

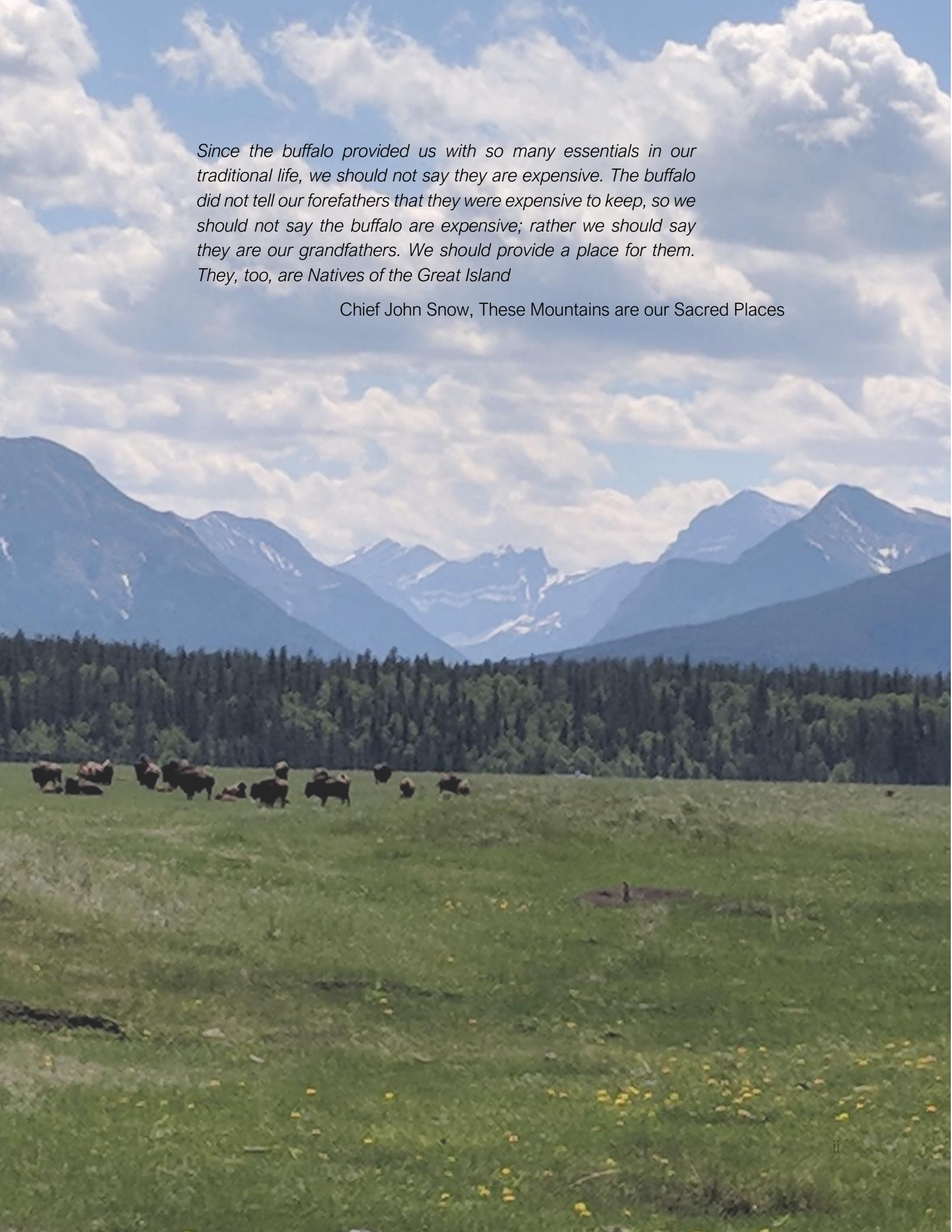
Enhancing the Reintroduction of Plains Bison in Banff National Park Through Cultural Monitoring and Traditional Knowledge



FINAL REPORT AND RECOMMENDATIONS
Stoney Nakoda Nations
April 4, 2022

Since the buffalo provided us with so many essentials in our traditional life, we should not say they are expensive. The buffalo did not tell our forefathers that they were expensive to keep, so we should not say the buffalo are expensive; rather we should say they are our grandfathers. We should provide a place for them. They, too, are Natives of the Great Island

Chief John Snow, These Mountains are our Sacred Places



Preface

Stoney Nakoda Background

The Stoney Nakoda Nations (SNN) consist of the Bearspaw First Nation, Chiniki First Nation and the Wesley First Nation who were signatories to Treaty 7 (1877). The SNN have constitutionally recognized Treaty and Aboriginal rights, titles, and interests in southern Alberta and beyond. Stoney Nakoda reside mainly at Indian Reserve Lands at Morley Alberta (I.R. #142, 143, 144), Eden Valley (I.R. #216), Rabbit Lake (I.R. #142B) and Bighorn (I.R. 144A). SNN Traditional Lands encompass Mîni Rhpa Mâkoche (Banff National Park), where the Bison Reintroduction area is located. The SNN is a self-governing body under the authority of Treaty 7 and the Indian Act, R. S. C 1985, C. 1-5, and provides leadership and direction in respect to all natural resource development applications through the duly elected Chiefs and Councils of the member Nations, collectively known as the Stoney Tribal Council.

Confidentiality

Information collected for this study was based on oral histories and traditional knowledge gathered from community participants. Given the confidential nature of the information, the contents of this report have been filtered to ensure the preservation and protection of Stoney traditional knowledge. The intent here is to provide an alternate perspective on wildlife and landscape management while respecting the cultural sensitivity of the information collected. The issue of confidentiality of traditional knowledge has been raised by Stoney Nakoda for some recent large industrial projects, as the protection of traditional knowledge has been a growing issue with many First Nations.

Acknowledgements

The “Enhancing the Reintroduction of Plains Bison in Banff National Park Through Cultural Monitoring and Traditional Knowledge Project” or the Bison Cultural Project, was conducted by the Stoney Consultation Team of the Stoney Tribal Administration, along with assistance from Stoney Nakoda Elders, Knowledge Keepers and Youth. The Stoney Consultation Team would like to thank Elders and participants for their time, knowledge, wisdom and teachings for this project. Also, Stoney Nation would like to thank Parks Canada, Mount Royal University, and the University of British Columbia for their insight, cooperation & assistance in the development of this report. The Stoney Nakoda Nation would also like to thank the Canadian Mountain Network and the University of Alberta for the opportunity to conduct this Indigenous study about a culturally important species from an Indigenous perspective.

Ethics approval for this project was provided by the Human Research Ethics Board at Mount Royal University (Application Number 101883).

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Executive Summary

Enhancing the Reintroduction of Plains Bison in Banff National Park Through Cultural Monitoring and Traditional Knowledge starts by setting an intention within ethical space for a good report and a good experience for the reader. Framing the report in this way emulates a meeting where people are invited to smudge and set an intention for the conversation about to ensue. In this way, our report is an invitation to explore and further understand the importance of weaving Traditional Knowledge with Western Science to create a more holistic understanding of the bison reintroduction in Banff National Park.

We start with a review of the historical and current relationship of the Stoney Nakoda First Nations with Mîni Rhpa Mâkoche, now known as the area of Banff National Park. The Stoney Nakoda have been in the Rocky Mountain region since time immemorial. Although their relationship with this land has not always been recognized, several efforts over the past few years have given the Stoney Nakoda an opportunity to reconnect to these traditional lands through ceremony and cultural activities.

In 2017, Parks Canada released 16 bison in the northeast section of Banff National Park. This herd has since grown to over 60 animals roaming throughout the reintroduction area. Although Parks Canada has been monitoring the ecological impacts of this reintroduction, there has been little to no cultural monitoring data collected until now. The Stoney Nakoda Nations have worked with several funding agencies to conduct this cultural monitoring and present this report.

Within the context of “Biculturalism”, the Stoney Nakoda applied their standardized cultural monitoring process, which includes Ceremony, Elder Interviews, Fieldwork, Elder Reconnection, Report Writing, and Outreach to describe the cultural impacts of the bison reintroduction. Their approach brings together the best of Western Science and Traditional knowledge to further an understanding of what it means for bison to again roam freely in Mîni Rhpa Mâkoche.

After a series of Ceremonies and Elder interviews, Stoney Nakoda Technicians conducted fieldwork in the Ya Ha Tinda from September 8 to 12, 2020. Their observations of bison habitat, behaviour, relations with other wildlife and vegetation formed the foundation of rich conversation with Elders upon their return where Traditional Knowledge was combined with observational data.

The Technicians and Elders emphasized the importance of ceremony for project success at all stages of the Bison Cultural Project and the need for continued cultural monitoring. Cultural monitoring can be used to better understand bison herd dynamics, predator-prey relationships with wolves and grizzly bears, and to better describe the renewed connection to the land by the Stoney Nakoda Nations.

Report recommendations include several ways that Parks Canada and the Stoney Nakoda can work more closely together to ensure the continued success of the bison reintroduction program, as well as a way to cooperatively manage the bison herd, ensuring genetic viability, habitat effectiveness, and overall ecosystem health. Projects such as this are an integral part of Truth and Reconciliation and demonstrate how Traditional Ecological Knowledge can be woven with Western Science to define a more holistic approach to park management.

1.0 Setting Intention with Ethical Space

To begin our discussion of the *Enhancing the Reintroduction of Plains Bison in Banff National Park Through Cultural Monitoring and Traditional Knowledge* project (hereafter: the Bison Cultural Project), we offer a brief introduction on “Ethical Space” and a reflection on the Indian Ecumenical Conference as a frame of reference for this report. We are grateful to Willie Ermine for the “Ethical Space” concept in furthering our discussion of environmental and cultural issues. Willie Ermine was the first scholar to define Ethical Space in his contribution to the *Indigenous Law Journal* in 2007. Ermine described Ethical Space as a condition that is “formed when two societies, with disparate worldviews, are poised to engage each other. It is the thought about diverse societies and the space in between them that contributes to the development of a framework for dialogue between human communities.” (Ermine, 2007, p. 193). Later, Bannister, Farget and Spencer defined the Ethical Space as:

A metaphorical space between the Indigenous and Western spheres of culture and knowledge. Ethical space can be understood as an invitation to step outside of our own worldviews and assumptions and step into an undefined neutral zone that is an abstract, nebulous space of possibility”. (Bannister, Smith Farget, & Spencer, 2019. p.6)

We are also grateful to the Stoney Nakoda Elders and all the communities that took part in the Indian Ecumenical Conference for their wisdom, knowledge and experience. We introduce the concept of Ethical Space here to set an intention for a good report that is appreciated by those who read it.

The research completed for this project is centered in Stoney interpretation and understanding of Ermine’s concept of Ethical Space. To begin, it may be helpful for the reader to envision “Ethical Space,” as the “Arbour” at Stoney Indian Park that was built for the Indian Ecumenical Conference (running from 1970 to the mid 1980s), and in 1992 to commemorate the Columbus Quincentennial. In this context, “Ethical Space” is not only theoretical space, but an actual place in our modern world.



Figure 1: The Arbour at Stoney Indian Park that hosted the Indian Ecumenical Conference 1992.

The Indian Ecumenical Conference was an Indigenous spiritual event that brought together Indigenous Elders, youth and adults from all over North America, South America and many other parts of the world. The conference began and ended with ceremony. A sacred fire was lit, and it was the duty of the youth boys to watch over this fire to keep it burning for four days. In this Ethical Space, Elders came to speak about their life experiences, and to share their teachings and wisdom with all who were present. Within this Ethical Space, dialogue on Indigenous history, spirituality, culture, language, and values could begin. This was a space where the truth about the impacts of social inequality, environmental degradation, and many Indigenous injustice issues could be raised and discussed.

In the book, *These Mountains are our Sacred Places*, Chief John Snow (2005) speaks about the beginnings for the conference.

“Prayers were also offered for the seasons so that they would continue to bring renewal and beauty to the land. One of the elders would explain the meaning of the sacred fire that was so central to our gathering, telling those present to revere the fire as one would an altar. Garbage is not be thrown into the sacred fire, but sweetgrass, sage, tobacco, and other offerings are to be placed on it, offered with prayers. The smoke of the sacred fire will carry prayers to the Great Mystery, our Creator. The fire would burn day and night throughout the Conference with young people responsible for keeping the fire going.

Often people would gather around the sacred fire for prayers, meditations, telling stories, sharing experiences, and encouraging one another in the journey of life. Many of us felt the presence of God, the Creator, and were touched. We felt a deeper understanding of our faith as we sat around the fire.” (p. 234)

Within this Ethical Space at the Indian Ecumenical Conference, traditional teachings were shared from Elders to youth and community members; traditional stories about life were told. One of these Stoney traditional stories is the story about *Ta Taga Skan*, the Great White Buffalo Story, that is also printed in the book “The Stonies of Alberta,” by Sebastian Chumak (Appendix A).

In the Great White Buffalo story, during traditional times, the Buffalo hid inside mountain areas during a great calamity and were released to the surface when peace was made. For the Buffalo, the grass is sacred, and the herd keeps moving to survive. The Buffalo gave many teachings, including the importance of humility in life. The Buffalo also gave their bodies to human beings so that they may have food, clothing and shelter, and to learn about medicines, water sources and water crossings from Buffalo travels. From their Buffalo bodies, the Stoney made ceremonial rattles, utensils for food, and implements for warfare. The Buffalo also imparted teachings to specially gifted Stonies, so they may learn about very sacred prophecies. Finding a Buffalo bone is interpreted to mean that Buffalos will return to landscape (Chumak et al, 1983).

2.0 The Road to Tatâga (Bison) Reintroduction

The Bison Cultural Project is about the restoration of Plains Bison to the mountain landscapes of Mîni Rhpa Mâkoche (Banff National Park). In 2017, 16 bison (ten impregnated cows and six bulls), were loaded into specifically made metal containers and transported by truck from Elk Island National Park to Ya Ha Tinda Ranch. From there, the bison were transported to the Bison Reintroduction Zone in Mîni Rhpa Mâkoche by helicopter. For the last five years, Parks Canada and Stoney Nakoda personnel have collaborated to both manage and culturally monitor the bison reintroduction pilot. The Reintroduction Zone has been expanded over time as the bison become more comfortable in their new home territory.

The Stoney Nakoda First Nations have had a long relationship with Parks Canada in Mîni Rhpa Mâkoche. The current Banff National Park Management plan recognizes the long relationship between the Stoney Nakoda First Nation and the park lands and commits Parks Canada to “working on initiatives that will welcome Aboriginal people to reconnect with their heritage and enable them to more fully participate in and benefit from the park” (Parks Canada Agency, 2010).

2.1 The Stoney Nakoda and Mîni Rhpa Mâkoche (Banff National Park)

The Stoney Nakoda have been in the Rocky Mountain region since time immemorial. When Banff National Park was created, Indigenous people were removed in the interest of game conservation for hunting, tourism, and the civilization of Indigenous people (Binnema & Niemi, 2006). Even though the Canadian government recognized the Stoney Nakoda peoples had previously hunted on and travelled over the land, they were to be kept out of the new park (Langdon, Prosper, & Gagnon, 2010).

While the Mîni Rhpa Mâkoche area was important for all Treaty 7 and Treaty 6 Nations, Mîni Rhpa Mâkoche and the Bow-Valley area was particularly important for the Stoney Nakoda people who inhabited the foothills and mountain ranges for several centuries; Stoney Nakoda subsistence, as well as cultural and spiritual practices, were and still are tied to this landscape (Mason, 2014). In the same year that Treaty 7 was signed, the boundaries of Banff National Park were extended to include areas that abutted the Stoney Nakoda Reserve and included much of their hunting grounds, as well as their main north-south trail between Morley and the Kootenay Plains (Binnema & Niemi, 2006).

In the Summer of 2014, at the Banff Indian Days, the Stoney Nakoda conducted Pipe Ceremonies for the sacred animals who once roamed freely in the Mîni Rhpa Mâkoche area. Due to oppressive government policies in past years, some of these ceremonies had not been conducted for many years in the Mîni Rhpa Mâkoche area (Backhouse, 1999). For the Elders and Ceremonial people who took part in these ceremonies it was a re-awakening; the ceremony had a deep and spiritual purpose for the Stoney Nakoda Elders and community.

Prior to 2014, and every year since 2014, many ceremonies have been conducted at the Banff Indian Grounds during the Banff Indian days. These ceremonies continue to be conducted in accordance with Stoney Nakoda protocols and practices. These protocols and practices are

followed in accordance with the spiritual roles and responsibilities the Stoney Nakoda have to the Mîñî Rhpa Mâkoche area, the traditional territory of the Stoney Nakoda.

The Banff Indian Grounds are the current location of the Banff Indian Days, a cultural event hosted by the Stoney Nakoda Nations in conjunction with Parks Canada in Mîñî Rhpa Mâkoche. The first Indian Days began in 1889 then progressed annually to 1978, after which the Indian Days were no longer held due to disagreements between the Stoney Nakoda and the organizing committee (Mason, 2015; Meijer Drees, 1993).

In his book *Tatanga Mani Walking Buffalo of the Stonies*, Grant MacEwan (1969) speaks about the beginning of the Indian Days:

“The Institution of the Indian Days originated in the early century when a rock slide brought railroad transportation in the mountains to a standstill. Officials of the Canadian Pacific Railway, with a trainload of restless passengers on their hands at Banff, appealed to the local citizenry for some kind of entertainment to occupy the stranded travelers until the trains started moving again. Norman Luxton and the Brewsters, James and William, suggested extending an invitation to the Stoney Indians to visit one of their favourite campgrounds at the base of Cascade Mountain where, on many occasions, they had enjoyed dancing, feasting, and horse racing. The Indians responded readily, came to Banff with their tipis, raced their cayuses on the town’s main street, and conducted colourful powwows—all of which delighted the detained travelers. Thus an idea was born, and the Banff Indian Days became an annual event. (p. 183-184)



Figure 2: Walking Buffalo (far left) and Colonel Mark Bennett Peacock (far right), KC, being made an honorary Chief of the Stoney in 1937, at the Banff Indian Days, Banff, AB.

In 2005, Elder Rolland Rollinmud of the Chiniki First Nation, worked with Parks Canada to restart the Banff Indian Days as an annual event. When interviewed by Mason on Banff Indian Days, Stoney Elder Roland Rollinmud explained that “[Banff] Indian Days have always been a bit about forgiveness [...] as we could return to use the lands that were important to our cultures for so long (personal communication, April 10, 2006 as cited in Mason, 2015 p. 88). The current Banff Indian Days is more focused on traditional teachings and connections between Elders and youth, as opposed to the previous focus on entertainment for tourists.

During the late 19th century, as the Canadian Pacific Railway was expanding through Mîî Rħpa Mâkoche, plans included blasting a tunnel through what is now known as Tunnel Mountain to make way for the railway. Fortunately, the blasting did not take place and the Canadian Pacific Railway was built on an alternate route. The name “Tunnel Mountain” stayed, however, and millions of visitors are informed each year that Tunnel Mountain does not actually contain a tunnel. The Stoney Nakoda have various traditional stories that relate to the “Tunnel Mountain” area. In the fall of 2016, the Stoney Nakoda Nation worked with Parks Canada to conduct a sweatlodge ceremony at Tunnel Mountain. The purpose was to combine these various meanings into a single name for the “Tunnel Mountain” area. From this ceremony, the name of *Eyarhey Tatanga Woweyahgey Wakân* or “Sacred Buffalo Guardian Mountain” was given. In a spiritual context, the guardian spirit of the Buffalo, as can be seen from the outline of Tunnel Mountain, guards over the sacred waters and medicines that form in the Tunnel Mountain area.

