizzly bear movement has moved dramatically away from the preferred habitats near the river to poorer and steeper areas, especially near Canmore; and dangerous encounters between people and grizzly bears are likely to increase significantly, especially if planned developments proceed without significant changes to recreation management. In 2022, we published our report and presented to councils of Town of Banff, Town of Canmore and MD of Bighorn; staff from Alberta Parks, Parks Canada, and environmental groups; and representatives from development, tourism and recreation groups. Later in 2022, we published our findings in the peer-reviewed journal Environmental Management (Yellowstone to Yukon Conservation Initiative 2025b).

5.2.3 Safety

Contributors noticed that a considerable amount of wildlife have opted to use roadways rather than natural routes. The main roadways within the PSA are highways, meaning there are high levels of traffic that move rapidly. The Trans-Canada Highway (TCH) is known as a significant barrier to watâga movement across the valley (Carlson et al. 17). Due to the fragmentation highways cause, bears in particular have been spotted following and crossing roadways within the PSA.

"The bears, I think they travel along the road, the small bears." (69SN)



Most of the wildlife vehicular strikes occur on the TCH in the southern-most bend of the highway (Higgs et al. 2026).²² Vehicle strikes on kiska (bighorn sheep) occur in clusters with over half of these strikes occurring at the Lac des Arcs portion of the highway (Higgs et al. 2026). Contributors noted there are also increased vehicle strikes with kiska along Highway 1A where there is a salt lick present. Vehicular strikes with bear and sîktogēja are more spread out through the PSA with more collisions occurring on the TCH than Highway 1A (Higgs et al. 2026). Pacheden and deer vehicular strikes occur more often in the lowlands near Chuwapchîpchîyan Kude Bi (Higgs et al. 2026).



Photo 33: Rundle Range, credit: William Snow

In 2025, there were approximately 73 animal deaths as a result of vehicle strikes in the PSA. Higgs et al. developed Figure 8, a map of reported fatal animal collisions between 2017 and 2024 (Higgs et al. 2026). The locations in which these wildlife-vehicular strikes occur offer opportunity for increased wildlife safety measures such as wildlife crossings and wildlife friendly fencing.

²² 73 fatal vehicle strikes on wildlife were counted for 2025 in the PSA; 76 fatal vehicle strikes on wildlife were counted for 2024 in the PSA.



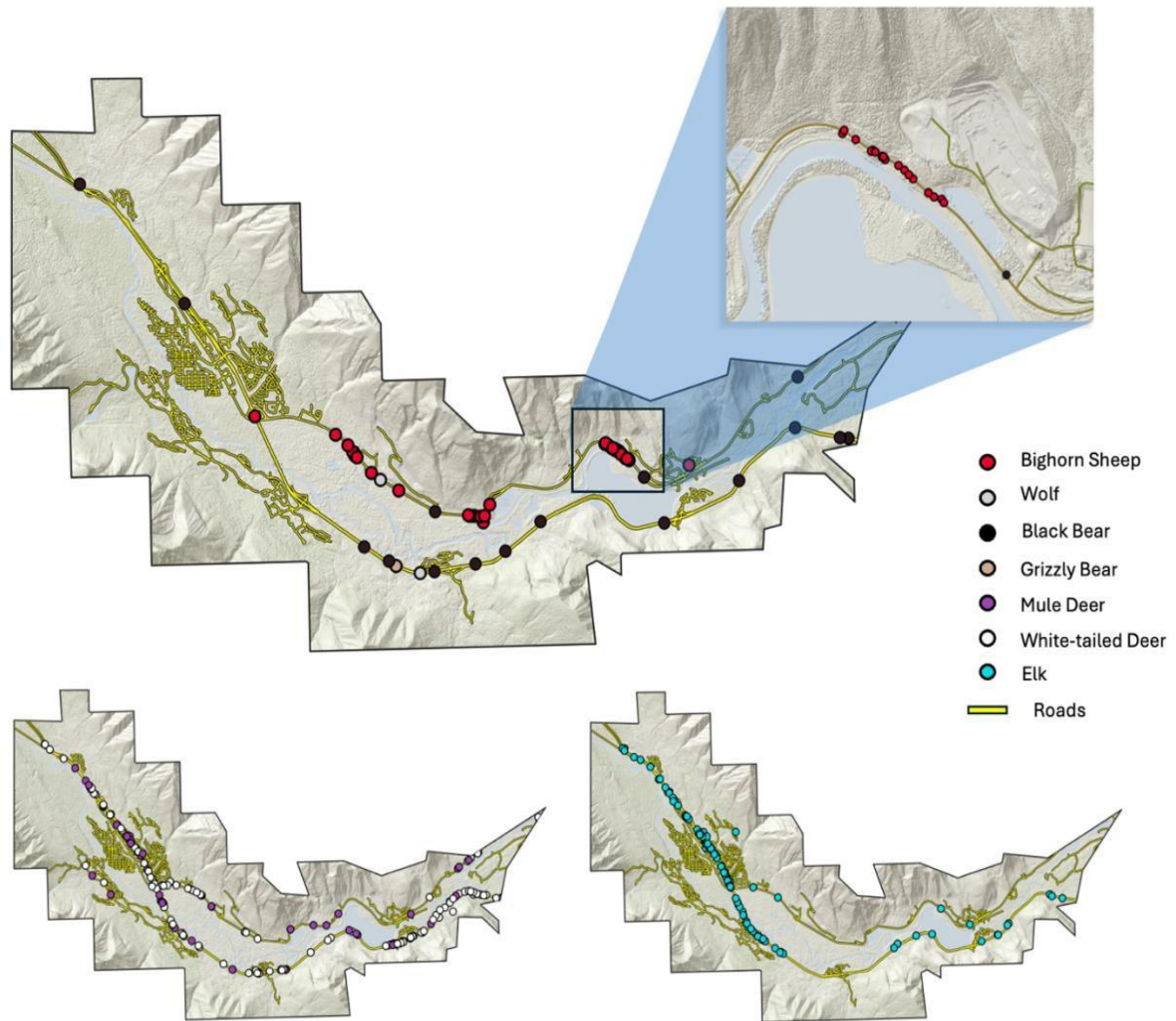


Figure 8: Distribution of Fatal Animal Collision on Roads in the Study Area between 2017 and 2024.

Source: Higgs et al. 2026. The large map at the top shows the distribution of reported collisions for bighorn sheep, wolves, black bears, and grizzly bears. The inset on the bottom left shows reports for two different species of deer (mule deer and white-tailed deer) and the inset on the bottom right shows data for elk. All data were obtained from the Alberta Wildlife Watch animal carcass records.

Higgs et al. determined that the distribution of wildlife collisions (displayed in Figure 9) correlates with the species and how they are known to acclimate to human presence:

The distribution of collisions with [bighorn sheep, wolf, and bears] closely matches the zones of high land cover persistence between historical and modern times; however, collision patterns with other species, such as elk and deer, are more common in zones of low land cover persistence surrounding Canmore (Higgs et al. 2026, 13).



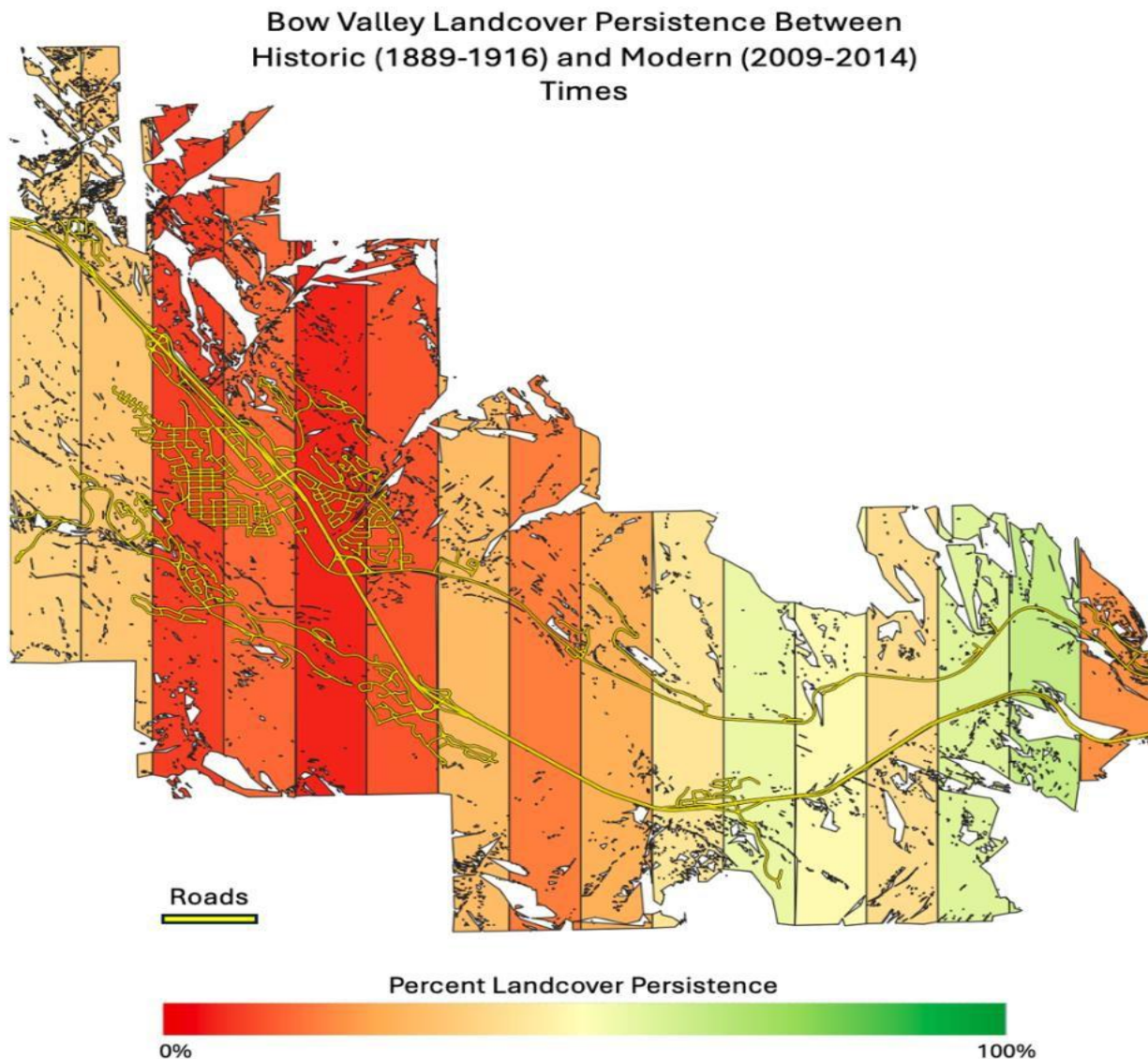


Figure 9: Percent Distribution of Historical–Modern Land Cover Persistence across 1 km-wide Habitat Bands Spanning the Bow Valley

Source: Higgs et al. 2026. Only portions of the PSA where data extended across the full north–south valley gradient, from the southern to northern valley margins, were included. Red zones indicate corridors of low land cover persistence between historical and modern periods, while green zones indicate corridors of high land cover persistence.

Similar to roadways, the railway through the PSA is an easy travel route for wildlife; it is efficient, especially in winter as it remains relatively clear, has long sightlines and often offers sources of food.²³ The railway tracks provide food sources for wildlife when train cars inadvertently drop grain or other edible materials, and the rock and sunny conditions are ideal for berry growth. Wildlife that are struck and killed along the railway also remain as carcasses for carnivores. According to Garrow et al. (2023), wildlife mortality due to train strikes increases in locations where the topography of the railway tracks is

²³ Per the 2023 Garrow, Bohonos and Low study, deer are the most frequent users of railway tracks as travel routes.



more complex (steep hills, cliffs, etc.) or there is close proximity to roadways. Mortality on railways can be reduced by creating egress or escape routes for wildlife, especially in areas in which the forest is dense (Garrow, Bohonos and Low 2023).

Parks Canada mapped railway mortalities within Banff, Yoho, and Kootenay National Parks between 2010-2019 (Figure 10). While the Park is outside of the PSA, these fatalities contribute to the decline in wildlife moving from the Park through the PSA.

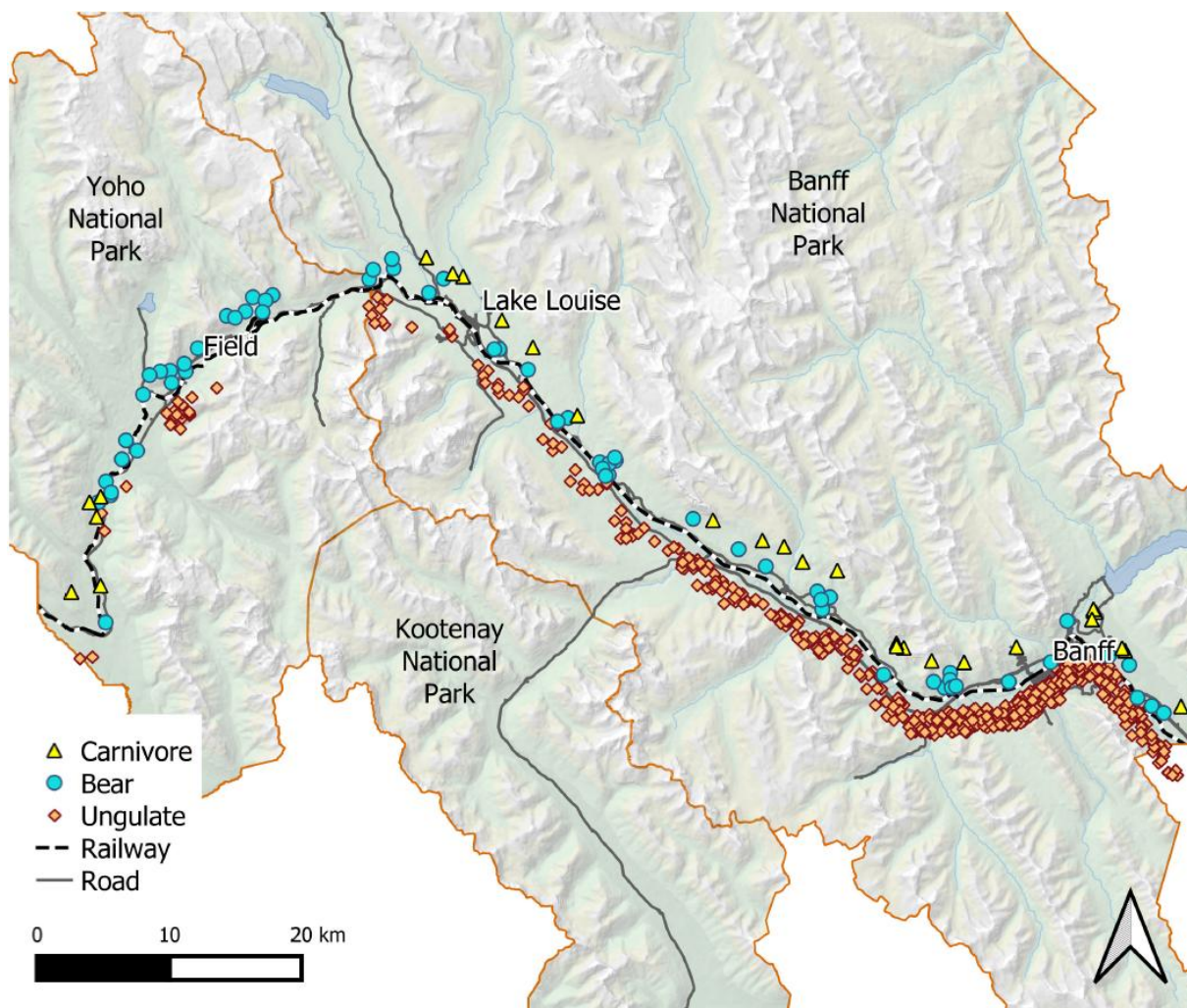


Figure 10: Railway Mortalities in the PSA. Source: Parks Canada

5.2.3.1 Overpasses and Underpasses

Contributors agree that wildlife overpasses and underpasses (“wildlife crossings” or “crossings”) are beneficial for wildlife within the PSA, but most wildlife require long adjustment periods before they use them effectively. Academic sources support this observation. They note noise is identified as an important issue of concern for wildlife when using wildlife crossings, confirming it can take years for some species to use crossings prior to them feeling safe enough or being forced to use them in order to access their habitats (Clevenger and Waltho 2004).



"I think we have to have more [overpasses], and it'll take time for [animals] to adjust to the crossing over. Where they can't just, you know, go back and forth like they used to. But it has been like that for a while, now. They haven't really been able to get across...it's like they're gonna get caged into this area." (78SN)



Photo 34: Highway 1 Overpass, Credit: Y2Y

Y2Y also concludes that highways are a major source of wildlife mortality and habitat fragmentation in the PSA, and mitigation measures such as fencing and wildlife crossings are increasingly being used to reduce these impacts and support safer wildlife movement:

Project Partner Spotlight: *Highway Mitigations for Wildlife, Y2Y (2025)*

Animal-vehicle collisions negatively impact the health of wildlife populations for numerous species and are a significant risk to motorist safety on the 39-km section of Highway 1 east of Banff National Park to the Kananaskis River, as well as on Highway 1A between Canmore and the Highway 1X junction. According to 2016-23 statistics from Alberta's Wildlife Watch program, over 400 animal carcass records have been recorded on these sections of Highway. Based on the success of Banff National Park's wildlife crossings and fencing that have reduced animal-vehicle collisions by over 80%, Alberta Transportation and Economic Corridors continues to work on fencing and crossings on the sections of Highway 1 and 1A mentioned above.



Approximately 1/3 of the 39-kilometer section of Highway 1 east of Banff National Park has been improved for wildlife and motorist safety, with two underpasses (2002), one overpass (2024) and 13.7 km of wildlife fencing constructed to date. In June 2024, the province announced plans for 17 future wildlife crossings and extensive wildlife fencing on Highway 1, 1A and 1X. Three of these projects have advanced to initial design phases:

- Highway 1 wildlife fencing between Banff east gate and the Bow River bridge (planned for 2025)
- Highway 1A 'Gap Lake' (proposed overpass) with approximately 15 km of fencing (timeline not known)
- Highway 1A 'Grotto Mountain' (proposed underpass) with approximately 5 km of fencing (timeline not known)

The remaining future crossings are identified as 'Retrofit' projects, which would modify existing bridges or culverts to be functional for wildlife passage; however, some of these projects may not advance until the current structures reach end-of-life replacement dates (Yellowstone to Yukon Conservation Initiative 2025a).

The outcomes of long-term research and monitoring in Mîni Rhpa Mâkoche, including that completed by Clevenger (2025), further supports Contributor observations that crossing structures can reduce wildlife mortality while maintaining movement and connectivity across the highway. Monitoring of wildlife crossing structures along the TCH in Mîni Rhpa Mâkoche began in 1996 and continued through 2014, representing one of the longest and most consistent monitoring programs globally. Over that period, monitoring recorded more than 150,000 large mammal crossing detections across 11 species, with ungulates accounting for most detections and large carnivores, including Sîktogêja, bears, and ihmûtağa, also using the structures regularly. It also found that fencing and crossing structures were associated with an 80% reduction in wildlife-vehicle collisions across mitigated sections, particularly for ungulates (Clevenger 2025).

Contributors reported that some species have preferences between overpasses or underpasses. Contributors speculated that preference for underpasses, for instance, is due to the feeling of security that underpasses may offer due to their elevation, shape, and lighting.

"Well, we haven't seen any evidence of [overpass use], you know, from any kind of camera or something, so, we don't know, right. But, if you go into Banff, every spring and fall, Banff Parks workers have this presentation on wildlife, and they show these clips...they [animals] use the underground more than the overhead." (91SN)

Research and Contributor observations demonstrate that wildlife crossings and fencing are highly effective at reducing wildlife-vehicle collisions, but their long-term success depends on careful design, placement, and ongoing monitoring (Clevenger 2025). Both the structure of crossings and the surrounding landscape influence how different species adapt and use these passages. For instance, species such as watâga and sîktogêja show a preference for larger, more open crossing structures, while



other species are more likely to use narrower, more constricted passages. Additionally, vegetation cover near crossings provides important protective habitat, further shaping wildlife preferences. These findings highlight that species-specific responses are shaped more by crossing size and openness than by whether the structure is an overpass or underpass, and that thoughtful design, including ample vegetation, increases the functional success of wildlife crossings (Clevenger and Waltho 2004; Clevenger 2025).

Current Crossings

There is currently one overpass and eight underpasses within the PSA.²⁴ These crossings are primarily distributed along the TCH between Mîni Thnî and Mîni Rhpa Mâkoche. In addition to 5, double-lane purpose-built wildlife crossings, there are 14 additional crossings, and 2 planned crossings along TCH and Highway 1A that were not built for wildlife use but may still be used by wildlife to cross these roads (i.e., underpasses or spillway/mîni diversion channels). Non-intentional wildlife crossings are deemed as 'redesigned existing wildlife crossings' and as such may be concrete, have roadways, and may be obstructed by mîni. As a result, non-intentional wildlife crossings do not prove as efficient or safe for wildlife as purpose-built crossings.

Areas along the TCH that have the highest wildlife fatalities do not have crossings. These locations are currently designated as "planned purpose" or crossings being redesigned (see Figure 11). Locations along the highway with operational crossings have the least number of wildlife fatalities, especially when paired with wildlife-friendly fencing.



Alberta Transportation proposed an overpass along the TCH in 2019. Stoney undertook a cultural assessment to better understand and provide recommendations based on the proposed location of the overpass (Stoney Consultation 2020). The overpass (SE 30 24-8-5) was constructed in 2024, and includes wildlife fencing 5 km to the east and 1 km to the west. Contributors agreed that the overpass was beneficial, although they recommended that the overpass be placed 1.5 km east of the current location due to evidence of higher wildlife presence (Stoney Consultation 2020).

"I think this is the only way this fence comes if there's going to be a big highway through here, car, you know, how many animals can get hit like this, so, I think [wildlife-friendly fencing is] the only way. But yeah, they need to get to places, and they have their own route they travel through, so they have to have an overpass on, in that area." (28SN)

5.2.3.2 Fencing

Wildlife-friendly fencing is present along highways in the PSA, with the TCH fully lined and Highway 1A having partial fencing for safety purposes. Contributors agreed that such fencing improves highway

²⁴ The purpose-built wildlife crossings occur in pairs along Highway 1 to ensure wildlife cross both sections of road.



safety for wildlife, but emphasized that it should be designed both to allow animals to move freely and to remain safe.

Although Contributors reported that they view wildlife-friendly fencing as an effective solution to vehicular collisions, they cautioned that it causes fragmentation.

"There's one thing I think that might be effective, it's [a] high fence, but then they'll have less place for them to roam, to be maintained. So, I don't think that's a really good idea, high fence. Because animals know where to go certain time of the year, you know...in the winter, there's not much over here, lot of snow to go, have to move where they used for their grazing. So, high fence would prevent accident with vehicles but then might hinder their movement." (25SN)

Contributors also noted that currently, fencing is restrictive for wildlife, preventing animals from moving naturally, directing them towards Chuwapchîpchîyan Kude Bi and the mountains. They also shared that they had never seen wildlife in Mînî Thnî until fencing was installed. Contributors raised concerns for species such as pacheden and kiska, whose movement in particular have been restricted; there are fears that they are not able to access their natural territories due to fencing.

"They can't move around like they used to. Because by seasons they move one place to another, but they're fenced off." (28SN)

Contributors also raised concerns with the use of electric fencing within the PSA and neighbouring regions. Electric fencing was introduced to the PSA in 2019 to deter bears from climbing the fences. Bear 178, also called Nakoda, was famous for scaling fences across the Rocky Mountains to cross roads, and is believed to have inspired the installation of electrified fencing in Bow Valley (Sherif 2024). Currently, electric fencing remains along the TCH near Mînî Rhpa. Bears like Nakoda have become adept at climbing wildlife-friendly fencing and have also taught their young to climb fences. Unfortunately, wildlife are unable to determine the difference between electrified and standard fencing. Contributors reported that a bear died near Chuwapchîpchîyan Kude Bi after climbing an electric fence. As such, Contributors view electric fencing as cruel to wildlife.

Regardless of whether the fence is electrified or not, fences can entrap wildlife who climb them in areas of the PSA in which they are not supposed to be in. This happens with bears such as Nakoda or pacheden, who then must climb the fence again or follow the fence line until an exit point. In 2024, Nakoda climbed the fence on the TCH in Yoho National Park and was forced to cross the road. During their crossing, both her yearling cubs were struck by a vehicle and killed (Sherif 2024). Two days later, Nakoda climbed the fence bordering the TCH to escape a nearby train and was struck by an oncoming vehicle (Sherif 2024). Nakoda was able to climb the fence back into the forest after being struck, but succumbed to her injuries soon after (Sherif 2024). As bears are sacred species to Stoney, Îyethkabi mourned this loss.





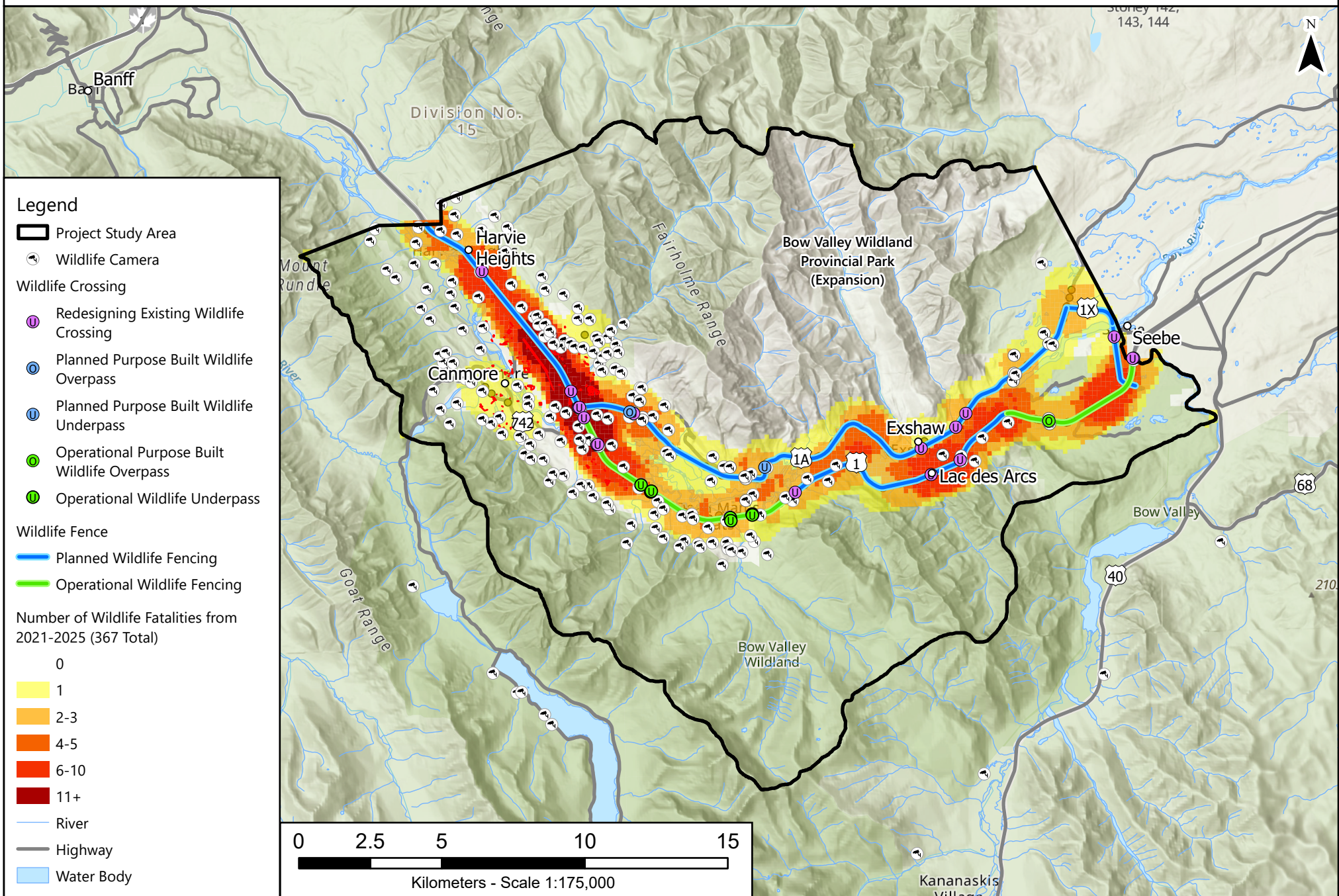
Photo 35: Nakoda, Bear 178 climbing a fence, Source: Jason Leo Bantle (Bantle n.d.)

When discussing how fencing should be implemented and locations for its use, Contributors agreed that fencing should remain on the TCH but should not be implemented on Highway 1A. Highway 1A is a much smaller highway by comparison to the TCH; it is predominantly a two-lane highway (one lane in each direction) with a small shoulder and little to no ditch. Highway 1A is north of the TCH and receives much less traffic through the PSA in comparison. Highway 1A is also lower speed, and is often travelled by those wanting a more scenic slow-paced route. Therefore, Contributors do not believe that adding wildlife-friendly fencing to Highway 1A is warranted. Implementing wildlife fencing along Highway 1A could potentially trap wildlife between highways 1A and 1, and force wildlife to adapt in ways such as Nakoda, by climbing fences. This would be counterproductive to promoting wildlife movement and limiting habitat fragmentation in the PSA.

Figure 11 shows the locations of wildlife cameras, both planned and current crossings, fences, as well as records of wildlife fatalities from 2021 to 2025.



Wildlife Connectivity Infrastructure and Interactions Map



Date: March 19, 2026

Coordinate System: NAD 1983 UTM Zone 11N

Data Sources: Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, ©

DISCLAIMER: This map should not be considered a substitute for consultation with the Stoney Nakoda Nations. This map is the exclusive property of the Stoney Nakoda Nations. Any reproduction or distribution without written approval is strictly prohibited.

Prepared By:
MNP LLP



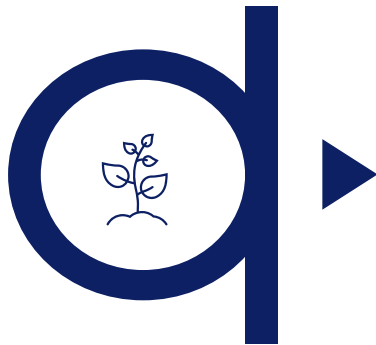
Prepared For:
Stoney Nakoda Nations



Figure:

11

5.3 Vegetation



Vegetation VC

Healthy and abundant culturally and ecologically important vegetation within the PSA.