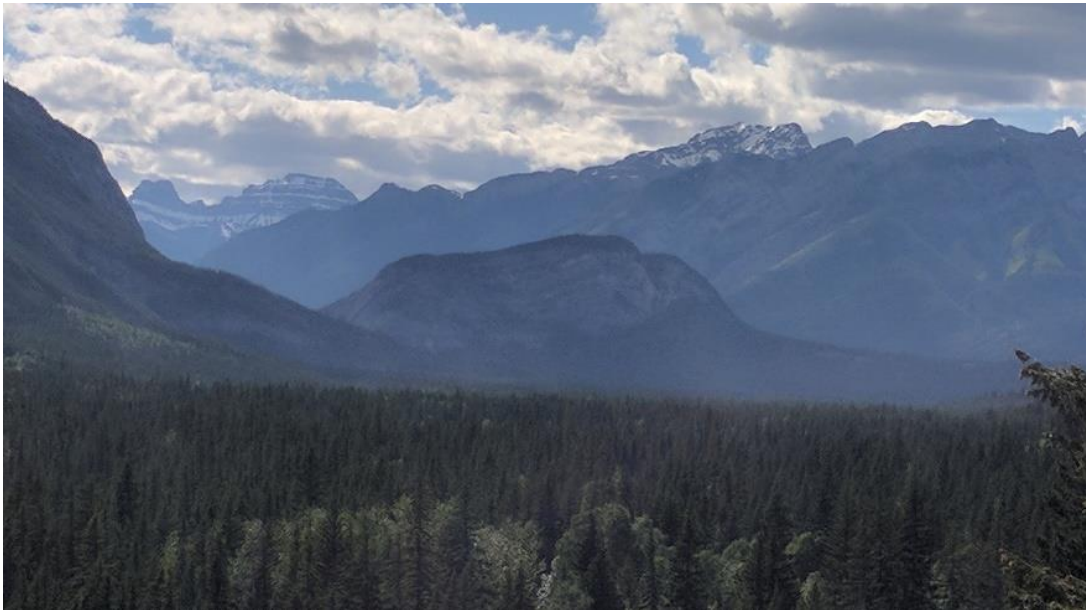


Figure 3: Tunnel Mountain or “Eyarhey Tatanga Woweyahgey Wakân” or in English as “Sacred Buffalo Guardian Mountain” in Mîî Rħpa Mâkoche.

On August 13 2015, the Chiniki First Nation, the Wesley First Nation and the Samson Cree First Nation took part in the signing of the “Buffalo Treaty” at the annual Banff Indian Days, at the Indian Grounds in Banff National Park. The Treaty has 9 articles to foster greater cultural, educational and cultural awareness about Buffalo, and to support returning Buffalo to landscapes.

In August of 2016, during the Banff Indian Days, at the Indian Grounds in Banff, the Stoney Nakoda held a pipe ceremony for the Bison Reintroduction project. At this time, we did not know if the bison reintroduction project would proceed, but Elders and Pipeholders held ceremony in the knowledge that the project should happen and that the Stoney Nakoda would support it. It was fitting that the ceremony was held in a sacred landscape such as Mîni Rha (meaning “the waterfalls” in reference to the waterfalls on Cascade Mountain near the Town of Banff) near *Eyarhey Tatanga Woweyahgey Wakân*.

The Bison Cultural Project is about the cultural understanding of Bison reconnecting to their mountain habitat. The project is also about the Stoney Nakoda reconnecting to their traditional lands, migration routes, camping sites, hunting and gathering areas, within Mîni Rha Mâkoche (meaning Banff National Park). Before and during the Bison Cultural Project, the Stoney Nakoda have been led by ceremony and have been guided by Stoney Nakoda Elders and Knowledge Keepers.



Figure 4: The Banff Indian Days in 2018.

2.2 Tatâga (Bison) in Alberta

There are two subspecies of bison in Alberta: Wood Bison and Plains Bison. For thousands of years, plains bison roamed the North American plains in massive herds; in the 1700’s their population was estimated to be approximately 60 million (Aune, Jorgensen, & Gates, 2017). Due to overexploitation, habitat loss and disease, plains bison were nearly extirpated from the Alberta plains.

Today in Alberta, there are an estimated 2,800 free-ranging wild wood bison and about 700 wood bison in captivity. All the plains bison in Alberta are semi-wild, captive, or farmed herds. Elk Island National Park is home to roughly 500 semi-wild plains bison. Most bison in Alberta are

associated with farming operations, thus they are classified as “livestock”. In November 2021, the Alberta Wildlife Regulation was amended to designate Wood Bison as Threatened under the Alberta Wildlife Act in several Wildlife Management Units (WMUs) in northern Alberta. This designation protects Wood Bison from hunting in the specified WMUs by people who do not have Indigenous hunting rights (Alberta Environment and Parks, 2021). These amendments aim to protect populations of wild wood bison and enable their conservation.

This “wildlife” designation only applies to wood bison in the specified WMUs; all other bison in the province remain classified as “livestock”, including all plains bison. Being classified as “livestock”, plains bison have no status under the Alberta Wildlife Act and are not protected under any current legislation. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) classifies the plains bison, *Bison bison bison*, as threatened and extirpated from provincial lands in Alberta (COSEWIC, 2004).

Today, plains bison occur in only five isolated subpopulations and occupy less than 0.5% of their original range in Canada. Removal of bison from the plains created an array of ecological impacts including the loss of grazing, wallowing, and migration patterns that made the land hospitable for a diversity of species from microbes to birds and rodents (Mamers, 2019).



Photo: Dragomir Vujnovic

2.3 The Stoney Nakoda and the Plains Bison

The near extinction of bison in Alberta played a pivotal role in making settlement of the plains possible; the sequence of events that led to the loss of bison is a part of Indigenous and non-Indigenous histories of settling Canada’s west (Mamers, 2019). For the Stoney Nakoda First Nations (i.e., the Bearspaw, Wesley, and Chiniki Nations) and other Indigenous groups who roamed the plains, the bison was, and still is, a species of great cultural and spiritual importance. Bison were the centre of the plains landscape ecosystem and central to Indigenous peoples’ lives. The rapid elimination of bison from the landscape destabilized all modes of life in the region and the relationships between them (Mamers, 2019).

Bison were not only a vital animal for Stoney Nakoda and other Indigenous groups across the Great Plains, but also an essential component of cultural identity and spirituality. The bison were a foundation of the daily lives of the Stoney Nakoda people – bison were in the clothes they wore, tools they used, food they ate, stories and songs they shared, and in their prayers to the Creator (Snow, 2005). The bison skull was, and is, used in the sacred Sun Dance and other ceremonies. Since 1970 the Stoney Nakoda Nation has managed a herd of 80-90 free-roaming bison in the Stoney Indian Park. The Stoney Nakoda continue to perform ceremonies in their traditional territories and highly regard the bison as an important part of the landscape since Time Immemorial; they are keenly interested in the successful reintroduction of bison within Stoney Nakoda traditional territory.

2.4 Tatâga Reintroduction in Mîni Rha Mâkoche

In the fall of 2016, Parks Canada completed an environmental assessment for the Reintroduction of Plains Bison into Mîni Rha Mâkoche. In advance of the Bison Reintroduction project, a “Bison Blessing” ceremony was organized by the group “Bison Belong” and held at Lake Minnewanka, near Mîni Rha (the town of Banff). Lake Minnewanka is a Stoney name for “Lake of the Water Spirits,” and is part of the special sacred waters in the Mîni Rha Mâkoche



Figure 5: (from L-R) Bill Snow, the late Melvin Beaver, the late Clifford Powderface, the late Sam Ear, the late Charles Powderface, Conlin Fox (Smudgeman), Hank Snow, Dave McDonough, at the Lake Minnewanka Bison Blessing Ceremony.

area. On January 29th, 2017, a Bison Reintroduction Blessing Ceremony took place at Elk Island National Park. The ceremony was hosted by the Samson Cree Nation as signatories of the Buffalo Treaty from Treaty 6; the Stoney Nakoda, Blackfoot Confederacy, and other First Nations were also part of the ceremony. In the over 100-year history of Parks Canada managing Elk Island National Park, the Elk Island Bison Blessing Ceremony was the first time First Nations were able to gather and conduct a ceremony on the lands at Elk Island. This was a historically

significant event and an important opportunity for First Nations to gather in this National Park space and conduct ceremony.

For First Nations and government, it was culturally important to begin the project with ceremony. The ceremony included two tipis from Treaty 7 and Treaty 6 and was designed to ensure the successful transportation of the Bison from Elk Island to Mîni Rhpa Mâkoche. A Pipe Ceremony was held in the Treaty 6 Tipi and then a Pipe Ceremony was held in the Treaty 7 Tipi, to symbolically recognize the movement of Bison from the Treaty 6 area (Elk Island National Park) to the Treaty 7 area (Banff National Park). Symbolically, the Bison brought First Nations and government together to work collaboratively on bringing a culturally and spiritually important species back to its mountain habitat.



Figure 6: Elk Island National Park, Late January 2017, First Nations, Parks Canada and other supporters of the Bison Reintroduction to Mîni Rhpa Mâkoche.

Parks Canada's objectives in reintroducing bison in Mîni Rhpa Mâkoche were to support ecological integrity and conservation efforts, renew cultural and historical connections, and inspire people to learn about and appreciate the bison and other wildlife (Parks Canada Agency, 2018). While a small herd of plains bison was maintained in a display paddock in Banff National Park for a century (1897 to 1997), the current reintroduction project returned a free-moving, wider-ranging bison herd to backcountry habitat (Locke, 2016). The project has had great success with calves born each year and the successful release of 31 bison from their soft release pasture into the 1200 km² reintroduction zone. By the fall of 2021, the herd had grown to 65 animals with a population growth rate of 30% per year. The herd also displays a low mortality rate with all but six animals having survived to the fall of 2021 (Heuer, personal communication, 2021). The 2016 Environmental Assessment on the project contained little to no cultural information on how the reintroduction may be received culturally by First Nations. To address this gap the Stoney Nakoda worked to secure funding from various sources, to conduct this Bison Cultural Project study.

2.5 Cultural Monitoring of Tatâga Reintroduction

The bison reintroduction has been of great interest since the initial consultations and ceremonies that marked the beginning of the project. In 2010, the Stoney Nakoda and Parks Canada signed a Memorandum of Understanding that recognized the historical and cultural importance of Mîni RHPa Mâkoche to the Stoney people. The current Banff National Park Management plan recognizes the long relationship between the Stoney Nakoda First Nation and the park lands and commits Parks Canada to “working on initiatives that will welcome Aboriginal people to reconnect with their heritage and enable them to more fully participate in and benefit from the park” (Parks Canada Agency, 2010). Bringing the bison back to Mîni RHPa Mâkoche presents an ideal opportunity for Parks Canada and the Stoney Nakoda to exemplify reconciliation and meaningfully work together. Given that there is a cultural difference of how bison are valued between Indigenous and non-Indigenous people (Will, 2015), it is critical that monitoring efforts pertaining to the bison reintroduction address cultural impacts as well as biological ones. The goals of Parks Canada biologists and Indigenous elders or youth have not always aligned, but they weave together naturally in the primary desire to have free-ranging bison on grassland territories (Mamers, 2019).

In 2019, Stoney Nakoda were able to secure funding from the Canadian Mountain Network to create this report to addressing the cultural aspects of Bison Reintroduction project, as well as support from Parks Canada in Banff National Park.

In September of 2020, prior to the Bison Ride from îyârhe Tînda (Ya Ha Tinda) to Scotch Camp, a ceremony was held at the Ya Ha Tînda Ranch. “îyârhe Tînda” in the Stoney language means “Mountain meadow” or “Mountain Prairie” and has been translated into English as Ya Ha Tinda. There are traditional stories about the îyârhe Tînda area, and these were discussed at the September 2020 ceremony. The Stoney Bison Riders, Toby Dixon, Conrad Rabbit and Ollie Benjamin attended the ceremony alongside Pipeholders, as this ceremony was to ensure the safety and success of the week-long ride into the Mîni RHPa Mâkoche back country.



Figure 9: Bison Riders Toby Dixon, Conrad Rabbit and Ollie Benjamin about to head on the trail from Ya Ha Tinda Ranch.

3.0 Approaches to Weaving Indigenous Knowledge with Western Science

Over the last twenty years, there has been a growing interest in understanding Traditional Knowledge by non-Indigenous people, groups and researchers, as well as younger Indigenous students and researchers. In many cases, along with this interest is a lack of understanding about how Traditional Knowledge has been regarded by Western Science and colonial structures. As part of the ongoing process of reconciliation and re-education, we have included this brief overview of Traditional Knowledge and Western Science.

Contributing to this Bison Cultural Project, are the writings of Indigenous scholars and educators that have written about Traditional Knowledge from various Indigenous perspectives. Some of these educators include Prof. Willie Ermine (Plains Cree), Dr. Marie Battiste (Mi'kmaw), Dr. Gregory Cajete (Tewa Pueblo), Prof. Robin Wall Kimmerer (Potawatomi), Elder Albert Marshall (Mi'kmaw), the late Chief John Snow (Stoney Nakoda), Dr. Daniel Wildcat (Yuchi Muscogee Nation), the late Vine Deloria Jr. (Standing Rock Sioux), and the late Chief Walking Buffalo, (Stoney Nakoda).

We acknowledge the importance of these Indigenous methodologies, that have been preserved and continued by many Indigenous groups, who have struggled to maintain their worldviews and way of life in the modern world. In the words of the late Vine Deloria Jr. (1997),

“People believed that each tribe had its own special relationship with the superior spiritual forces that governed the universe. The task of each tribe was to remain true to its special calling without worrying about what others were doing. Tribal knowledge was not fragmented data arranged according to rational speculation. It was simply the distilled memory of the People describing the events they had experienced and the lands they had lived in.” (p. 36)

Later, Vine Deloria Jr. And Daniel Wildcat (2001), would add that the inclusion of Traditional Knowledge into more modern forms of land and wildlife management as a welcome sign. More involvement of Indigenous groups in the land management process and in research opportunities will bring a new perspective to existing studies and form a “conceptual shift” that will bring cultural knowledge to modern use (p. 132).

“It will take a considerable period of time for a new theoretical posture to be developed by this generation, but some individuals are well on their way to doing so. As a new perspective is formed, individual Indians who have moved completely through the institutional structures will take all conceptions of Indians beyond the ability of Western ideas to compete, and this conceptual shift will focus attention on the cultural knowledge of the community colleges. Once community colleges articulate a new conception of what it means to be an Indian and Indian community, the rest of the shift is apparent and predictable.” (p. 132)

We are indebted to these Indigenous scholars for sharing their wisdom and knowledge in helping all of us to better understand Traditional Knowledge in our modern world.

3.1 Reclaiming Indigenous Voice and Vision

Author, Educator and Elder, Dr. Marie Battiste (Mi'kmaw), edited the book *Reclaiming Indigenous Voice and Vision* that is the collective works of Elders and educators who gathered in the Summer of 1996 at the University of Saskatchewan, in Saskatoon, Saskatchewan, to honour leaders in Indigenous human rights initiatives. Dr. Battiste writes about the need to include Aboriginal Knowledge in modern curriculum:

“The real justification for including Aboriginal knowledge in the modern curriculum is not so that Aboriginal students can compete with non-Aboriginal students in an imagined world. It is, rather, that immigrant society is sorely in need of what Aboriginal knowledge has to offer. We are witnessing throughout the world the weaknesses in knowledge based on science and technology. It is costing us our air, our water, our earth; our very lives are at stake. No longer are we able to turn to science to rid us of the mistakes of the past or to clean up our planet for the future of our children. Our children’s future planet is not secure, and we have contributed to its insecurity by using the knowledge and skills that we received in public schools. Not only have we found that we need to make new decisions about our lifestyles to maintain the planet, but we are also becoming increasingly aware that the limitations of modern knowledge have placed our collective security in jeopardy.” (Battiste, 2000, p. 201-202)

The need for curriculum change is to bring about a greater awareness of the strengths of Traditional Knowledge in our larger understanding of nature, and to also better understand the environmental changes that we are witness to.

“The strength of tribalism lies in our collective values, which must be fostered toward a collective consciousness as opposed to individual gain. Schools and community leaders must seek to nurture among the youth these traditional attitudes of collective community as they seek to develop their nation’s growth. As the collective gains, so do its parts. Collective healing in our community of the pains of the past and present will shape the attitudes of the youth. They must understand their past and the context of the present to embark on a new vision of the future.” (Battiste, 2000, p. 207)

The need for curriculum change is one step in providing more meaningful education to Indigenous youth, in shaping their understanding of traditional knowledge and, ultimately, to assist them in building their own perspective.



Figure 10: (L-R) Dr. James Sakej Youngblood Henderson, Dr. Marie Battiste, Dr. Leroy Littlebear, Dr. Gregory Cajete, with a copy of “Reclaiming Indigenous Voice and Vision” at the Banff Centre, April 13, 2019.

3.2 Traditional Ecological Knowledge

Traditional Ecological Knowledge (TEK) is considered a subset of Indigenous Knowledge (IK) that focuses specifically on ecological relationships across the landscape. TEK describes the knowledge held by Indigenous cultures about their immediate environment and the cultural management practices that build on that knowledge. As a knowledge system based on practice and belief, TEK tends to be experiential and tied to a way of life.

TEK is the systematic body of knowledge acquired by local people through extensive and accumulative experience, informal experiments, and an intimate understanding of their environment (Berkes, 2004; Huntington, 2000). This body of knowledge is multigenerational and usually passed on orally through cultural transmission about the relationship of living beings, which includes humans, their relationships with one another, and their surrounding environment (Berkes, 2005). TEK is defined by a holistic orientation to information gathering and understanding. It is based on an oral tradition consisting of stories to disseminate information; “spirit” is included in this understanding and knowledge is based on cultural practices (e.g., oral teachings, dreams, visions). Spiritual practices are included and respected as part of this knowledge environment (Deloria, 1970). TEK is specific to each Indigenous group and no single Indigenous experience dominates other perspectives and no two Indigenous heritages produce the same knowledge (Battiste, 2013).

3.3 Western Science

The scientific method is designed to break problems down into their components to increase understanding; through designed methodology that when repeated produces similar results, the scientific method contains an internal validation mechanism. This approach aims to reduce natural variation in an effort to make the system more productive, predictable, and controllable (Berkes, 2004). Western science has a linear orientation and is based on a written tradition; learning is based on the scientific method of collecting data and coming to conclusions that are replicable.

3.4 Ethical Space

Prof. Willie Ermine was the first scholar to define Ethical Space in his contribution to the Indigenous Law Journal in 2007. Ermine (2007) described the Ethical Space as a condition that is “formed when two societies, with disparate worldviews, are poised to engage each other. It is the thought about diverse societies and the space in between them that contributes to the development of a framework for dialogue between human communities.” (p. 193). We opened this report with a discussion of Ethical Space as it set the stage for the Stoney Nakoda approach to cultural monitoring.

3.5 Theology of Nature

Tewa Elder, Dr. Gregory Cajete, of the Santa Clara Pueblo describes a “Theology of Nature” as a way of learning and being interrelated to nature. In his book “Look to the Mountain” Cajete (1994) describes how education in Nature is life.

“For Native people throughout the Americas, the paradigm of thinking, acting, and working evolved through their established relationships to Nature. The foundation, expression, and context of Indigenous education were environmental. Through art, community, myth, or any aspect of human, social or Tribal expression, the Theology of Nature reverberated. All were inspired through and integrated relationship of living in the reality of their physical environments.” (p. 87)

For Indigenous people, “nature” forms the foundation of a worldview and a way of life. Each Indigenous group engages with their respective environment, which forms their understanding of the world around them. Through engaging with their surrounding “nature” and respective environments, Cajete (1994) explains that Indigenous people become participants with everything in their region.

“They affected their places and understood that their effect had to be accomplished with humility, understanding, and respect for the sacredness of their place and all living things of that place. They expressed a Theology of Nature that, while focussing specifically on their place, included all of Nature. The environments may have been different, but the basis of the Theology was the same. The word “Indigenous” is derived from the Latin root indu or endo that is related to the Greek word, endina meaning

'entrails'. Indigenous means being so completely identified with a place that you reflect its very entrails, its soul.¹³' (p. 87)

All definitions of TEK include general knowledge composed of empirical observation with explanatory, practical, social, and spiritual elements that are rooted in relationships across the lands and encoded in Indigenous languages (Bonny & Berkes, 2008). Various methods have been developed from an Indigenous Worldview to apply TEK to a more holistic understanding of ecosystems.

3.6 Braiding Knowledge

Braiding Knowledge is an Indigenous methodology gifted to us from Potawatomi Professor Robin Wall Kimmerer. The concept is richly described and exemplified in her book, *Braiding Sweetgrass*. When we consider the different approaches to knowledge more holistically, it can be called “weaving” or “braiding” ways of knowing. When strands of thread are braided together to make a rope, each individual strand is still visible, and the resulting rope is its own entity that is stronger than any strand on its own. Just as the individual strands of the braid are still distinguishable, TEK should be viewed as independent from western science. The resulting rope of knowledge is stronger than any one way of knowing is on its own, even while all individual ways of knowing remain independent and distinguishable from the other. Braiding ways of knowing is an essential component of empowering Indigenous communities and meaningfully addressing reconciliation (Kimmerer, 2015).

3.7 Two-Eyed Seeing

Two-Eyed Seeing, a form of knowledge co-production, is another Indigenous Knowledge framework gifted to us from Mi'kmaw Elder Albert Marshall. Knowledge co-production is defined as “the collaborative process of bringing a plurality of knowledge sources and types together to address a defined problem and build an integrated or systems-oriented understanding of that problem” (Armitage et al., 2011). Knowledge co-production creates a platform where the concerns and interests of Indigenous peoples and local communities living with environmental change are addressed (Bannister et al., 2019).

Etuaptmumk: Two-eyes seeing refers to learning to see from one eye with the strengths of Indigenous knowledges, and from the other eye with the strengths of western knowledges and ways of knowing – and learning to use both of these eyes together for the benefit of all. (Elder Albert Marshall of the Mi'kmaw Nation in Indigenous Circle of Experts, 2018, p.37).

Two-eyed seeing is the guiding principle for integrative science. It refers to the achievements that can be gained by learning from the best of Indigenous ways of



knowing, inherently tied to the natural world, and the best in western ways of knowing (Elder Albert Marshall as cited in Bartlett, 2017). Two-eyed seeing requires an ongoing commitment to relationships and personal efforts to understand positionality.

3.8 Biculturalism

In the book, "These Mountains are our Sacred Places," the late Chief Snow (2005) talks about the need to "combine wisdom" of both western knowledge and traditional knowledge, and how this process of "combining wisdom" needs to be led by Elders.

*"In this transition from a traditional mode which has stood the test of time for thousands of years to a system imposed by the immigrant society there is a need for the combined wisdom of the Indian people. Only the older and experienced people of our race can develop the essential guidelines."
(Snow, p. 204-205)*

To accomplish this, Chief Snow (2005) writes about how understanding can be achieved through a Stoney process called "Biculturalism."

"In other words, we came to understand that it was not an either/or choice: acculturation to the dominant society or clinging to our old ways in a world where they could no longer offer us and our children a good life. We came to understand that there was a third way – the way of biculturalism. We came to understand that we could still follow Stoney tribal custom but, at the same time, adjust to a technological age on our own terms. Our hope was (and still is) to retain the best in the Stoney culture and to take the best in the dominant culture." (p. 169).

As Chief Snow (2005) states, the adjustment from a traditional mode to a more modern way of life can be done, but on terms of the Indigenous community, for there are many dangers to making technological changes, without a long term environmental and spiritual vision. Time must be given for non-Indigenous society to understand Indigenous values and philosophy. Chief Snow states:

"Once I heard an elder say that we must help our white brother before he kills himself and all of us. At the time, I thought it was a harsh statement, but I have come to understand the elders and their teachings. Another statement made by the elders was that modern man is a giant in technology but a dwarf in spirituality and conversely, the Indian is a giant in spirituality, but a dwarf in technology. In time it came to me that we must help the non-Indian society to learn about the values and the philosophies of Indian life." (p. 239, Snow)

In a 1974 statement from Elders from the tribes of Alberta, Biculturalism was defined as taking aspects of settler society and using that knowledge to "[d]iscover and establish the harmonies with the basic values of the Indian ways, and thereby forge a newer and stronger sense of

identity. To be fully Indian today, we must become bilingual and bi-cultural” (Snow, 2005, p. 212).

3.9 Linear-Holistic Model

The late Vine Deloria Jr. was a theologian, historian, and legal scholar from the Standing Rock Sioux Tribe, who wrote several books about Traditional Knowledge, and Indigenous world views. In his books, “We Talk, You Listen” (1970) and “For this Land,” (1999) Deloria describes a process that may be used by Western Science and Traditional Knowledge to better understand each other, in the form of a Linear-Holistic Model:

“The best method of communicating Indian values is to find points at which issues appear to be related. Because tribal society is integrated toward a center and non-Indian society is oriented toward linear development, the process might be compared to describing a circle surrounded by tangent lines. The points at which the lines touch the circumference of the circle are the issues and ideas that can be shared by Indians and other groups. There are a great many points at which tangents occur, and they may be considered as windows through which Indians and non-Indians can glimpse each other. Once this structural device is used and understood, non-Indians, using a tribal point of view, can better understand themselves and their relationship to Indian people.” (Deloria, 1970, p. 12)

“If we visualize tribal society as a circle, which is the custom of traditional practitioners, then this circle is being pierced by many lines, networks, other activities that compete daily to make parts of the circle a part of the line. Life in a modern tribal society becomes a matter of balancing an activity that is an integral part of community life with an activity from the outside that is highly entertaining or rewarding but does not have an anchor in community life.” (Deloria, 1999, p. 185-186)

We provide additional details and diagrams of Deloria’s Linear-Holistic model and some adaptations in Appendix B as a way to understand and implement the recommendations in this report. These adaptations may assist the reader to explain Western dominated environments and Traditional Knowledge dominated environments, as well as the many differences that exist between Western Science and Traditional Knowledge.



Figure 11: the late Vine Deloria Jr., and the late Rev. Dr. Chief John Snow, at the 2005 Robert K. Thomas Symposium, Northwest Indian College, Lummi Nation, Bellingham, Washington, USA.

3.10 Community Based Monitoring

Observing and reporting on TEK can involve Cultural Monitoring or Community Based Monitoring (CBM), which is a methodological approach to applying TEK to decision making. The definitions of CBM vary somewhat based on location, however, all programs recognize the importance of community knowledge contribution, a systematic way of recording that knowledge, and the need for a process to integrate that knowledge into management processes. Bannister et al. (2019) define CBM as a process for communities to observe, track, and respond to interests of common concern, collaboratively with external partners.

Community based monitoring (CBM) focuses on community engagement and leadership in determining the goals and approaches of monitoring (Johnson et al., 2016). Most of the research involving TEK or CBM involves interviewing elders or other knowledge holders. Peer selection, a process whereby the research identifies key informants as opposed to random sampling, is the preferred approach (Huntington, 2000).

4.0 Policy Direction

This Stoney Bison Cultural Monitoring Project complements Parks Canada’s existing efforts to monitor the success of bison reintroduction by examining and describing the cultural and spiritual significance of the Bison Reintroduction to Mîni Rħpa Mâkoche through a cultural-monitoring program. This project uses Biculturalism to include Stoney Nakoda Indigenous knowledge and cultural values to inform conservation and directly supports Target 15 of Canada’s 2020 Biodiversity Goals and Targets that “by 2020, Aboriginal traditional knowledge is respected, promoted and, where made available by Aboriginal peoples, regularly, meaningfully and effectively informing biodiversity conservation and management decision-making” (BiodivCanada, 2020). Enhancing wildlife management with braided knowledge is also aligned with Call to Action #57 of the Truth and Reconciliation Commission (TRC), ensuring that “federal, provincial, territorial, and municipal governments to provide education to public servants on the history of Aboriginal peoples” including “skills-based training in intercultural competency” (Truth and Reconciliation Commission, 2015).

This project also aligns with Articles #25 and #26 of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Article #25 of UNDRIP affirms “Indigenous peoples [...] right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands [...] and to uphold their responsibilities to future generations in this regard” (United Nations, 2007). While Article #26 of UNDRIP asserts Indigenous peoples' rights to their traditional lands ensuring that “states shall give legal recognition and protection to these lands, territories and resources” with “due respect to the customs, traditions and land tenure systems of the Indigenous peoples concerned.” (United Nations, 2007). The Stoney Bison Cultural Monitoring Project also meets Goal #15 of the United Nations Sustainable Development Goals (SDG) to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss” (United Nations, 2015).



Photo: Karsten Heuer/Parks

5.0 Methods

5.1 Stoney Nakoda Approach

The knowledge and outreach to come through the Stoney Bison Cultural Monitoring project are an opportunity to apply Biculturalism to understand the implications of the bison reintroduction more holistically. While the knowledge system and methodology are Indigenous, the communication of the research is co-produced with Stoney Tribal Administration, non-Indigenous investigators from the Canadian Mountain Network, and Parks Canada staff. This exercise in biculturalism is a step toward the kind of collaborative management that can truly benefit the bison, the vegetation and animals they impact, and the landscapes they inhabit.

The Stoney Nakoda Nation defines cultural monitoring as a means of integrating TEK into the identification of priority areas for conservation and/or restoration that recognizes environmental factors and considers local knowledge and perspectives (Stoney Consultation Team, 2017). The main difference between TEK and Cultural Monitoring is that the former is a way of knowing and the latter is the process by which TEK is incorporated into existing research in areas of cultural importance. Culturally based monitoring can assist government bodies, the scientific community, and the wider public in understanding Indigenous ways of knowing.

Throughout the process, this Stoney Nakoda cultural study has been guided by the wisdom of Elders. In his book “For this Land,” the Standing Rock Sioux legal scholar, Vine Deloria Jr., speaks about the importance of Elders:

Ultimately, decisions are made by the oldest and wisest people in the tribe because it is they who have fulfilled their responsibilities and who have the knowledge and experience to make important decisions. Indians consider it sheer folly to count the speculations of an eighteen-year-old equal with the deliberations of an eighty-year-old and merely count the number of bodies present and how they feel about something. (Deloria, pg. 180)

The steps in the Cultural Monitoring process are: Ceremony, Planning, Elder Interviews, Field work, Elders Reconnection, Final Report and Outreach. A similar “Cultural Monitoring” process was used for the Stoney Nakoda Nation Grizzly study in 2016 (Enhancing grizzly bear management programs through the inclusion of cultural monitoring and traditional ecological knowledge).

5.2 Study Area

The cultural monitoring project was focused on a portion of the Bison Reintroduction Zone in Mîni RHPA Mâkoche, which is located in the central-east portion of the park adjacent to the Ya Ha Tinda ranch on Alberta public lands (Figure 3). This remote wilderness area provides grassy valleys and abundant habitat for bison in the Panther and Dormer River Valleys. Bison are discouraged from leaving the 1,200km² reintroduction zone by being bound by area’s natural topography and wildlife-friendly fencing. The herd is able to explore parts of the Red Deer and

Cascade River Valleys. Parks Canada has been monitoring the herd's movement and ecological impacts on the landscape during the 5-year pilot reintroduction project.

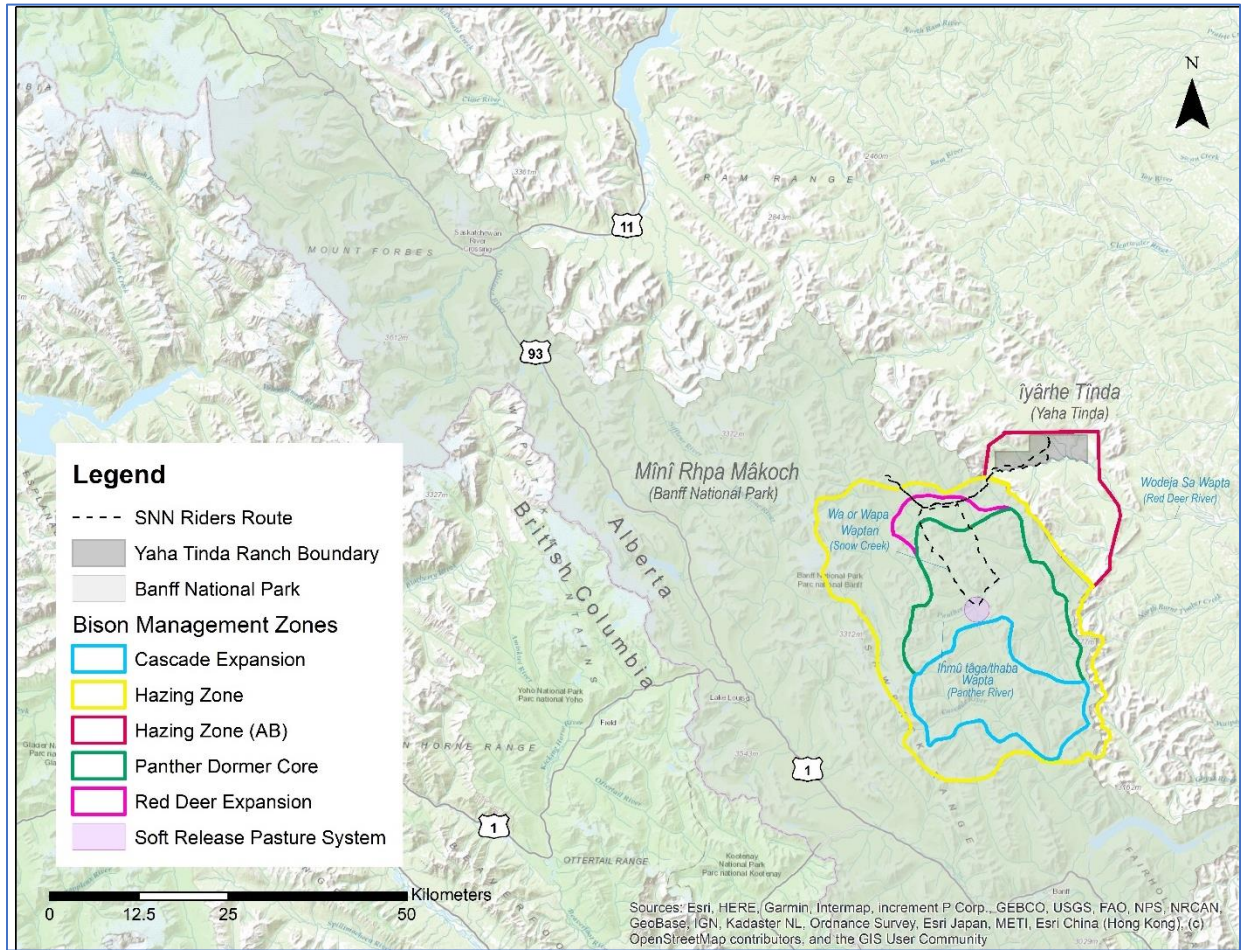


Figure 12: The bison reintroduction zone and the Bison Riders Route in Mîni Rħpa Mâkoche (Banff National Park).

5.3 Cultural Monitoring Activities

After several years of attempts to find funding that would allow the Stoney cultural monitoring work to be completed in time for the 2022 review of the bison reintroduction pilot, the research team secured funding through the Canadian Mountain Network and collaborated with Mount Royal University and the University of British Columbia to proceed with the project in 2019. We hope that the Stoney Cultural Monitoring process can be a method used by other First Nation communities to further develop their relationship with researchers and post-secondary institutions. This will bridge the gap between Western Science and Traditional Knowledge.

“Cultural Monitoring” is a process that utilizes Traditional Knowledge steps (Ceremony, Elder Interviews, Field work, Elder Reconnection, Report Writing and Outreach), as well as Western Science steps (Planning, Fieldwork, Report Writing). The “Cultural Monitoring” process is a combination of Traditional Knowledge and Western Science and should be viewed as a result of the “Biculturalism,” that is, the bringing together of the best of Western Science and Traditional Knowledge together, to further our understanding.

Step 1: Ceremony

Since contact, Indigenous ways of knowing by settlers have been misinformed, miscommunicated, and misunderstood. This has impacted Indigenous ways of life for generations and continues to do so. One historical example of this misinformation were the repressive Canadian government policies that restricted Indigenous rights. In her book “Colour Coded History,” Constance Backhouse (2001) writes:

“The Canadian Government first began to pass criminal laws prohibiting the ceremonial dancing of the First Nations in 1884, when the Indian Act outlawed the Potlatch and the Tamanawas Dances native to the west coast. The prohibition was extended in 1895 to encompass all festivals, dances, and ceremonies that involved the giving away of money or goods, or the wounding of humans or animals. Federal Legislation which would remain substantially intact until 1951, was remarkably comprehensive. The statute proclaimed it an indictable offence for ‘Indians’ or ‘other persons’ to

CEREMONY

Ceremony is an essential component of work and life for the Stoney Nakoda First Nation. Through ceremony, the Stoney Nakoda prepare for the work to be conducted and ask for guidance in how to apply the knowledge gained through projects.

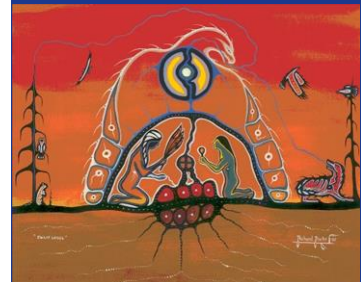


Photo from Oyate Sweat Lodge CJWE FM advertisement (2019)

The need to conduct ceremony before, during, and after all project phases is integral to project success and is reiterated throughout this report.

engage in, or assist in celebrating, or encourage anyone else to celebrate, either directly or indirectly.” (p. 63)

These cultural restrictions were finally amended out of the Indian Act in 1951, although “Compulsory Enfranchisement” still prevailed, and was not amended until 1961. “Compulsory Enfranchisement” allowed for Indian Agents to control the membership function of many First Nations. The impact of this prejudicial legislation continues to impact many First Nation communities (Backhouse, 2001). These types of government policies forced many Elders and Traditional Knowledge holders to hold their ceremonies in secret or “underground” to preserve their knowledge, language and culture.

Within Traditional Knowledge, the practice of ceremony is vitally important. The connection between Indigenous communities and the “spirit world” is one that has been in practice since Time Immemorial. The connection to the “spirit world” is a way for Indigenous communities to understand the natural world and its phenomenon and is still a common practice in many Indigenous communities. Chief Snow (2005) writes,

“Our Traditional evaluation of a leader was made in terms of how much he gave to his people. A well-fed, well-clothed, band of people mounted on good ponies was credit to a leader. To achieve this, the leader would spend hours in prayer and meditation, for this success would, in very large part, result from the guidance of the Creator through the leader’s wisdom in placing himself in harmony with the Creation. Time to be alone in the forest or on the prairie listening to the voice of nature was most important.” (p. 204)

For many Indigenous communities, when new or important project is being undertaken, a ceremony is held, to tell the “spirit world” of the purpose for a project or undertaking. To establish this connection with the “spirit world” is still culturally and spiritually important and is why ceremony is the first step in the “Cultural Monitoring” process.