Vegetation health and abundance

- Changes in the health and abundance of culturally and ecologically important vegetation due to disturbance and contamination.

Natural interactions with wildlife

- Changes in the quality and quantity of vegetation wildlife use for forage, cover, habitat, and seasonal behaviour.
- Changes in vegetation due to changes in wildlife maintenance.

Recent ecological monitoring in Mîni Rhpa Mâkoche indicates that vegetation and landcover are changing in ways that can affect both wildlife and Stoney harvesting practices. Analysis of landcover change from 1985 to 2019 found increases in coniferous forest cover and declines in herbaceous meadows across much of the Park, with shrubs increasing in some alpine areas and decreasing elsewhere. In several alpine and valley settings, meadows transitioned to shrubs and shrubs transitioned to coniferous forest, indicating ongoing infilling and encroachment. These changes are important because they can reduce forage availability, alter habitat structure, and affect the movement and distribution of wildlife, while also making it more difficult for Îyethkabi to access culturally important vegetation in places where meadows and open gathering areas have diminished.

The following section focuses on how ecological factors including vegetation connectivity, health, and composition have been affected, highlighting the importance of maintaining healthy plant communities for wildlife movement.

5.3.1 Ecological Functions

Anthropogenic changes to the landscape have altered ways wildlife and nature interact and connect with each other. Many wildlife species serve as natural seeders (see Section 3.2), but movement restrictions (see Section 5.2.2) now prevent them from spreading seeds across the PSA. Consequently, plants such as berries are no longer abundant throughout the PSA, making them inaccessible for wildlife to continue seeding.



"Like I said before, [animals are] seeders. After, you know, [they] eat something here, [they] take it back here and seed...[with their] droppings. But today, it's kind, kind of worries me, because fences. How they gonna' take stuff and put a, you know a seed over here. They must-plants might die on this, our, this side. You know, the elk, moose, they got a job [from] Creator...drop over here, they grow, keep this healthy..." (72SN)

Anthropogenic changes have also impacted châraziya (willow) and similar saplings. Châraziya are a common riparian species, maintaining the integrity of the riverbank soil with their roots and holding back debris from the edge. Riparian areas with dense shrubbery act as more protective zones for nearby mînî. Typically, young saplings and châraziya are pruned by wildlife during the spring. When a shrub or young plant is pruned, it grows more shoots, resulting in a bushier shrub. The absence of wildlife pruning inhibits young plants in riparian zones from developing sufficient branching, thereby reducing their effectiveness in stabilizing riverbanks. This limitation affects both the extent and condition of riparian areas, ultimately influencing mînî health and quality.

5.3.2 Health and Shelter

Wildlife rely on certain plants, such as berries and pezuda, for their health and maintenance of spirit. Without access to wild pezuda, wildlife are unable to stay healthy in the face of anthropogenic stressors and the increase of contaminants and disease. Wildlife find this vegetation for food and habitat within the PSA's mountains and valley landscapes. The Canadian Rockies' elevation and topography create distinct montane, subalpine, and alpine ecosystems, each with species like châptâ (lodgepole pine) and chuwaba rhtîja (spruce) that support diverse wildlife (Rogala et al. 2011). Valley bottoms like the Bow Valley also provide abundant vegetation and serve as movement corridors for wildlife. However, as explained in Section 0, these areas also have experienced concentrated human disturbances. Even minor increases in disturbance can significantly impact habitat through vegetative degradation and fragmentation of wildlife routes. Disturbances not only remove forage but also diminish diversity and alter habitat quality, as wildlife tends to avoid areas near roads or human activity, resulting in a reduction of usable habitat (Rogala, et al. 2011; Carlson et al. 2022).

Changes in vegetation may compel animals to occupy less productive areas, thereby influencing predator-prey relationships, grazing patterns, and ecosystem regeneration. Observations indicate these shifts have direct effects on animal feeding and movement, aligning with broader ecological impacts. Overall, ongoing vegetation disturbance diminishes habitat connectivity and ecological function, affecting wildlife and Îyethkabi access to vital plants and animals necessary for harvesting and cultural continuity (Rogala, et al. 2011; Carlson et al. 2022).





Mountain pine beetle outbreaks can change the vegetation in *châptâ* (lodgepole pine) forests by killing large pines, removing the canopy cover and thereby letting more light reach the forest floor. Research in western Canada showed that as more trees died due to the beetles, there was an increase in both the diversity and productivity of understory plants, especially herbs, altering forest structures (Pec et al. 2015). The study results indicate that pine beetles can affect the types and numbers of plants in the understory, which may also impact overall habitat conditions within the PSA.

Contributors noted concern that invasive plants can further reduce the quality of wildlife habitat within the PSA. Invasive species can outcompete native vegetation that wildlife rely on for forage, cover, and seasonal movement, reducing the availability of berries, browse, and other important plant species. They can also alter habitat structure by creating dense or simplified plant communities that are less suitable for feeding, bedding, nesting, or travel, which may further restrict wildlife movement through an already fragmented corridor. Invasive species can contribute to broader ecosystem stress by disrupting food sources, reducing biodiversity, and introducing or supporting parasites and disease, all of which can affect wildlife health and resilience.

5.3.3 Vegetation Changes – The Mountain Legacy Project

Stoney contracted the University of Victoria's School of Environmental Studies to conduct a separate study of changes in the PSA's vegetation composition over the last century. The study found significant changes have occurred to the area over time:

Project Partner Spotlight: *Using novel approaches to map land cover change in the Bow Valley for the Îyâhé Nakoda ecological corridors project* Summary, Higgs et al. (2026)

Prior to European colonization, the Bow Valley was actively managed for millennia by the Îyârhe (Stoney) Nakoda. The valley, located just east of present-day Banff National Park, Alberta, Canada, was historically a mosaic of grasslands, shrubs, and different types of forest. It is a key ecological corridor between adjacent wildlands and protected areas. As well, it is bisected by the Bow River which provides additional riparian habitat. Historically, the area was kept open by a combination of Indigenous burning and grazing/trampling by wildlife, including large herds of bison. The landscape has changed considerably over the last 100 to 200 years due to significant forest infill, as well as urban growth and industrial activity. Yet the area remains an important ecological corridor for wildlife including bighorn sheep, wolves, and grizzly and black bears.

We used newly-developed software and a set of historical images taken by European surveyors between 1889 and 1916 to map the past land cover in the valley. We created a second map from repeat images taken between 2009 and 2014 by the Mountain Legacy Project. A comparison of the maps reveals that the over half of the area experienced land cover change between the two time periods. The largest change was the reduction in grassland/shrubland, which declined by 80% of its early 20th century extent. Open habitat was mainly replaced by forest in the absence of the processes required to maintain it – namely the loss of frequent burning by the Îyârhe Nakoda as well as the suppression of any lightning-caused fires. This also coincided with the



colonial extirpation of bison. The cycle of burning and grazing was therefore disrupted, allowing trees to establish and densify.

Despite the changes, the Bow Valley is a vital and highly used ecological corridor connecting the Bow Valley Wildland to the Don Getty Wildland. A large number of fatal wildlife collisions occur on the highways running through the valley. Collision data for bighorn sheep, wolves, and bears show that accidents are concentrated on the southern bend of the valley where historical land cover patterns have persisted. Fewer collisions occur in areas that have experienced high levels of change. Several wildlife crossings exist or are planned for the valley, including the recent opening of the Peter Lougheed Wildlife Overpass. However, none of the mitigation projects currently target the corner of the 1A above Lac des Arcs where collisions are common. At a minimum, warning signs and a reduced speed zone could decrease the number of accidents.

In order to restore a greater proportion of open habitat, the valley would strongly benefit from the restoration of Îyârhe ecological management and cultural practices, including Indigenous burning, for example through the creation of an Indigenous Guardians program. Over time, this will increase habitat quality and open sightlines for wildlife while also reducing the risk of severe wildfires impacting the human communities in the area (Higgs et al. 2026).

Additional findings from the University of Victoria's *Using novel approaches to map land cover change in the Bow Valley for the Îyâhé Nakoda ecological corridors project* further illustrate the scale of change within the Bow Valley and provide quantitative context for Stoney's concerns about wildlife movement, vegetation loss, and habitat fragmentation (Higgs et al. 2026) (see Appendix C for the University of Victoria's full report).

The report analyzed 15 historic and repeat photo pairs spanning more than 14,000 hectares of the Bow Valley and found that 52% of the study area experienced land cover change between 1889–1916 and 2009–2014. Herbaceous and shrubland cover declined from about 30% of the study area to less than 6%, representing an approximately 80% reduction, while more than 3,000 hectares of coniferous forest became established through forest infill and encroachment. Areas identified as recently disturbed, including areas affected by fire, declined from more than 500 hectares historically to less than 14 hectares in the modern period, reflecting the combined effects of fire suppression and the loss of Indigenous burning. The report also found that within 50 m of waterbodies, herbaceous and shrub cover declined from 43% to 11%, while built-up, transportation, and barren cover increased from 3% to 13%, representing a fourfold increase in non-biotic riparian land cover (Higgs et al. 2026).



	Historical (ha)	Historical %	Modern (ha)	Modern %	% Change
Coniferous	6835.58	48.18%	10097.46	71.17%	48%
Broadleaf/Mixed	63.31	0.45%	203.52	1.43%	221%
Herbaceous/Shrub	4282.16	30.18%	835.00	5.89%	-81%
Barren	1701.71	11.99%	1068.84	7.53%	-37%
Water	542.94	3.83%	399.95	2.82%	-26%
Wetland	182.35	1.29%	92.10	0.65%	-49%
Recently Disturbed	503.96	3.55%	13.89	0.10%	-97%
Ice/Snow	1.06	0.01%	0.03	0.00%	-98%
Transportation	53.05	0.37%	166.50	1.17%	214%
Built-Up	21.34	0.15%	1310.16	9.23%	6038%

Table 1: The composition of historical (1889-1916) and modern (2009-2014) land cover across the PSA, by area and percent.

Further, wildlife collision data from 2017 to 2024 show that more than half of recorded kiska deaths occurred on an approximately 800 m stretch of road north of Lac des Arcs, where the report notes that mitigation projects are currently absent. The report also notes that Mîni Rhpa Mâkoche's network of 44 wildlife crossing structures has reduced wildlife-vehicle collisions there by more than 80%, underscoring the potential value of targeted mitigation in the PSA (Higgs et al. 2026).



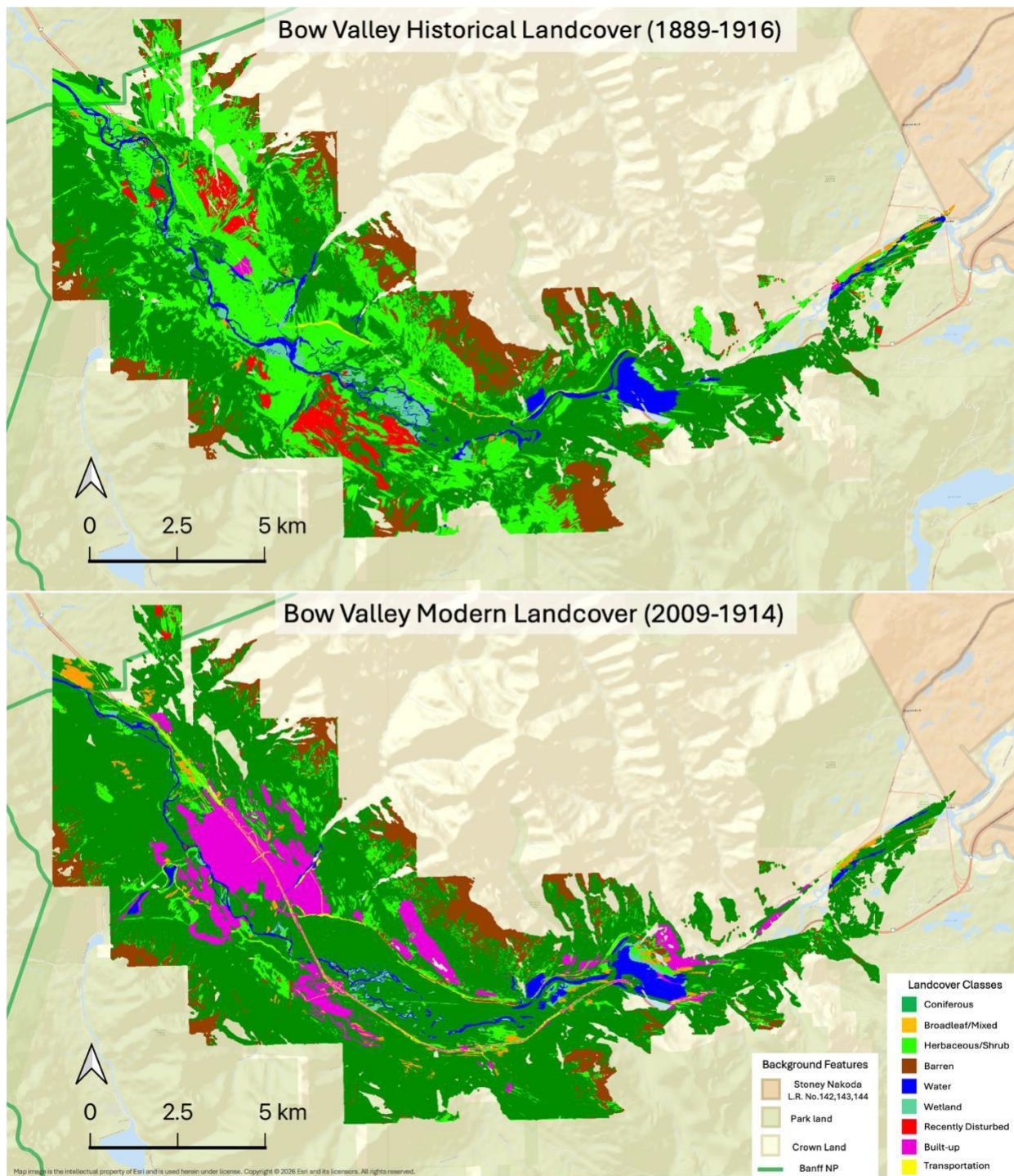
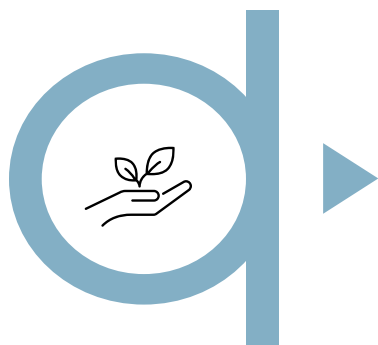


Photo 36: Historical (1889-1916) and modern (2009-2014) land cover within the PSA

Both maps are produced from 15 classified oblique images obtained from the Mountain Legacy Project using the Mountain Image Analysis Suite in QGIS.



5.4 Stewardship



Stewardship VC

Stoney's ability to care for and manage lands, mîî, and resources within the PSA.

Ability to maintain access for stewardship

- Changes in the number of physical barriers to access areas for stewardship, such as gates, fencing, signage, closures, and development.
- Changes in perceived barriers to access such as uncertainty, avoidance, conflict with the public, or feeling restricted.
- Changes in legal barriers to access for stewardship, such as regulations.

Healthy, functioning lands, mîî, and resources for stewardship

- Changes in disturbances affecting culturally and ecologically important areas and resources for stewardship.
- Changes in the presence of contamination, litter, noise, or other signs of degradation or human presence.

Preservation of stewardship practice and knowledge transfer

- Changes in ability to teach and learn stewardship on the land.
- Changes in the continued transfer of language, oral history, and cultural knowledge tied to stewardship.

Recognition of Stoney stewardship authority

- Changes to the level of Stoney involvement in planning, monitoring, and management decisions.
- Changes in decision-making affecting lands and resources without adequate consultation with Stoney.

One of the ways in which Stoney protects their other VCs of Connections to Culture, Place, and the Land; Wildlife; and Vegetation is through Stoney's ability to care for and manage lands, mîî (water) and resources within Îyăhé Nakoda Mâkoche. Through exercising stewardship of the lands, mîî and resources, Stoney ensures culturally significant resources can support the entire community, as well as future generations. Stewardship principles can relate to habitat quality, mîî quality, air quality, and resource quality. Additionally, stewardship is connected to Stoney's rights to harvest in a preferred and meaningful manner. However, Stoney's ability to steward the PSA has been threatened by anthropogenic changes, which have impacted Stoney's ability to preserve and teach stewardship principles.



5.4.1.1 Natural Law

For Stoney, natural law refers to the responsibilities and teachings that arise from the interconnected relationships to the land, mîni, animals, plants, and spirit world. It is a way of living that requires respect, reciprocity, restraint, and care, and it guides how Îyethkabi conduct TLRU within Îyăhé Nakoda Măkoche. Following natural law is important because it ensures that human actions remain in balance with the

environment and with all living beings, supports the continuation of cultural teachings and Section 35 rights, and upholds Stoney's responsibilities to protect the land and resources for future generations.

Protocols are crucial when conducting TLRU. Stoney protects the spirit in lands and resources by starting any action with stating intentions through ceremony and making offerings. Contributors reported that Stoney was not offered the chance to hold ceremonies or follow proper protocols while the PSA was being developed. The inability to fulfill relational duties to the land, wildlife, and spirits within the region undermines the connection Stoney has with the PSA.

"We have to honour our ancestors. They are the ones who went through a hard time, and that is why we're here. They are the ones [who] preserved [the PSA], they kept the preservation going for us, like the ceremonies. At one time we were, our ceremonies were outlawed. But they kept it, they kept it going, they preserved for us. Now it's our duty to keep it going...have to hand it down to our next generation." (43SN)



Photo 37: Mount Yamnuska from Many Springs, Credit: Y2Y

If a resource is harvested without proper protocol, the spirit it holds is removed it cannot come back. Without proper spirit, pezuda, mîni, and wildlife lose their healing properties, and connection for Medicine Holders to these resources is lost. Contributors reported that this spirit has been lost due to perceived and real impacts on Stoney's ability to follow protocols within the PSA.



5.4.1.2 Decision Making and Authority

Changes to the landscape and exclusion of Stoney from consultation and regulatory decisions has effectively blocked Stoney from caring for the lands and mîî in Îyăhé Nakoda Mâkoche in a preferred and self-determined manner.

Through the establishment of reserves, the pass system, and harvesting and travelling restrictions throughout the PSA and into Mîî Rôpa Mâkoche, Stoney has been limited in the ways they are able to make decisions. Since the late 19th century, the ability for Stoney to apply traditional knowledge and culturally relevant perspectives to activities has changed within the PSA; governments and companies have made decisions on land developments and regulations without considering Indigenous knowledge, and fully understanding the connection between the land, wildlife, and human impacts. Development has impacted Stoney's ability to make decisions about and exercise stewardship over the lands and resources in Îyăhé Nakoda Mâkoche by altering landscapes, removing vegetation, and potentially contaminating mîî and altering movements or behaviours of wildlife, in a manner that is not aligned with principles of preservation and respect for the land.

"They do to-our way of life as Indigenous people, we always try to preserve, we respect nature. But today, we use nature... We have to understand that, too. But still, we respect it through natural laws. We learn everything with our beliefs, too. Our beliefs [are] important to us." (43SN)

Some Contributors identified the difficulty of reconciling Crown economic priorities with principles of preservation, and the fear this creates for the availability of essential resources for future generations.

5.4.1.3 Controlled Burning and Clearing

As identified by Stoney and the University of Victoria (see Section 5.3.3), one of the contributing factors to forest overgrowth is the discontinuation of Indigenous burning. Stoney's *Stoney Nakoda Indigenous Forest Guardian Program Final Report* details that:

One of the ways Îyethkabi have protected the Îyăhé Nakoda Mâkoche is through controlled burns (îktû dââ awîyagabi). Controlled burns were conducted to regenerate specific areas that were once plentiful with culturally important plants and medicines. They were also conducted to remove potential wildfire fuel. Most controlled burns were conducted when the grass dried and it was safe to do so in the fall, usually in October before moving from the summer to winter camps. This promoted new growth in the spring, when Îyethkabi would move back from their winter camps to their summer camps. These controlled burns not only helped control vegetation overgrowth, but they also promoted new growth, which attracted culturally important wildlife that were critical for Îyethkabi diet (Stoney Nakoda Nations 2026, 28).



"Yeah, what they do is they burn it in the fall, kind of towards fall, because when it comes next spring the grasses will be come up..." (24SN, Stoney Nakoda Indigenous Forest Guardian Program Final Report)

"The stories I hear is hardly any trees back then, until they start burning, new growth, new pine." (71SN, Stoney Nakoda Indigenous Forest Guardian Program Final Report)

"This historically, I'm talking about back in the...before the settlers came, they, the Stoneys would be moving around all through these areas, so the different camp spots where they would stay, those areas would be used the, the wood in those areas would be used for fires, for the camping, but then the fire, the fires would also be used to make a clearing or to burn off the old vegetation, and then in, usually in the early spring, and then when the new shoots come up, the wildlife will come in to different areas." (74SN, Stoney Nakoda Indigenous Forest Guardian Program Final Report)

Vegetation overgrowth resulting from Stoney's inability to steward the PSA through traditional burning has contributed in turn to wildlife movement changes in the PSA.

5.4.2 Existing Projects and Work

As modern stewards, Stoney has several active projects underway in the PSA. These projects relate to, can be used to inform, or can be conducted in tandem with, the management and improvement of the ecological corridor. They include but are not limited to:

Various Environmental Assessments and Impact Assessments

Stoney is actively participating in various environmental assessments (EA) and impact assessments (IA) within the Îyắhé Nakoda Mâkoche. Each project follows Stoney's Cultural Monitoring process and Traditional Land and Resource Use methodology to understand the impacts to Stoney, and the Îyắhé Nakoda Mâkoche and the wildlife within it. Through EA/IAs, Stoney advocates for their interests and carries out research and monitoring through an Îyethkabi lens.

Cultural Assessment for the "Enhancing grizzly bear management programs through the inclusion of cultural monitoring and traditional ecological knowledge."

In 2015-2016, Stoney completed a cultural assessment as part of a human-wildlife conflict prevention program within the PSA (including Kananaskis). Through engagement with Elders and Knowledge Holders, Stoney developed a report that promoted the conservation/restoration of watâga (grizzly bear) habitat and wildlife monitoring based in TEK.



The Study for Westslope Cutthroat Trout (in development)

Stoney is actively participating in a study to promote the conservation for horrem tisha (westslope cutthroat trout) in the Îyăhé Nakoda Mâkoche. Through guidance and engagement with Elders and Knowledge Holders, Stoney is developing habitat and wildlife monitoring based in TEK.

Using Novel Approaches to Map Land Cover Change in the Bow Valley for the Îyăhé Nakoda Ecological Corridors Project

This work is being done in collaboration with the University of Victoria to study the landscape changes within the PSA. Through historical and modern photographs of the landscape, the University demonstrates the changes in vegetation growth and land use and relates findings to the movement and mortality of wildlife along roadways.

Wildlife Monitoring and Cameras

On behalf of Stoney, there is ongoing wildlife monitoring work (with and without the use of wildlife cameras) throughout Tînda Mîman and the Îyăhé Nakoda Mâkoche. Stoney has intentions to increase the number of wildlife cameras within Îyăhé Nakoda Mâkoche to track and monitor wildlife patterns and behaviours.

Cultural Assessment Report for the Alberta Transportation Highway 1 Wildlife Overpass Structure Project

In the fall of 2020, Stoney undertook a cultural assessment for a proposed wildlife overpass that was anticipated to be built between 2021-2023. In this cultural assessment, Stoney engaged with Elders and Knowledge Holders to understand the impacts and benefits of its construction and the best place for it to be built.

Stoney Nakoda Indigenous Forest Guardian Program

The Stoney Nakoda Indigenous Forest Guardian Program promotes collaborative Îyethkabi forest stewardship with Parks Canada to manage and maintain forest health to reduce the threat of forest fires within the Îyăhé Nakoda Mâkoche through prescribed burning, underbrush and debris clearing, and FireSmart™ initiatives within Stoney communities.

Stoney Nakoda Limber Pine Cultural Assessment (in development)

The Stoney Nakoda Limber Pine Cultural Assessment involves ongoing work to support provincial and federal government engagement on the recovery of limber pine, a species of pine that is listed as endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The limber pine is located within the Îyăhé Nakoda Mâkoche and Bow Valley Corridor and is significant to Îyethkabi.

5.4.3 Opportunities for Îyethkabi Stewardship

During interviews, Elders and Knowledge Holders shared their goals and recommendations for future Îyethkabi stewardship in the PSA.



Contributors requested Stoney involvement in advising on the development and maintenance of more wildlife friendly fencing and crossings (overpasses and underpasses), especially around the TCH. Similarly, Contributors would like wildlife rights-of-way to be maintained/established to promote wildlife movement through the corridor and limit vehicle collisions.

Contributors recommended that Stoney be involved in decision making for resource management within the PSA to ensure that Stoney values and way of life are protected and supported for generations to come. They recommended vegetation management to promote traditional species that support both wildlife and Îyethkabi in the region. Contributors also stated that Îyethkabi would likely be interested in helping steward areas of the PSA.

"That's our homeland. It's our homeland, it's our mother. So, we got this way, we respect it and live and honor it." (01SN)

"Yeah, it's important to me to give back to Stoney Nation, see that it's still alive, keep it going." (28SN)

Contributors would like to involve youth in all stewardship work. Having young Îyethkabi involved in stewardship aligns with cultural practices such as teaching and the use of Îyethka; it also ensures that youth have a voice as to how the ecological corridor and resources are preserved for them for future use.



6 Conclusion

Stoney undertook the *Understanding the Tînda Mîmân Corridor through Stoney Nakoda Traditional Knowledge Project* to support a more holistic approach to protection of the Bow Valley Corridor in collaboration with Parks Canada – an approach not only based in science, but one that also considers cultural context. By focusing on wildlife habitats, quality and quantity, wildlife corridors, cultural spaces, and Stoney Section 35 rights, this Study aimed to address the critical need for both wildlife connectivity and cultural continuity in the Bow Valley.

6.1 Study Results

The PSA remains critical to both wildlife connectivity and Stoney cultural continuity. Through interviews, site visits, and rider debriefs,²⁵ the Study resulted in the identification of four VCs and associated indicators and measurable parameters that can be used to monitor future change to these VCs, supporting both wildlife connectivity and Stoney cultural continuity management efforts.

Connections to Culture, Place, and the Land VC

Stoney's ability to maintain connection to land- and place-based culture and identity through preferred means within the PSA.

Indicators:

- Îyethkabi ability to harvest preferred wildlife
- Îyethkabi ability to gather preferred plants, berries, and pezuda (medicines)
- Îyethkabi ability to maintain spiritual and cultural connections to landscapes

Wildlife VC

The ability of wildlife to maintain health, safety, and movement throughout the PSA.

Indicators:

- Wildlife's ability to move throughout the PSA
- Wildlife's ability to maintain health and safety in the PSA
- Wildlife's ability to conduct natural behaviours in the PSA
- Maintenance of natural habitats

Vegetation VC

Healthy and abundant culturally and ecologically important vegetation within the PSA.

Indicators:

²⁵ Including for this, and all former Stoney studies.



- Vegetation health and abundance
- Natural interactions with wildlife

Stewardship VC

Stoney's ability to care for and manage lands, mînî, and resources within the PSA.

Indicators:

- Ability to maintain access for stewardship
- Healthy, functioning lands, mînî, and resources for stewardship
- Preservation of stewardship practice and knowledge transfer
- Recognition of Stoney stewardship authority

Contributors reported **306** TLRU sites and **64** TEK sites within the PSA, demonstrating that despite all anthropogenic changes, Îyethkabi continue to maintain their presence within the PSA for harvesting, ceremony, travel, teaching, place-based identity, and stewardship. However, Contributors also reported that development, roads, rail, tourism, industrial activity, restrictions, and other barriers to access have altered wildlife habitat and movement, reduced the quality and availability of culturally important places and resources, disrupted harvesting and ceremonial practices, and made the transmission of language, cultural knowledge, and TEK more difficult.

In response, Contributors recommended the following Stoney-led, long-term approach to management and monitoring of the PSA, grounded in both Traditional Knowledge and western science. The Stoney Consultation Office notes that before these recommendations can be executed, Stoney will need to source additional funding through future Parks Canada Ecological Corridor projects, Project Partners, and/or additional grants and funding opportunities.

6.2 Stoney Management Plan Recommendations

The following recommendations were made for a Cooperative Management Plan for the PSA:

Develop a Stoney-led Cooperative Management Plan for the PSA that sets clear priorities, management objectives, partner roles, and decision-making processes for wildlife, vegetation, cultural sites, access, and stewardship, that is based on traditional knowledge, species, sites/areas, and specific concerns discussed in this Report, braided with proven western science methods.

- Parks Canada, Alberta Forestry and Parks, municipalities, and industry should **formally recognize and support Stoney's stewardship authority** within the PSA, including Stoney's direct role in planning, monitoring, management, and adaptive decision-making.
 - A copy of the Management Plan should be provided to all applicable regulators to ensure Stoney participation in all future land use, access, infrastructure, and development decisions affecting the PSA, to ensure management reflects Stoney priorities, knowledge, and rights.
- **Consult Stoney on all existing plans and other documents related to the PSA**, including management plans, regional use plans, dispositions, etc., and discuss how Stoney can be involved in cooperative management with these plans in place.



- **Establish a Stoney-led cooperative management table or working group²⁶** with relevant partners to coordinate monitoring, review findings, respond to emerging issues, and guide the implementation of management actions.
- **Provide Stoney with the appropriate avenues to recommend targeted wildlife safety measures** in high-risk areas, including improved fencing, crossing structures, escape routes, speed reduction measures, and other mitigation where wildlife mortality is concentrated.
- **Discuss and implement the following Stoney recommendations:**
 - Reduce speed limits on roads where there are high collision rates.
 - Install wildlife warning signs where there are high collision rates.
 - Decrease the amount of forage around railways.
 - Clean up train car spills (especially grain/food).
 - Establish regular vegetation maintenance on and around railways.
 - Remove electric fencing.
 - Build and maintain egress routes away from railways so wildlife can escape trains (routes should be on alternating sides of the tracks).
 - Consider multiple types of road crossings/structures.
 - Limit development and recreational activity in wildlife corridors to limit wildlife-human conflict.
- **Discuss and implement academic recommendations.**
- Recommend that government bodies (such as Alberta Forestry and Parks, and Parks Canada) **consult Stoney on all issues impacting human/wildlife relationships** by contacting the Stoney Consultation Office.
 - This includes **consultations on all topics relating to Stoney's culture and way of life**, including collaboration with Parks Canada, Alberta Forestry and Parks, and the Town of Canmore on Stoney placenames within the PSA and beyond.

6.3 Stoney Monitoring Plan Recommendations

Contributors made the following recommendations for an Îyethkabi Traditional Monitoring Program for the PSA. The Monitoring Program will be designed to align with Stoney values and interests, and will include the use of SMART (specific, measurable, attainable, relevant and timely) goals, with different monitoring priorities per season to target specific species.

Develop an Îyethkabi Traditional Monitoring Program that tracks and reports on changes to Stoney's VCs based on the indicators and measurable parameters outlined in this Report. This Monitoring Program should include an adaptive management approach for the PSA, where monitoring results are regularly reviewed and used to revise priorities, management actions, and stewardship responses over time.

Training and Capacity Building

- Establish Stoney monitor training, including first aid, WHMIS, bear awareness, plant identification, rock and mineral identification, weed identification, bird identification, animal

²⁶ The Stoney Consultation Office is also considering involvement in the Human-Wildlife Coexistence group.



- trail identification, Stoney management priorities and practices, and equipment use (recorders, cameras, GPS units, and drones where applicable).
- Establish a Stoney Indigenous Knowledge training program so Stoney monitors can develop a sufficient understanding of Stoney language, protocols, traditional stories about wildlife, etc.

Roles, Staffing, and Coordination

- Hire or assign a coordinator position responsible for overseeing monitoring and monitoring reporting, and recommending any follow-up or mitigating steps with leadership.
- Hire Stoney monitors, or assign positions to internal candidates.
- Assign roles and responsibilities to Stoney monitors, including monitors who conduct horseback observations, foot observations, and wildlife camera monitoring.

Collaboration and Planning

- Collaborate with other Stoney monitoring groups (e.g., with Stoney Nakoda Indigenous Guardian Program monitoring) arising from other projects to avoid duplication, and identify additional priorities.
- Develop a monitor guide that includes all monitoring priorities per season including locations, species, and specific concerns.

Monitoring and Assessment Priorities

- Examine future traditional land use studies to monitor changes in wildlife availability for Stoney harvesting, including the abundance, distribution, accessibility, and condition of culturally important species used for hunting and trapping.
- Monitor culturally important vegetation and gathering areas, including the abundance, health, seasonal availability, and accessibility of berries, pezuda (medicines), roots, tree products, and other culturally important species.
- Monitor the condition of culturally and spiritually important sites, including ceremonial areas, sacred sites, burial sites, place name locations, historic sites, family camps, and travel routes, to identify disturbance, loss of privacy, vandalism, or barriers to use.
- Monitors human disturbance in priority wildlife and cultural areas, including tourism, recreation, trail use, noise, crowding, and public behaviour that affect wildlife movement, harvesting, or ceremony.
- Monitor industry disturbance in priority wildlife and cultural areas.
- Maintain a monitoring results database so the Stoney Consultation Office is more prepared to review and respond to the effects of current and future development in the PSA, including roads, tourism infrastructure, residential growth, industrial activities, and cumulative effects on wildlife, vegetation, access, and cultural continuity.

Establish a wildlife monitoring sub-component of the Monitoring Program to track wildlife movement, habitat use, mortality, behaviour, and long-term changes across the PSA.

- Install purchased wildlife cameras.
- Develop a training program with ABMI so Stoney monitors can operate the cameras, and interpret their data.



- Monitor the impacts of industry and development on wildlife movement, habitat use, mortality, behaviour, and long-term changes across the PSA.
- Work with Project Partners to obtain updated wildlife movement and migration routes throughout the PSA, including seasonal travel patterns, corridor use, crossing behaviour, and shifts in movement caused by roads, fencing, tourism, or development to identify emerging or shifting priorities.
- Work with Project Partners to obtain wildlife mortality data to identify hotspots, including highway and railway collisions, near misses, carcass locations, and recurring areas to identify where mitigation is most needed.
- Monitor Stoney-reported and available public reports that indicate changes in wildlife behaviour, including habituation, displacement, use of urban or roadside areas, and increased aggression or avoidance associated with human disturbance.

Establish an invasive species and weed monitoring sub-component of the Monitoring Program for Stoney Monitors to identify weeds and invasive species and their associated impacts.

- Work with the MD of Bighorn to develop a training program so Stoney monitors can recognize weeds and invasive species.
- Monitor for invasive species (including pine beetle) as a component of the overall Monitoring Program and report any associated concerns and impacts that require mitigation to the coordinator, and where applicable, Stoney leadership.

6.4 Additional Recommendations

Additional recommendations for the PSA provided by Contributors include the following, to be implemented by Stoney in collaboration with Parks Canada, Alberta Forestry and Parks, and municipalities as appropriate:

- Work with Parks Canada, Alberta Forestry and Parks, and municipalities, to **reduce barriers to Stoney access within the PSA**, including uncertainty around harvesting rights, park rules, user conflicts, signage, gates, fences, and other obstacles that discourage or restrict use.
- **Develop a Stoney Indigenous Awareness Training module** that teaches members of the public about Stoney's Section 35 rights and regulations regarding Stoney's TLRU in the PSA.
- **Develop an internal training program** to communicate where and how Stoney can access the PSA for harvesting, ceremony, monitoring, and stewardship with Îyethkabi.
- **Support and expand Stoney land-based teaching and youth camps**, and include youth in intergenerational monitoring programs to ensure that knowledge of trails, places, species, protocols, and stewardship practices is passed on to future generations.

"...hunting, survival was part of our culture. Today, it will always be, everything is changing, but our identity is important for young people to know these things. They need to know who they are, today..." (43SN)



- **Install new and update existing tatâga (bison) and pacheden (elk)-friendly fencing** in and around Mîni Thnî and the Bison Reintroduction Zone.
- **Develop community and local educational materials** on corridor management (including a short video), and Report results.



Photo 38: Canmore Area, Credit: Y2Y



References

- Alberta Biodiversity Monitoring Institute. 2024. *About Us: Our Organization*. Accessed November 30, 2025. <https://abmi.ca/abmi-home/about/our-organization>.
- Alberta Conservation Association. 2009. "Status of the Bull Trout (*Salvelinus confluentus*) in Alberta: Update 2009." *Alberta Government*. <https://open.alberta.ca/dataset/16a3731d-4e66-4cd7-87c2-d6197ed3d4cf/resource/c3d1396c-035a-45e1-87a8-9c852a435ec8/download/2009-sar-statusbulltroutalberta-sep2009.pdf>.
- . 2010. "Status of the Grizzly Bear (*Ursus arctos*) in Alberta: Update 2010." *Government of Alberta*. <https://open.alberta.ca/dataset/f1fb30ac-f8fe-44db-b4b8-d53ebbe77cc2/resource/7921e7e0-5012-400c-9fb6-80854f994a94/download/4470165-2010-status-grizzly-bear-alberta-update-2010.pdf>.
- . 2006. "Status of the Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisii*) in Alberta." *Alberta Government*. <https://open.alberta.ca/dataset/c01f7c84-667f-4e15-a927-fe75a85b91cb/resource/793375ef-e090-4649-a415-82e88197385b/download/2006-sar-statuswestslopecutthroattroutalberta-dec2006.pdf>.
- Alberta Government. 2016. "Hunting by Treaty Indians in Alberta Rights & Responsibilities." *Open Alberta*. October 25. Accessed May 11, 2026. <https://open.alberta.ca/dataset/b2eeb0aa-3250-496b-bc1f-0910a150a1e5/resource/e743ce3e-09c9-480b-aa88-483ea9148371/download/huntingbytreatyindians-oct25-2016.pdf>.
- Alberta Wilderness Association. 2025. *About Us*. Accessed November 30, 2025. <https://albertawilderness.ca/about-us/>.
- Alberta's Species at Risk Program. 2015. "Species at Risk Limber Pine and Whitebark Pine." *Alberta Government*. November. <https://open.alberta.ca/dataset/c5117a2b-451d-420f-b734-256bdb1f52f5/resource/160eb215-dbf0-4e86-b9cd-a49592689a3e/download/2015-sar-whitebarkandlimberpine-dec2015.pdf>.
- Anderson, Raoul. 1970. "Alberta Stoney (Assiniboin) Origins and Adaptations: A Case Study." *Ethnohistory*.
- Athabasca University. 2025. *About AU*. January 13. Accessed November 30, 2025. <https://www.athabascau.ca/about-au/index.html>.
- Bantle, Jason Leo. n.d. *Bear 178*. All in the Wild Photography.
- Barron, Laurie F. 1988. "The Indian Pass System in the Canadian West, 1882-1935." Department of Native Studies, University of Saskatchewan. Accessed April 10, 2026. [https://portal.usask.ca/docs/Prairie%20Forum/The%20Indian%20Pass%20System%20\(v13no1_1988_pg25-42\).pdf](https://portal.usask.ca/docs/Prairie%20Forum/The%20Indian%20Pass%20System%20(v13no1_1988_pg25-42).pdf).
- Bernard, H.R. 2018. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. 6th. London, UK: Rowman & Littlefield.



- . 2006. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. 4th. Lanham, MD: AltaMira Press.
- Bolken-Hern, Sam, Claire Wright, and Eric Higgs. 2026. *Using novel approaches to map land cover change in the Bow Valley for the Îyắhé Nakoda ecological corridors project*. Victoria: School of Environmental Studies, University of Victoria.
- Bow Valley Human-Wildlife Coexistence Roundtable. 2018. "Bow Valley Human-Wildlife Coexistence Technical Report." *Recommendations for Improving Human-Wildlife Coexistence in the Bow Valley*. May.
- Brown, Zoe. 2024. *Horseshoe Plant – The First Large-Scale Hydroelectric Power Plant in Alberta*. November 27. Accessed July 10, 2026. <https://calgary-name.com/en/eternal-3974-horseshoe-plant-the-first-large-scale-hydroelectric-power-plant-in-alberta>.
- Burgess, Marilyn. 1993. "Canadian "Range Wars": Struggles over Indian Cowboys ." *Canadian Journal of Communication*.
- Burgess, Marilyn. 1993. "Canadian "Range Wars": Struggles over Indian Cowboys." *Canadian Journal of Communication* 18 (3). Accessed May 2025. doi:<https://doi.org/10.22230/cjc.1993v18n3a760>.
- Canadian Pacific. n.d. *Our History*. Accessed April 10, 2026. <https://cpconnectingcanada.ca/our-history/>.
- . n.d. *Tourism & Recreation*. Accessed April 10, 2026. <https://cpconnectingcanada.ca/#tourism-recreation>.
- Carlson, Matt; Integral Ecology Group; Yellowstone to Yukon Conservation Initiative. 2022. *Grizzly Bear Movement and Risk in the Bow Valley: A Cumulative Effects Model*. Canmore: Yellowstone to Yukon Conservation Initiative.
- Chini, Joey. 2024. *Cascade Creek restoration project helps increase westslope cutthroat trout population*. September 5. Accessed May 6, 2026. <https://www.cbc.ca/news/canada/calgary/cascade-creek-restoration-cutthroat-trout-population-1.7313230>.
- Chiniki Elders Advisory Council; MD of Bighorn. n.d. *Chânḥ Pay Oda*. Accessed May 5, 2026. <https://www.mdbighorn.ca/DocumentCenter/View/1255/NakodaSign-Exshaw>.
- Clevenger, Anthony. 2005. "Conservation Value of Wildlife Crossings: Measures of Performance and Research Directions." *GAIA - Ecological Perspectives for Science and Society* 124-129.
- Clevenger, Anthony P. 2025. "Tinda Miman - Summary of Wildlife Research associated with the Trans-Canada Highway Mitigation Fencing and Wildlife Crossing Structures 1996-2014." June 24.
- Clevenger, Anthony P., and Nigel Waltho. 2004. "Performance indices to identify attributes of highway crossing structures facilitating movement of large mamals." *Elsevier*, April 20: 453-464.
- Cochrane Eagle Staff. 2013. *Mjolness brothers devoted lives to SLS*. September 12. Accessed July 6, 2026. <https://www.cochraneagle.ca/local-news/mjolness-brothers-devoted-lives-to-sls-1447448>.
- Colgan, Greg. 2026. "Banff National Park breaks visitation record - again." CBC News, March 21. <https://www.cbc.ca/news/canada/calgary/banff-national-park-visitation-record-9.7135069>.



- Committee on the Status of Endangered Wildlife in Canada. 2012. "Assessment and Status Report on the Grizzly Bear *Ursus Arctos* Western population Ungava population in Canada." *Government of Canada*.
https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_ours_grizz_bear_1012_e.pdf.
- . 2010. *COSEWIC Assessment and Status Report on the Whitebark Pine *Pinus albicaulis* in Canada*.
https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Whitebark%20Pine_0810_e.pdf.
- . 2018. *Westslope cutthroat trout COSEWIC assessment and status report*. May 22.
<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/westslope-cutthroat-trout.html>.
- Council, Chiniki Elders Advisory, and The Municipal District of Bighorn. 2017. *Tìnda Mìmun*.
<https://mdbighorn.ca/DocumentCenter/View/1253/NakodaSign-Indian-Flats>.
- Dempsey, Hugh Aylmer. 1997. *Indian tribes of Alberta*. Glenbow-Alberta Institute.
- Discovery APEGA. n.d. *Wildlife Crossings Key to Highway Safety in Banff*. Accessed May 8, 2026.
<https://discoverapega.ca/stories/wildlife-crossings-key-to-highway-safety-in-banff/>.
- EBA, McElhanney Consulting Services Ltd. 2011. *Twinning of the Trans Canada Highway Through Banff National Park*. March 11. Accessed May 8, 2026. <https://www.tac-atc.ca/wp-content/uploads/eba.pdf>.
- Edey, Noel. 2023. *West Fraser acquiring Spray Lakes Sawmills*. September 8. Accessed July 6, 2026.
<https://cochranenow.com/articles/west-fraser--acquiring--spray-lake-sawmills>.
- Erasmus, Peter. 1976. "Buffalo Days and Nights." 74, 78, 84, 157-158, 165-166. Calgary: Glenbow-Alberta Institute.
- First Nations Information Governance Centre. 2025. *The First Nations Principles of OCAP®*.
<https://fnigc.ca/ocap-training/>.
- Fisheries and Oceans Canada. 2025. *Progress Towards the Implementation of Recovery Strategy and Action Plan for: Westslope Cutthroat Trout, Alberta Population*. Accessed May 6, 2026.
https://publications.gc.ca/collections/collection_2025/mpo-dfo/En3-4-182-1-2025-eng.pdf.
- Foster, Janet. 1978. *Working for Wildlife: The Beginning of Preservation in Canada*. Toronto: University of Toronto Press.
- Garibaldi, Ann, and Nancy Turner. 2004. "Cultural Keystone Species: Implications for Ecological Conservation and Restoration." *Ecology and Society* 9 (3): 1. Accessed August 2021.
<https://www.ecologyandsociety.org/vol9/iss3/art1/main.html#conclusion>.
- Garrow, Dave, Nadia Bohonos, and Petah Low. 2023. *Evaluating the Effectiveness of Enhancing Wildlife Travel Routes and Establishing Egress Routes in Reducing Train Caused Wildlife Injury and Mortality - Final Report*. Banff: Banff National Park Resource Conservation, Banff Field Unit, Parks Canada.



- Garrow, Dave, Nadia Bohonos, Petah Low, Parks Canada, Banff National Park Resource Conservation , and Banff Field Unit. 2023a. *Evaluating the Effectiveness of Enhancing Wildlife Travel Routes and Establishing Egress Routes in Reducing Train Caused Wildlife Injury and Mortality – Final Report*. Banff National Park.
- Getty, Ian. 2006. "Stoney Nakoda." *The Canadian Encyclopedia*. <https://www.thecanadianencyclopedia.ca/en/article/stoney-nakoda>.
- Glenbow Archives. 1886. "Glenbow Archives NA-4140-13."
- Government of Alberta. 2025. *About Park*. July 7. Accessed November 30, 2025. <https://www.albertaparks.ca/albertaparks-ca/about-parks/>.
- . n.d. *Alberta Wildlife Watch*. Accessed March 5, 2026. <https://geospatial.alberta.ca/portal/apps/experiencebuilder/experience/?id=c21a003f744a43a183456d6b2b650b54>.
- Government of Canada. 2025. *About the Parks Canada Agency*. August 25. Accessed November 30, 2025. <https://parks.canada.ca/agence-agency>.
- . n.d.a. *Construction of the Trans-Canada Highway National Historic Event*. Accessed May 8, 2026. https://www.pc.gc.ca/apps/dfhd/page_nhs_eng.aspx?id=15012.
- . 2013a. *Copy of Treaty and Supplementary Treaty No. 7 between Her Majesty the Queen amd the Blackfeet and Other Indian Tribes, at the Blackfoot Corssing of Bow River and Fort Macleod*. August 30. Accessed August 2021. <https://www.rcaanc-cirnac.gc.ca/eng/1100100028793/1581292336658>.
- . 2013. "Copy of Treaty and Supplementary Treaty No. 7 between Her Majesty the Queen and the Blackfeet and Other Indian Tribes, at the Blackfoot Crossing of Bow River and Fort Macleod." *Treaty Texts: Treaty and Supplementary Treaty no. 7*. August 30. Accessed August 2021. <https://www.rcaanc-cirnac.gc.ca/eng/1100100028793/1581292336658>.
- . 2022. *COSEWIC Assessment and Status Report on the Limber Pine Pinus flexilis in Canada - 2014*. February 24. <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/limber-pine-pinus-flexilis-2014.html>.
- . 2025a. *Parks Canada attendance 2024_25*. June 30. Accessed April 10, 2026. <https://open.canada.ca/data/en/dataset/59fb63af-67ae-4495-9c05-d121360aaeb4/resource/35f76db5-3080-4b99-a343-884c221c9487>.
- . 2024. *The Trans-Canada highway*. April 22. Accessed May 8, 2026. <https://parks.canada.ca/pn-np/ab/banff/nature/conservation/transport/tch-rtc>.
- Hauer, RF, H Locke, VJ Dreitz, M Hebblewhite, WH Lowe , CC Muhlfeld, CR Nelson, MF Proctor, and SB Rood. 2016. *Gravel-bed river floodplains and the ecological nexus of glaciated mountain landscapes*.
- Heritage Collaborative Inc. 2011. "Municipal District of Bighorn Heritage Inventory." *Context Paper*. January. Accessed February 4, 2026.



https://www.mdbighorn.ca/DocumentCenter/View/696/CONTEXT_PAPER_ONLY?bidId=#:~:text=operation%20when%20McCandlish%20failed%20to,randomly%20on%20the%20landscape.38.

International Union for Conservation of Nature. 2020. "Guidelines for conserving connectivity through ecological networks and corridors." Edited by Craig Goves. <https://portals.iucn.org/library/sites/library/files/documents/PAG-030-En.pdf>.

Lakusta, Ernie. 2007. *The Intrepid Explorer: James Hector's exploration in the Canadian Rockies*. Brighton: Fitzhenry & Whiteside.

Lee, Jessica. 2024. *MD of Bighorn logging forestry history*. January 5. Accessed May 6, 2026. <https://www.rmoutlook.com/md-of-bighorn/md-of-bighorn-logging-forestry-history-8037198>.

Lothian, W. F. 1977. *A History of Canada's National Parks*. Vol. Volume II. Parks Canada. doi:QS-7034-020-EE-A1.

Luxton Museum of the Plains Indians. n.d. *Banff's Indian Days and Tribal Days*. Accessed May 2025. https://epe.lac-bac.gc.ca/100/205/301/ic/cdc/luxton/sect_1/1b.htm?nondisclaimer=1.

—. n.d. *Banff's Indian Days and Tribal Days: The Collections of the Luxton Museum of the Plains Indians*. https://epe.lac-bac.gc.ca/100/205/301/ic/cdc/luxton/sect_1/1b.htm?nondisclaimer=1.

MacEwan, Grant. 1969. *Tatanga Mani: Walking Buffalo of the Stonies*. Edmonton: M. G. Hurtig.

Mason, Courtney W. 2014. *Spirit of the Rockies: Reasserting an Indigenous Presence in Banff National Park*. Toronto: University of Toronto Press.

Mason, Courtney W. 2015. "The Banff Indian Days Tourism Festivals." *Annals of Tourism Research* 53 77-95.

MD of Bighorn. n.d. "Welcome to Bighorn." *Municipal District of Bighorn*. Accessed May 13, 2026. <https://mdbighorn.ca/>.

Minister of Supply and Services Canada. 1996. "Banff-Bow Valley at the crossroads: Technical report."

MNP LLP. 2025. *About*. Accessed November 30, 2025. https://www.mnp.ca/en/about?utm_source=Google&utm_medium=CPC&utm_campaign=mnp-nationwide&utm_term=accounting&utm_content=accounting&gad_source=1&gad_campaignid=23081955247&gbraid=0AAAABBiThOREsBNsYta5BqQxYTjlniLv&gclid=EAlaIQobChMIxN7Tir2bkQMVhQWtBh3Fogn.

Municipal District of Bighorn. n.d. *Dead Man's Flats*. Accessed February 4, 2026. <https://www.mdbighorn.ca/163/Dead-Mans-Flats>.

—. n.d. a. *Exshaw Historical Information*. Accessed February 4, 2026. <https://www.mdbighorn.ca/167/Historical-Information>.

—. n.d. b. *Harvie Heights*. Accessed February 4, 2026. <https://www.mdbighorn.ca/165/Harvie-Heights>.



—. n.d. c. *Lac des Arcs*. Accessed February 4, 2026. <https://www.mdbighorn.ca/166/Lac-des-Arcs>.

Natural Resources Conservation Board. 1992. "N.R.C.B. Hearing Three Sisters Proposal - Stoney Intervention." *In the Matter of the Natural Resources Conservation Board Hearing Into the Application of Three Sisters Gold Resorts Inc. Recreational and Tourism Development Canmore Application No. 1903*.

Parks Canada. 2025a. *Criteria for ecological corridors*. August 6. <https://parks.canada.ca/nature/science/conservation/corridors-ecologiques-ecological-corridors/criteres-criteria>.

—. 2025. *National Program for Ecological Corridors*. 07 21. <https://parks.canada.ca/nature/science/conservation/corridors-ecologiques-ecological-corridors>.

Pec, Gregory J, Justine Karst, Alexandra N Sywenky, Paul W Cigan, Nadir Erbiligin, Suzanne W Simard, and James F Cahill Jr. 2015. "Rapid Increases in Forest Understory Diversity and Productivity following a Mountain Pine Beetle (*Dendroctonus ponderosae*) Outbreak in Pine Forests." *PLOS ONE* 10 (4). <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0124691>.

Province of Alberta. 2025. "Alberta Regulations." *2025 Alberta Guide to Hunting Regulations*. Accessed February 9, 2026. <https://albertaregulations.ca/huntingregs/additional-information.html#:~:text=and%20Emergency%20Services.-,Marked%20Wildlife,of%20Alberta%20Forestry%20and%20Parks.&text=All%20waterfowl%20leg%20bands%20recovered,at%20the%20website%20reportband.gov>.

Robinson, Sheila. 1978. "Parks Canada History." *The Natural and Human History of Banff National Park*. May. Accessed April 10, 2026. <http://parkscanadahistory.com/publications/banff/banff-natural-human-history.pdf>.

Robinson, Zac, and Stephen Slemon. 2022. *The Shining Mountains*. Banff: for the UIAA General Assembly, hosted by the Apline Club of Canada.

Rogala, James Kimo, Mark Hebblewhite, Jesse Whittington, Cliff A White, Jenny Coleshill, and Marco Musiani. 2011. "Human Activity Differentially Redistributes Large Mammals in the Canadian Rockies National Parks." *Ecology & Society* 16 (3).

Seneff, Dr. Stephanie. 2021. *Toxic Legacy: how the weedkiller glyphosate is destroying uor health and the environment*. Vermont: Chelsea Green Publishing.

Sherif, Omar. 2024. "Mourning the loss of beloved blond bear, wildlife advocates want more protection for the animals." *CBC News*. Calgary: CBC News, June 13. <https://www.cbc.ca/news/canada/calgary/bear-killed-banff-alberta-parks-canada-1.7232706>.

Snow, Chief John. 2005. "These Mountains are our Sacred Places." Calgary: Fifth House Ltd.

Spry, Irene M. 1995. *The Palliser Expedition, The Dramatic Story of Western Canadian Exploration*. Friesens.



- Statistics Canada. 2023. "2021 Census of Population." *Census Profile*. Ottawa, November 15. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/Page.cfm?Lang=E&SearchText=anmore&DGUIDlist=2021A00054815023&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0>.
- Stoney Consultation. 2020. "Stoney Nakoda Nations Cultural Assessment Report for the Alberta Transportation Highway 1 Wildlife Overpass Structure Project." December 4.
- Stoney Nakoda Nations. n.d. *About Us: Our History*. Accessed December 16, 2025. <https://stoneynakodanations.com/about-us/>.
- Stoney Nakoda Nations. 2026. *Stoney Nakoda Indigenous Forest Guardian Interim Report*. Calgary: MNP LLP.
- . 2013. "Stoney Nakoda Nations (SNN) Support the "Idle No More" Movement." *Statement From the Stoney Nakoda Leadership*. January 11. <https://www.stoneynation.com/Statement%20Jan%2011th%202013.pdf>.
- Struthers, Dan. 2024. *Cascade Creek restoration project*. June 5. Accessed May 6, 2026. <https://parks.canada.ca/pn-np/ab/banff/nature/conservation/aquatics/connectivity/cascade>.
- The Canadian Encyclopedia. 2023. *Canadian Pacific Railway*. March 8. Accessed April 10, 2026. <https://thecanadianencyclopedia.ca/en/article/canadian-pacific-railway>.
- . 2006. *Stoney-Nakoda*. February 7. Accessed April 10, 2026. <https://www.thecanadianencyclopedia.ca/en/article/stoney-nakoda#:~:text=The%20Stoney%2C%20led%20by%20Chiefs,the%20Morleyville%20mission%20in%201879>.
- The Town of Canmore. n.d. *Community Statistics*. Accessed February 4, 2026. <https://www.canmore.ca/your-government/your-town-organizations/community-statistics>.
- Theobold, A, M Wickstrom, and S Hancock. 2024. "Coding Code: Qualitative Methods for Investigating Data Science Skills." *Journal of Statistics and Data Science Education* 32 (2): 161-173.
- Tourism Canmore Kananaskis. 2026. *History of Canmore*. Accessed February 4, 2026. <https://www.explorecanmore.ca/plan-your-trip/about-canmore/canmore-history/>.
- Town of Banff. n.d. *Learn about Banff*. Accessed February 4, 2026. <https://banff.ca/252/Learn-About-Banff>.
- n.d. *TransAlta Corporation*. Accessed May 6, 2026. <https://hpnecoguide.ecomedes.com/product/trans-alta-corporation/cascade-hydro-plant>.
- TransCanadaHighway.com. n.d. *AB Highway History: Lake Louise to Banff Park Gates*. Accessed May 8, 2026. <https://transcanadahighway.com/alberta/ab-tch-history/highway-history-lake-louise-to-banff-park-gates/>.
- Treaty 7 Elders and Tribal Council. 1996. *The True Spirit and Original Intent of Treaty 7*. Edited by Sarah, Dorothy First Rider, and Hildebrant, Walter Carter. Montreal: McGill Queen's Press.



- Truett, Joe C, Michael Phillips, Kyran Kunkel, and Russell Miller. 2001. "Managing Bison to Restore Biodiversity." *Great Plains Research: A Journal of Natural and Social Sciences (through 2013)* 541. https://digitalcommons.unl.edu/greatplainsresearch/541?utm_source=digitalcommons.unl.edu%2Fgreatplainsresearch%2F541&utm_medium=PDF&utm_campaign=PDFCoverPages.
- Tyler, Dixon. 2022. *Historical Photos from Exshaw, Alberta*. February 10. Accessed May 5, 2026. <https://calgaryguardian.com/historical-photos-exshaw/>.
- University of Calgary Archives. 2018. *Eau Claire and Bow River Lumber Company Fonds*. October 11. Accessed May 6, 2026. <https://searcharchives.ucalgary.ca/eau-claire-and-bow-river-lumber-company-fonds>.
- University of Victoria. n.d. *About the university*. Accessed May 13, 2026. <https://www.uvic.ca/about-uvic/about-the-university/index.php>.
- Whittington, J, M Hebblewhite, and R.W. Baron. 2022. "Towns and trails drive carnivore movement behaviour, resource selection, and connectivity." *Mov Ecol* 10 (17). doi:<https://doi.org/10.1186/s40462-022-00318-5>.
- Whittington, J, R Baron, J Hood, A Zier-Vogel, P Low, S Jaward, G Prophet, C Gill, and A Brushett. 2024. *Banff Field Unit Ecological integrity monitoring program summary report for 2023-2024*. Banff: Parks Canada-Banff Field Unit-Resource Conservation Unpublished Technical Report.
- Whyte, Jon, and Carole Harmon. 1982. "Lake Louise: A Diamond in the Wilderness." 8-9, 14-15, 24. Banff: Altitude Publishing.
- Wilcox, Walter Dwight. 1913. "Guide book to the Lake Louise region, including Paradise Valley, Valley of the Ten Peaks and neighbourhood of Lake O'Hara." 26, 30, 45. New York: Knickerbocker Press.
- Wright, C, C Bone, D Matthews, J Tricker, Wright B, and E Higgs. 2024. "Mountain Image Analysis Suite (MIAS): A new plugin for converting oblique images to land cover maps in QGIS." 28 (7). doi:10.1111/tgis.13229.
- Yellowstone to Yukon Collective. 2026. "Bow Valley Connectivity for Tinda Mîman." February.
- Yellowstone to Yukon Conservation Initiative. 2025b. "Grizzly Bear Movement and Conflict Risk in the Bow Valley: A Cumulative Effects Model." *Y2Y project summaries for Tînda Mîmân study area*. May.
- . 2025a. "Highway Mitigations for Wildlife." *Y2Y project summaries for Tînda Mîmân study area*. May.
- . 2025. *Who We Are*. Accessed November 30, 2025. <https://y2y.net/who-we-are/>.
- . 2020. "Wildlife corridors are an essential part of the Bow Valley." *Yellowstone to Yukon Conservation Initiative*. July 16. Accessed November 17, 2025. <https://y2y.net/blog/wildlife-corridors-bow-valley/>.

GIS References



Alberta Biodiversity Monitoring Institute. 2024. Wall-to-Wall Human Footprint Inventory – Year 2022 Shapefile. Last modified April 30, 2025. <https://abmi.ca/data-portal/80.html>

Alberta Forestry and Parks, Parks Operations Division. 2026. Active Remote Cameras Shapefile.