Step 2: Planning

The planning step is for Indigenous and non-Indigenous groups to meet and discuss a project, its background, and its purpose. In some cases, some groups have never formally met to discuss land, wildlife or vegetative management. With many Western Science projects, the scope for project planning is short term, whereas Traditional Knowledge projects inherently consider long term project impacts. In the planning process, Traditional Knowledge teachings can be derived. Chief Snow (2005) states:

“My people say: “If you destroy nature and the environment, you are destroying yourself. But if you protect the environment and safeguard the water, ultimately you are protecting yourself.” Wisdom harnessed with technology can go a long way in creating a better social order, a world in which all creation can survive and enjoy life to the fullest.” (p. 212)

In Traditional Knowledge, the long-term impact of a project is always at the forefront for Elders. Many Indigenous communities have seen the inequality that has been created in society as a result of a short-term perspective. Chief Snow (2005) further states:

“My people were able to live in this country for thousands of years without reducing the size of the animal herds. The coming of the whiteman saw the buffalo destroyed in a decade. After only two centuries, the immigrant society is short of water, has an energy crisis, and experiences seasonal food shortages. A large section of the population, including most of the Indians, lives in poverty. Is this what is meant when the whiteman talks of economic viability and profitability – a very few wealthy people who have much more than their share and many very poor people who have much less than their share? This is not the way of my people.” (p. 214-215)

For Indigenous communities, to live in balance with the world around us, has been a value that Indigenous people have considered long before today’s environmental and conservation movements. Planning a project, with these teachings in mind, will assist in bringing an Indigenous perspective through the “Cultural Monitoring” process.

In this phase, we gather to discuss a proposed project and its timeline and logistics. We learn about existing management practices and on-going studies in the project area. This is essential for our Elders, technicians, consultation officers, and contractors to understand the environment that we are working in. The planning stage also includes a process for Elders to share information, which they review prior to the Elder Interview stage.

Step 3: Elder Interviews

The importance of Elders in the “Cultural Monitoring” process cannot be understated. For Elders, it is a lifetime of knowledge and experience that provides history, education, reflection and insight to a project. This knowledge is then shared with project technicians, in the case of the Bison Cultural Project, the technicians were the Bison Riders who attended the Elder Interviews prior to conducting field work. What is equally important as the Elders is the form of the knowledge they hold, the Oral Tradition. As Western Science relies on the scientific method to extract knowledge from nature, so to does Traditional Knowledge rely on the knowledge from Elders in the Oral Tradition. In his book “Red Earth White Lies” Deloria writes:

“The non-Western, tribal equivalent of science is the oral tradition, the teachings that have been passed down from one generation to the next over uncounted centuries. The oral tradition is a loosely held collection of anecdotal material that, taken together, explains the nature physical world as people have experienced it and the important events of their historical journey.” (pg. 36, Deloria)

Traditional Knowledge is mainly derived from ceremony and other cultural practices like vision quest and dreams, where knowledge is accepted from nature. From the book “Power and Place”, Wildcat and Deloria (2001) explain:

“A great gulf exists between these two ways of handling knowledge. Science forces secrets from nature by experimentation, and the results of the experiments are thought to be knowledge. The traditional peoples accepted secrets from the rest of creation. Science leaves anomalies, whereas the unexplained in traditional technology is held as a mystery – accepted, revered, but not discarded as useless.” (p. 63-64)

Another difference in Western Science and Traditional Knowledge is how knowledge is transmitted. In the oral tradition, specific traditional knowledge would be shared among selected individuals of the tribe, in this way preserving the importance of the knowledge, and preventing it from being used for other purposes. In his book “Red Earth, White Lies,” Deloria (1997) writes:

“In the old days, elders performed a similar function and recited the oral traditions of the tribe during the wintertime and as a regular part of camp or village life. Religious ceremonies generally involved the recitation of the origin and migration stories, and most of the accumulated wisdom of the tribe was familiar to everyone. Special knowledge regarding other forms of life, if revealed in visions or dreams, was made available to the larger community on a “need to know” basis, since it was generally regarded as personal knowledge.” (p. 37)

“The difference between non-Western and Western knowledge is that knowledge is personal for non-Western peoples and impersonal for Western scientist. Americans believe that anyone can use knowledge; for American Indians, only those people given the knowledge by other entities can use it properly.” (p. 38)

Conversely, in the modern Western Scientific process, education has become a function of economics, where knowledge is available to that can afford to enroll in programs. Deloria (1997) further explains:

“Education in the American system is a function of class and economics, and with some rare exceptions the scientific- academic community is self-perpetuating. Middle- and upper-class peoples have a significantly better chance to become scientists than do average citizens simply because they can afford to continue in school until they receive a Ph.D.” (p. 38)

Given the generations of poverty and lack of economic support that Indigenous communities have lived in, these differences are an important cultural awareness aspect of the Elder Interview step of “Cultural Monitoring.”

The first round of Elder interviews served to formally introduce and explain the project to our Elders. We discuss what we have learned in the planning step and show them the study area with maps and photos or videos. Elders may share their knowledge of an area, their personal experiences or those of their families and relatives. Many of these personal experiences have never been recorded or documented. We record the stories as per the instruction of the Elders.

Step 4: Fieldwork

In the Fieldwork step, technicians are asked to go to a project area to observe and record their experiences for a study. For the Stoney Technicians, the field work is also a chance to re-connect to sacred natural space within Stoney Traditional Territory. Learning from “Nature’s University” is best described by the late Chief Walking Buffalo, as MacEwan (1969) writes in his book, “Tatanga Mani Walking Buffalo of the Stonies:

“...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.” (p. 175-176)

Within the field work step, Elders, Knowledge Keepers, and technicians are able to reconnect with the natural surroundings of Stoney Nakoda Territory, and to experience the first-hand the teachings of “Nature’s University”. Similar to this, Chief Snow (2005) speaks about the “seeking” of many truths in nature:

“The Stoney way of life begins with reverence for the Great Spirit and gratitude for the sacred mountains created by Him for Himself and His children. In the mountains we find many truths. As we cast our eyes toward them, they seem to be different each day, and yet we know that they have always been the same, strong and unchanging.” (p. 203)

Further to this, Deloria speaks about the role of the Scout in traditional times, and the importance of their role in observing and recording information for the tribe:

“We can characterize modern Indian students as fulfilling the function of scouts in the old hunting culture. They did not direct tribal activities as much as they provided information upon which the community could act.” (Deloria & Wildcat, 2011, p. 109-110)

In terms of differences between Western Science and Traditional Knowledge, the role of fieldwork is confronting western misunderstanding on how information is gathered in traditional knowledge processes. Deloria (1997) states:

“Other attitudes encompass the idea that the non-Western knowledge, while interesting, is a lucky correspondence between what science has “proved” and what these people discovered by chance. Even with Tribal peoples now entering academics fields, there is a bias, and most academics deeply believe that an Indian, or any other non-Western person, cannot be an accurate observer of his or her own traditions because that individual is personally involved.” (p. 34)

The role of Stoney Nakoda technicians for this Bison Cultural Project, was to observe and record data, based on traditional knowledge and oral teachings. The consultation officers or technicians traveled to the project area and observe attributes of the landscape. Observations are based on the traditional knowledge gleaned from the Elder Interviews, traditional stories, and the language and history of the Stoney Nakoda. Technicians may observe cultural indicators, such as wildlife migration or habitat, weather patterns, changes in vegetation, the presence or absence of traditional medicines, the presence of minerals or mineral licks, and water sources, among others.

Step 5: Elder Reconnection

It is important for Elders to hear, firsthand, about the observations and experiences of the field work. This step allows time for reflection by Elders who hear about these experiences and consider them alongside stories and traditional teachings. Chief Snow (2005) reiterates the importance of Elder wisdom in applying wisdom, to live in a balanced world, stating:

“With technology it is possible to drill deeper for oil and gas, make bigger mines for iron and coal, and exploit the soil and the forests more thoroughly. This can be good; but without the application of wisdom in its use, technology will only change our world into a vast quarry which provides material for great factories while the people live in cities which resemble mighty beehives. Only wisdom can harness technology so that man can build a better world where people can live in pride, freedom, dignity, equality, and brotherhood. My people must never lose their respect for the wisdom of the elders, wisdom which will balance all human activity.”
(p. 212)

Technicians relay their experiences and observations with the aid of photos, videos, and personal accounts. In return, Elders provide interpretation of what is happening on the landscape. These interpretations are captured and recorded as clearly as possible.

Step 6: Report Writing

For the report writing stage, it is important to capture the information gathered from the Planning, Elder Interviews, Field work and Elder Reconnection steps. One of the aspects of the report writing step is to convey traditional teachings, from a traditional knowledge worldview. Once information is gathered from Elders and Knowledge Keepers, at the Elder Reconnection step, it is important to write and present this information with this background and these experiences in mind. As part of the “Cultural Monitoring” process, in addition to a final report, a short video of the Bison Cultural Project will be produced for this project to try and capture the cultural aspects of this project, that may not be fully conveyed in written form.

Another difference between Western Science and Traditional Knowledge is in bridging the gap in understanding the natural world. For Traditional Knowledge, the natural world is alive, in

Western Science the natural world is an object to be used for the benefit of humankind. Deloria (1997) states:

“The major difference between American Indian views of the physical world and Western Science lies in the premise accepted by Indians and rejected by scientists: the world in which we live is alive. Many scientists believe this idea to be primitive superstition and, consequently, scientific explanation rejects any nuance of interpretation that would credit the existence of any activities of the natural world as having partial intelligence or sentience present. American Indians look at events to determine the spiritual activity supporting or undergirding them. (p. 40)

Another difference between Western Science and Traditional Knowledge is in how we, as human beings, observe, record and understand natural phenomenon. In Western Science, as in many disciplines, knowledge is categorized and siloed, whereas in Traditional Knowledge, knowledge is interconnected and multi-disciplinary. Deloria (1997) in “Red Earth, White Lies” states:

“Science insists, albeit at a great price in understanding, that the observer be as detached as possible from the event he or she is observing. Indians know that human beings must participate in events, not isolate themselves from occurrences in the physical world. Indians thus obtain information from birds, animals, rivers, and mountains, which is inaccessible to modern science.” (p. 40)

In “Power and Place,” Wildcat and Deloria (2001) state:

“Look at the curriculum that Indian children are asked to use. Knowledge of the world is divided up into separate categories that seem to be completely isolated from each other. So profound is this separation that most children, Indian and non-Indian, rebel when they are asked to write complete sentences in classes other than English, or to show any comprehension of mathematics in any course except mathematics and physics/engineering. We are asking children to divide the world into predetermined categories of explanation and training them to avoid seeing the complete picture of what is before their eyes.” (p. 155)

All information from the previous steps is presented in a final report. The report itemizes the meetings, personnel, and processes utilized. The final report summarizes the report outcomes and provides conclusions and recommendations.

Step 7: Outreach

The Outreach step of the “Cultural Monitoring” process exemplifies another difference between Western Science and Traditional Knowledge. In Western Science, knowledge can be accumulated for the sake of accumulating knowledge. For Traditional Knowledge, once

knowledge is acquired, it is fit into a large whole of a person's existence and purpose. The knowledge comes with roles and responsibilities to the land and the tribe:

“Where traditional Indians and modern science are quite different is in what they do with their knowledge after they have obtained it. Traditional people preserve the whole vision, and scientists generally reduce the experience to its alleged constituent parts and inherent principles. These principles then become orthodoxy and stumbling blocks to future generations. (Deloria & Wildcat, 2011, p. 63-64)

Chief Snow states that Elders have identified a need to re-educate non-Indigenous people about Indigenous values and teachings, and that these teachings must be done with respect. Chief Snow (2005) states:

“Life is not only human life, but the life of the forest, the trees, the elements of nature, and so on. The elders were saying that unless modern society is in tune with those things, it will continue to destroy, pollute, and make bigger machines and greater weapons that eventually will destroy the planet Earth. The elders believe we must teach all of our brothers and sisters that life is sacred and very valuable and was created for a purpose. Everything is interrelated, and we must live in harmony in the renewal process of the seasons. The fundamental basis of our teachings is to respect the Great Spirit's creation – Mother Earth and her inhabitants – and to remember them in our prayers and our ceremonies.” (p. 239)

The Stoney Consultation team will conduct educational presentations on the project to the community. Presentations will be made to elementary schools, post-secondary schools, environmental groups, conservation groups or workshops and conferences. Thus, the traditional knowledge of the Stoney Cultural Monitoring process is actively disseminated in communities and utilized as an education tool. This step brings traditional knowledge to communities.

5.4 Project Specific Methods

Details regarding how the above steps were applied to this project are contained in Table 1. For this Stoney Nakoda-led project, Bearspaw, Chiniki, and Wesley Elders and Knowledge Keepers were interviewed by the Stoney Nakoda research technicians prior to visiting the bison reintroduction zone to observe the cultural indicators of the bison on the landscape. This final report includes a detailed account of all meetings held (Appendix C).

The Stoney Nakoda research technicians entered the bison reintroduction zone from îyârhe Tînda (Ya Ha Tinda) to the east by horseback and were accompanied by Parks Canada staff. Riders conducted fieldwork from September 8 to September 12, 2020. Their itinerary was as follows and a map of their route is described in Figure 13:

- September 8, 2020, Day 1 - Leave from îyârhe Tînda to Scotch Camp
- September 9, 2020, Day 2 - From Scotch Camp to Station Mountain / West side of Mount Tyrrell

- September 10, 2020, Day 3 - From Scotch Camp to Panther River Cabin
- September 11, 2020, Day 4 - From Panther River Cabin to Scotch Camp
- September 12, 2020, Day 5 - From Scotch Camp to Îyârhe Tînda



Photo: Karsten Heuer/Parks Canada

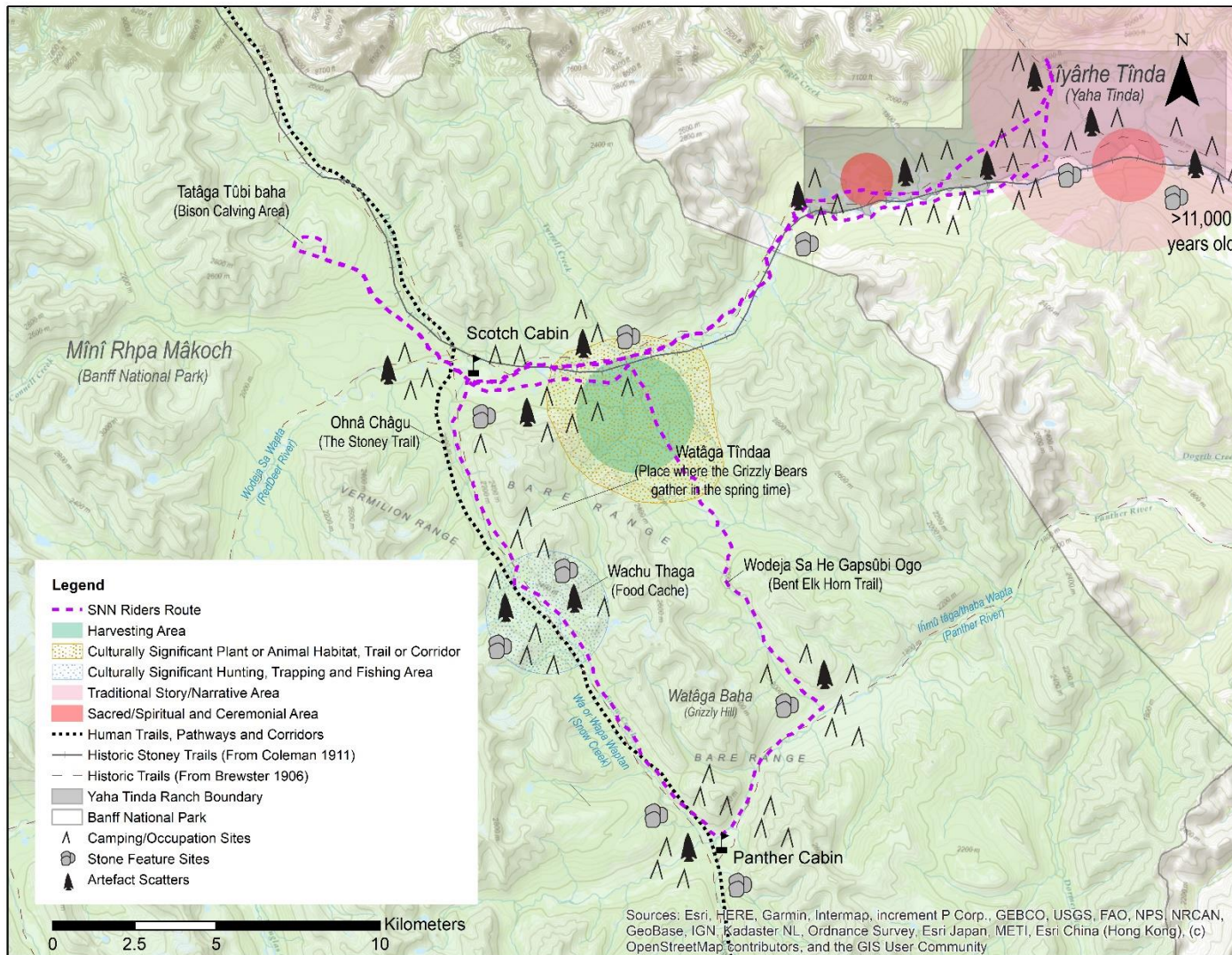


Figure 13: Map of route taken by the Stoney Nakoda riders in conducting cultural monitoring fieldwork.

Table 1: Our methodological approach, outputs, and timelines

Methodological Step	Outputs and Timelines
<p>Interview Stoney Nakoda elders (Bears paw, Chiniki, and Wesley) to identify the traditional and cultural resources that can be monitored in the bison reintroduction zone and among the bison.</p> <p>Conduct ceremonies to start the project.</p>	<ul style="list-style-type: none"> • Conversations with elders occurred during the Stoney Indian Days in Mîñî Rhpa Mâkoche (Banff National Park). • A formal project ceremony was held on August 28, 2020 at the Stoney Indian Park in Morley, Alberta • A ceremony for the fieldwork team was held on September 7, 2020 at Ya Ha Tinda Ranch, Alberta.
<p>Write a literature review summarizing western and Indigenous approaches to knowledge gathering and keeping, traditional ecological knowledge and cultural monitoring, the relationship of the Stoney Nakoda Peoples to the territories included in Mîñî Rhpa Mâkoche (Banff National Park), and the role of bison both ecologically and culturally within the reintroduction zone.</p>	<ul style="list-style-type: none"> • The western components of the literature review were drafted in Winter 2019. • The Stoney Nakoda/Indigenous knowledge will be added as the study is completed.
<p>Meet with the Parks Canada conservation ecology team and bison reintroduction lead to understand the bison reintroduction project, the status of the herd from a western science perspective, and opportunities to contribute to the pilot review project in 2022.</p>	<ul style="list-style-type: none"> • Multiple meetings occurred in 2019, 2020, and 2021 as the project progressed.
<p>Fieldwork in the bison reintroduction zone where Bears paw, Chiniki, and Wesley riders observed the reintroduced bison population and habitat through cultural monitoring methods as provided by Stoney Nakoda elders.</p>	<ul style="list-style-type: none"> • Traditional knowledge technicians from all three bands of the Stoney First Nation traveled by horse into the bison reintroduction zone with Parks Canada beginning at Ya Ha Tinda Ranch and extending to Scotch Camp in the Panther Dormer Valley September 7-12, 2020. • Riders recorded observations using photos, videos, and field notes.
<p>Dialogue between the riders and elders to apply Traditional Ecological Knowledge (TEK) to the field observations to provide insight into the wildlife and land management practices, as well as policies related to bison.</p>	<ul style="list-style-type: none"> • Conversations between elders and riders occurred at the Stoney Indian Park in Morley, AB on: <ul style="list-style-type: none"> ○ September 18, 2020 ○ January 12, 2022
<p>Outreach and knowledge mobilization to share the results of the project with the Parks Canada bison reintroduction pilot project reviewers as well as the broader community of parks and protected areas decision-makers, wildlife managers, researchers, and the conservation community.</p>	<ul style="list-style-type: none"> • Outreach has been primarily through the Canadian Mountain Network and an interim report completed in January, 2022. • Production of a research film and final report is scheduled for March 2022.

6.0 Results

6.1 Cultural Monitoring Research Process

Though the study was approved for funding by the Canadian Mountain Network in 2019, the Covid-19 worldwide pandemic and administration challenges had significant impact on our completion timelines. Challenges that arose are addressed in the recommendations.

6.2 Field Observations and Oral Histories

The field observations were rich and varied with Traditional Knowledge as the Technicians (hereafter the Bison Riders) observed bison (hereafter Tatâga) in the reintroduction zone and recorded locations and descriptions of habitat attributes. Some examples of observations from the Bison Riders and interpretations from the Elders are contained in Table 2. A photo essay of the fieldwork is available in Appendix D Photo Report.



Photo: Karsten Heuer/Parks Canada

Table 2: Examples of Bison Riders' Observations and Elder Interpretation

Bison Herd Attribute	Elder knowledge	Cultural Monitoring Observation
Herd Social Structure	<p>Bison herds have a social structure. There are the Tatâga Wiye Îtawagihâ (Matriarch), the middle aged, Tatâga Mnoga Îtawagihâ (Dominant Bull), Tatâga Wiye (Mature Bison Cows), Tatâgan Chîjan (Bison Calves) and the Tatâga Mnoga Chugan (warrior bison). Tatâga Mnoga Chugan are between two and three years old and defend the herd. The Tatâga Mnoga Chugan protects the herd. Tatâga Mnoga Chugan are expected to be located beginning after the 3rd year of reintroduction.</p> <p>The social structure also includes Tatâga Wiye Îtawagihâ (matriarchs) that teach and direct the herd. The Tatâga Wiye Îtawagihâ can also be found in the herd around the 5th year.</p>	<p>Technicians observed what were likely Tatâga Mnoga Chugan (warrior bison) one evening when two tatâga (bison) came over the hill towards the cabin. A few minutes later there were 4-5 bison. The Elders suggested this was a display of warning. The herd would have been vulnerable prior to gaining a Tatâga Mnoga Chugan (Warrior bison). Now that the herd has a Tatâga Mnoga Chugan (warrior bison), the herd has seen success. The herd is growing and has not faced recent attacks from predators. There will be more Tatâga Mnoga Chugan (warrior bison) to monitor in the coming years.</p> <p>The Tatâga Wiye Îtawagihâ (matriarch) is leading the herd to safety. This is also ensuring the herd's health.</p>
Rub Stones	<p>The Bison herds have historically rubbed against stones leaving the stones smooth.</p>	<p>The riders noticed rub stones outside and within the reintroduction zone.</p>
Movement and grazing of medicines	<p>The Tatâga migrated in a circle to access all the grasses, willow, and other plants they needed to graze on. Each grass grew in a certain area at a certain time of the year and the tatâga moved with it. Throughout the year there were different plants that needed to be consumed for the health of the herd. This caused them to continuously move.</p>	<p>Riders noted that the Tatâga did move in a circular pattern following their grazing pattern. Riders also found willow and grasses that the tatâga grazed on.</p>
Bull Battles	<p>The battles between the bulls causes bulls to leave the reintroduction zone. Tatâga Mnoga Îtawagihâ (Dominant Bulls) in the herd get to mate. Weak bulls are chased away in this process. This keeps the herd strong. This may have caused bulls to leave the reintroduction zone in the past. It may also cause the herd to split soon.</p> <p>There is only one Tatâga Mnoga Îtawagihâ who impregnates all cows. When he is challenged, the older bull takes the older cows, and the younger bull takes the younger cows. They separate during mating season, but then the whole herd comes back together when mating season is over.</p>	<p>The herd is still growing. Ongoing cultural monitoring is required following mating season.</p>
Wallows	<p>The tatâga have historically created wallows.</p>	<p>Rider reported finding wallows 3-4 feet deep in the Tatâga reintroduction zone.</p>
Increased Biodiversity	<p>Tatâga reintroduction increases biodiversity in the reintroduction zone and beyond. Birds, insects, wolves, and other species rely on the bison for sustenance. The zone will see an increase in biodiversity as a result.</p>	<p>Riders noted tracks of wolves, coyotes, elk, grizzly bears, and other animals with bison tracks. All animals are coexisting with the bison herd.</p>

6.3 Project Findings

Our findings are grouped into categories and were compiled based on the cultural monitoring data collection conducted by the riders, meetings with Stoney Elders, and lessons learned from the process of conducting this project. Our results are designed to complement existing monitoring efforts being conducted by Parks Canada staff to understand the ecological implications of reintroducing bison to this landscape. Through fieldwork and interviews with Elders, we offer a deeper understanding of the significance of the bison reintroduction as the landscape's biodiversity is restored and the spirit of the land becomes whole again.

The reintroduction has accomplished more than the physical presence of bison on the landscape – it has helped restore an intense ancestral Stoney connection to these lands, which also contributes to the landscape being whole once again. The overarching result is that this cultural monitoring project confirmed that Stoney Nakoda knowledge can enhance understanding of bison behaviour and impact to the landscape, and that the presence of Indigenous people on the landscape delivers holistic benefits for wildlife, landscapes, and people.

6.3.1 The Importance of Ceremony

The Elders spoke of how the first attempt to reintroduce tatâga into this area in 2010 failed when the bison scattered and disappeared. One of the reasons this more recent introduction has been so successful is because the Stoney were permitted to conduct ceremony. Ceremony and cultural connections were used to build a relationship with the tatâga, directing them to stay in the reintroduction zone and ensuring the success of the Bison Reintroduction Study Pilot.

That's where the buffalo, where the story of the buffalo. When they were introduced, they were introduced without ceremony, back twenty years ago or so. And they all scattered, and they all disappeared. They all got hit on the road, or trying to get back to Elk Island. That's where they originally came from. So the second time around, Parks, we were working with Parks at that time and we suggested that a second attempt should include ceremony where the buffalo will be told what the purpose is. The first time nobody told them why they were being put over there. And then of course, if you were dropped off in the mountains and nobody told you what you were there than you would try to get home. The second time around through ceremony, we told the buffalo the purpose of why they were getting dropped off there. And then with that, then they flourished. Then they got back into their natural ecosystem. The natural ecosystem was created too for the birds, and for all the animals that are included in the ecosystem over there too. The plants too. So it all worked out, just like the stories they are telling, it is amazing how everything naturally forms back into how it was created in the first place. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Technicians and Elders identified the need for ceremony. Elder Hank Snow noted the role of ceremony in supporting the relationship the technicians had with the tatâga during field work.

I was just asking Ollie here, after they tied the prayer flags. After they did that is when they came. So that's an interesting point too. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Rider Ollie Benjamin highlighted the need for sweats to occur in or near the reintroduction zone moving forward.

The other thing is too, before we left that morning I was walking around the horses. I could hear voices saying we should have a sweat over there. At Scotts camp and Windy Cabin. (Technician Ollie Benjamin, Personal Communication, January 13, 2022)

Ollie continued his reflection on ceremony, noting the importance of ceremony and the need for a sweat to occur to support the ongoing relationship with the herd.

It's not just about the buffalo over there. When we were over there, you'll see like the spirits are over there. A whole bunch of them were over there. Like you can feel it, you can hear them, they are over there. All those other animals too, are happy that those guys are back over there. You know. That's why when we're talking about those cultural activities up there, they should at least go put up a tipi and have sweats over there. That way, it seems like when those buffalos were back over there that's when we original people from there, we went there and those spirits were there and already knew who we were. And they were happy too. That's why we have that feeling there, because it felt safe over there. We want to come back. That's what that buffalo brought back. (Technician Ollie Benjamin, Personal Communication, January 13, 2022)

Even though the elders did not visit the bison reintroduction zone, they were able to share information about geographic locations and medicines (i.e., specific vegetative species with medicinal attributes) to guide the Stoney Nakoda technicians. Their advice led the field team to observe things such as the location of old wallows, rub stones, and specific plants that offered important medicine to the bison herd. Upon return from the reintroduction zone, Chiniki rider Conrad Rabbit shared that:

"The creator set the sunshine on us until we were heading back – it was very humbling. Way on top of the ridge, you could feel it – 200 years ago, this is where the buffalo roamed and we were in our ancestor's footsteps." (Dulewich, 2020).

6.3.2 Bison herd and social structure

It is pertinent to preface this with an awareness that the initial herd by was selected by Parks Canada based on genetics. Stoney Knowledge holders did not have the opportunity to inform

the project with a Traditional understanding of herd structure, which would have benefited the project and the bison herd structure. The selection of bulls was not based on Traditional Knowledge, and Elder Henry Holloway explains how this may have impacted reintroduction success.

They told me they're bringing about sixteen or eighteen buffalo. There was four bulls. You know you only need one. One will take care of everyone. They will chase the other three away. I told them that. And you know one buffalo will take care all fifteen-sixteen buffalo, one bull. Not four. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

In Stoney Nakoda knowledge systems, Tatâga have a matriarchal social structure that includes a Tatâga Wiye Îtawagihâ (matriarch), Tatâga Mnoga Chugan (warrior bull), cows, and Tatâgan Chîjan (calves). Ongoing observations of the Bison herd in Morley at Stoney Indian Park have given Stoney Nakoda knowledge holders the chance to observe this social structure. They shared their awareness of indicators in the herd that allow them to pick out the Tatâga Wiye Îtawagihâ and Tatâga Mnoga Chugan, as well as the Tatâga Wiye (mature bison cows) that support the matriarch.

"Now five years later a matriarch is probably established. So now that matriarch, if it stays there, the herd stays there. The matriarch tells everybody where to go. It teaches the young ones, the warriors how to protect and what to expect [in] certain areas. [...] All these things are the responsibility of the matriarch. To hand down that information." (Charlie Rabbit, Stoney Nakoda Nation, personal communication, August 2021)

Elder Hank Snow provided additional information on the Tatâga Mnoga Chugan (Warrior Buffalo), including its role in protecting the herd against other animals like the grizzly in the story below.

"There's Nakoda stories of the warrior buffalo. Probably a three- or four-year-old, there was a battle between a buffalo and grizzly bear. The biggest buffalo challenged the grizzly bear unsuccessful. But the warrior one, warrior buffalo is the one that defeated the grizzly bear. When they first introduced, there was no warrior within the 18 or something that they brought.

So they were vulnerable to animals until the new ones were born and they became 2-3-year-olds. Then they had their protectors. Just like what they were talking about. The warrior bison were raised. Now they have the protection they need for the herd to survive. So that the warrior of the herd." (Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

The riders attested to this, describing an observation of the Tatâga Mnoga Chugan one evening coming over a hill when they were at camp. The elders explained that the protector of the Bison herd is always around. The Tatâga Mnoga Chugan of the herd is usually a 3-4 year old male, but not always the biggest.

“When they came up to greet us at Panther Valley. They disappeared ten minutes later. I think a group of four or five came back. One main one stood there in the open playing. It just so happened I was reading a book and when the buffalos are curious, their tale is straight up. That’s how the young bull was. Then all the sudden I seen two go the left. Then two go to the right.” (Conrad Rabbit, Personal Communication, January 13, 2022)

Elder Henry Holloway went on to discuss Traditional Knowledge on the times of year to we need to leave the herd alone.

Mating is in May and June, that’s the only time. The other times they are all together. The only time they separate is during mating one herd will stay away from another herd until mating is all over. Then they leave together. That’s why you see all these buffalo together all over. You don’t see herds like this, just taking care of one bull. They only take care once its mating time and then the rest of the time they all live socially. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Bison herd expansion is informed by its own set of Traditional Knowledge. Stoney Knowledge systems may also tell us the role of the Tatâga Mnoga itawagihâ (dominant bull) in protecting and expanding the herd in the future.

You see, a dominant male will look after its own herd. It will look after its herd. Usually when a young bull comes in, the old bull take out its old mates away. Just the one young ones, the new bull will take over. The old ones will not go with the new bull. Just the young ones. The old bull will take care of its old cows separately. This is how nature takes care of itself. By not inbreeding. They know more about how to separate each other than we do. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022).

Traditional Knowledge of herd may also explain why bulls or cows leave herd.

For the buffalo herd, I think in a pack. A buffalo pack would know which buffalo is sick, and I think the dominant buffalo would chase the sick one away out of the herd. I think that’s one thing too. They know that. So they chase them off. (Ollie Benjamin, Personal Communication, January 13, 2022)

Elders also emphasized the need to understand the ways Traditional Knowledge may explain herd size and Tatâga behavior now and moving forward.

The only time a herd separates is when it gets too big. If you have 200 head there, there will be three different herds in different valleys. But during the summertime, sometimes they come together. But most of the time each herd goes to each area where it survives. So that 150 head goes around in circles, it's a place where it can eat all the time good. So they'll just change camp all the time in the area. But if you add another 50 head, they will go to another area and stay there. So this is the pattern of the buffalo they were many years ago. My great grandpa used to say on that time of the year, you go to Hanna, there will be 400-500, or a thousand of them there. Then you go towards Longview or Turner Valley, in August or September there will be a thousand of them there. You'll see the herd move. And we know where they move and we'll go to hunt. That's what my great grandpa used to say. They know what time of the season what herds are in different areas. Which buffalo jump they're close to. So that's the same thing up there. The buffalo, there's only 50 just going around in each valley like [shows circular motion with hands]. That's their home. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Elder Hank Snow provided concluding thoughts on the Bison herd and size, adding that Traditional Knowledge may offer important Stoney cultural considerations when it comes to managing the herd size.

So, fifty might not be enough to protect themselves. Maybe that's why they are staying together for protection. Maybe like what buddy's saying, when you get to 100 or something, then there's enough there to split off. That might be one of the issues too, because if you don't have enough warriors to split, then the wolf can come and take over. So, I think it's kind of a natural balance that is happening out there. That we are monitoring or trying to monitor. Some will likely go amiss, but it will take time. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication January 13, 2022)

6.3.3 Stoney culture and reconnection

While at the Ya Ha Tinda Ranch, Wesley rider Ollie Benjamin found a 1917 picture of his grandfather Jonas Benjamin (Figure 14). This connection to the past is an indication of the role Stoney Nakoda people have played in Mîni Rhpa Mâkoche (Banff National Park), which is an often-overlooked narrative. Similarly, the elders shared information and stories with riders about Stoney Nakoda place names in the Panther Dormer Valley that offer insight into the traditional ecological knowledge carried by the Stoney Nakoda people.



Figure 14: 1917 image of the building of Yaha Tinda Ranch, (l-r) Albert or Isaac Benjamin, Jonas Benjamin and Lillie Benjamin, relatives of Bison Rider Ollie Benjamin.

While on the land, the Stoney riders observed the path the tatâga had taken to eat specific plants at specific times of the year. These medicines are also used by the Stoney Nakoda people at similar times. Following the opportunity to be on the landscape Bears paw rider Toby Dixon said that:

"It felt like a holy place – I hope [Parks Canada] continues the project. I think they can sustain another 100 head out there" and that it was "a spiritual awakening." (Rocky Mountain Outlook, 2020).

Stoney Technician Conrad Rabbit reflected on his trip to the visit the Panther Dormer Valley, elated that the Bison are thriving in the Panther Dormer Valley expressed his excitement stating:

Even though it was from a distance it was good to see the herd. But as soon as they heard the hooves, the horseshoes on the rocks by the creek the whole herd took off and disappeared. It was good to see they were thriving. They grew, the herd grew from what 24 to forty something. (Conrad Rabbit, Personal Communication, January 13, 2022)

Conrad Rabbit went on to express how the Stoney Bison project provided opportunities for Stoney Nakoda Nation to reconnect to the landscape. Reflecting on the experience Conrad explained:

"From my experience, it was surreal [,] for people that haven't been in the backcountry. This was a once in a lifetime experience for some people. But us, we have lived in the backcountry for so many years. And it didn't hit us until the second day [...] Me and Toby were the only ones by the fire. They

told us to watch it until it burns out. We heard voices... and there was only two of us. It was behind the cabin, by the corral where the creek runs. We heard people talking and laughing. [...] And as the days progressed, you could sense there was a great presence from a long time ago that was still there.” (Conrad Rabbit, Personal Communication, January 13, 2022).

Elder Hank Snow echoed the importance of the project's continuation as an opportunity for Stoney Nakoda Nation to reconnect with Banff National Park:

The place they are talking about is a very powerful place. I know the parks have been in that area for the last couple hundred years. Hundred some odd years but they never connected to the spirituality of the area. Like these guys experienced it. I rode up through there too and the feeling that you get is amazing. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Technicians also identified traditional medicines found in the Bison Reintroduction zone. Understanding where and how these plant medicines grow is an important component of cultural monitoring and Stoney reconnection to this part of the area that is now Banff National Park.

Those plants, like the herbs that we drink to cleanse ourselves are there too. So it seems like those ones they kind of showed themselves too. All those things, it was right there. You can smell them; you can see them. (Technician Ollie Benjamin, Personal Communication, January 13, 2022)

6.3.4 Tatâga adaptation to other wildlife

Technicians observed Tatâga and other wildlife tracks interweaving with each other. Elders and riders agreed that it appears as though the Tatâga are successfully adapting to surrounding wildlife. Ongoing cultural monitoring is necessary to further understand the relationship between the bison and other species.

There was lots. In one picture, I had took this one picture in dirt. There was one picture in dirt. I don't know what went through there first. There were elk tracks, buffalo tracks, cougar, grizzly tracks, wolf so we can't tell who was following who as a food source. (Technician Conrad Rabbit, Personal Communication, January 13, 2022)

The Bison herd and local Wagiyá (eagle) population have adapted to each other in the reintroduction zone and surrounding area, as they have done for generations.

There are places in the valley here long ago. My great grandfather told me there are places through the mountains where eagles gather. A lot of the feathers drop from the eagles and Elders go up there to collect them. There's a spot here by Canmore, just this side of Canmore in the mountains. In the springtime, around March April part of May, you'll see

Wagiya gather there on the other side of that mountain. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Although there has not been any wolf predation on Tatâga thus far, this predator-prey relationship is bound to evolve in the coming years as the herd grows and a young male attempts to take some females to start a new herd.

That's the only time, if there's one herd that, one young bull has about ten of them and another has five. He will try to take three or four away from him. That's what they fight over because the more herd they have, the more they feel comfortable from wolves. So this is the time they fight, the bulls. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

The relationship between the Bison herd and wolf packs, as well as other predators like grizzly bears, will need to be examined through cultural monitoring for years to come.