Government of Alberta. 2025. *Alberta Wildlife Watch animal carcass records*. March 5, 2026. <https://open.alberta.ca/opendata/alberta-wildlife-watch-animal-carcass-records/resource/a1ddc795-3cc5-42dc-b710-fb8d476fd413>.

Government of Alberta. 2026. *Alberta Wildlife Watch Animal Vehicle Collision (AVC) Mitigation Projects*. 2026. <https://geospatial.alberta.ca/portal/apps/experiencebuilder/experience/?id=c21a003f744a43a183456d6b2b650b54>.

Government of Alberta. 2026. *Registered Fur Management Area*. 2026. https://extranet.gov.ab.ca/srd/geodiscover/srd_pub/boundaries/RFMA.zip.



Appendix A – Project Partner Contribution Summaries

Y2Y Report Contributions

Y2Y provided the following summary of their prior initiatives that informed their Report contributions:

Y2Y project summaries for Tînda Mîmân study area

May 2025

Protecting Wildlife Through Respectful Recreation in the Upper Columbia of BC and Kananaskis-Ghost of AB

Beginning in 2019, Y2Y and the University of Northern British Columbia conducted an extensive recreation ecology research project with partners to better understand the intersection of outdoor recreation and wildlife in the Upper Columbia of British Columbia and Kananaskis-Ghost of Alberta. Improved information on where, when, and how people are recreating and overlap with wildlife helps communities stay ahead of the evolving challenges that come with the growth of recreation.

This project provides motorized and non-motorized recreation trail data and maps, guidance on recreation monitoring tools to use for different seasons and recreation types, flexible and adaptative modeling approaches for predicting recreation intensity, and identifies overlap of recreation with important habitat for grizzly bears, wolverines, and caribou. This project also offers recommendations for recreation and land-use planning, monitoring, and management to help improve how wildlife and humans coexist in shared landscapes.

Our [research summary](#) and website (www.y2y.net/RecEcology) summarizes key results and recommendations. Updates to the research summary are expected in late winter 2025. We have also published key findings, including:

- [Comparing tools for monitoring recreation](#), published in PeerJ Environmental Science in 2023
- [Recreation trail data and maps](#), published in the Journal of Outdoor Recreation and Tourism in 2023
- [Mapping wolverine habitat](#), published in Global Ecology and Conservation in 2023.

Two more publications predicting human recreation intensity and the overlap of recreation with grizzly bear, wolverine, and caribou habitat are expected in late 2025/early 2026.

Since 2024, we have shared science-backed recommendations with hundreds of federal and provincial land managers and government officials in Alberta and British Columbia, recreation groups, and leaders in the recreation and research communities to identify key knowledge gaps and build a better picture of the shared challenges and possible solutions. We continue to provide advice, resources, and foster relationships with land managers and biologists to

promote better stewardship and reduce impacts of recreation on wildlife in priority areas. More on how this research is shaping planning and management can be found here: <https://y2y.net/blog/supporting-flourishing-communities-and-nature/> (Yellowstone to Yukon Collective 2026).

Y2Y also provided several photos and wildlife movement literature for this Report.

Parks Canada Report Contributions

Anthony P Clevenger, a wildlife research scientist, and crossing specialist, and former Parks Canada contractor, provided the Study Team with research for use in this Report, as well as the following summary describing this work:

The Trans-Canada Highway (TCH) is a major transportation corridor traversing Banff National Park with an estimated annual average daily traffic volume of over 20,000 vehicles per day. In the 1970s, the TCH was upgraded from two to four lanes, beginning from the park east boundary and working west.

The first 27 km of highway twinning (Phases 1 and 2) included 10 wildlife underpasses and was completed in 1988 (see Figure 1).

Highway upgrades on the next 20 km section (Phase 3A) were completed in late 1997 with 11 additional wildlife underpasses and two 50-m wide wildlife overpasses.

The final 35 km of four-lane highway to the western park boundary (Phase 3B) includes 21 crossing structures, including four, 60-m wide wildlife overpasses and was completed in late 2013. The Phase 3B twinning and installation of mitigation measures progressed over a 5-year period (2008-2013).

Seventeen years is longer than most research projects are conducted. The value of long-term research and monitoring is indisputable among scientists and natural resource managers. Our research evolved from the initial basic questions of:

- Whether fencing and wildlife crossing mitigation reduce road-related mortality of wildlife?
- If wildlife use the crossing structures? And if so, what species and how often?
- Are there differences in species use?
- Last, can these data be used to plan and design crossing structures for future mitigation projects on the TCH in Banff (Phase 3B)?

We answered all of these questions in a **2002 final report** to the Banff Field Unit of Parks Canada. We then asked: what more can we learn? And what additional information will be gained by continuing monitoring and research?

By 2002, monitoring data confirmed that the Banff crossing structures were regularly used by all large mammal species. However, there was uncertainty whether the crossings provided for **demographic and genetic connectivity** i.e., males and females were able to cross and their young able to disperse. These fundamental questions were addressed in our research from

2005-2009, which was funded by our first public-private-academic partnership. **A second report was prepared for this phase of research in 2009.**

As the previous partnership concluded, the last phase of the twinning project (Phase 3B) began on the TCH in Banff National Park. This phase was the first major transportation corridor project in North America to provide crossings for wildlife across the Continental Divide.

Different from previously mitigated sections, the focus was on rare, higher elevation, fragmentation-sensitive species: wolverines and lynx. This phase of the research project was branded “Highway Wilding” and partners included Parks Canada Agency, Western Transportation Institute - Montana State University (WTI), Miistakis Institute, Woodcock Foundation, and Wilburforce Foundation (A. P. Clevenger 2025).

Jesse Whittington, a current Parks Canada employee, also provided literature and mapping information on the following ecological monitoring initiatives (as displayed in Appendix B) to inform this Report:

- movements of GPS collared watâga (grizzly bears),
- movements of GPS collared sîktogēja (wolves),
- watâga (grizzly bear) and sîktogēja (wolf) habitat quality by season,
- remote camera detection rates of medium to large mammals, and
- railway mortalities.

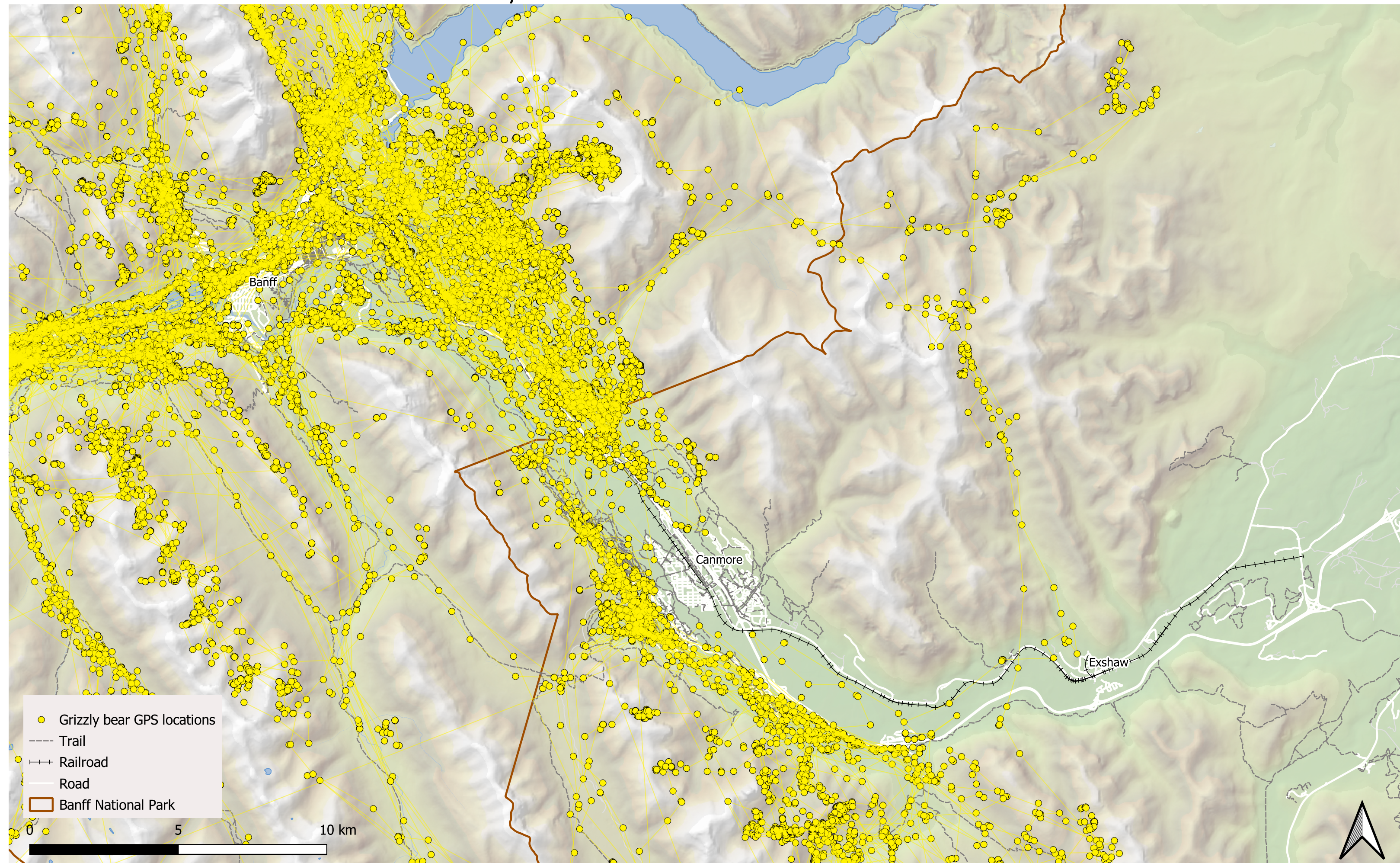
Alberta Forestry and Parks Contributions

Alberta Forestry and Parks representatives provided relevant resources to support the Report, including:

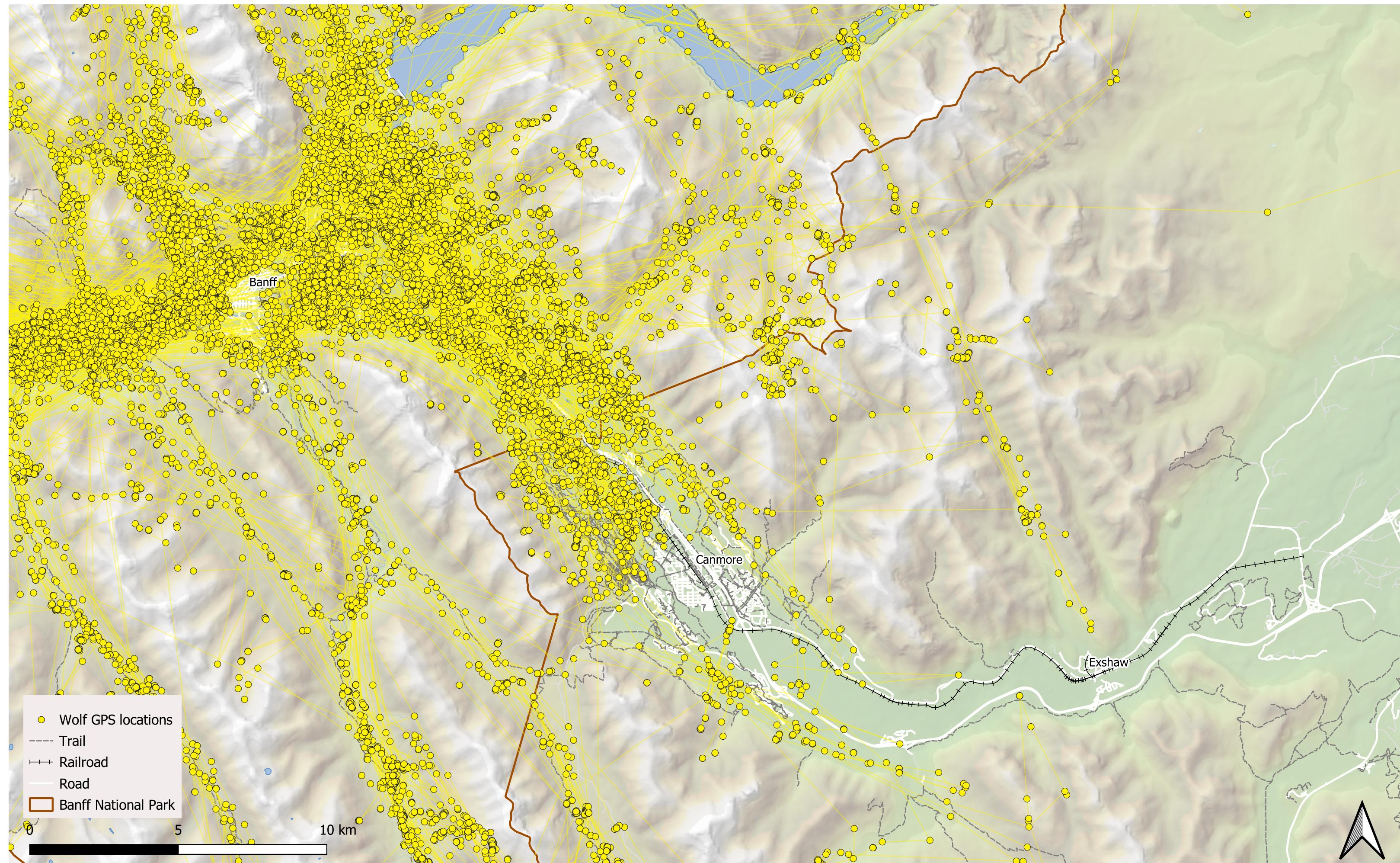
- 2018 Bow Valley Human-Wildlife Coexistence Report,
- remote camera locations, and
- videos and photos of wildlife using the underpass.

Appendix B – Parks Canada-Provided Wildlife Identification and Fatality Locations