Nature takes care of itself. Whether its wolves, grizzlies. You know everything relies on one another to survive in the wilderness. We have to understand that the wolves, they're not out there to wipe out a whole herd. They're out there to survive and they'll go after the smallest one or the weakest one. See they know which to separate from the herd. They'll never attack a whole big bunch of healthy herd. The wolves are there as predators, but they survive. See nature balances. They have to understand that. See grizzlies they're not a very big threat to the buffalo. They get along. But if they find one weak one, or one that separates from the herd, and they are really hungry in the springtime they'll kill it. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Cultural monitoring should also be used moving forward to evaluate wolf pack size and Tatâga predation risk and mortality through wolf predation.

There's no longer the natural predators that rely on each other like hundreds of years ago. That doesn't exist anymore. And they reintroduced wolves to this area, the Bow Valley and Kananaskis area, They forgot to research the amount of cubs are born from the wolves each year. See the wolves can probably breed every six months. They get eight, nine cubs and they amount up so fast because there is no predators for the wolves to keep them down. Not like it used to be. So the wolves have outnumbered just about every predator in the forest right now. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Grizzly bears will be another key species in Stoney Nakoda Cultural Monitoring. Monitoring will need to occur in the summer to understand the impact grizzly predation has on the herd.

The only time a grizzly will kill one of those is springtime. That's when the grizzly is trying to survive, out of everything that it can find to survive. It even eats grass. Grizzly, they eat grass. They're more vegetarian than eating meat. It's the wolves out there. A whole pack won't attack an army of buffalo. They'll come there, they'll look for the ones that look like they will separate from the herd, one that's sick or that's weak. That hasn't had very much to eat in the wintertime. It'll separate that. The other thing that they really use is they will chase them. When they chase, they're panicked, maybe the one- or two-year-old buffalo will stray and that's the one they will take out to hunt. It's like us, we go hunt and kill one and we survive. It's the same thing with the wolves and the grizzlies. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Elders and Technicians agreed that the reintroduction of the Tatâga (bison) appears to be contributing to biodiversity in the Panther-Dormer Valley.

I think the natural ecosystem came back. Not because of just the buffalo but also for the birds. For the other animals because the birds, and the insects because of the droppings of the buffalo are different than the other animals. So the bugs that live off that, also the birds nesting using the buffalo hair to build their nests. You know that was not there for many years. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

6.3.5 Tatâga adaptation and impacts to vegetation

The riders' found evidence of the bison herd sharing the same habitats that grizzly bears use during the spring. Cultural Monitoring is needed to evaluate how Tatâga share these habitats with grizzly bears throughout the seasons and how Tatâga activity may alter the vegetative structure of areas important to grizzly bears.

"Watâga Tînda" means the places where the grizzlies gather in the springtime. During the springtime. You see the You see the little willow trees about that high [motions with hand to about knee height]. They're just full of it. In the bottom of that, is the sweet root. We call it, Mâku thkiya. It grows all over the hillside. Grizzlies go to eat that in the springtime. It's really sweet, it's like a carrot and they go there. That's why they named it that... It's called the valley of the grizzly bears. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

This includes the Tatâga respecting food sources like the Mâku thkiya and feeding on Pezi Rhoda (grasses the bison eat) instead. This ensures the Tatâga (bison) and Grizzly can co-exist in areas like *Watâga Tînda*.

You take it out, you pull it (Mâku thkiya) out sometimes it's about that long [holds hands approximately 25 centimeters apart]. It's all black, you just

take it to water and peel it off. It's all white. You eat that. Nice and sweet. It used to be the candy for our people. Candy stick! Long ago. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Traditional Knowledge also identified food sources for Tatâga, including Chârhatziya Îyârhe ekta uyatha ze (little willow trees that grow on the side of the mountains) in the winter.

During the wintertime the buffalo doesn't only rely on the grass. It eats the twigs of the willows. You know the willows that grow up in the mountains that are that high. Those are sticking out in the wintertime, the tips. The buffalos they eat that during the wintertime. They won't eat it in the summer. In the wintertime to survive they eat that. [...]

Even cows will eat that if they are up there. If they're short of food for an animal, like a cow or moose, or an elk, they eat those twigs during the wintertime. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Traditional Knowledge also identified the need for Tatâga to have a large area of land where they are permitted to expand. This is important for herd health as there may be resources in other parts of the park that they require access to.

All the animals, the deer the moose, they all migrate to certain areas and eat different plants. And all these plants are medicine. They are gathering medicine everywhere. And then when you kill the animal and eat the meat you are eating the medicine that it had gathered throughout its life. So, if the buffalo are leaving the park, and going into the different area of the park there might be something there that they need. That's why they have to go there. If it was further in. Maybe it's just the different plants, or grasses, or whatever is growing there is probably different. When you go further deep into the mountains. I guess that would kind of be the same thing to monitor. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

6.3.6 Tatâga behaviour and adaptation to the landscape

The Technicians observed several Tatâga wallows throughout their ride. The presence of these wallows demonstrates that the Tatâga are using landscapes as they normally would by creating three-to-four-foot wallows in the reintroduction zone.

These big wallows, the big area of wallows that were amazing compared to the ones we seen. Just imagine the herd, or the bulls that did this for so many years. That's a big big digging, big opening there. (Technician Conrad Rabbit, Personal Communication January 13, 2022)

The Technicians observed tatâga wallows in a variety of landscape throughout the Îhmû tâga/thaba Wapta (Panther River). Historic Wallows confirm the knowledge that the tatâga have created wallows for thousands of years.

When we got to that place, we just kind of walked around. There were buffalo wallows all over the place. Old ones, new ones. (Technician Ollie Benjamin, Personal Communication, January 13, 2022)

Technicians and Elders used cultural monitoring to evaluate the Bison herds behaviour when they first met the technicians. As the Tatâga approached the riders' camp with their tails raised, Traditional Knowledge indicated the Tatâga were warning the Technicians and Parks Canada team to maintain their distance.

Usually buffalo, that's a sign of don't come any closer. They used to say that when they hunted buffalo. It's a warning. Just like Conrad is saying. That means don't come any closer. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

The Tatâga have adapted to the landscape, demonstrating a familiarity with the reintroduction zone and mountainous landscape.

They know that area. It seems like they know. I think they saw us. I think they are automatically adapted. They are so used to their ancestors being up there. So they adapted to the region. They knew where to go. They are so intelligent. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Elder Henry Holloway attributed the success of the pilot to the bison's knowledge and relationship to the land.

See all animals are instantly adapted to where they come from. All the wild animals. You put them out there, they know what to do already. They know how to survive because they are adapted to it automatically. So, when they brought the buffalo there, the buffalo as soon as you let them out, they knew what to do and where to go. They know everything. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

6.3.7 Tatâga and reintroduction zone history is informed by Traditional Knowledge

Traditional Knowledge provides insight into the evolutionary changes of the Tatâga over the years. Plains Bison were historically smaller in size than the bison we see in the reintroduction zone and elsewhere. According to Elders, additional research is needed to culturally monitor the bison to learn more about the change in size.

Way back when the buffalo were in the mountains. They weren't the size of the buffalo that are up there now. They were smaller buffalo. They were smaller than the plains buffalos, that's what my grandpa used to say. I don't

know why. That they were smaller than the plains buffalo. I'm talking about one hundred, maybe two hundred years ago. The buffalo weren't that big. These buffalo are way bigger than the ones in the mountain. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Tatâga have their own unique history in the surrounding area, including at Indian Head. Traditional Knowledge was used to identify bison bones in the Indian Head area. It is essential that Technicians are permitted to further study these bones as part of future cultural monitoring.

Further North, of Scotch Camp is Indian Head. That's where they found the buffalo skulls. I think they brought one back, and I think Clifford or Charles were the ones that used it for his Sun Dance. So that's where they found it. That was further North. Around Scotch Camp. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Traditional Knowledge also highlights îyârhe Tînda as a culturally important area for Stoney Nakoda Nation as the location of the last piercing ceremony.

When we were camped over there at Ya Ha Tînda. We did youth camp for a couple years. The Elder, my father-in-law Charlie Rabbit told that story. Other Elders have also told that story. Where the last women that did a piercing ceremony was at Ya Ha Tînda. When women do a piercing ceremony, they pierce their shoulders and attach to the tree of life. The last women that did a piercing ceremony was at Ya Ha Tînda. That's they story that they told. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

îyârhe Tînda is also culturally and historically significant to Stoney Nakoda Nation as a site of early contact and resistance against settler David Thompson.

Another story that the father-in-law told us, it came from my mother-in-law. Her grandmother I think it was, or great grandmother told a story of camping in Ya Ha Tînda. They camped in the one area there and they heard chopping. Just like we are hearing now but at a distance on the other side of the clearing at Ya Ha Tînda. So, the men went over there to investigate what's going on. When they got there, they said there was a hairy little white man. He said he was chopping trees down, but they couldn't talk. So, it was mostly sign language. So, they asked him what he was doing there. He said oh he's going to build a cabin there. He was sawing logs. So, they told him no, and they chased him away and he went North. And then there were people camped at Kootenay plains. They told a similar story. They were camped there, and they heard the same chopping. They went to investigate that, and it was that same guy. Trying to do the same thing, building a cabin there. They chased him away. But the warriors got offended by that, with showing them no respect. He thought he could

do whatever he wanted. So, the warriors wanted to kill him. So, they went after him, but he hid. I don't know where he hid but they didn't catch him anyway and he got away. He ended up in Edmonton, a big house they called it. Do you know who that was? David Thompson. [laughter]. When they first found him all he had to eat was a big frog they said. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Elders also discussed the close connection between the area surrounding îyârhe Tînda and Stoney origin stories. This includes the story below:

See my great grandfather used to talk about the history in this area. See my great grandfather was Enoch Baptiste. [...] At signing of the treaty, he was twelve years old and he knows a lot about the history in this area. Blackfoots were never in this area. Never. Hardly. If they see them in this area, they were lucky to get out with their scalps on. That's how secure the Nakoda people looked after this area. To travel back and forth through the mountains right into the Flathead area, Chief Joseph strived to. The horses come through there. Way back 200-300 years. The horses that did that over there were Spanish horses that were brought up there and were introduced to the Stoney Nakoda people. And that's why, the mountain range here, the Stoney Nakoda people has always been in here. They never left this area. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

6.3.8 The need to continue cultural monitoring

Cultural Monitoring can provide historical context regarding the bison herd and the area, but it is through this knowledge that we can also better understand the future. Cultural monitoring is required to preserve both the bison and the environment for years to come.

They know that. They're smart, really smart. And the government has to understand that. They are trying to figure out something for some group. The government is always trying to figure out things for some group that they don't even know. That's what they did to us. That's what they're doing to the buffalo. They have to understand that. They have to listen to us from now on. If they want to preserve this land, this world. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Elders added that Cultural Monitoring is needed on an ongoing basis to learn more about the herd.

Just like our Elder Henry was saying, they know more than we do. We're just starting to learn a little bit about them by monitoring and listening to the traditional stories. We're starting to understand a little bit more about what's going on. But there's probably more to know. By monitoring it with

ceremony and everything we will start to understand more and more about how many or what's the population. (Elder Hank Snow, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

Cultural Monitoring should occur at least once a year, ideally in each of the seasons to monitor the bison and re-build the relationship with them.

I think we should be involved in the monitoring. Like Ollie, and Conrad and them guys did. They can go up there in the springtime, on horseback, and then go in the summertime, then fall, so you have three different seasons they can monitor. Our people. They'll know, they'll understand. Then they can bring it back and report to the government. Exactly what happened, what's going on with them. Because we understand them, they understand us. They'll probably know when we are coming to be with them for a while. So, we need to have a relationship with the buffalo. And to build that relationship there's got to be a trust. And that's what we need. (Elder Henry Holloway, Stoney Nakoda Nation, Personal Communication, January 13, 2022)

6.3.9 Systemic barriers to working with Biculturalism

While the most significant barrier to completing this research project has been the COVID-19 pandemic, disparity between academic and tribal institutions also presented challenges. Administrative requirements to complete funding applications, obtain ethics approval, access research funds, report progress, and share findings have required the Stoney Tribal Administration to adapt to western systems. Enabling organizations like the Canadian Mountain Network, and Parks Canada staff, and interdisciplinary research collaborators are moving this kind of collaborative work forward. It is crucial to note, however, that the Stoney Nakoda First Nations ultimately had to independently find external funds to do research on a culturally important species in a National Park in Stoney Nakoda territory to share that knowledge with Parks Canada.

7.0 Project Recommendations

The main purpose of this project was to provide cultural monitoring information that could be woven with western science to ensure bison management in Mîni Rhpa Mâkoche (Banff National Park) uses a more holistic approach. Tatâga (Bison) serve as both an ecological keystone species and a cultural keystone species; their presence on the landscape effectively changes many aspects of that landscape from biodiversity to cultural and spiritual significance. Our recommendations fit within a Traditional Knowledge dominant environment, in the Linear Holistic adaptation context and align with the diverse ecological and cultural aspects of having bison back on the landscape in Mîni Rhpa Mâkoche. Implementing these recommendations is an important part of reconciliation and ensuring the bison reintroduction program continues to be effective.

Recommendation #1: The existing Tatâga (Bison) reintroduction program should continue in Mîni Rhpa Mâkoche (Banff National Park).

The Stoney Nakoda First Nations are supportive of wild roaming bison remaining on the landscape so they can serve their vital role in the ecosystem and their respected place in the cultural and spiritual domain of the Stoney Nakoda people. As William Snow explained to the research team, the reintroduction of the bison to the landscape in Mîni Rhpa Mâkoche is also a reintroduction of the Stoney Nakoda people to the landscape (Snow, 2020).



Photo: Karsten Heuer/Parks Canada

Recommendation #2: Hold ceremony at the start of all new phases of the Tatâga reintroduction project in Mîni Rhpa Mâkoche in a good way.

Stoney Nakoda peoples understand knowledge from nature through ceremony and cultural practices. The Stoney Nakoda First Nations worldview calls for a ceremony to be conducted by Stoney Nakoda Elders, Knowledge Keepers, and the local community at the start of any and all new phases of the bison reintroduction and monitoring project. Ceremonies will assist plains bison to continue their physical and spiritual relationship to the specific areas that are culturally significant to them and the Stoney Nakoda peoples. A first step is to determine a location for this ceremony and invite Parks Canada staff and researchers involved in the reintroduction project.

Recommendation #3: Conduct follow-up field visits to the Tatâga reintroduction zone to extend cultural monitoring and continue adding to this important work.

Just like ecological monitoring work conducted annually by Parks Canada staff, cultural monitoring should become a standard measure of the reintroduction project's success. The Stoney Nakoda First Nations bison cultural monitoring program ideally includes multiple field visits to observe the seasonal and longer-term impacts of bison on the landscape. Due to the impact of COVID-19, the second site visit was not completed during this project. A first step is to coordinate additional fieldwork in the bison reintroduction zone with Parks Canada, followed by dialogue with elders. If the bison reintroduction project continues, repeated field visits could be incorporated into the bison reintroduction plan and supported by bringing a tipi canvas to the reintroduction zone and preparing tipi poles that could be used by Stoney Nakoda riders in the future.



Photo: Conrad Rabbit

Recommendation #4: The Tatâga reintroduction should be expanded further into Mîni Rhpa Mâkoche.

We recommend that the bison reintroduction zone be expanded to include other parts of Banff National Park. Bison should be permitted to roam freely anywhere within the National Park boundaries, including into the Cascade Valley, and the Red Deer River valley into the Icefield region. The Stoney Elders have indicated in their interviews that the bison roam to the foods and waters they need, as the herd grows, so too will the area needed. The biodiversity that the bison are bringing to the reintroduction zone, should be extended to all of Mîni Rhpa Mâkoche.

For herd expansion to be successful, connectivity between valleys must be integrated into a bison herd management plan. The Stoney Nakoda cultural monitoring activities should be continued to identify movement corridors and connecting habitats.



Bison Rider Toby Dixon looking south to the Red Deer River Valley.

Recommendation #5: The Province of Alberta should designate plains bison as “wildlife” in a defined provincial reintroduction area.

On Alberta lands adjacent to Banff National Park, plains bison should be classified as “wildlife” and protected under the Alberta Wildlife Act. Parks Canada should work with Alberta Environment and Parks to ensure that bison who leave the National Park in natural dispersal events are treated as wildlife and not destroyed for management purposes. As a first step, Parks Canada should work with Alberta Environment and Parks to create and deliver educational materials to potentially affected communities and adjacent land holders. They should also define potential Wildlife Management Units adjacent to Banff National Park where wildlife designation may be applied.

Recommendation #6: Acknowledge the perspective of the Tatâga when defining monitoring objectives and future recommendations associated with the Tatâga reintroduction project.

Stoney knowledge holders shared that these animals need to be given the room to determine their own boundaries. While the reintroduction zone is defined by practical limits, the herd may indicate a desire to move into areas that contradict the reintroduction plan. Considering the perspective of the bison can help us understand if the herd is adapting well to an area by staying in it, or if they are constantly trying to get into a new area (suggesting they are not adapting well to the boundaries set by management). Viewing the bison as wild roaming and independent social creatures with their own physical and spiritual needs may be more effective. With help from the Stoney Nakoda worldview that offers an interface with the bison way of being, Parks Canada could improve bison management. First steps could include acknowledging the boundaries set by Parks Canada (e.g. Banff National Park) may not be the same boundaries recognized by the bison.

Recommendation #7: Recognize and integrate Stoney Nakoda cultural monitoring methods in the Tatâga reintroduction project and in other parks wildlife management projects from the beginning.

The Stoney Nakoda worldview of Biculturalism is operationalized through cultural monitoring projects like this one. The Stoney Nakoda First Nations recommend Biculturalism and cultural monitoring methodologies be integrated into future wildlife management activities beyond initial consultations and ceremonies. Traditional Ecological Knowledge should be approached with



similar rigour as and be woven with cumulative effects monitoring. Observations made about vegetation and medicines, the social behaviour and structure of the herd, and indicators of the ecocultural health of the area could be useful to understand the success of the herd from interdisciplinary perspectives. First steps could be to incorporate the observations and findings of the Stoney Bison Study into the next phase of the bison reintroduction project and to add Stoney Nakoda-led cultural monitoring ceremonies, methods, and metrics as a component of subsequent environmental impact assessments and project plans. In addition, Stoney Nakoda place names and the Stoney Nakoda language should be incorporated into monitoring. This project includes media support for Stoney Nakoda songs that may be incorporated at a later date.

Recommendation #8: Create a Stoney Nakoda Guardians Program to collaboratively support the reintroduction of Tatâga in Mîni Rhpa Mâkoche.

The value of sending Stoney Nakoda technicians into the bison reintroduction zone for this project goes beyond cultural monitoring, ceremonies, and observations. The presence of Traditional Knowledge teachings in the bison reintroduction zone provided deep spiritual connection for the riders, new and holistic understandings of the bison and the ecosystem for the Parks Canada team, and opportunities to celebrate traditional bonds with the land for Stoney Nakoda elders. The Stoney Nakoda would like to work with Parks Canada to create a Guardians Program through the federally funded Indigenous Leadership Initiative (ILI). These programs help Indigenous Nations honour the responsibility to care for lands and waters, serving as the “eyes and ears” of traditional territories. First steps to creating a Stoney-Nakoda Guardians Program for bison could be to work with the ILI and apply for funding to co-design a project that would meet the needs of Parks Canada and Stoney-Nakoda collaborators.

Recommendation #9: Collaborate with the Stoney Nakoda in Tatâga harvesting.

As the bison herd continues to grow it may reach the capacity of the reintroduction zone. Parks Canada should work with Stoney Elders and ceremony to determine the appropriate number of bison for the reintroduction area. Once a population target is defined and achieved, Parks Canada should work with the Stoney to discuss herd control mechanisms. There may be an opportunity to support Indigenous harvesting if there is a need to reduce herd numbers or if a particular individual needs to be destroyed for public safety or other management reasons. How these individuals are managed should be informed by the observed herd social structure and advice of the elders. Ceremony should be conducted before any bison is removed from the herd for any reason. Lessons may also be learned from the collaborative moose management by the Mi'kmaq and Parks Canada in Cape Breton Highlands National Park/Mi'kma'qi.

Recommendation #10: Collaborate with the Stoney Nakoda in herd health management.

As the herd grows, genetic diversity and bison health may be supported by translocations and/or bull exchanges between Banff National Park and the bison herd managed by the Stoney Nakoda in Morley. This is important to bring in new bloodlines. Parks Canada and the Stoney Nakoda could also discuss bringing in new bulls from surrounding herds. First steps could be to establish a collaborative, cross-cultural herd management working group and diversity plan for plains bison in the area. The success of this collaboration would depend on fostering open relationships among Parks Canada and Stoney Nakoda bison herd managers, potentially beginning with site visits and information exchanges.

Recommendation #11: Support cultural awareness among Parks Canada staff, partners, and visitors.

The knowledge gathered in this project will be useful and relevant to supporting the goals of the bison reintroduction and to inspire people to learn about and appreciate bison and other wildlife. Implementing this recommendation will also come from the Outreach portion of this project that will be conducted by the Stoney Nakoda. More than that though, this project can contribute directly to an increased visitor appreciation of the role of Indigenous peoples in the lands that include Banff National Park. Similarly, the outreach and knowledge mobilization outputs of this project offer an opportunity to begin or continue a program of Stoney Cultural Awareness, where wildlife policy, programs and regulations can be discussed. The first steps will be to support the sharing of outreach materials, including the forthcoming project video about cultural monitoring and the Bison Cultural Study.

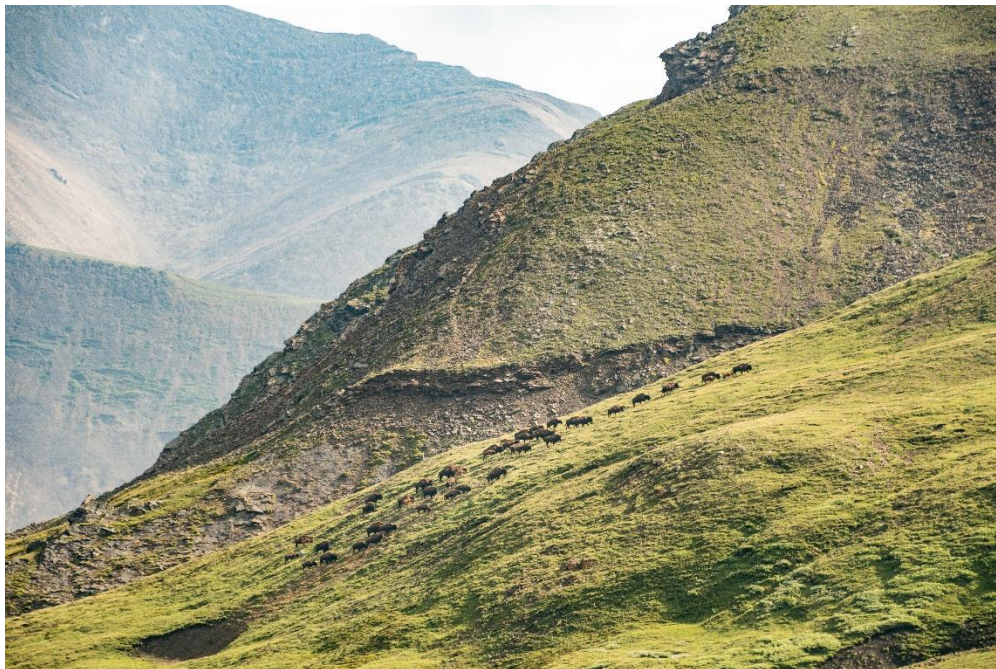


Photo: Karsten Heuer/Parks Canada

8.0 Collaborating Forward

Parks Canada is committed to achieving reconciliation with Indigenous peoples through renewed nation-to-nation and government-to-government relationships based on recognition of rights, respect, cooperation, and partnership (Parks Canada Agency, 2019). As of 2010 Indigenous people became involved in all phases of management planning starting with the State of the Park Reports and defining management objectives. Although Canadian Parks are still managed using a predominantly science-based management model, the incorporation of TEK is occurring in some parks (Devin & Doberstein, 2004). The current management planning process engages Indigenous communities by allowing their perspectives to influence the identification of key issues, challenges, and opportunities to be considered in the scoping documents and in management plans (Langdon, et al., 2010). Cooperative management agreements with First Nations have become more common within Parks Canada, and in 2010 there were 18 formal cooperative management agreements in place and numerous project-specific cooperative agreements in place across the system (Langdon et al., 2010). In the current Parks Canada development plan, Indigenous knowledge is listed on equal footing with scientific evidence to conserve and restore existing national protected areas (Parks Canada Agency, 2019).

Western science, legislation, and policy, however, continue to play the leading role in park management. The Indigenous Circle of Experts (2018) recommended that Indigenous experts become part of this guidance in substance and method. Building trust with Indigenous partners and co-creating new relationships and knowledge within an ethical space will create more meaningful protected areas for all Canadians, Indigenous and non-Indigenous alike. Working together on park management benefits conservation and addresses wider issues of social justice, community development, and the preservation of cultural identity; all of which are values of World Heritage Areas and mandated in international law (Poirier & Ostergren, 2002). Parks Canada now has a strong organizational culture that encourages and supports building and maintaining relationships with Indigenous peoples (Langdon et al., 2010). As Chief John Snow shares in *These Mountains are Our Sacred Places*, this reconnection benefits us all:

So, we need to look at the traditional teachings if we are to be in tune with Mother Earth and to know the ecosystems and the ways of nature. Our money-oriented society seems to have forgotten that we need all of life to sustain us. These are some of the lessons that Indigenous people can teach in this time of environmental destruction. To fulfill the prophecy of our elders, we must remain as the caretakers and keepers of the land and teach others about living in harmony with nature. (Snow, 2005, p 255).

Meaningfully including Stoney Nakoda people and knowledge into the bison reintroduction in Banff National Park is a way to not only ensure the successful reintroduction of bison to the landscape, but to also ensure the reconnection of the Stoney Nakoda peoples to their ancestral and sacred territories.

9.0 Closing Reflection

Within Traditional Knowledge, after a cultural session, a closing prayer or ceremony is usually given. For the purposes of this report, we would like to offer a “closing reflection.” Tatanga Mani or Walking Buffalo was a Stoney Chief, Philosopher and Elder who travelled the world spreading a message of peace and brotherhood. From the book, *These Mountains are our Sacred Places*, Chief Snow recalls a teaching by Walking Buffalo:

“He told me one day that I must look at the beautiful forest where the trees and shrubs and tiny plants grow tall and straight to shelter the small trees and the misshapen ones; how the delicate flowers nestle among the grass at the foot of the trees catching the sunlight, as though the trees lean away to allow its rays to give them life. He spoke of the red trees and the white trees and the black trees, each forming a part of a beautiful pattern in their diversity. He showed me how each stands proud and upright in its own way to honour the Great Spirit. The diversity of plants and trees makes a beautiful forest. Why is the forest beautiful? Because it grows according to the plan of the Creator. If mankind, too, could stand humbly at the Creator’s feet, mankind too, could share in the harmony which is the Creation.” (pg. 202, Snow)

In his many teachings, Walking Buffalo shared Traditional Knowledge that was given to him by the Creator. A final message of this report is to acknowledge Walking Buffalo’s teaching that much can be learned from “Nature’s University,” if we seek knowledge from a world that is alive.



Figure 1: Bison at Stoney Indian Park, with Kananaskis Country in the background, in May 2018.

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Glossary of Stoney to English Translations of Terms

Stoney Word	English Translation
îyârhe Tînda	Ya Ha Tinda
Tatâga Tûbi baha	Bison calving area
Watâga Tînda	Place where the Grizzlys gather in the springtime
Chârhâziya Îyârhe ekta uyatha ze	Small willows that grow on the mountain side
Mâku thkiya	Sweet root that tastes like carrot
Pezi Rhoda	Palatable grasses that bison eat
Tatâga	Bison
Tatâga Wiye Îtawagihâ	Matriarch
Tatâga Mnoga Chugan	Warrior Bison
Tatâga Mnoga Îtawagihâ	Dominant Bull
Tatâga Wiye	Mature Bison Cows
Tatâgan Chîjan	Bison Calves
Ohnâ Châgu	Stoney Trail
Wachu thaga	Dried meat/ food cache
Wodeja Sa He Gapsûbi Ogo	Elk Horn Trail / Bent Elk Horn Trail
Wodeja Sa Wapta	Red Deer River
Îhmû tâga/thaba Wapta	Panther River
Mînî Rhpa Mâkoche	Banff National Park (General Landscape)
Mînî Rhpa	Town of Banff
Watâga Baha	Grizzly Hill
Wa or Wapa Waptan	Snow Creek

Appendix A: Ta Taga Skan, Great White Buffalo Story

This story is copied from The Stonies of Alberta

“In the beginning, *Waka Taga*, Great Mystery, makes Great White Buffalo, *Ta Taga Skan*, and names him the chief of all buffalo.

Ta Taga Skan, the sacred one, the Spirit of Buffalo-who-gives-life.

In the early spirit days, when Grandfather Sky was at war with Grandmother Earth, the Old Woman dug out a great hole east of Beaverfoot Mountains and hid all the buffalo inside herself. After her white hair reached the Wabiskaw River, and after the peace pipe was passed between Sky and Earth, the Old Woman released the black and gray buffalo people to follow the sacred grasslands and to run her body when these shaggy people would wallow in dust or mud.

Great White Buffalo is the biggest, oldest, wisest, fastest, and most sacred bull buffalo. And Great Mystery gifts him with much buffalo wisdom: This snorting person runs like West Wind, his older brother. He grazes into the North Wind. Nothing living on earth can stand and face the snowstorm spirit or the blizzard people like this one. Great Mystery gifts this one with the power never to die. These medicines flow from the spirit of *Waka Taga*.

Great White Buffalo leads the way of the moving herds that fill the earth from sun to sun. For only *Ta Taga Skan* has the power to hear the voice of the Old Woman calling through the soil persons and the birthing grasses. *Ta Taga Skan* passes this hearing-power to the buffalo herd bull leader, *Ta Taga*.

The first source of the great buffalo life-grass circle is *Waka Taga*.

The first wisdom of *Ta Taga* is receiving the mystery and seeing that grass is a circle. *Ta Taga*, the bull leader, keeps the black herds moving so that these will stay-within and honour the grass circle which is sacred.

And it is said that Great White Buffalo gives up his body to the Stony people with bitter tears. For *Ta Taga Skan* can see a day when his buffalo brothers will almost die out and his great prairie heart grieves. Yet *Ta Taga Skan* yields himself and his grazing nation up to Great Mystery so that the Stonies may have a greater life. For these mountain-prairie people are first chosen. And the buffalo nation gives up its life for these.

Ta Taga Skan yields many gifts to the Stonies. His brothers gift the people with much light and warmth. These bring the Stonies gifts of buffalo meat, warm robes, living-circle lodges, and many medicines. They teach the people many wisdoms. They point to prairie water, and to the crossing places of rivers.

In the ancestral moons, the Stonies were a hungry, weak, and windswept people, in tied rabbit skins. It is *Ta Taga Skan* yielding himself that makes the Stonies a buffalo nation and a buffalo people. This yielding, the origin of hunters, these red-meat dancers, these buffalo dreamers. And the yielding buffalo gifts, these: Hide shields. War clubs. Leg bone fleshers. Sun-dried and wind-dried skins and robes.

Stoney spirit men who meet *Ta Taga Skan* in dreams and visions say that this sacred one wears a robe that is pure white. As white as the snow goose. The Stoney buffalo dreamers hear the prophecies of *Ta Taga Skan*. These prophecies are very sacred to the people.

It is said that if a Stoney who is especially gifted by *Ta Taga Skan* finds a buffalo bone, then that very buffalo will come back to life again. And that is the way that the great herds would one day come back to life.

And *Ta Taga Skan* brings the Stonies one of the highest wisdoms of life: The strongest and mightiest warrior of the buffalo bull nation feeds on one of the smallest and humblest things on earth: grass. For grass is a circle.”

Appendix B: Linear Holistic Mode: An approach for implementation

Given the overall lack of Traditional Knowledge research studies by Indigenous groups in the areas of wildlife behaviour and habitat, compared to Western Science studies, it follows that the recommendations of such Indigenous research may not be fully incorporated into the wildlife management systems of government agencies. To alleviate this potential barrier, a model for understanding the differing perspectives of Western Science and Traditional Knowledge is offered here.

In his books, “We Talk, You Listen,” and “For this Land,” Vine Deloria Jr., describes a process that may be used by Western Science and Traditional Knowledge to better understand each other, in the form of a Linear-Holistic Model described below and visually represented in Figure B1.

“The best method of communicating Indian values is to find points at which issues appear to be related. Because tribal society is integrated toward a center and non-Indian society is oriented toward linear development, the process might be compared to describing a circle surrounded by tangent lines. The points at which the lines touch the circumference of the circle are the issues and ideas that can be shared by Indians and other groups. There are a great many points at which tangents occur, and they may be considered as windows through which Indians and non-Indians can glimpse each other. Once this structural device is used and understood, non-Indians, using a tribal point of view, can better understand themselves and their relationship to Indian people.” (pg.12, Deloria)

“If we visualize tribal society as a circle, which is the custom of traditional practitioners, then this circle is being pierced by many lines, networks, other activities that compete daily to make parts of the circle a part of the line. Life in a modern tribal society becomes a matter of balancing an activity that is an integral part of community life with an activity from the outside that is highly entertaining or rewarding but does not have an anchor in community life.” (pg. 185-186, Deloria)

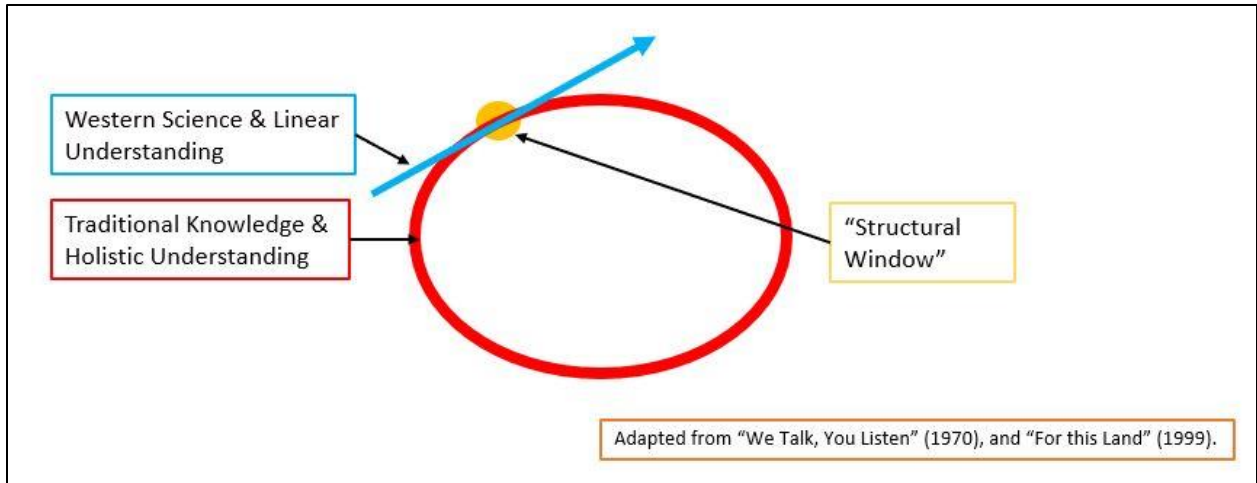


Figure B1: Vine Deloria's Linear-Holistic Model.

Additionally, Deloria also describes how a “future orientation” of Western Science and Traditional Knowledge systems and how they may be oriented (Figure B2). From the book “For this Land” Deloria states:

“We have great difficulty in understanding simple things because we have been trained to deal with extremely complicated things, and we respond that way almost instantaneously. The old traditional Indians were in tune with the rhythms of life. They were accustomed to bringing in and relating to a whole picture of the land, the plants, and the animals around them. They responded to things as a part of a larger whole which was a subjective reality to them. We could say the traditional Indian stood in the center of a circle and brought everything together in that circle. Today we stand at the end of a line and work our way along that line, discarding or avoiding everything on either side of us. (pg. 257, Deloria).

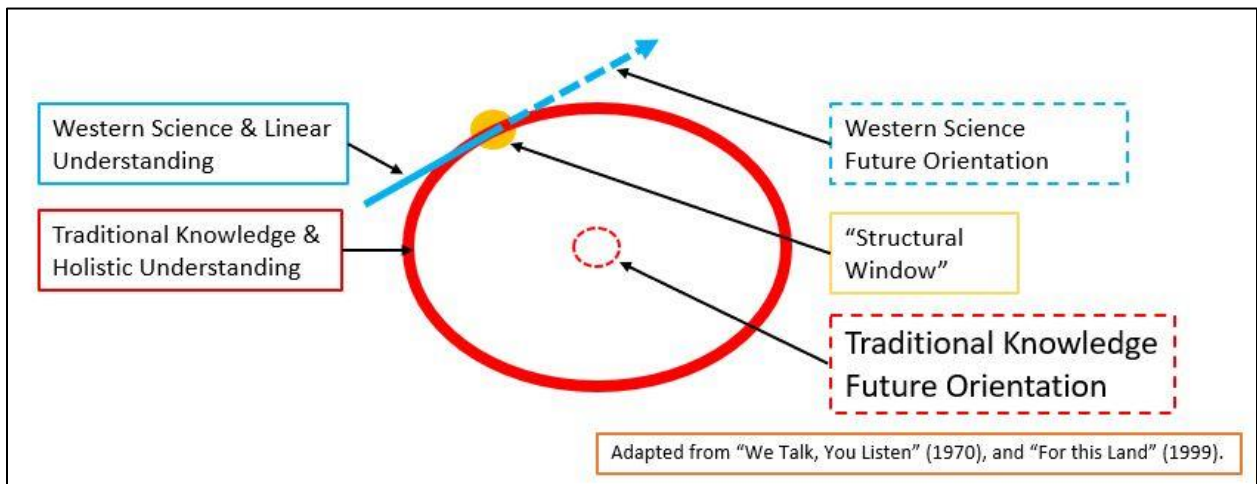


Figure B2: Vine Deloria's Linear-Holistic Model Expanded

Here, Deloria envisions the Western Scientist travelling along the linear path, understanding what is predicted from linear systems, and discarding anything outside of a linear path. A Traditional Knowledge system is viewed from the centre of a circle, and the future orientation is to bring knowledge to the centre where it can be seen as part of a greater whole, that is interrelated, interconnected and interdependent.

Deloria’s Linear-Holistic Model can be adapted to represent environments where Western Science is dominant (Settler communities and processes), and where Traditional Knowledge is dominant (Indigenous communities). And, the “Structural Window” can also be interchanged with the concept of “Ethical Space,” as described by Willie Ermine. Following this, a dominant Western Science environment can be represented in the following adaptation of the Linear-Holistic model (Figure B3).