Grizzly bear GPS locations: 2000 - 2017



Wolf GPS locations: 2002 - 2025



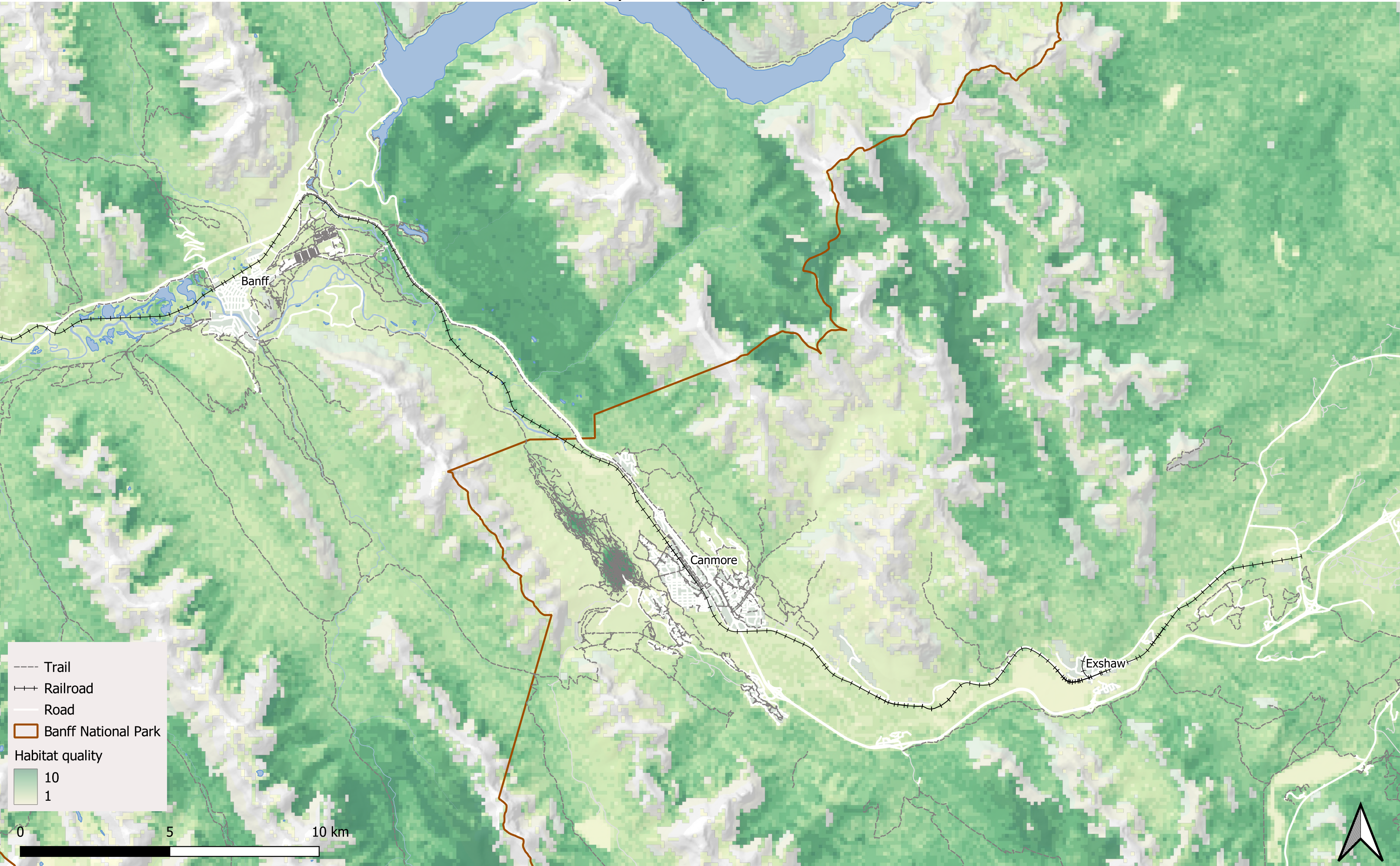
Habitat quality: Grizzly bear - Spring



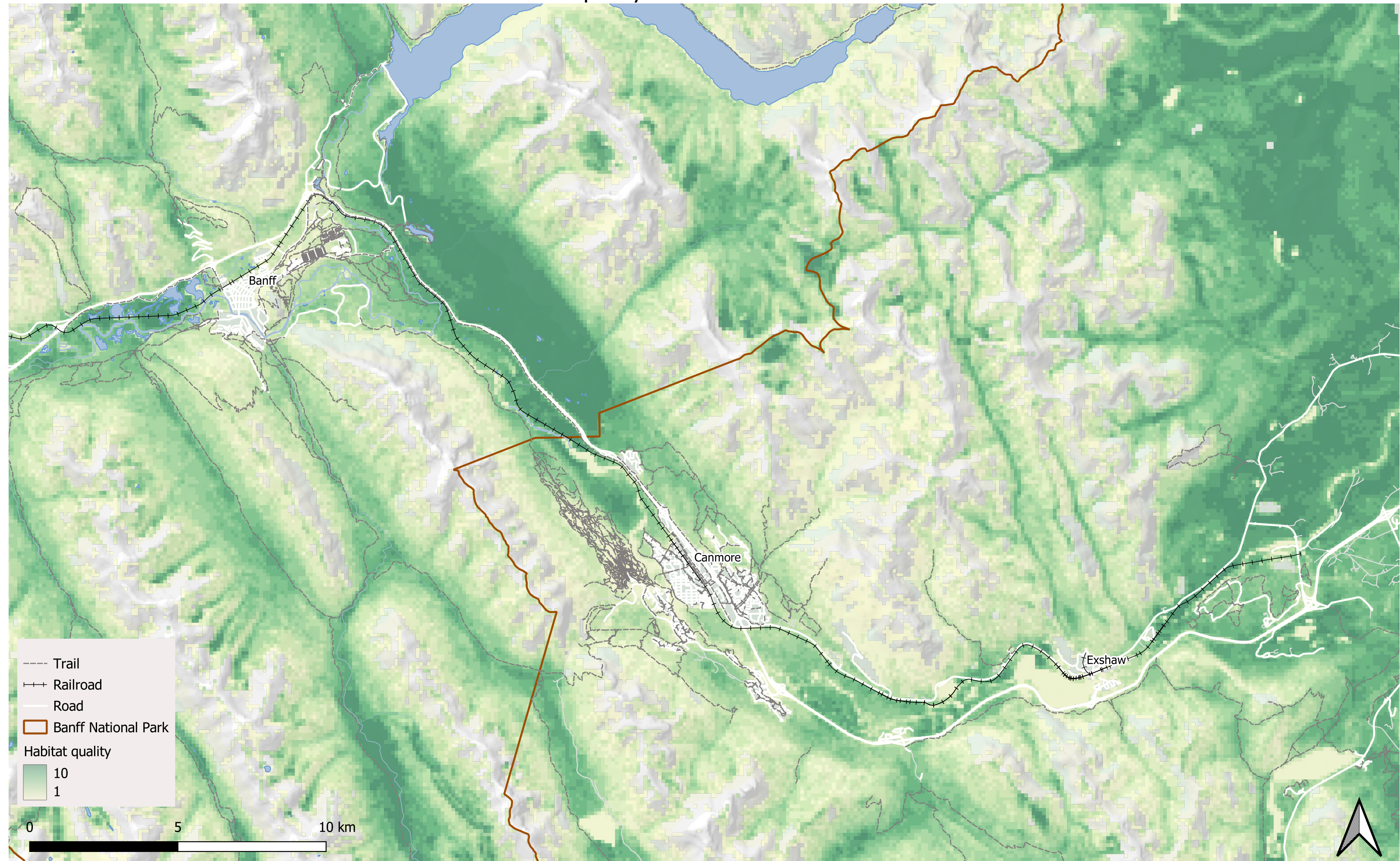
Habitat quality: Grizzly bear - Summer



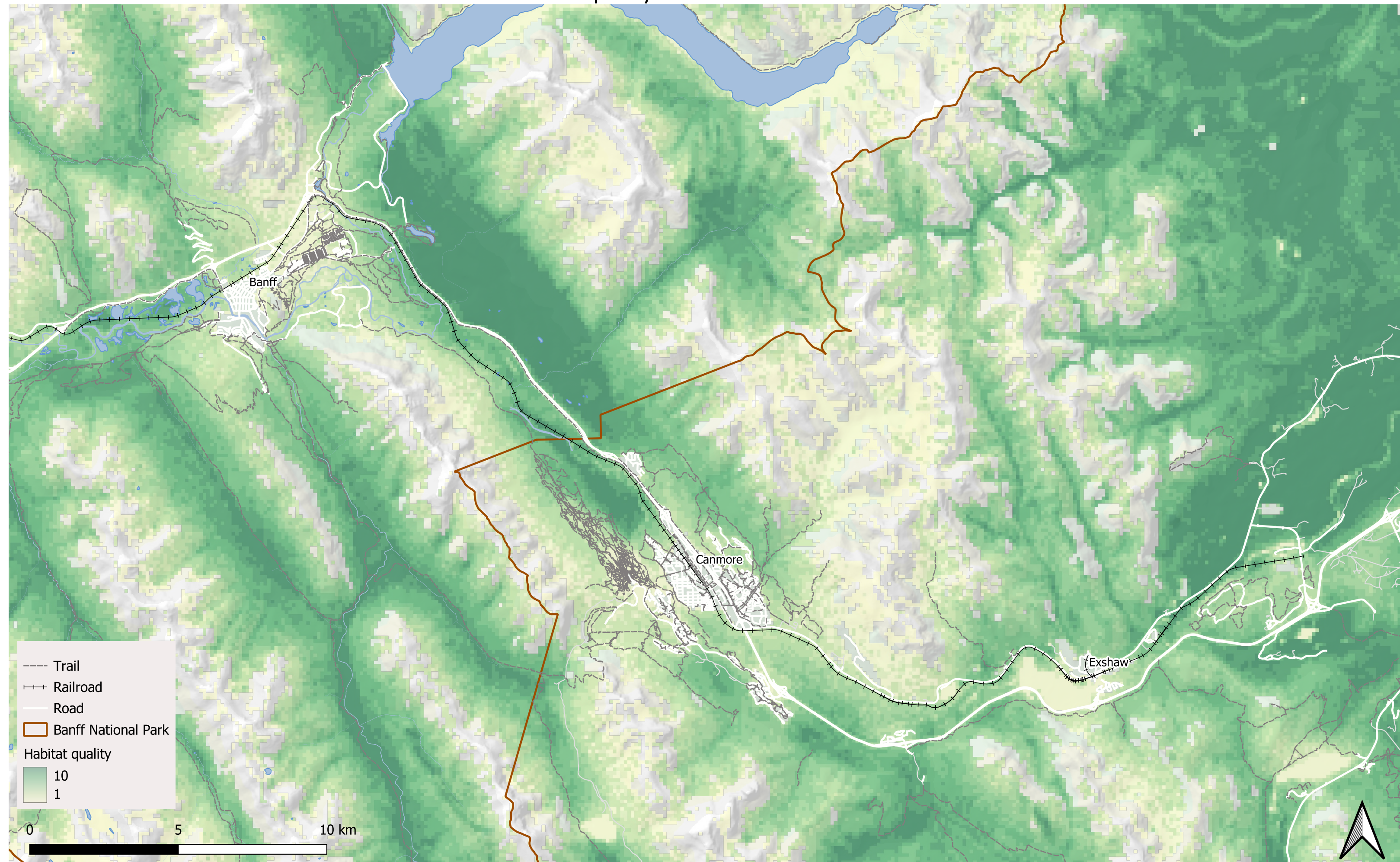
Habitat quality: Grizzly bear - Fall



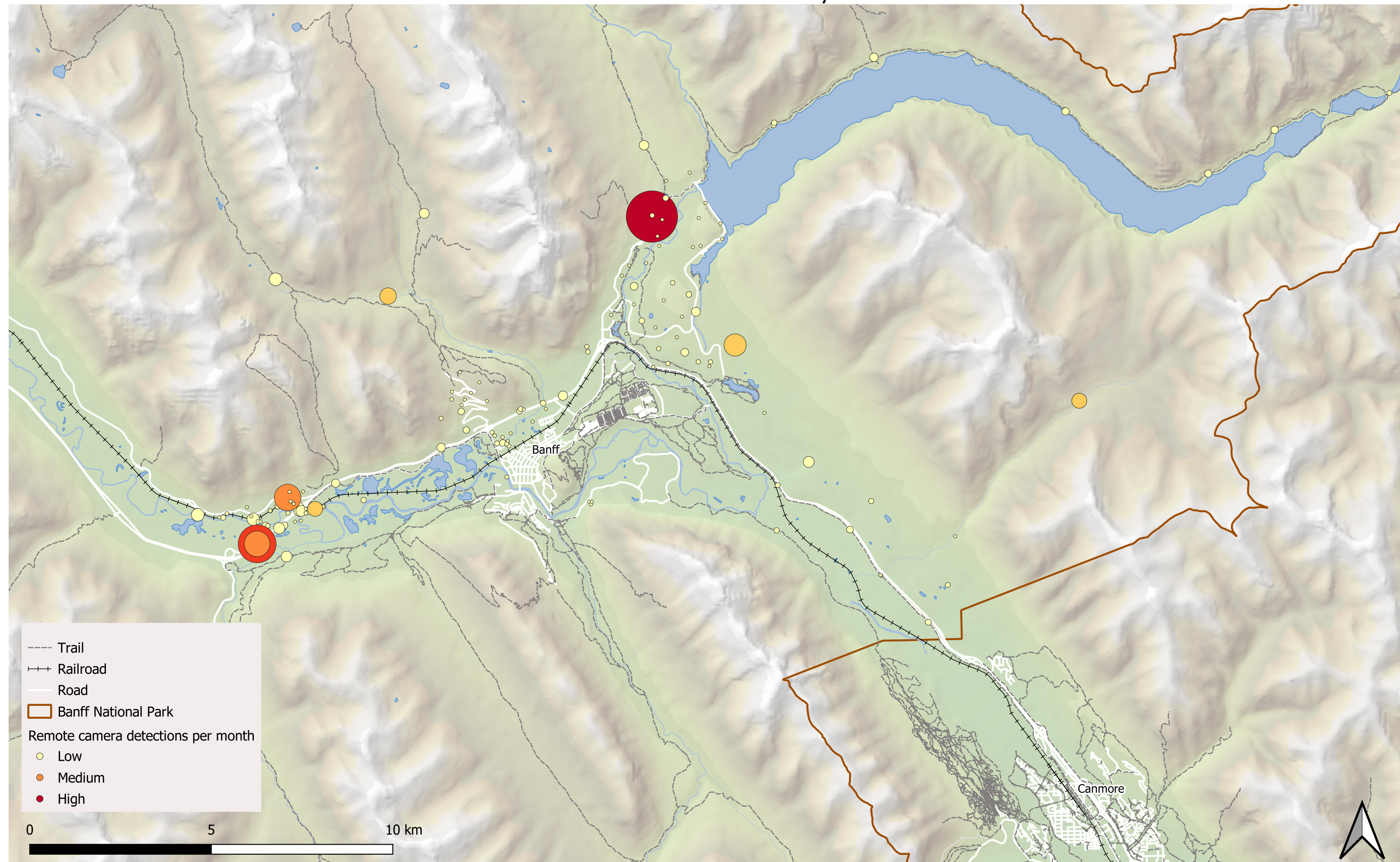
Habitat quality: Wolf - Summer



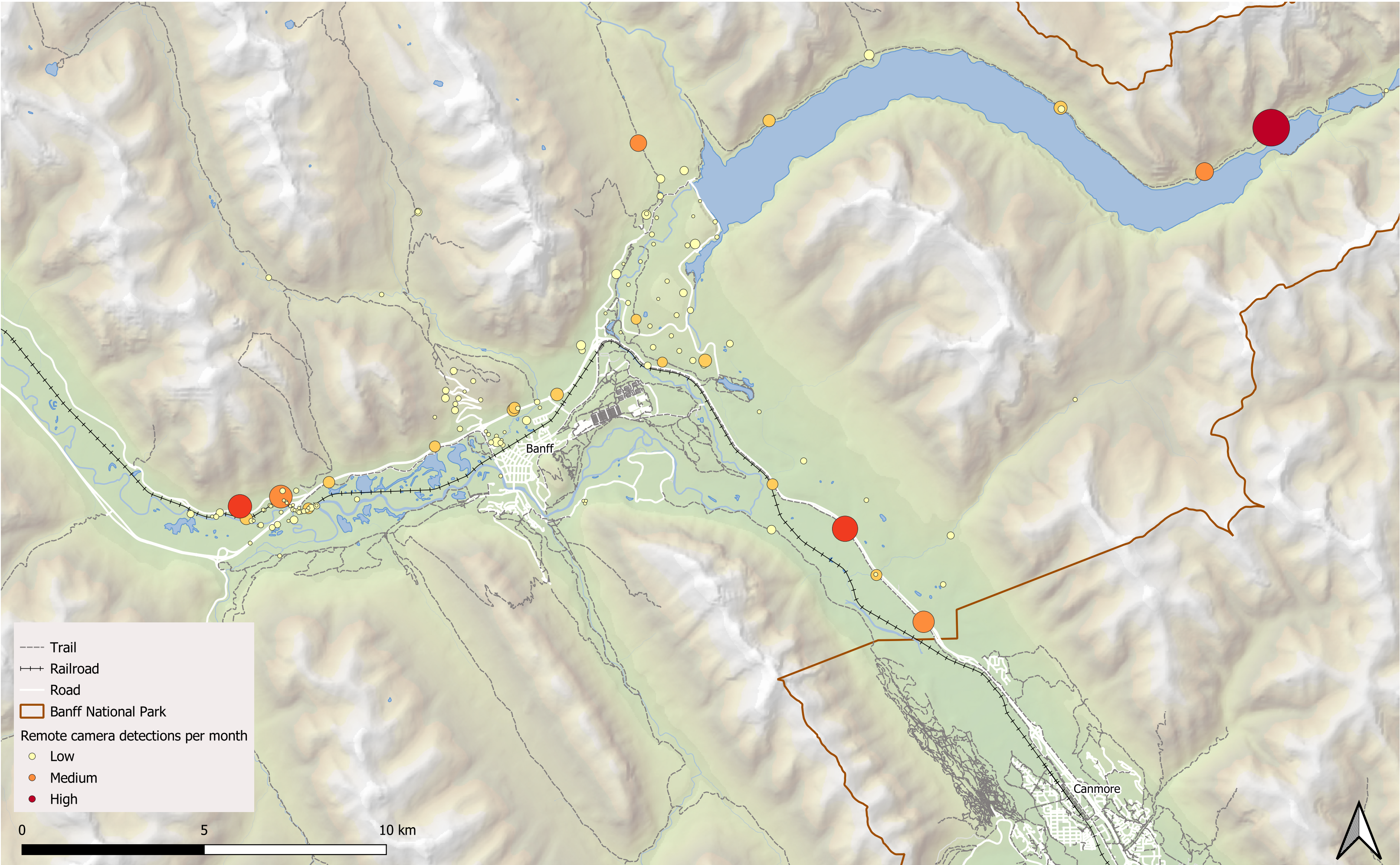
Habitat quality: Wolf - Winter



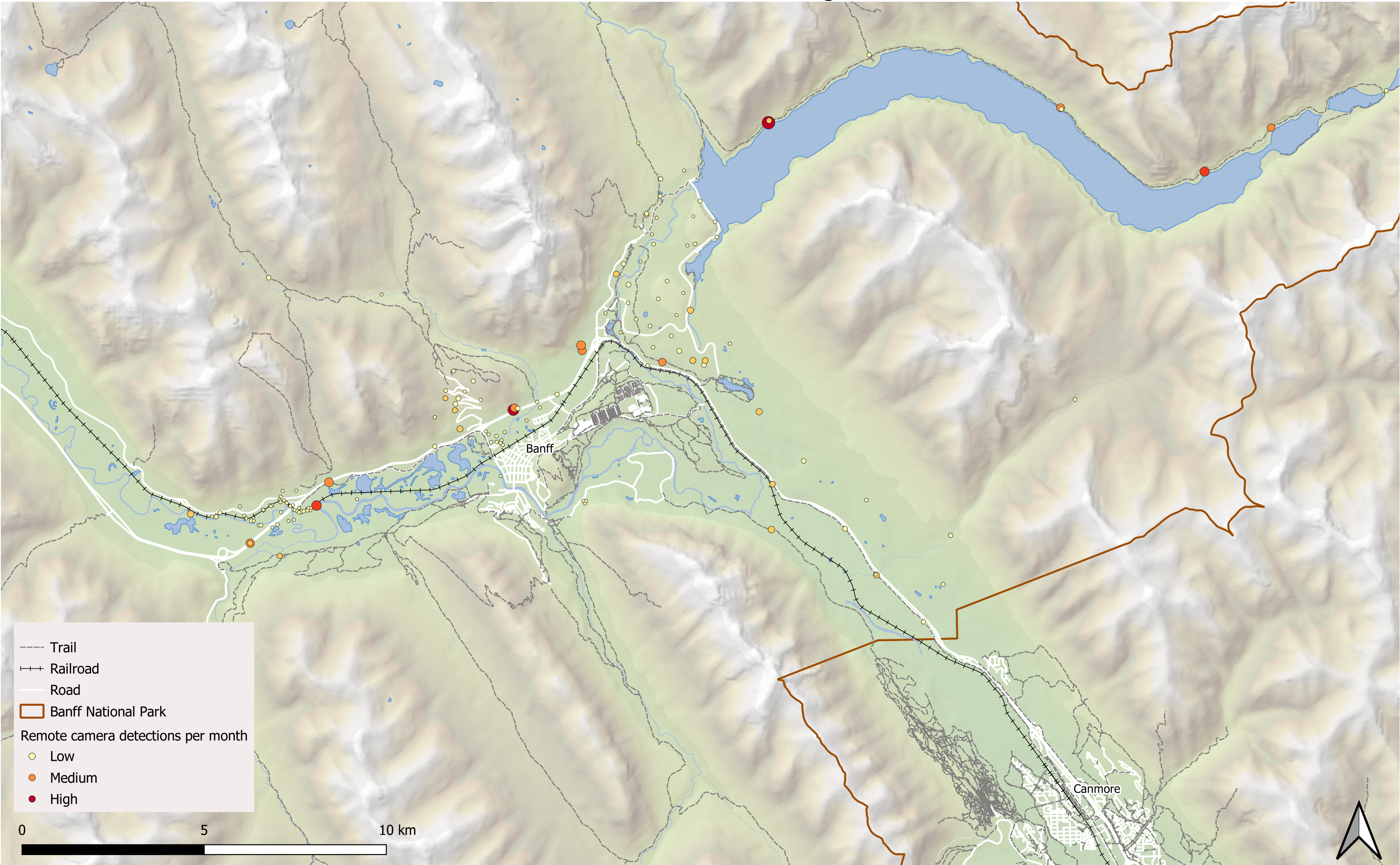
Remote camera detections: Grizzly Bear



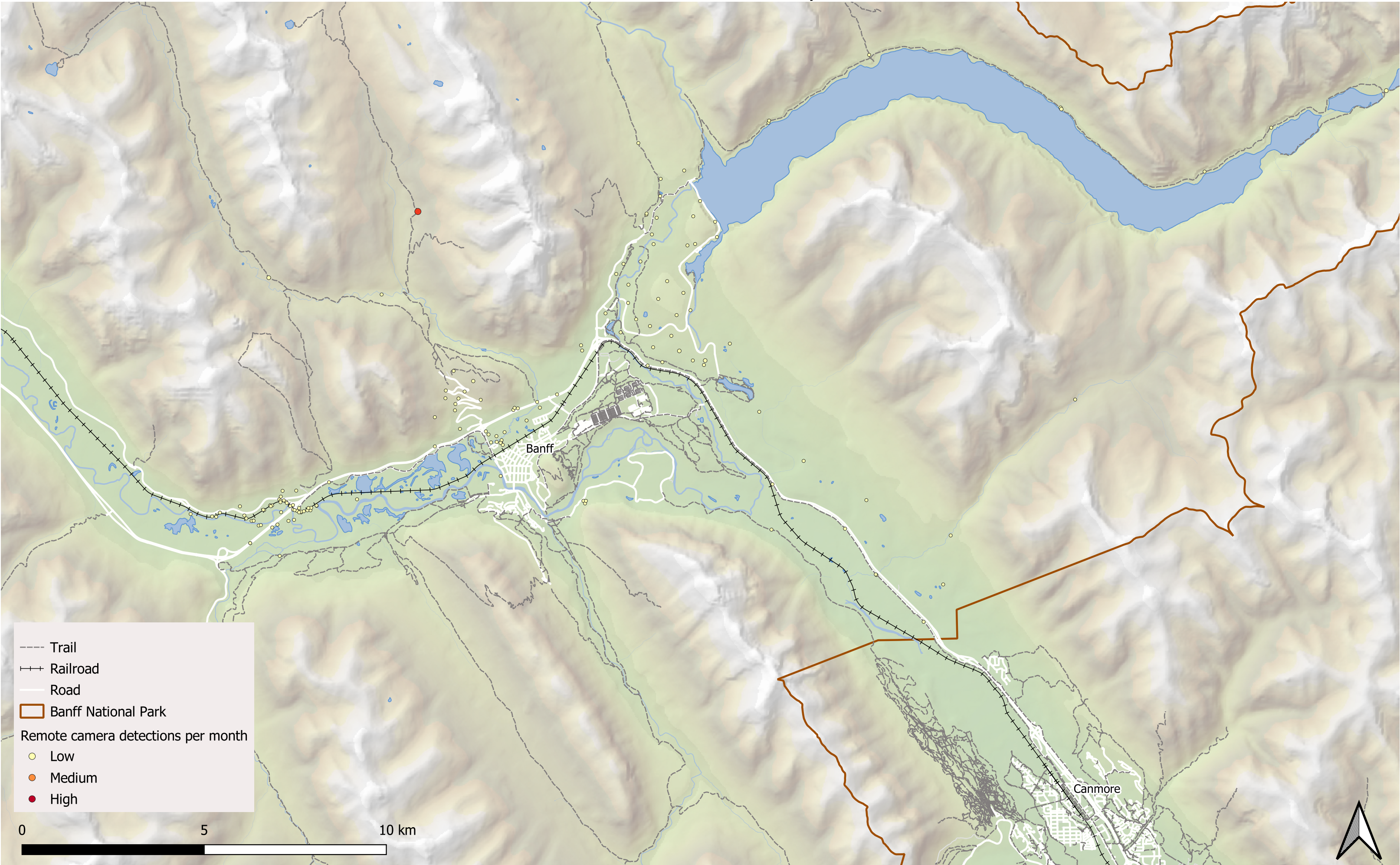
Remote camera detections: Black Bear



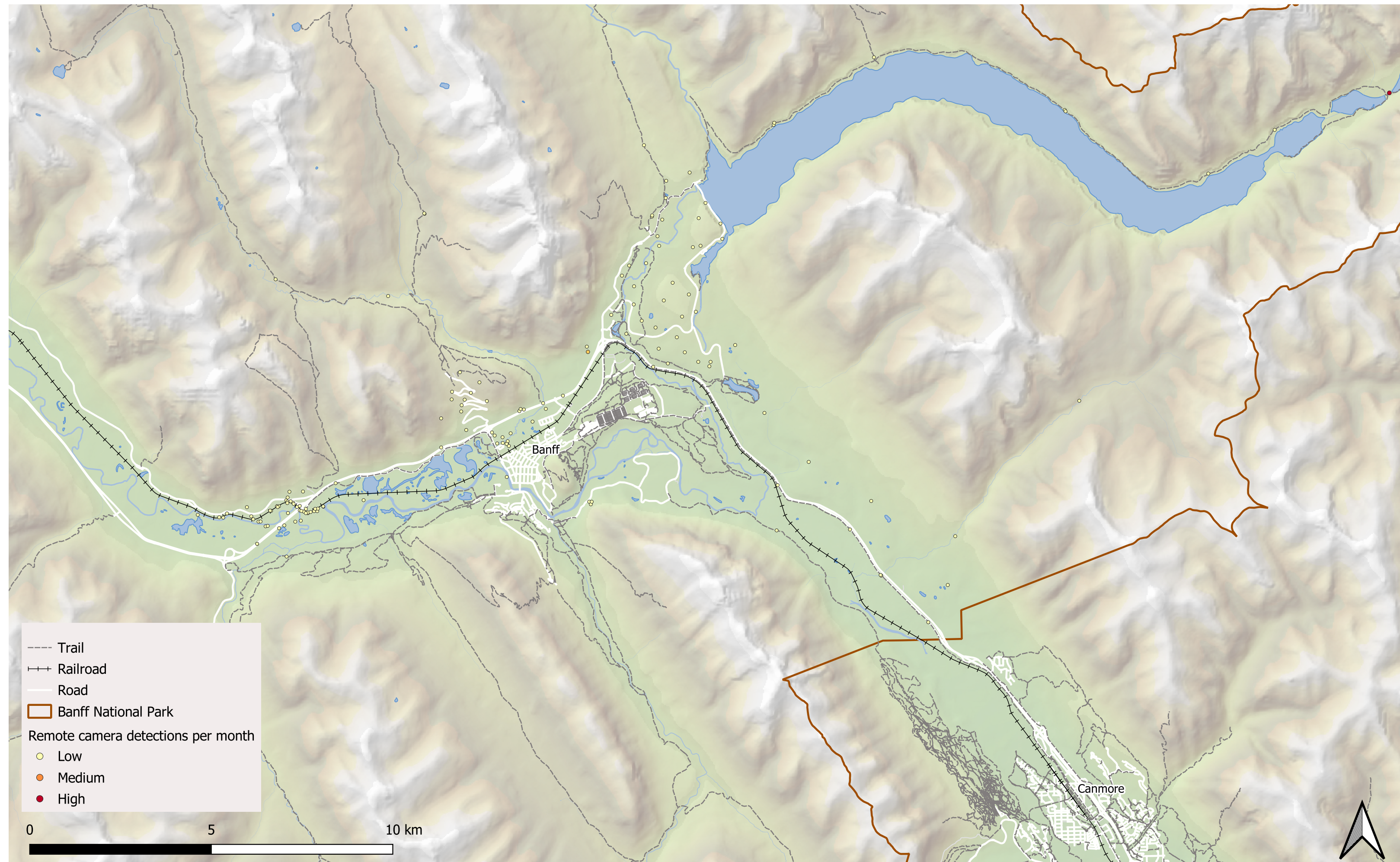
Remote camera detections: Cougar



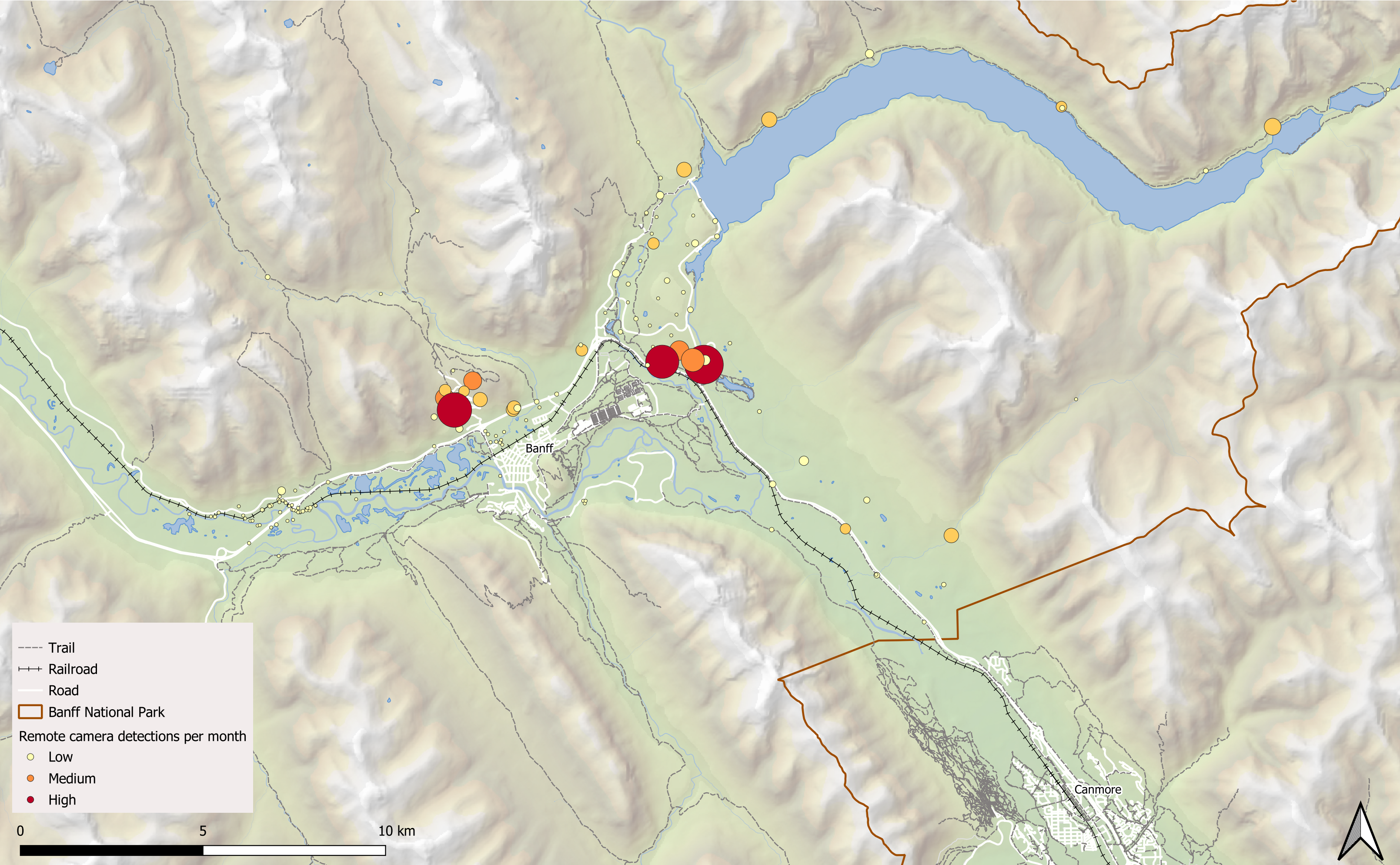
Remote camera detections: Lynx



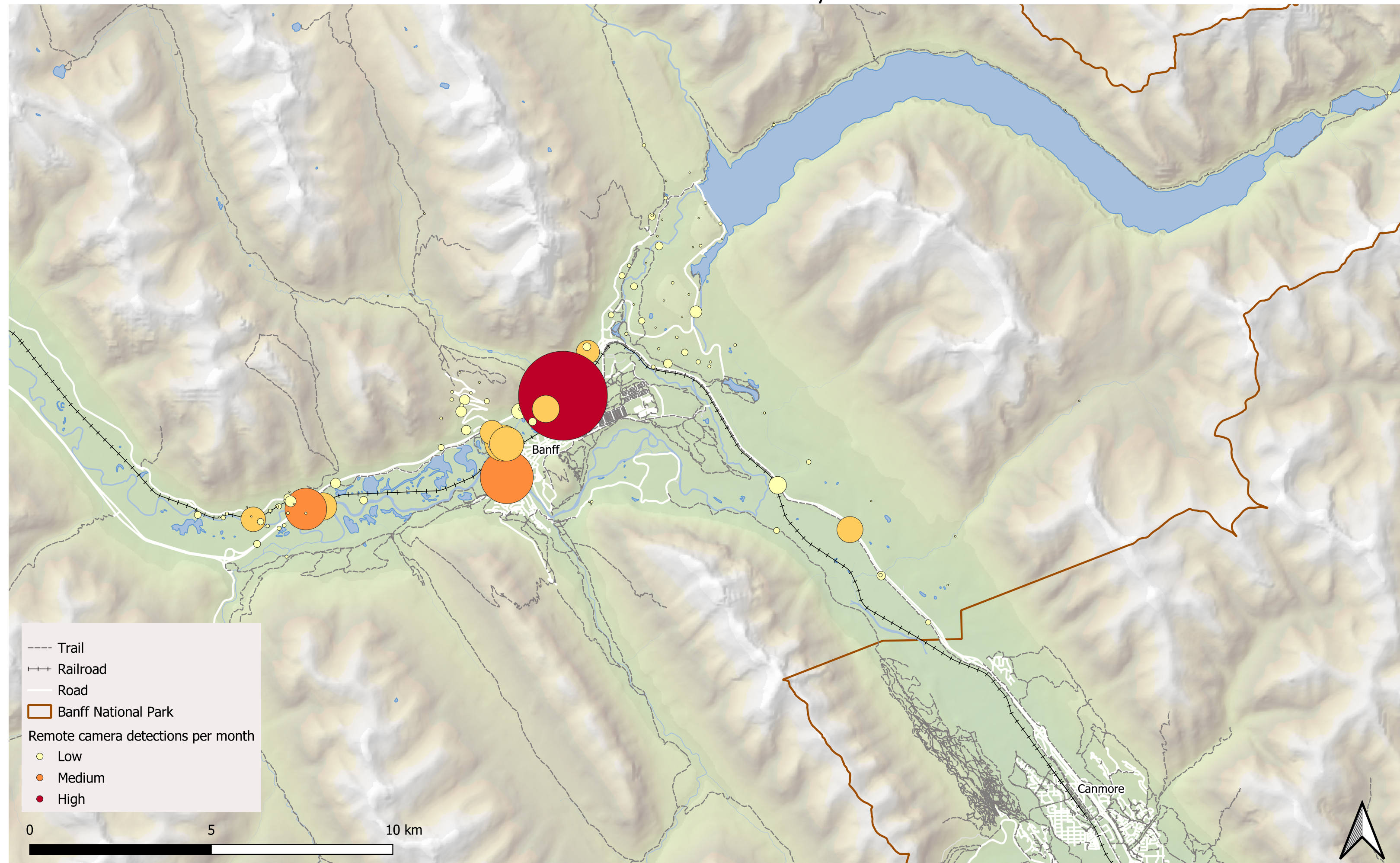
Remote camera detections: Bobcat



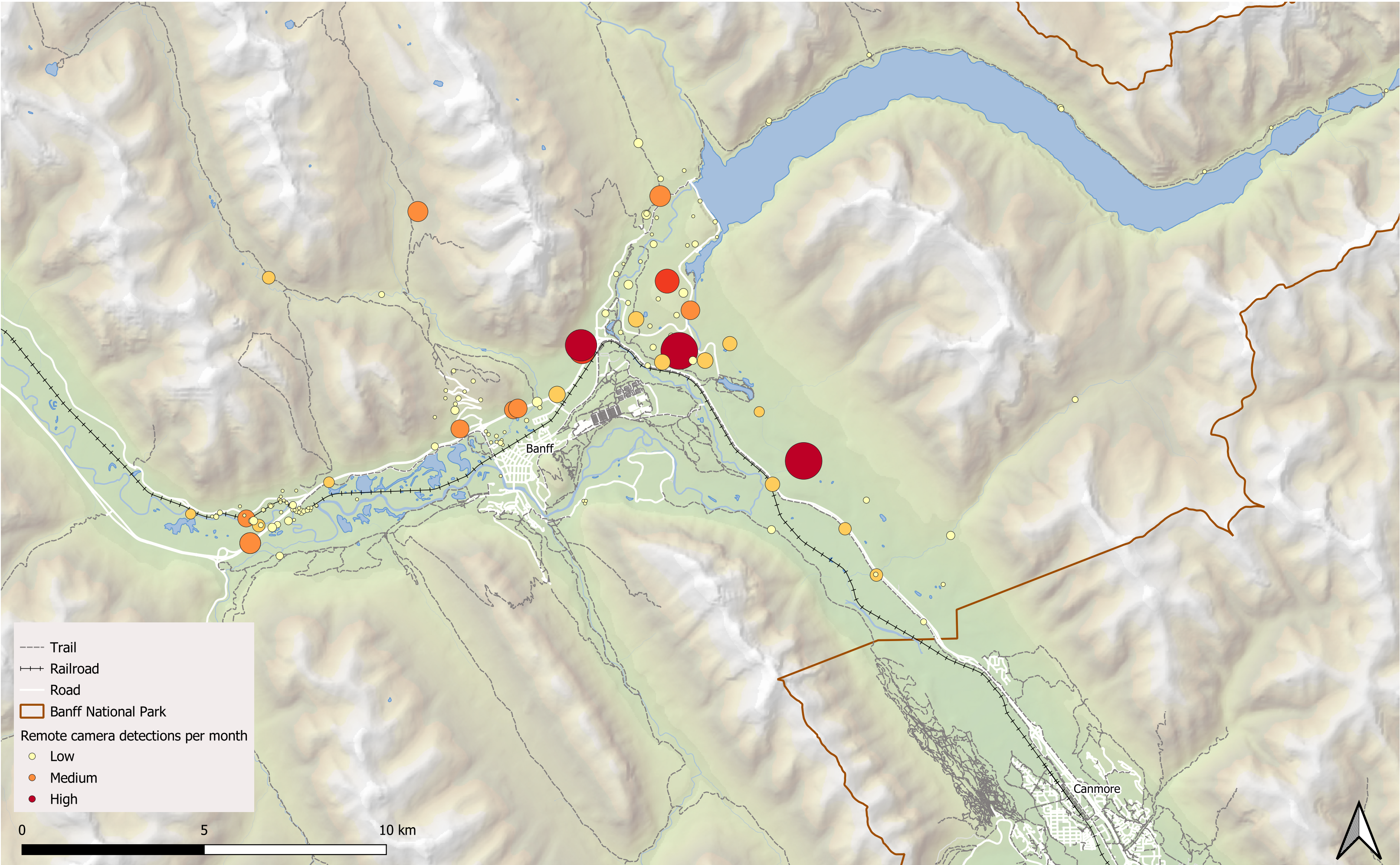
Remote camera detections: Red Fox



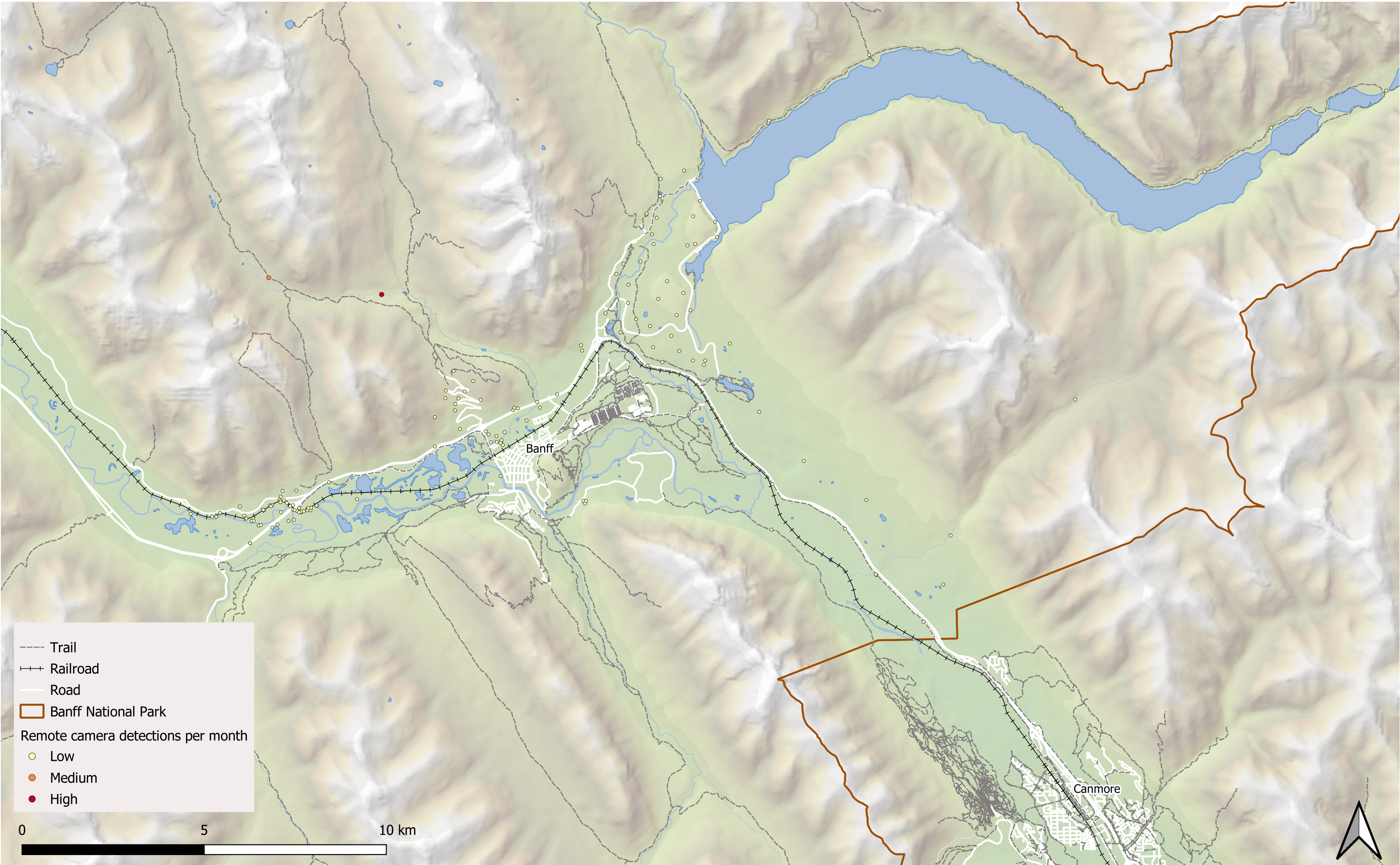
Remote camera detections: Coyote



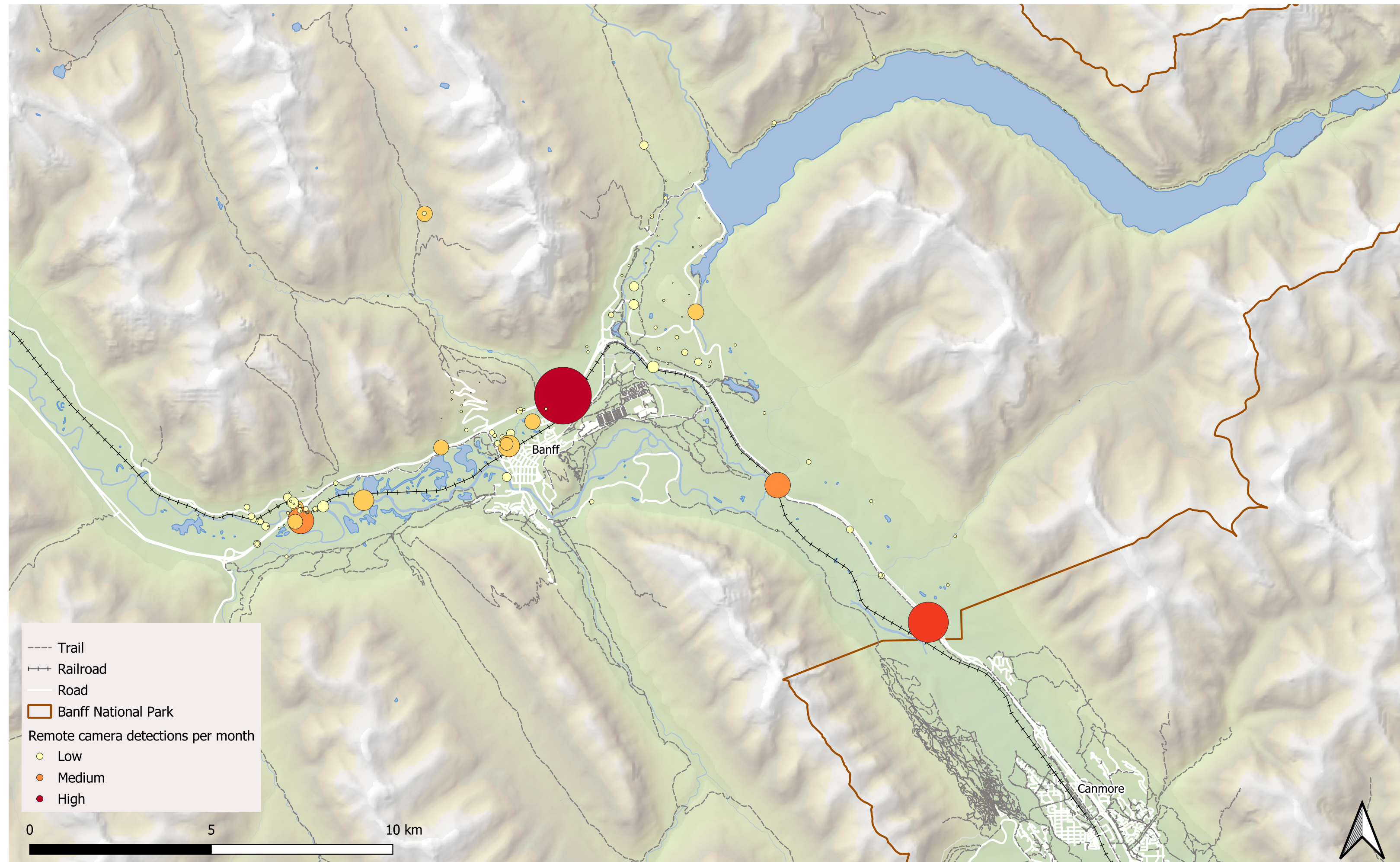
Remote camera detections: Wolf



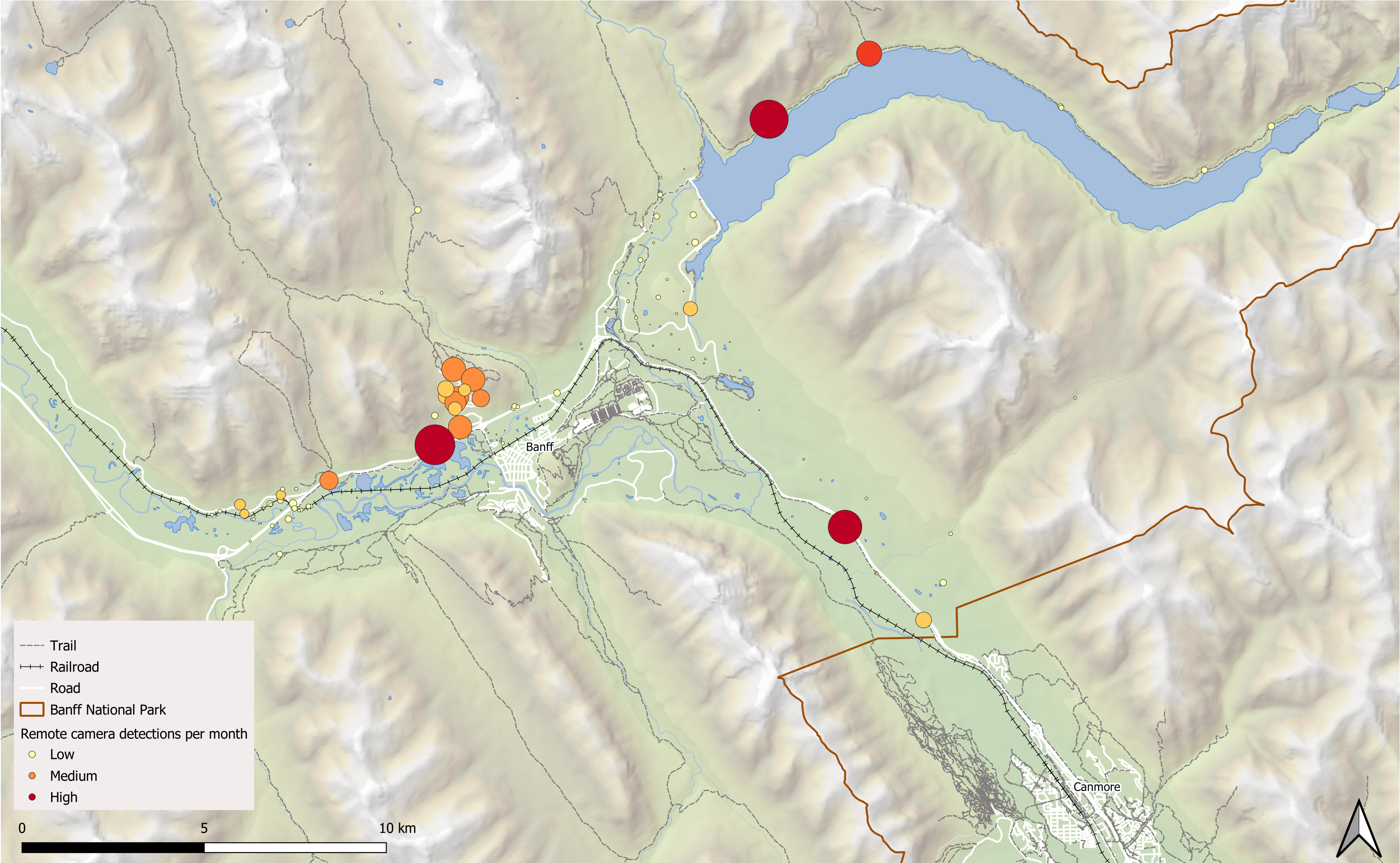
Remote camera detections: Wolverine



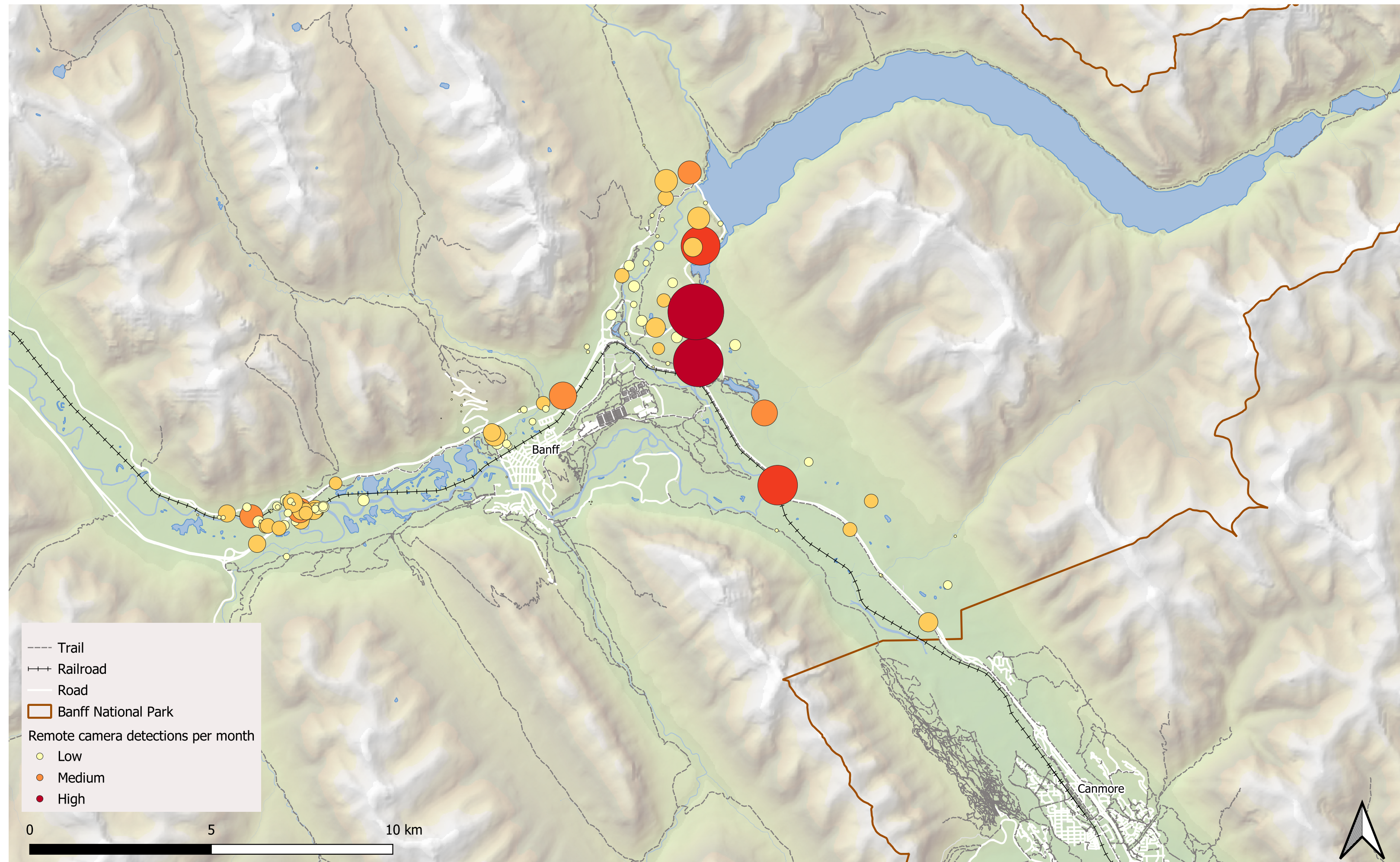
Remote camera detections: Elk



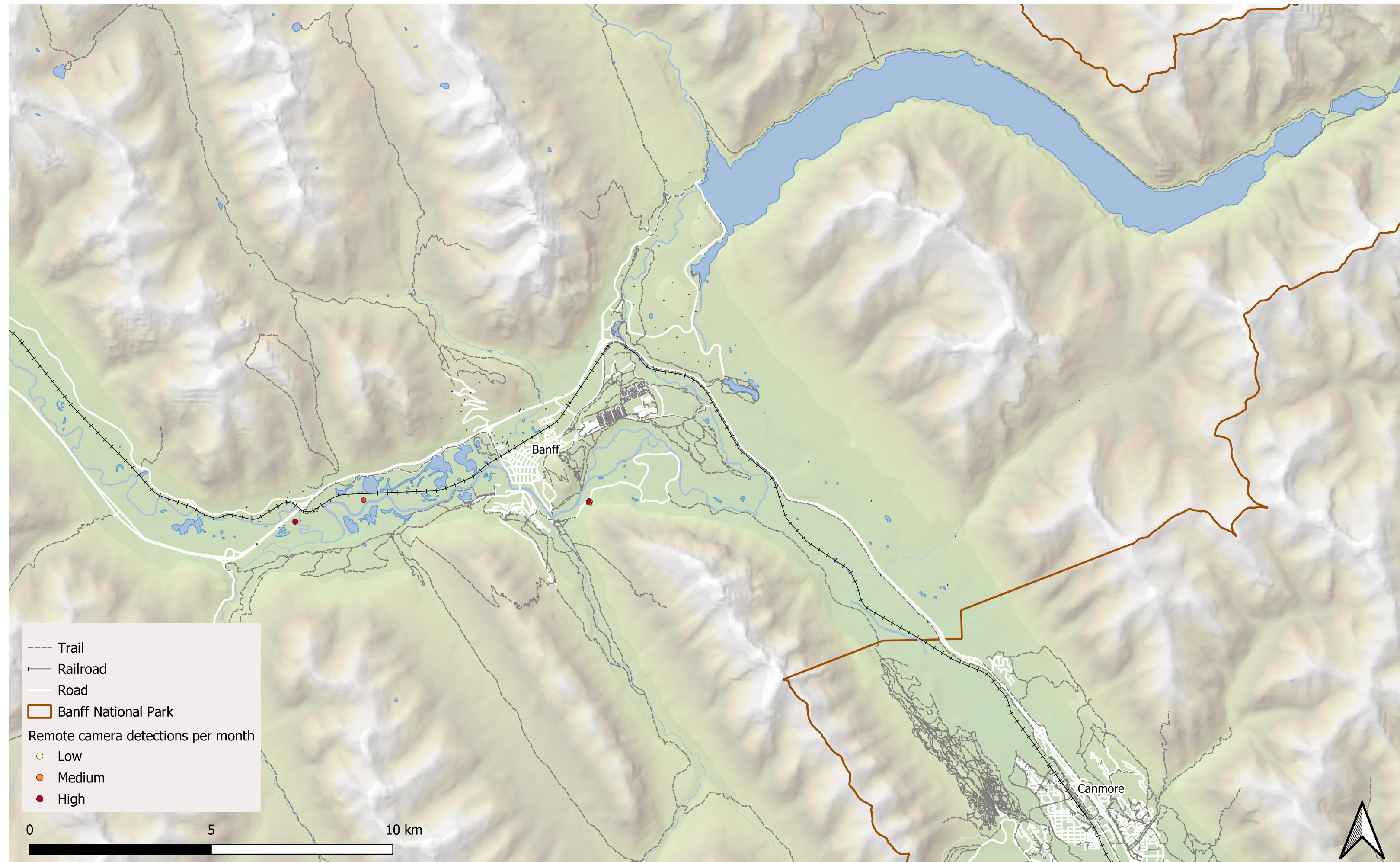
Remote camera detections: Mule deer



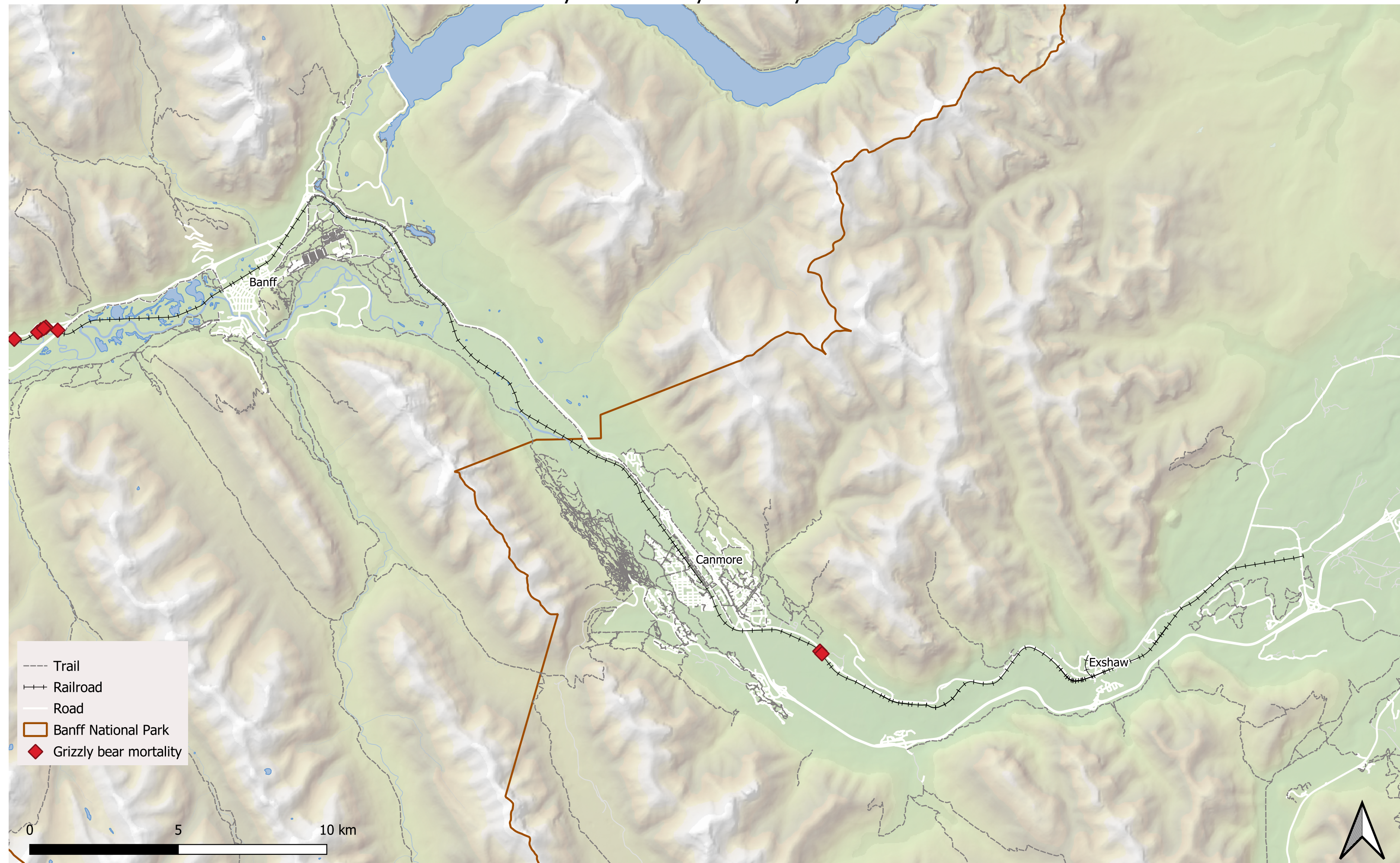
Remote camera detections: White-tailed deer

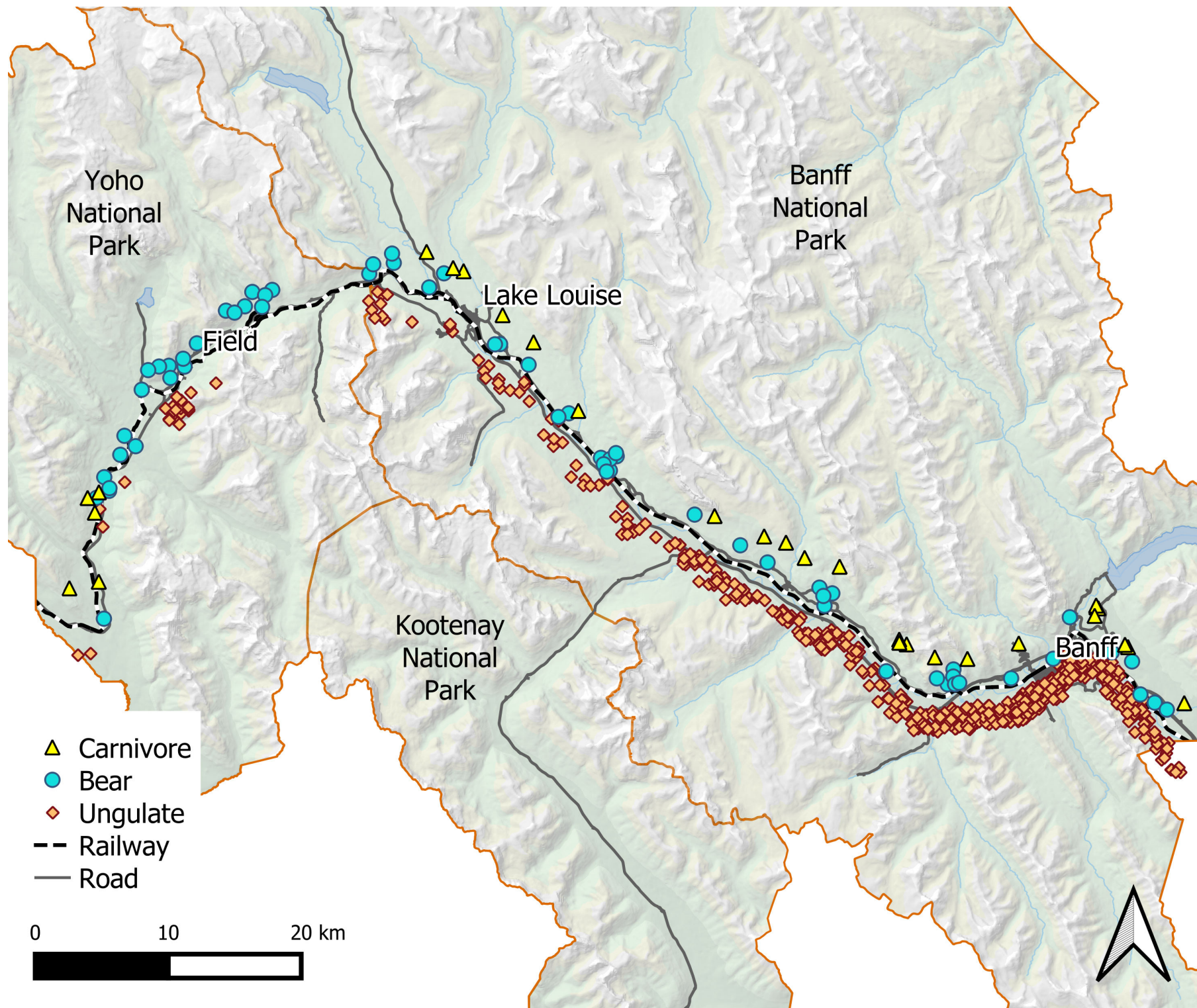


Remote camera detections: Moose



Grizzly bear railway mortality





*Appendix C – Using novel approaches to map
land cover change in the Bow Valley for the
Îyãǥé Nakoda ecological corridors project*

**Using novel approaches to map land cover change in the Bow Valley for
the Îyârhe Nakoda ecological corridors project**

Mountain Legacy Project – Stoney Nakoda Nation
Final Report for Project 8948
Prepared for Stoney Nakoda Nation
February 18, 2026

Sam Bolkhen-Hern¹, Claire Wright¹, and Eric Higgs¹

¹School of Environmental Studies, University of Victoria, Victoria, BC, Canada

Plain Language Summary

Prior to European colonization, the Bow Valley was actively managed for millennia by the Îyârhe (Stoney) Nakoda. The valley, located just east of present-day Banff National Park, Alberta, Canada, was historically composed of a mosaic of grasslands, shrubs, and different types of forest. It represents a key ecological corridor between adjacent wildlands and protected areas. As well, it is bisected by the Bow River which provides additional riparian habitat. Historically, the area was kept open by a combination of Indigenous burning and grazing/trampling by wildlife, including large herds of bison. The landscape has changed considerably over the last 100 to 200 years due to significant forest infill, as well as urban growth and industrial activity. Yet the area remains an important ecological corridor for wildlife including bighorn sheep, wolves, and grizzly and black bears.

We used a set of historical images taken by European surveyors between 1889 and 1916 to map the past land cover in the valley. We created a second map from repeat images taken between 2009 and 2014 by the Mountain Legacy Project (mountainlegacy.ca). A comparison of the maps reveals that the over half of the area experienced land cover change between the two time periods. The largest change was the reduction in grassland and shrubland, which declined by 80% of its early 20th century extent. Open habitat was mainly replaced by forest in the absence of the processes required to maintain it – namely the loss of frequent burning by the Îyârhe Nakoda as well as the suppression of any lightning-caused fires. This also coincided with the colonial extirpation of bison. The cycle of burning and grazing was therefore disrupted, allowing trees to establish and densify.

Despite the changes, the Bow Valley is a vital and highly trafficked ecological corridor connecting the Bow Valley Wildland to the Don Getty Wildland. A large number of fatal wildlife collisions occur on the highway and railway running through the valley. In particular, collision data for bighorn sheep, wolves, and bears show that accidents are concentrated on the southern bend of the valley where historical land cover patterns have persisted. Fewer collisions occur in areas that have experienced high levels of change. Several wildlife crossings exist or are planned for the valley, including the recent opening of the Honourable Peter Lougheed Wildlife Overpass. However, none of the mitigation projects currently target the southern bend where collisions are common. At a minimum, warning signs and a reduced speed zone could decrease the number of accidents.

On a broader level, the valley would strongly benefit from the reimplementation of Îyârhe ecological management and cultural practices, including Indigenous burning, for example through the creation of an Indigenous Guardians program. Over time, this will increase habitat quality and open sightlines for wildlife while also reducing the risk of severe wildfires impacting the human communities in the area.

Executive Summary

This project was undertaken to evaluate land cover change in the Bow Valley, Alberta, Canada over the last century and to identify the implications of these changes for management and ecological connectivity. The valley is home to the Îyârhe (Stoney) Nakoda, who have lived on and cared for the land since time immemorial. Îyârhe Nakoda ecological and cultural practices were strongly disrupted by European colonization, including the loss of frequent Indigenous burning and the extirpation of bison from the area. We used a set of historical (1889 to 1916) and repeat (2009 to 2014) images from the Mountain Legacy Project (mountainlegacy.ca) to map land cover change in the valley. The images were classified, georeferenced, and mosaicked into land cover maps using the Mountain Image Analysis Suite (MIASuite, Wright et al., 2024)

The ground-based images provide ecological insights across a time span exceeding that of satellite or aerial methodologies (Fortin et al. 2018). A comparison of the two maps reveals a landscape which has undergone a substantial transformation over the last century, with over 50% of the total study area experiencing land cover change. The greatest shift in land cover was the reduction of herbaceous and shrubland areas, which shrank from occupying 30% of the study area to only 6%. These open habitats were largely replaced by coniferous forest infill and encroachment, likely due to the loss of Îyârhe Nakoda stewardship along with stringent fire suppression regimes (Schepens et al., 2024; Struzik, 2017). Riparian zones also experienced a substantial decrease in herbaceous/shrub cover and a threefold increase in non-biotic land cover classes (built-up, transportation, and barren ground).

The largest proportion of land cover change occurred in the north-west half of the valley surrounding Canmore, while land cover patterns were substantially more continuous in the southern bend of the valley between the Bow Flats Natural Area and Lac des Arcs. Wildlife collision data from 2017 to 2024 show mortality hotspots for bighorn sheep, wolves, and bears concentrated along this southern bend, closely aligning with areas of land cover persistence. Collectively, these results indicate that the exclusion of Indigenous management, long-term fire suppression, forest encroachment, and expanding infrastructure have altered habitat structure and constrained movement corridors across the Bow Valley. Management strategies such as Indigenous burning to restore open habitats are therefore needed to improve ecological connectivity within the Bow Valley and the surrounding region. As well, several animal-vehicle collision mitigation projects such as overpasses, underpasses, and culverts exist or are underway in the area (Government of Alberta, 2026). However, some critical areas are still not served by existing or planned crossings.

Table of Contents

<i>Plain Language Summary</i>	2
<i>Executive Summary</i>	3
<i>Objectives</i>	5
<i>Methods</i>	5
<i>Results</i>	8
<i>Discussion</i>	13
<i>Management Implications and Conclusions</i>	14
<i>References</i>	15

Objectives

The goal of the project is the development of historic and contemporary maps for the Bow Valley using ultra-high resolution ground-based images from the Mountain Legacy Project. The maps will act as a reference for how the land cover of the Bow Valley was structured over a century ago, providing a means of assessing the extent of ecological change that has occurred, and offering insights to support future land management initiatives.

Methods

The study area for the project focuses on the Bow Valley between Banff National Park and the Stoney Indian Reserves #142, #143, #144 at Mîni Thnî (Figure 1). The area was systematically photographed by J.J. McArthur and D.A. Nichols in 1889 and 1916, respectively. The historical images are stored as glass plates at Library and Archives Canada and were digitized at ultra-high resolution by the Mountain Legacy Project (MLP). We used repeat photographs taken by members of the MLP between 2009 and 2014. All images used in the project are available from the MLP's online database (explore.mountainlegacy.ca).

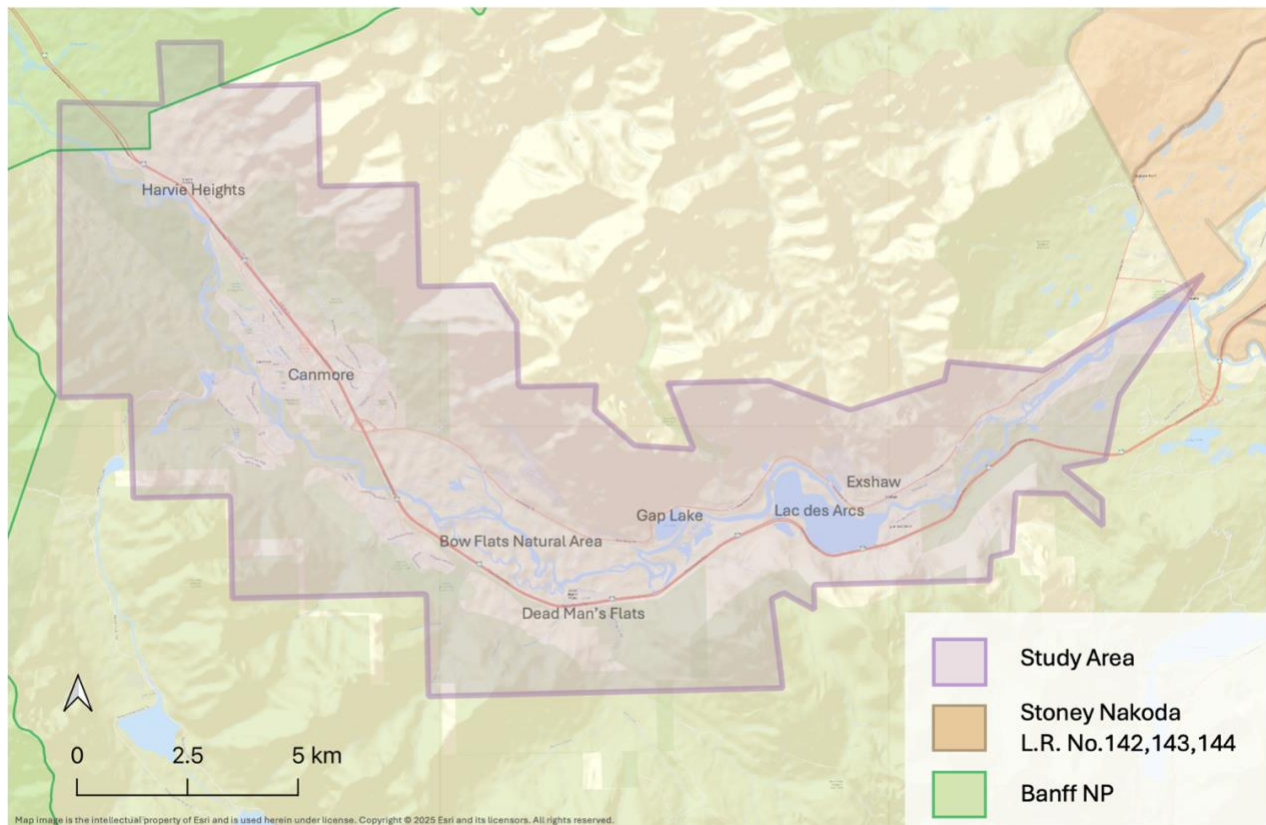


Figure 1: The location of the project study area within the Bow Valley, Alberta, Canada. The shape of the study area is determined by the coverage provided by 15 historic and repeat photo pairs which collectively span over 14,000 hectares.

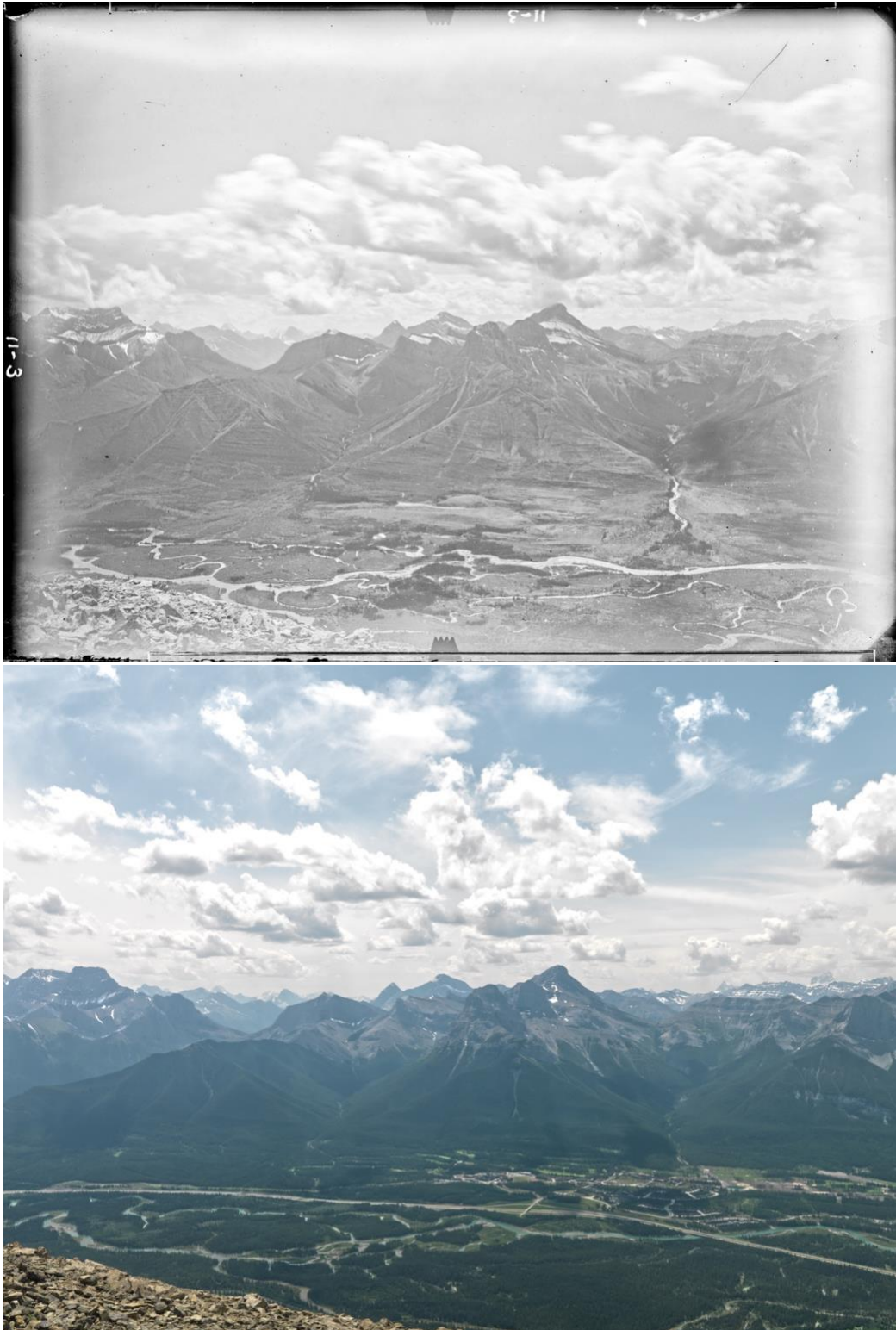


Figure 2: Example historical and repeat images of the Bow Valley used in land cover mapping. Top – greyscale image captured by topographical surveyor J.J. McArthur in 1889 and digitized by Library and Archives Canada (eCopy number: e010767006). Bottom – repeat image captured by researchers with the Mountain Legacy Project in 2009.

We selected fifteen image pairs and converted them into land cover maps using the Mountain Image Analysis Suite (MIASuite) available for QGIS (Appendix A; Wright et al., 2024). Land cover was initially classified in the images using the Python Landscape Classifier (PyLC), a deep learning segmentation model trained on MLP images (Rose, 2020). We manually edited the resulting land cover masks using Affinity Photo 2 (ver. 2.6.5) to ensure high classification accuracy. The classified masks were then aligned and georeferenced using additional tools in the MIASuite and 1 m Digital Elevation Models (DSM and DTM). The resulting viewsheds were mosaicked into unified maps, and a 20 m nearest-neighbour interpolation was applied to fill in small gaps in data coverage. All land cover analysis was completed in QGIS (ver. 3.36).

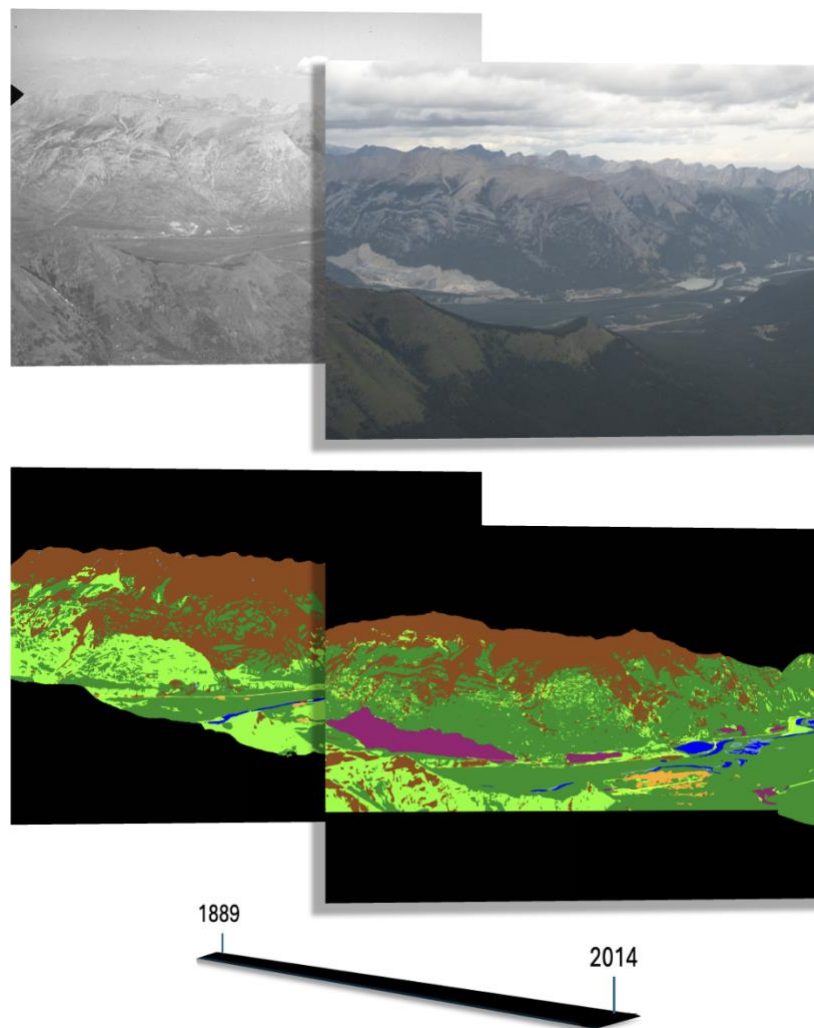


Figure 3: Example historical and repeat images and associated land cover classifications. The greyscale image was captured by surveyor D. A. Nichols in 1916 and digitized by Library and Archives Canada (eCopy number: e011093580). The colour image was captured by researchers with the Mountain Legacy Project in 2014. The bottom panels show land cover classifications produced in the Mountain Image Analysis Suite and hand-corrected in Affinity Photo.

Along with land cover mapping, we assessed animal-vehicle collisions along transportation features (highways and railways) for bighorn sheep, wolves, and black and grizzly bears. Collision data collected between 2017 and 2024 are available from the Alberta Wildlife Watch program (Government of Alberta, 2024). Road network shapefiles were obtained from Statistics Canada (Statistics Canada, 2022).

Results

Between the historical and contemporary mapping dates (1889-2014), land cover across the study area changed substantially in terms of both distribution and composition, with the most change occurring at the valley floor (Figure 4; Figure 5). The largest proportional change in land cover was the reduction in herbaceous/shrubland, which decreased from occupying 30% of the total historical area to less than 6% of the modern area (Table 1; Figure 4). While the development of Canmore and surrounding built-up areas was responsible for part of this reduction, contemporary built-up areas only occupy 15% of the area's historic shrub and grassland ecosystems. The primary driver of grass and shrubland loss has been coniferous forest encroachment, with 75% of historical herbaceous/shrub areas now occupied by this land cover class, resulting in over 3,000 hectares of coniferous forest being established over the last century.

Another notable change in land cover was the reduction in areas of recent disturbance. Areas classed as “recently disturbed” are those which present signs of death or damage to plants within the landscape following events such as fire or insect infestations. In the historical map, over 500 hectares were recently disturbed by fire, with large tracks of forest and grassland showing clear signs of recent burning (Table 1; Figure 4). By the contemporary study period, such areas were extremely rare, spanning less than 14 hectares of the total area.

While wetland and water land covers both decreased in coverage from historical to modern times, with the former being reduced by nearly 50%, it is possible that these changes are over-reported due to coniferous encroachment blocking the visibility of rivers and adjacent ecosystems. The land cover within a 20 m buffer zone of water features also showed a considerable reduction in riparian herbaceous/shrub classes (shifting from 43% to 12%), driven by conifer encroachment as well as a large reduction in total biotic land cover (Figure 6). “Built-up,” “transportation,” and “barren” land cover classes historically comprised just 4% of near-water areas. In modern times, these classes account for 13% of near-water land cover, representing a more than threefold increase in the proportion of non-biotic riparian land cover over the past century.

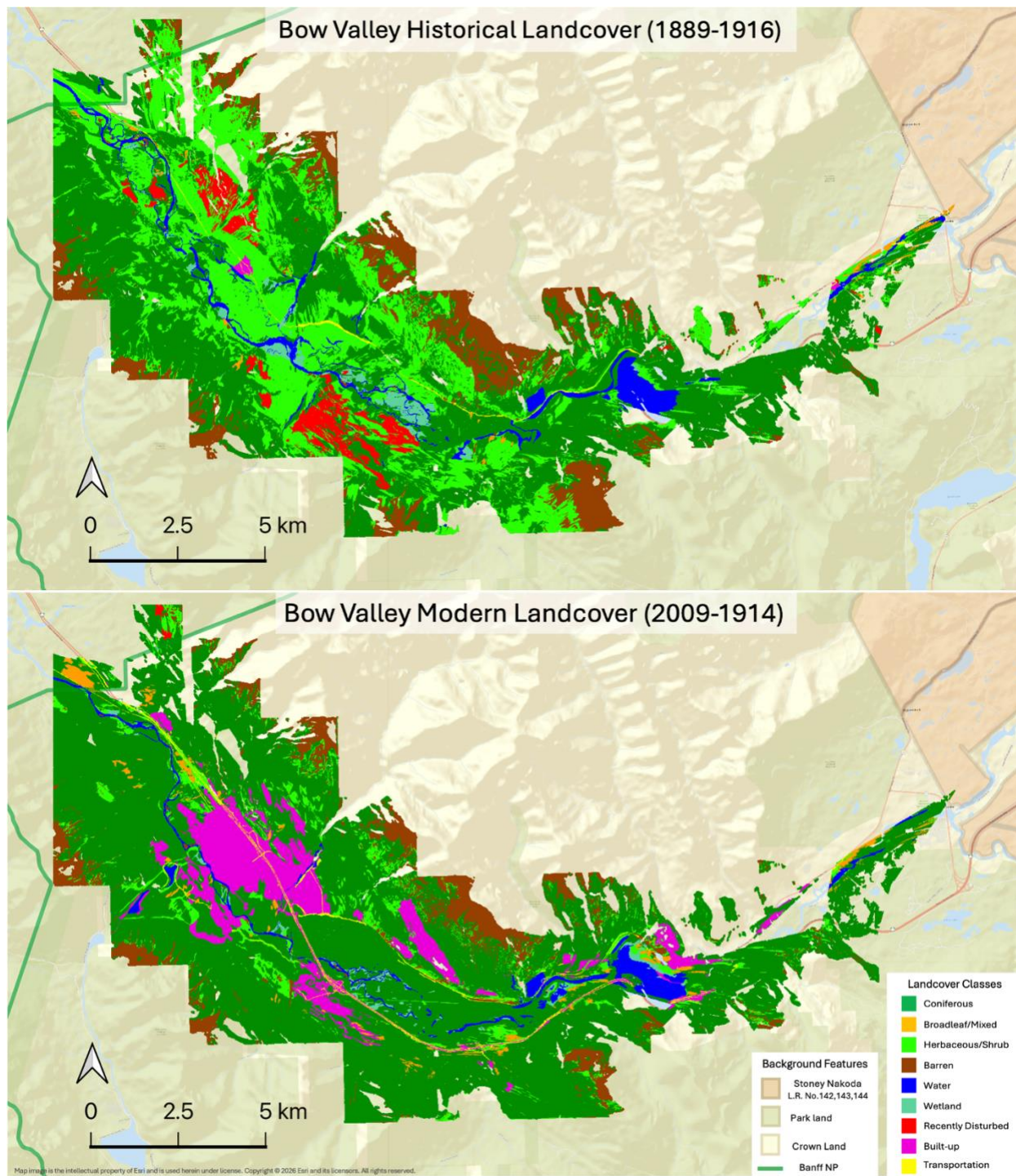


Figure 4: The historical (1889-1916) and modern (2009-2014) land cover within the study area. Both maps are produced from 15 classified oblique images obtained from the Mountain Legacy Project using the Mountain Image Analysis Suite in QGIS.

Table 1: The composition of historical (1889-1916) and modern (2009-2014) land cover across the study area, by area and percent.

	Historical (ha)	Historical %	Modern (ha)	Modern %
Coniferous	6835.58	48.18%	10097.46	71.17%
Broadleaf/Mixed	63.31	0.45%	203.52	1.43%
Herbaceous/Shrub	4282.16	30.18%	835.00	5.89%
Barren	1701.71	11.99%	1068.84	7.53%
Water	542.94	3.83%	399.95	2.82%
Wetland	182.35	1.29%	92.10	0.65%
Recently Disturbed	503.96	3.55%	13.89	0.10%
Ice/Snow	1.06	0.01%	0.03	0.00%
Transportation	53.05	0.37%	166.50	1.17%
Built-Up	21.34	0.15%	1310.16	9.23%

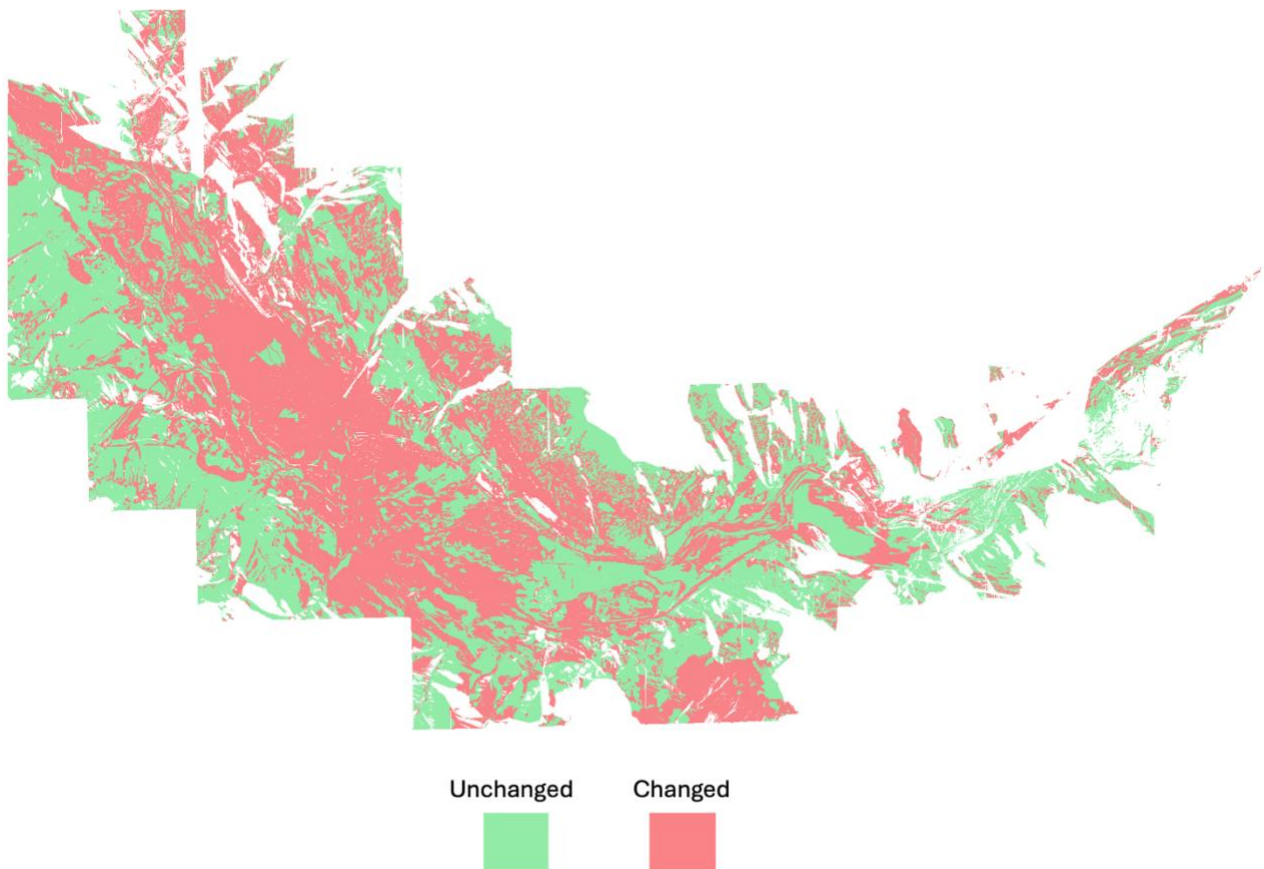


Figure 5: The land cover persistence between historical (1889-1916) and contemporary (2009-2014) maps. Regions are presented as green when the land cover has remained the same and red for areas where it has changed. In total, 52% of the study area's land cover has changed, and 48% has remained unchanged.

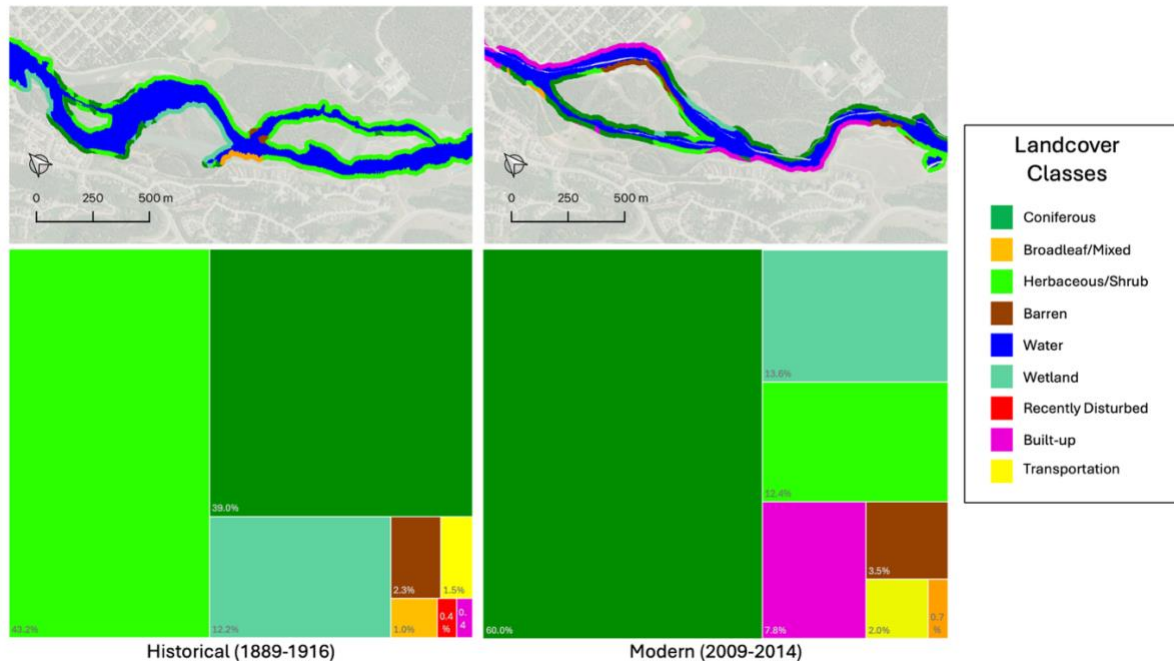


Figure 6: Proportion of historical and modern land cover classes within a 20 m buffer surrounding water bodies across the study area. The upper maps depict 1.5 km buffered segments of the Bow River.

Animal collision data recorded between 2017 and 2024 indicate that the majority of deaths for bighorn sheep, wolves, and bears occur in the southernmost bend of the Bow Valley between the Bow Flats Natural Area and Lac des Arcs (Figure 7). Bighorn sheep collisions tend to be clustered together, such as those on the 800 m stretch of road north of Lac des Arcs which account for over 50% of all recorded deaths (Figure 7), and all recorded collisions have occurred on the north side of the valley. Wolf and bear collisions are more spread out, with the latter significantly more likely to be struck along the Trans-Canada Highway than on the northern 1A.

The distribution of collisions with these species closely matches the zones of high land cover persistence between historical and modern times (Figure 8); however, collision patterns with other species, such as elk and deer, are more common in zones of low land cover persistence surrounding Canmore.

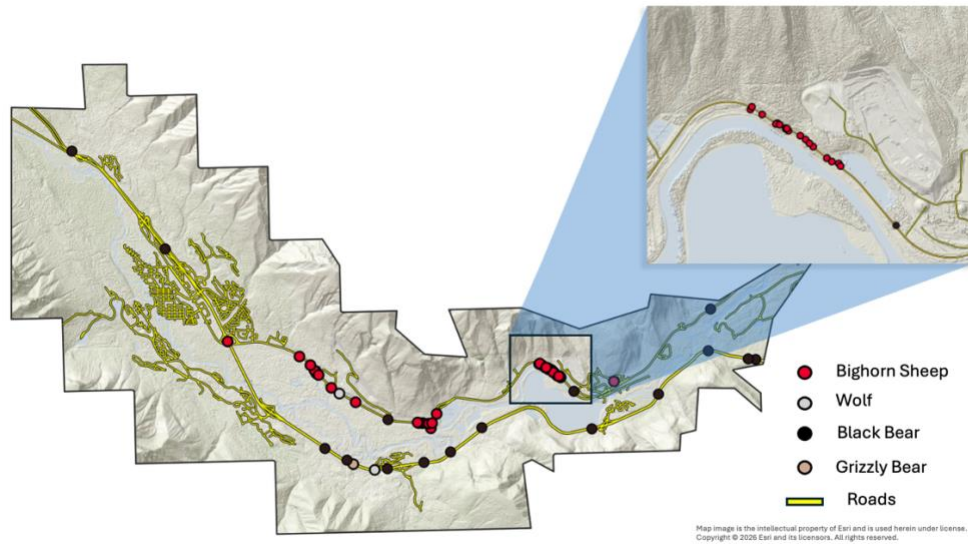


Figure 7: The distribution of fatal animal collision reports for bighorn sheep, wolves, black bears, and grizzly bears between 2017 and 2024. Data obtained from the Alberta Wildlife Watch animal carcass records.

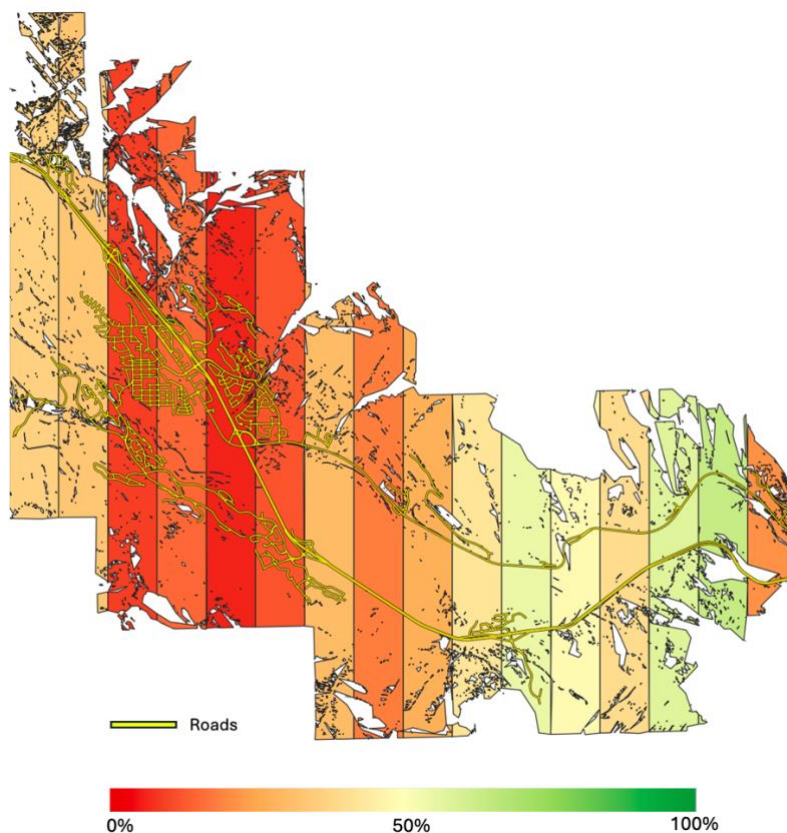


Figure 8: Percent distribution of historical-modern land cover persistence across 1 km-wide habitat bands spanning the Bow Valley. Only portions of the study area where data extended across the full north-south valley gradient, from the southern to northern valley margins, were included. Red zones indicate corridors of low land cover persistence between historical and modern periods, while green zones indicate corridors of high land cover persistence.

Discussion

The substantial shift in land cover composition and distribution across the Bow Valley over the last century has important implications for land management and wildlife connectivity. A widespread loss of herbaceous and shrubland ecosystems within the valley bottom has occurred, primarily due to the encroachment of coniferous forests rather than the expansion of built-up areas. The extent of these habitats declined from 30% to only 6% of the total study area (Table 1). Such open habitats likely provided important forage and movement corridors for ungulates and their predators, and their conversion to closed-canopy conifer forest has reduced the habitat suitability and permeability for a wide variety of species (Killeen et al, 2014; Newmark & Rickart, 2012).

The Bow Valley was traditionally managed by the Îyârhe Nakoda through practices such as the use of low intensity fire, harvesting, and hunting. The near elimination of recently disturbed areas between the historical and modern land cover maps indicates that patterns of open habitat loss likely stem from intensive fire suppression within the area, including the loss of frequent Indigenous burning, which was further exacerbated by the reduction of grazing following the regional extirpation of bison (Desantis et al. 2011; Whyte et al. 2024). The reintroduction of active land management such as the use of Indigenous and prescribed fire may therefore be necessary to restore and maintain open habitat conditions (Schepens et al., 2024; Sachro et al. 2005). The locations of historical disturbance and “herbaceous/shrub” land cover could be used to inform these efforts.

In addition to the reduction in grass and shrublands, a threefold increase in non-biotic, water-adjacent land cover coupled with substantial conifer encroachment has resulted in altered riparian habitats across the study area (Figure 6). As riparian zones provide ecosystem services essential for supporting wildlife populations and connectivity (Graziano et al. 2022; Fremier et al. 2015), the protection and restoration of these zones, as well as the ecological corridors that intersect them, is of heightened importance.

The southernmost bend of the Bow Valley between the Bow Flats Natural Area and Lac des Arcs represents a region with ample historical-modern land cover persistence surrounding water features. Cross-valley movement corridors in this zone have maintained the highest degree of ecological continuity between historical and modern times (Figure 8). This region also correlates to the largest incidence of fatal vehicle collisions for bighorn sheep, bears, and wolves within the study area (Figure 7), indicating that it continues to provide valuable but heavily obstructed movement pathways for species entering or crossing the valley. Collisions may additionally be heightened due to the presence of salt licks at the roadside.

Management Implications and Conclusions

Management strategies are required in order to protect the many species moving through the Bow Valley. Our study area is directly adjacent to Banff National Park which contains a network of 44 wildlife crossing structures along with other collision mitigation strategies along the Trans-Canada Highway (Stewart et al., 2020). Since the construction of fencing and wildlife crossing structures, wildlife-vehicle collisions in the area have dropped by more than 80%. In the Bow Valley, several animal-vehicle collision mitigation projects such as overpasses, underpasses, and culverts exist or are underway (Government of Alberta, 2026). This includes the recent opening of the Honourable Peter Lougheed Wildlife Overpass. However, none of the mitigation projects currently target the southern bend where collisions are common. At a minimum, warning signs and a reduced speed zone could decrease the number of accidents, if not the strategic use of infrastructure.

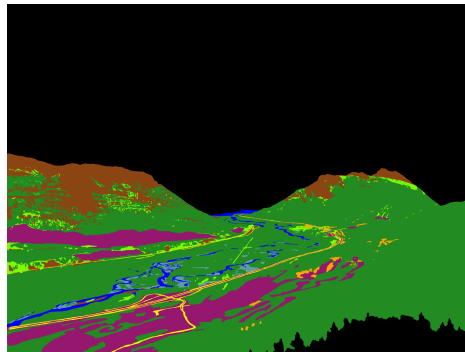
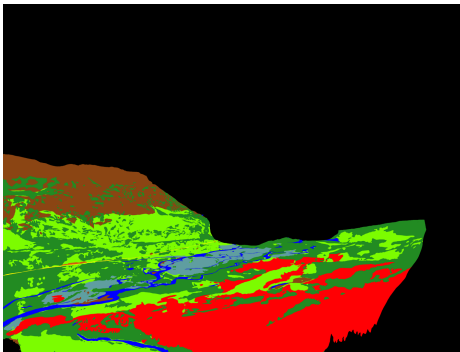
The Bow Valley is situated between the Bow Valley Wildland to the Don Getty Wildland and represents a key ecological corridor. Its function is currently impaired by a lack of habitat diversity and high levels of forest encroachment. The historical images and land cover map presented here demonstrate that the area was previously much more open, consisting of a mosaic of grasslands, shrublands, and forest. The changes visible in the repeat photographs and maps can be largely attributed to the loss of Indigenous stewardship in the valley, as a cycle of fire and grazing (by bison and other megafauna) traditionally maintained an open landscape. The valley would strongly benefit from the reimplementation of Indigenous ecological management and cultural practices, including Indigenous burning, for example through the creation of an Indigenous Guardians program. Over time, this will increase habitat quality and open sightlines for wildlife while also reducing the risk of severe wildfires impacting the human communities in the area.

References

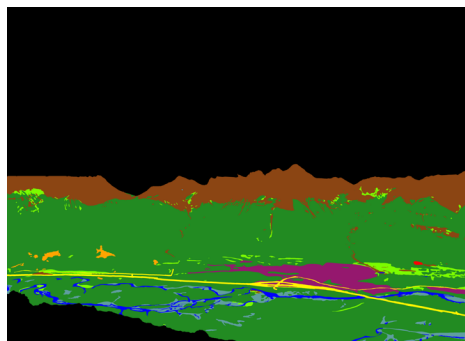
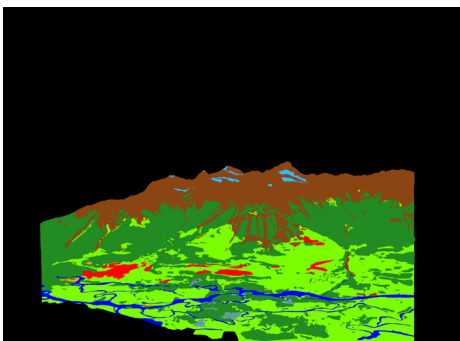
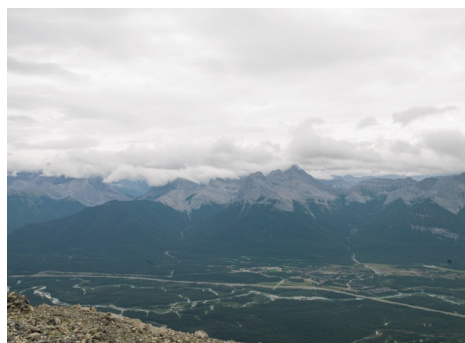
- DeSantis, R. D., Hallgren, S. W., & Stahle, D. W. (2011). Drought and fire suppression lead to rapid forest composition change in a forest-prairie ecotone. *Forest Ecology and Management*, 261(11), 1833–1840. doi: 10.1016/j.foreco.2011.02.006
- Fortin, J. A., Fisher, J. T., Rhemtulla, J. M., & Higgs, E. S. (2019). Estimates of landscape composition from terrestrial oblique photographs suggest homogenization of Rocky Mountain landscapes over the last century. *Remote Sensing in Ecology and Conservation*, 5(3), 224–236. doi: 10.1002/rse2.100
- Fremier, A. K., Kiparsky, M., Gmur, S., Aycrigg, J., Craig, R. K., Svancara, L. K., Goble, D. D., Cosens, B., Davis, F. W., & Scott, J. M. (2015). A riparian conservation network for ecological resilience. *Biological Conservation*, 191, 29–37. doi: 10.1016/j.biocon.2015.06.029
- Government of Alberta. (2024). *Alberta Wildlife Watch animal carcass records* [Dataset]. Open Government – Alberta. <https://open.alberta.ca/opendata/alberta-wildlife-watch-animal-carcass-records>
- Government of Alberta. (2026). *Alberta Wildlife Watch mitigation projects* [Interactive map]. GeoDiscover Alberta. Retrieved February 17, 2026, from https://geospatial.alberta.ca/portal/apps/experiencebuilder/experience/?id=c21a003f744a43a183456d6b2b650b54#data_s=id%3AdataSource_2-Alberta_Wildlife_Watch_Mitigation_Projects_WGS_9641-0%3A24
- Graziano, M. P., Deguire, A. K., & Surasinghe, T. D. (2022). Riparian Buffers as a Critical Landscape Feature: Insights for Riverscape Conservation and Policy Renovations. *Diversity*, 14(3), 172. doi: 10.3390/d14030172
- Killeen, J., Thurfjell, H., Ciuti, S., Paton, D., Musiani, M., & Boyce, M. S. (2014). Habitat selection during ungulate dispersal and exploratory movement at broad and fine scale with implications for conservation management. *Movement Ecology*, 2(1), 15. doi: 10.1186/s40462-014-0015-4
- Rose, S. (2020). An evaluation of deep learning semantic segmentation for land cover classification of oblique ground-based photography. <http://hdl.handle.net/1828/12156>
- Sachro, L. L., Strong, W. L., & Gates, C. C. (2005). Prescribed burning effects on summer elk forage availability in the subalpine zone, Banff National Park, Canada. *Journal of Environmental Management*, 77(3), 183–193. doi: 10.1016/j.jenvman.2005.04.003
- Schepens, G., Seider, J. H., Wesley, B. L., Mathews, D. L., & Starzomski, B. M. (2024). Colonial management drives ecological change following the exclusion of Indigenous stewardship in a Stoney Iyethka montane grassland, Canadian Rocky Mountains. *People and Nature*, 6(6), 2618–2632. doi: 10.1002/pan3.10747
- Statistics Canada. (2022). *2021 Census – Road network file* [Dataset]. Government of Canada. <https://www12.statcan.gc.ca/census-recensement/2021/geo/sip-pis/rnf-frr/index-eng.cfm>
- Stewart, L., Russell, B., Zelig, E., Patel, G., & Whitney, K. S. (2020). Wildlife crossing design influences effectiveness for small and large mammals in Banff National Park. *Case Studies in the Environment*, 4(1). doi: 10.1525/cse.2020.1231752
- Struzik, E. (2017). A History of Fire Suppression. In E. Struzik (Ed.), *Firestorm: How Wildfire Will Shape Our Future* (pp. 81–102). Island Press/Center for Resource Economics. doi:10.5822/978-1-61091-819-0_4
- Whyte, P. J., Henderson, D. C., Heuer, K., & Ford, A. T. (2024). Bison and bighorns: Assessing the potential impacts of reintroducing a large herbivore to a mountainous landscape. *Ecology and Evolution*, 14(2), e11008. doi: 10.1002/ece3.11008
- Wright, C., Bone, C., Mathews, D., Tricker, J., Wright, B., & Higgs, E. (2024). Mountain Image Analysis Suite (MIAS): A new plugin for converting oblique images to land cover maps in QGIS. *Transactions in GIS*, 28(7), 2044–2061. doi: 10.1111/tgis.13229

Appendix A - Images and classified masks used for land cover mapping in the Bow Valley

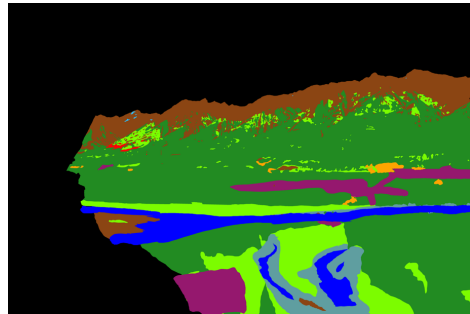
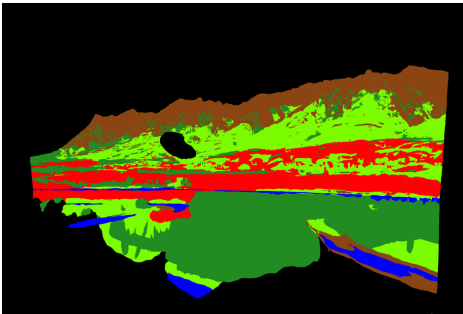
Station: Mt Lawrence Grassi South — Original Surveyor: McArthur — 1889 & 2014



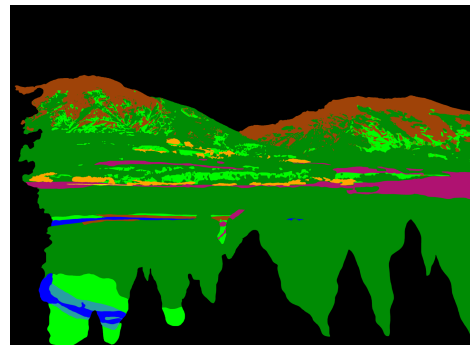
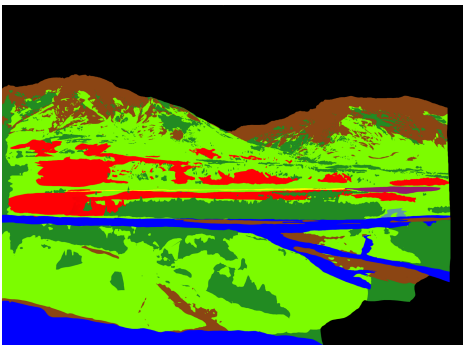
Station: Grotto Mt— Original Surveyor: McArthur — 1889 & 2014



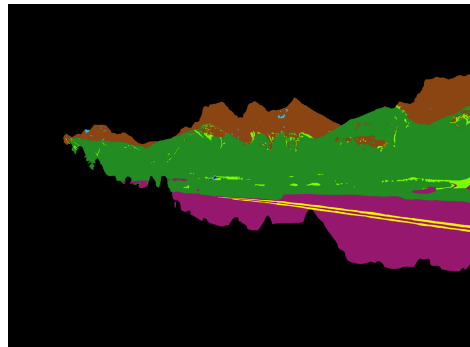
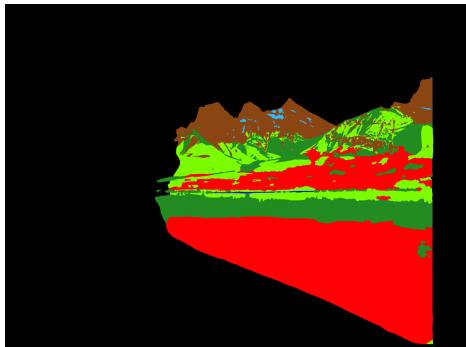
Station: Georgetown — Original Surveyor: McArthur — 1889 & 2014



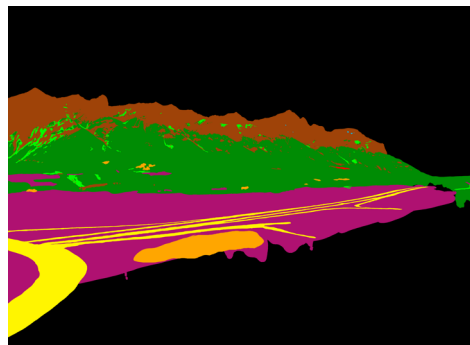
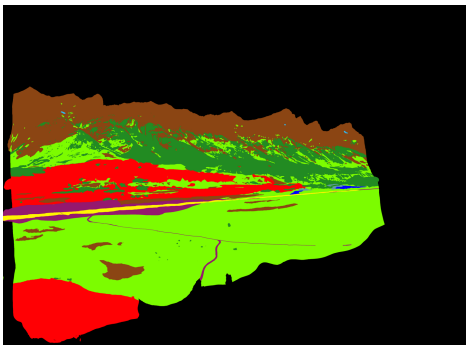
Station: Georgetown — Original Surveyor: McArthur — 1889 & 2014



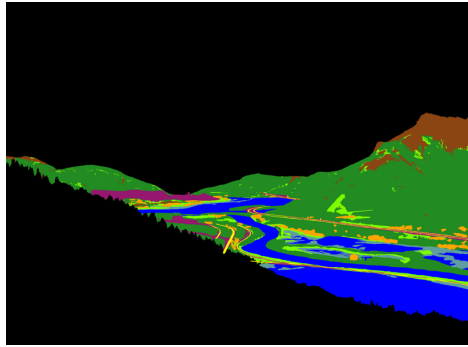
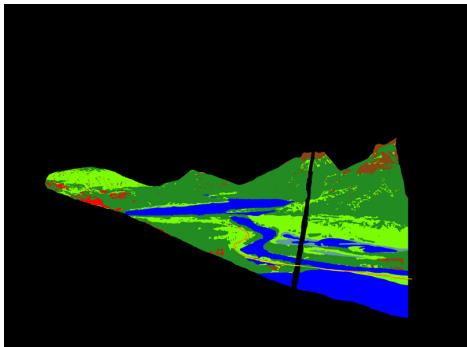
Station: Lady Macdonald Bench — Original Surveyor: McArthur — 1889 & 2009



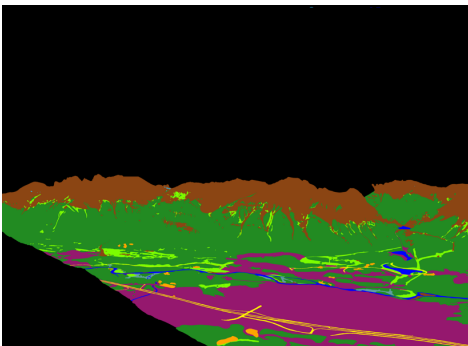
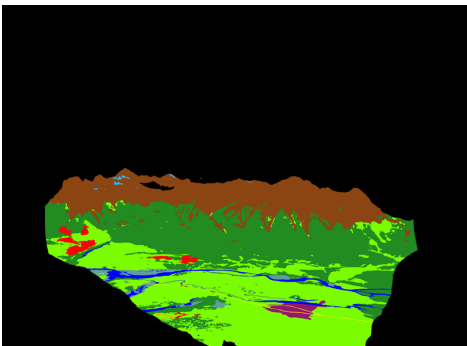
Station: Lady Macdonald Bench — Original Surveyor: McArthur — 1889 & 2009



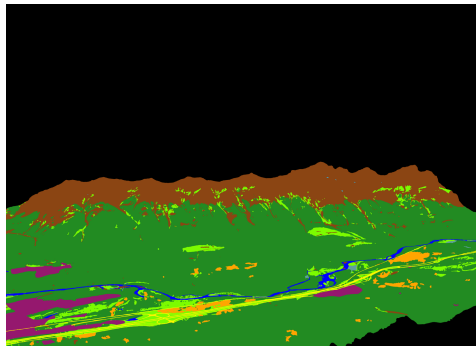
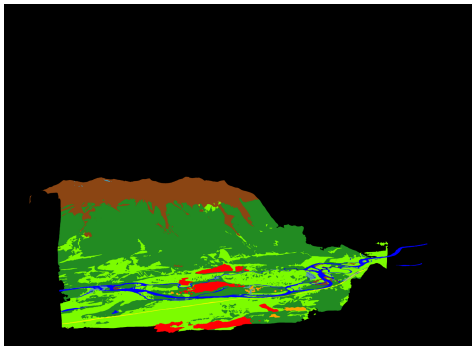
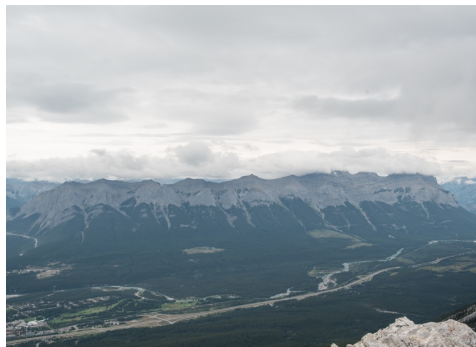
Station: Gap Lake— Original Surveyor: McArthur — 1890 & 2014



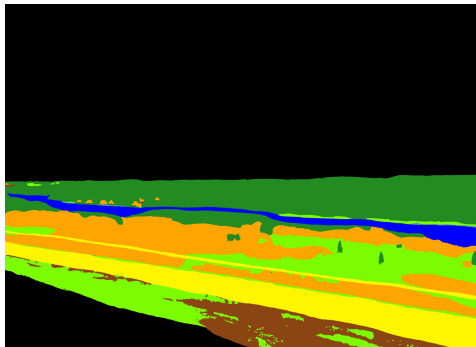
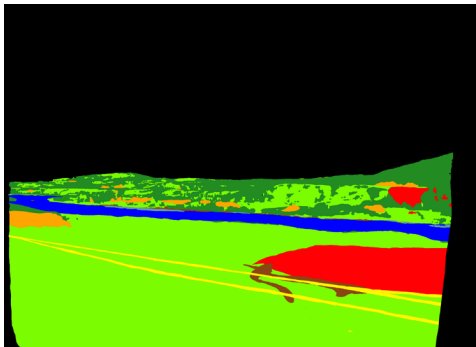
Station: Mt Lady Macdonald — Original Surveyor: McArthur — 1890 & 2014



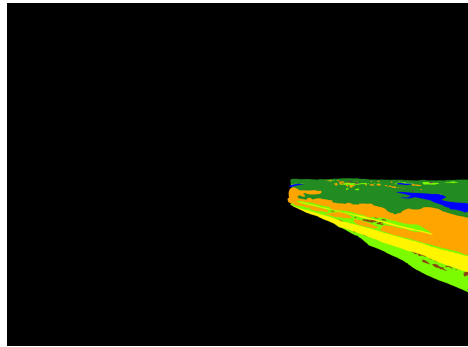
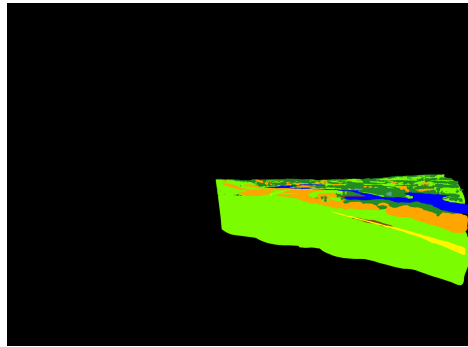
Station: Mt Lady Macdonald — Original Surveyor: McArthur — 1890 & 2014



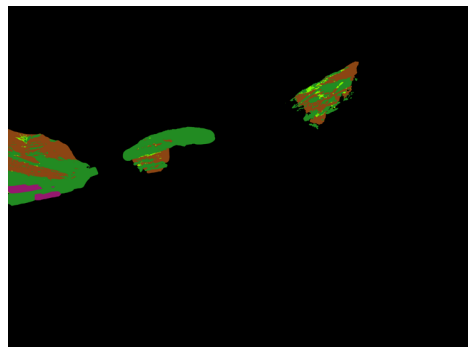
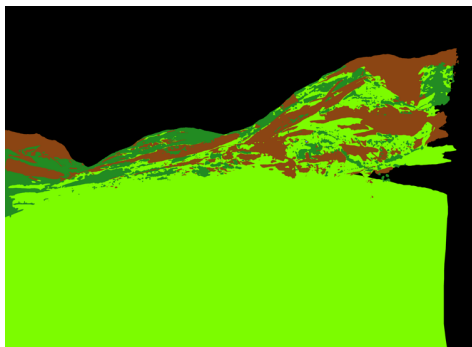
Station: Door Jamb East — Original Surveyor: McArthur — 1890 & 2014



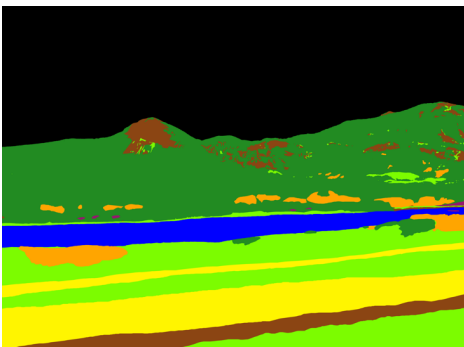
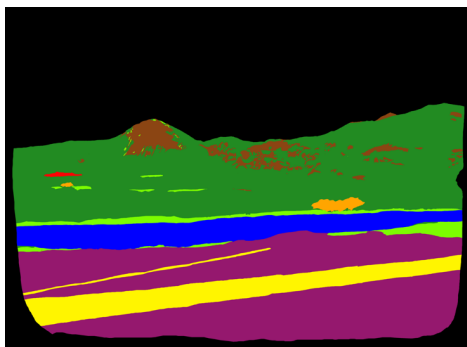
Station: Door Jamb East — Original Surveyor: McArthur — 1890 & 2014



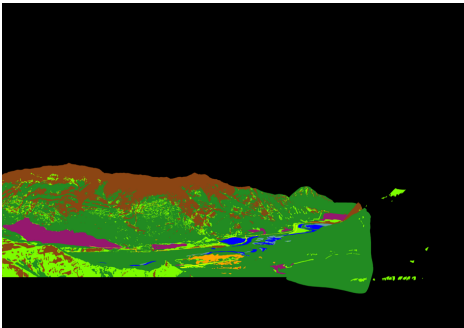
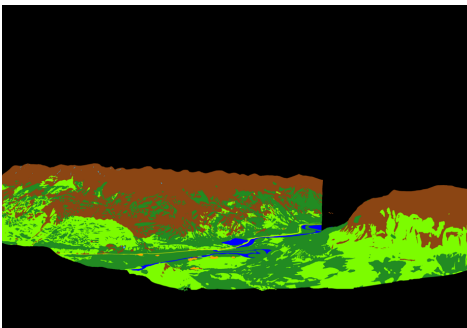
Station: Door Jamb East — Original Surveyor: McArthur — 1890 & 2014



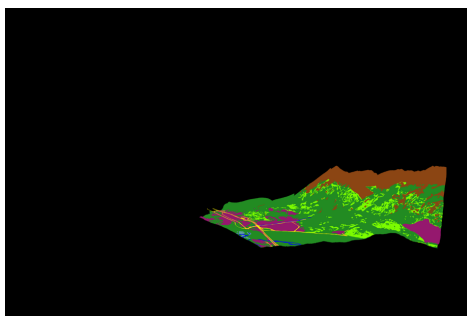
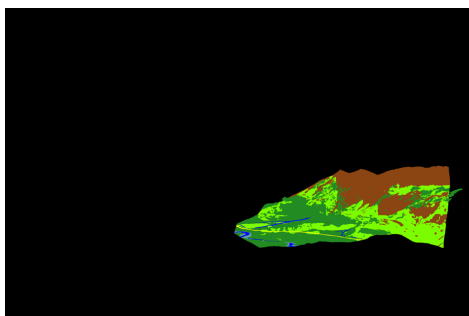
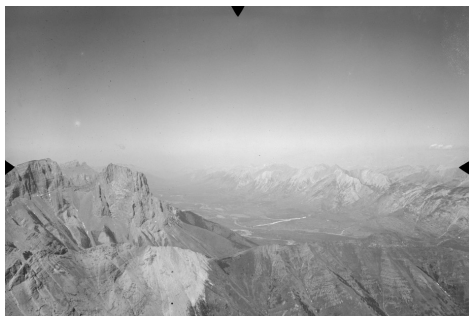
Station: Door Jamb East — Original Surveyor: McArthur — 1890 & 2014



Station: 45 Rimwall — Original Surveyor: Nichols — 1916 & 2014



Station: 45 Rimwall — Original Surveyor: Nichols — 1916 & 2014



Appendix D – Study Methodology

Cultural Assessment Approach

The Stoney Nakoda Cultural Monitoring process and Traditional Land and Resource Use methodology was used to conduct this Study. This methodology incorporates local knowledge systems used by First Nations for generations to identify resources and monitor ecosystems. Cultural monitoring develops tools and knowledge to increase community capacity for environmental problem-solving and provides a broad set of data ideal for land management decisions.

The Stoney Nakoda Cultural Assessment approach includes:

1. Ceremony
2. Planning
3. Elder Interviews
4. Field Work
5. Elder's Reconnection
6. Final Report
7. Outreach

To ensure all information presented in this Report is accurate, the Report was reviewed and verified by the Stoney Consultation Office.

Ceremonial Protocols

Per the Stoney Nakoda Cultural Assessment approach, cultural and ceremonial protocols were followed for this Study.

Stoney follows cultural and ceremonial protocols when participating in interviews or site visits. Pipe ceremonies are conducted to open negotiations and good communications between different nations and peoples. By participating in a pipe ceremony, all parties agree to be truthful, respectful, and abide by the decisions and any agreements that are made during the meeting time. Pipe ceremonies are also conducted to bless lands and resources prior to disruption from a development project.

Stoney held one pipe ceremony to initiate the Project on May 7, 2025, at the Canmore Nordic Centre. Stoney, Alberta Forestry and Parks, Parks Canada, Yellowstone to Yukon Conservation Initiative (Y2Y) and the Study Team were present.

Mapping

Interview Mapping

During Project interviews, members of the Study Team physically controlled documentation of mapped information for both the digital and paper mapping. Mapped information was confirmed with the Participant as each site or area was recorded. Identified sites and areas were given a feature number at the time they were recorded and information about the site or area was noted.

Sites that were reported during interviews or site visits that did not intersect the PSA were digitized but not included in this Report.

The Study Team's experience is that the use of polygons is best suited to represent an Indigenous harvester's life experiences related to land use and occupancy. Polygons, although not exact, afford the Participant the ability to represent a lifetime of experience in a single, approximately two-hour interview format. Additionally, polygons allow for the representation of movement over large territories used for harvesting.

The Study Team also used polylines as part of the Project, where applicable, to document trails and travel routes.

Map Digitization

Map digitization for this Report was conducted using ArcGIS Desktop, ArcMap Version 10.8.2 (developed by ESRI, 1999-2021) Geographic Information System (GIS) software and ArcGIS Pro Version 3.5.4 (Esri Inc., 2025). To ensure consistency, digital shapefiles that were previously created from the Stoney 2018 Survey were used. All map digitization was entered into these files. The file created included a polygon file to document use areas.

Stoney Place Names Mapping

Stoney place names within the study area were compiled through a combination of historical research and community knowledge. Place name information was derived from historical documents collected as part of the Tînda Mîmân study, as well as through interviews with Elders.

Historical source materials included maps containing documented place names, which were used as a reference for spatial digitization. Relevant place name locations were interpreted from these mapped sources and digitized as point features.

In addition, place names and associated locational information shared during Elder interviews were incorporated into the map. Where spatial references were provided (e.g., descriptions tied to known landscape features or locations), these were used to support the digitization of corresponding place name points.

Disturbance Mapping

The disturbance map was developed to illustrate the spatial distribution and types of human disturbance within the Tînda Mîmân study area. The analysis was based on the Alberta Biodiversity Monitoring Institute (ABMI) Human Footprint Inventory (2022) dataset, which was obtained from the ABMI online Open Data Portal.

The Human Footprint Inventory dataset, which classifies and maps various types of anthropogenic disturbance (e.g., roads, industrial features, and other land-use modifications), was clipped to the study area boundary. The dataset was used as provided, without modification to its classification structure.

To enhance visual interpretation, the map was designed using a dark background within the study area extent. This cartographic approach was applied to increase contrast and improve the visibility of the Human Footprint layer, allowing distinct disturbance types to be more clearly differentiated through their colour symbology.

The resulting map provides a comprehensive overview of the extent and composition of human disturbance across the study area, supporting the identification of areas of higher disturbance intensity and informing broader ecological and land-use considerations.

Wildlife Connectivity Infrastructure and Interactions Mapping

The Wildlife Connectivity Infrastructure and Interactions map was developed to represent known areas of wildlife movement and mortality in relation to transportation infrastructure within the Tînda Mîmân Ecological Corridor.

Planned and operational wildlife exclusion fencelines were incorporated by digitizing the wildlife fencing from a screen capture of the Government of Alberta's Alberta Wildlife Watch, Animal Vehicle Collision (AVC) Migration Projects web map. Due to the absence of downloadable geospatial data, this feature was manually digitized and may be subject to minor spatial inaccuracies associated with screen-based interpretation.

Locations of wildlife crossing structures including planned and operational overpasses and underpasses and wildlife crossings that will be redesigned were also digitized from the same web map. These point features were then reviewed against high-resolution satellite imagery to validate their spatial placement and improve positional accuracy where necessary.

Wildlife mortality data were obtained from the Government of Alberta's Alberta Wildlife Watch Animal Carcass Records dataset. Records were filtered to include observations from the most recent five-year period (2021–2025) to reflect current conditions. The dataset was then clipped to the defined study area boundary. To ensure relevance to wildlife movement patterns, records associated with domestic animals (e.g., dogs and cats) were removed from the dataset.

A heat map (kernel density analysis) was used to visualise the relative density of wildlife–vehicle collision records across the study area. This approach transforms discrete point observations of wildlife mortality related to vehicle collisions into a continuous surface, allowing for the identification of spatial patterns and areas of higher concentration (i.e., hotspots). The resulting visualisation supports the interpretation of collision trends and assists in identifying priority locations for mitigation measures. The resulting surface was symbolised using a graduated colour ramp, with darker red tones representing areas of higher mortality density, transitioning through orange to lighter, transparent values indicating lower or negligible recorded incidents. This visualisation supports the identification of high-risk segments of the transportation network and informs potential mitigation priorities.

Limitations

TRLU information contained in this Report is not the totality of information related to Tînda Mîmân and the Bow Valley Corridor. It is impossible to fully represent the extent of the knowledge learned, and areas accessed, for the exercise of Section 35 rights over a lifetime during a standard interview format. A lack of representative map data or verbally collected information does not equate to Stoney lack of use or knowledge of the area. Stoney's Section 35 rights exist throughout the Province of Alberta, Treaty No. 7, and Îyăǵé Nakoda Mâkoche.

The mapped locations reflect interpretations based on available historical materials and interview-based spatial references and may not represent exact or confirmed coordinates. Place names and their

associated locations are culturally sensitive and were mapped for the purposes of this study only; use or reproduction may be subject to community permissions.

Sharing Knowledge

It should be noted that not all Contributors chose to share all relevant information and stories related to the PSA. Additionally, certain comments and stories have been omitted to protect culturally valuable, personal, or sacred details.

Translation and Language

Some Contributors required either full or partial interpretation services during interviews. For those who preferred to speak Îyethka, Stoney Consultation Officers and Elders provided translation support services. It should be noted that the English language cannot fully and completely capture the expression of Îyethkabi in Îyethka; Îyethka words or expressions may not readily transfer to an understanding in the English language as the Îyethkabi intended.

This Report contains Îyethka place names. Not all place names within this Report have been verified by Stoney Elders and Knowledge Holders.

It should also be noted that Îyethka is not a standardized language. Many Indigenous languages are verb-based, while many Western languages are noun-based; as a result, translations do not always align one-to-one, and a single term or concept may have multiple possible translations or descriptions.

Historical Context

It is important to note that Îyethkabi were actively excluded from parts of the PSA throughout periods in history. Due to the changes in access and regulations, many Îyethkabi have adjusted their land and resource uses in the PSA.