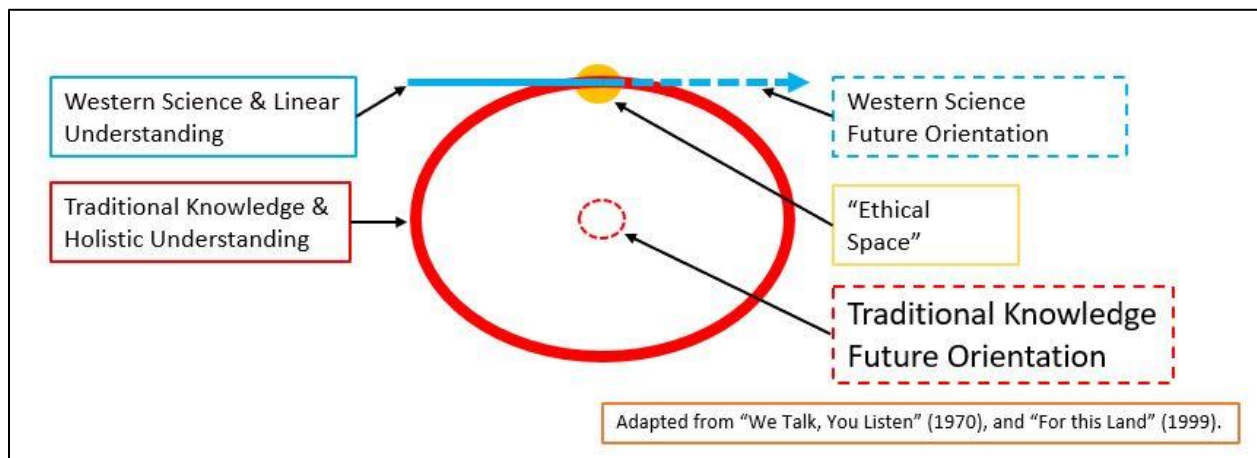


Figure B3: Linear-Holistic Model Adapted Western Environment.

In this dominant Western Science environment, a linear or hierarchal understanding is prominent, where nature is understood through isolation or separation (i.e. the separation of mind, body and spirit), and with a focus on short term impacts. Learning is based on the “Scientific Method” where knowledge is extracted from nature. Other characteristics include understanding that is mainly transmitted through a written system and is time oriented. Similarly, a dominant Traditional Knowledge environment can also be represented in the following adaptation of the Linear-Holistic model (Figure B4).

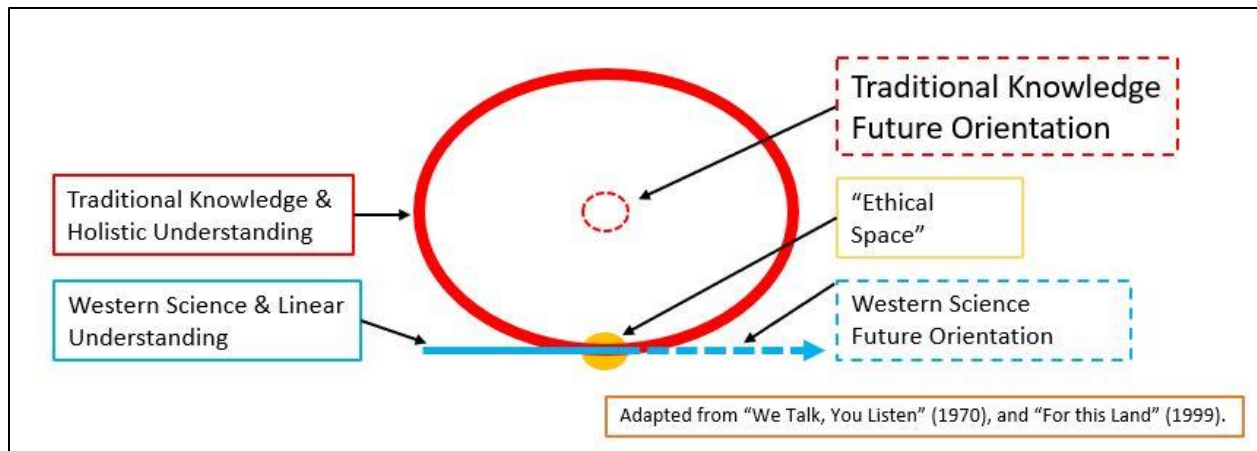


Figure B4: Linear-Holistic Model Adapted Traditional Environment.

In a dominant Traditional Knowledge environment, a holistic understanding is prominent, where nature is understood as being interrelated, interconnected, and interdependent (i.e. everything is alive, everything has a spirit), and with a focus on long term impacts. Learning is based on the “cultural practices” where knowledge is accepted from nature, through ceremonies, dreams and visions. Other characteristics include understanding that is mainly transmitted through an oral tradition and is story oriented.

As an example, “Cultural Monitoring” could be seen as a Traditional Knowledge dominant process that utilizes Traditional Knowledge steps (ceremony, Elder interviews, fieldwork, Elder reconnection, report writing, and outreach), as well as Western Science steps (defining research objectives, reviewing existing information and literature, data collection, synthesis of results, and report writing). As the “Cultural Monitoring” process is a combination of Traditional Knowledge and Western Science, it can then be viewed as a product of “Biculturalism,” the bringing together of the best of Western Science and Traditional Knowledge together to further our understanding of complex systems.

In terms of wildlife management, government agencies or other groups can utilize these Linear-Holistic adaptations to understand if Western Science or Traditional Knowledge elements are being incorporated into wildlife policies or processes. The Linear-Holistic Model and adaptations are offered as starting points to re-examine planning, administrative, and management processes. The Linear-Holistic Model and adaptations are one form of combining worldviews or a form of “Biculturalism,” and is offered here as one possible solution in understanding wildlife management issues within the backdrop of Traditional Knowledge and Western Science.

Appendix B: Ceremonies, Meetings and Activities Conducted as Part of Cultural Monitoring Project.

Ceremonies			
Activity	Date	Location	Participants
Pipe Ceremonies	Summer 2014	Banff Indian Grounds, Banff National Park	Stoney Consultation, Elders and Pipeholders
Sweatlodge Ceremony	Fall 2016	Tunnel Mountain, Banff National Park	Stoney Consultation, Elders and Ceremonialists
Pipe Ceremony	August 2016	Banff Indian Grounds, Banff National Park	Stoney Consultation, Elders and Ceremonialists
Bison Blessing Ceremony	September 29, 2016	Lake Minnewanka, Banff National Park	Stoney Consultation, Elders and Ceremonialists, Parks Canada
Bison Reintroduction Blessing Ceremony	January 29, 2017	Elk Island National Park	Ceremony hosted by Samson Cree and conducted by the Stoney Nakoda and other First Nations.
Pipe Ceremony	September 7, 2020	Ya Ha Tinda Ranch	Jackson Wesley (Elder), the late Charles Powderface (Elder), Hanks Snow (Elder), Conlin Fox (Smudgeman), Toby Dixon, Conrad Rabbit, Ollie Benjamin, Bill Snow, Cathy Arcega, Gavin Ear, Conal Labelle, Chris Goodstoney.

**Specific dates provided where available.*

Project Meetings and Activities			
Activity	Date	Location	Participants
Project Planning Meeting	June 1, 2020	Virtual	Stoney Consultation: Bill Snow (Stoney Consultation Manager), Erin Slater (Consultant to Stoney Tribal Administration) Project Support: Don Carruthers Den Hoed, PhD (MRU), Sarah Elmeligi, PhD (MRU) Parks Canada: Bill Hunt, Christie Thompson, Karsten Heuer.
Elder and Knowledge Holder Interviews	August 5, 2020	Banff Indian Grounds, Banff National Park	Henry Holloway (Elder), Charlie Rabbit (Elder), the late Phyllis Ear (Elder), Hank Snow (Elder), Garrett Baptiste (Chiniki Bison Herd Manager), Ollie Benjamin, Bill

Project Meetings and Activities			
Activity	Date	Location	Participants
			Snow, Cathy Baptiste Arcega, Larry Daniels Jr., Gavin Ear, Conal Labelle, Chris Goodstoney, Barry Wesley.
Elder and Knowledge Holder Interviews	August 28, 2020	Buffalo Paddock, Stoney Indian Park, Morley Alberta	<p>Stoney Consultation: Bill Snow (Stoney Consultation Manager), Cathy Baptiste Arcega (Project Analyst and Coordinator), Chris Goodstoney (Consultation Officer, Wesley First Nation), Larry Daniels Jr. (Consultation Officer, Bearspaw First Nation), Ollie Benjamin (Bison Rider), Garrett Baptiste (Chiniki Bison Herd Manager), Charlie Rabbit (Elder), Hank Snow (Elder), Gilbert Francis (Elder), Erin Slater (Consultant to Stoney Tribal Administration), Conal Labelle (Consultation Officer, Chiniki)</p> <p>Project Support: Don Carruthers Den Hoed, PhD (UBC)</p>
Project Update Meeting	September 4, 2020	Virtual	<p>Stoney Consultation: Bill Snow (Stoney Consultation Manager)</p> <p>Project Support: Don Carruthers Den Hoed PhD (UBC), Sarah Pointer (MRU)</p>
Bison Rider Fieldwork	September 8-12, 2020	Bison Reintroduction Area, Banff National Park	<p>Bison Riders: Toby Dixon, Conrad Rabbit, Ollie Benjamin</p> <p>Project Support: Karsten Heuer (Parks Canada), Rob Jennings (Field Support)</p>
Project Update Meeting	September 16, 2020	Virtual	<p>Stoney Consultation: Bill Snow (Stoney Consultation Manager)</p> <p>Project Support: Don Carruthers Den Hoed, PhD (UBC), Sarah Elmeligi, PhD (MRU Consultant), Sarah Pointer (MRU)</p>
Elder, Knowledge Holder and Bison Rider Post-Rider Meeting	September 18, 2020	Buffalo Paddock, Stoney Indian Park, Morley Alberta	<p>Stoney Consultation: Bill Snow (Stoney Consultation Manager), Cathy Baptiste Arcega (Project Analyst and Coordinator), Conal Labelle (Consultation Officer, Chiniki First Nation), Chris Goodstoney (Consultation Officer, Wesley First Nation), Gavin Ear (Consultation Officer, Bearspaw First Nation), Ollie Benjamin (Bison Rider), Toby Dixon (Bison Rider), Conrad Rabbit (Bison Rider), Garrett Baptiste (Chiniki Bison Herd Manager), Charlie Rabbit (Elder), Gilbert Francis (Elder), Erin Slater (Consultant to Stoney Tribal Administration)</p> <p>Project Support: Don Carruthers Den Hoed PhD (UBC), Sarah Elmeligi PhD (MRU Consultant)</p>

Project Meetings and Activities

Activity	Date	Location	Participants
			Parks Canada: Karsten Heuer (Banff National Park)
Project Update Meeting	February 17, 2021	Virtual	Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration) Project Support: Don Carruthers Den Hoed, PhD (UBC)
Project Update Meeting	April 9, 2021	Virtual	Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration) Project Support: Don Carruthers Den Hoed, PhD (UBC)
Project Update Meeting	April 13, 2021	Conference call	Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration) Project Support: Don Carruthers Den Hoed PhD (UBC) Canadian Mountain Network: Nicole Olivier, Monique Dube, Kirsten Bowser, Murray Humphries
Project Planning Meeting	June 4, 2021	Virtual	Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration) Project Support: Don Carruthers Den Hoed PhD (UBC)
Elder Interviews	Summer 2021	Eden Valley, Morley, Big Horn	Stoney Consultation, Elders and Project Support
Project Update Meeting	November 30, 2021	Virtual	Stoney Consultation: Bill Snow (Acting Director of Consultation) Canadian Mountain Network
Project Planning Meeting	December 9, 2021	Virtual	Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration) Project Support: Don Carruthers Den Hoed PhD (UBC)

Project Meetings and Activities

Activity	Date	Location	Participants
Project Planning Meeting	January 7, 2022	Virtual	<p>Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration)</p> <p>Project Support: Don Carruthers Den Hoed PhD (UBC), Sarah Elmeligi PhD (MRU Consultant), Sarah Pointer (MRU)</p>
Reconnection Meeting	January 13, 2022	Buffalo Paddock, Stoney Indian Park, Morley Alberta	<p>Stoney Consultation: Bill Snow (Acting Director of Consultation), Cathy Arcega (Project Analyst and Coordinator), Gavin Ear (Bears paw Consultation Officer), Garrett Baptiste (Chiniki Bison Herd Manager), Conrad Rabbit (Rider), Ollie Benjamin (Rider), Henry Holloway (Elder), Hank Snow (Elder), Gilbert Francis (Elder), Conal Labelle (Consultation Officer, Chiniki)</p> <p>Project Support: Sarah Elmeligi PhD (MRU), Sarah Pointer (MRU)</p>
Project Planning Meeting	January 28, 2022	Virtual	<p>Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration)</p> <p>Project Support: Don Carruthers Den Hoed PhD (UBC), Sarah Elmeligi PhD (MRU Consultant), Sarah Pointer (MRU)</p>
Project Planning Meeting	February 11, 2022	Virtual	<p>Stoney Consultation: Bill Snow (Acting Director of Consultation), Erin Slater (Consultant to Stoney Tribal Administration)</p> <p>Project Support: Don Carruthers Den Hoed (UBC), Sarah Elmeligi (Consultant), Sarah Pointer (MRU)</p>
Bison Rider Meeting and Interviews	February 16, 2022	Virtual	<p>Stoney Consultation: Bill Snow (Acting Director of Consultation), Cathy Arcega (Project Analyst and Coordinator), Chris Goodstoney (Wesley Consultation Officer) Gavin Ear (Bears paw Consultation Officer), Conal Labelle (Chiniki Consultation Officer), Erin Slater (Consultant to Stoney Tribal Administration), Meg Berry (Consultant to Stoney Tribal Administration)</p> <p>Bison Riders: Toby Dixon, Conrad Rabbit, Ollie Benjamin</p>

Appendix D: Photo Essay of Fieldwork

September 8, 2020, Day 1 - Leaving from Ya Ha Tinda to Scotch Camp



Figure 1 Tatâga (Bison) Riders heading west from Ya Ha Tinda Ranch.



Figure 2 Stoney Nakoda Technicians noting vegetation patches along the Red Deer River Valley.



Figure 3 Tatâga Riders noted marked points along the trail.



Figure 4 Stoney Nakoda Technicians noting Tatâga Wallow areas.

September 9, 2020, Day 2 - From Scotch Camp to Station Mountain / West side of Mt Tyrrell



Figure 1 Field team at Scotch Camp Cabin (L-R: Karsten Heuer (Parks Canada), Toby Dixon (Bears paw Rider), Ollie Benjamin (Wesley Rider), Rob Jennings (Field Support), and Conrad Rabbit (Chiniki Rider).



Figure 2 Stoney Nakoda Technicians crossing the Wodeja Sa Wapta (Red Deer River).



Figure 3 Riders on the trail heading towards Station Mountain, looking back at the Red Deer River Valley.



Figure 4 Riders on the trail towards Station Mountain.



Figure 5 Technicians observed wildlife scat on the trail to Station Mountain, captured above.



Figure 6 Recorded observations of Medicinal Plants at Station Mountain.



Figure 7 Stoney Nakoda Technicians observed additional Medicinal Plants at Station Mountain.



Figure 8 Stoney Nakoda Technicians stopped to examine Tatâga wallows at Station Mountain.



Figure 9 Stoney Nakoda Technician Toby Dixon looking south to the Red Deer River Valley.



Figure 10 Stoney Nakoda Technician Conrad Rabbit taking in the view at Station Mountain.



Figure 11 Technicians observed multiple wildlife tracks at Station Mountain.

September 9, 2020, Day 2 - From Scotch Camp to Station Mountain / West side of Mt Tyrrell



Figure 1 Heading to the West side of Mount Tyrrell.



Figure 2 Stoney Nakoda Technicians take in the view at Mount Tyrrell.



Figure 3 Technicians observed Tatâga tracks in the mud at Mount Tyrrell.



Figure 4 Tatâga Wallow area at Station Mountain / Mount Tyrrell.



Figure 5 Tatâga activity was evident along the trail.



Figure 6 Riders viewing Medicinal plants at Mount Tyrrell.

September 10, 2020, Day 3 - From Scotch Camp to Panther River Cabin



Figure 1 Stoney Nakoda Technicians at Scotch Camp (L-R: Wesley Rider Ollie Benjamin and Bears paw Rider Toby Dixon).



Figure 2 Stoney Nakoda Technicians leaving Scotch Camp and heading south to the Íhmû tâga/thaba Wapta (Panther River).



Figure 3 Stoney Nakoda Technicians riding along Snow Creek trail headed to ĩhmû tâga/thaba Wapta.



Figure 4 Heading south on the Panther River Trail, Watâga mâkoche en ùbitha (area where Grizzly frequent) to the southwest.



Figure 5 Stoney Nakoda technicians navigate steep mountain trails on the way to the l̥m̥û tâga/thaba Wapta.



Figure 6 Medicinal plant growing along the Snow Creek Trail.



Figure 7 Watâga mâkoche en ûbitha Southwest alongside Snow Creek trail.



Figure 8 Stoney Nakoda Technicians traveling along the Snow Creek trail to the Îhmû tâga/thaba Wapta.



Figure 9 Stoney Nakoda Technicians observed multiple open, grassy areas that serve as Tatâga habitat along the Snow Creek trail.

September 10, 2020, Day 3 - From Scotch Camp to Panther River Cabin



Figure 1 Stoney Nakoda Technicians observed additional open areas for Tatâga habitat along the Snow Creek trail.



Figure 2 Stoney Nakoda Technicians examine Tatâga Wallows near the Panther River Valley.



Figure 3 Technician Conrad Rabbit along the Snow Creek Trail, with the Panther Valley in the background.

September 10, 2020, Day 3 - From Scotch Camp to Panther River Cabin



Figure 1 Technicians looking down the steep slopes along the Snow Creek Trail.



Figure 2 Stoney Nakoda Technicians arriving at the final approach to the Panther River Valley.



Figure 3 The field team arrives at the Panther River Cabin.



Figure 4 Stoney Nakoda Technicians examine a Tatâga Wallow (Karsten Heuer in the background of the image).

September 11, 2020, Day 4 - From Panther River Cabin to Scotch Camp Cabin



Figure 1 Tatâga Riders heading east from Panther River Cabin to Scotch Camp Cabin.



Figure 2 Stoney Nakoda Technicians stop to observe while heading towards the Panther River Cabin.



Figure 3 Stoney Nakoda Technicians taking a rest at a waterfall located near Mount White (L-R: Ollie Benjamin, Conrad Rabbit and Toby Dixon).



Figure 4 Riders heading northeast of Panther River Cabin, near the original Tatâga enclosure in the reintroduction zone.



Figure 5 Approaching the creek on the way back to Scotch Camp.



Figure 6 Crossing the creek on the way back to Scotch Camp. Riders found elk antlers and a ram skull nearby.



Figure 7 Vegetation along the creek.



Figure 8 Riders proceed to make their way to Scotch Camp Cabin.



Figure 9 Stoney Nakoda Technicians arriving back at Scotch Camp Cabin (L-R: Conrad Rabbit, Toby Dixon and Ollie Benjamin).

September 12, 2020, Day 5 - From Scotch Camp Cabin to Ya Ha Tinda Ranch.



Figure 1 Riders observed Tatâga foraging areas along the Red Deer River Trail.



Figure 2 The field team heading out from Scotch Camp Cabin to Ya Ha Tinda Ranch.



Figure 3 Wodeja Sa Wapta (Red Deer River) pictured along the Red Deer River Trail.



Figure 4 Image of the multiple wildlife tracks sighted in the mud along the Red Deer River trail.



Figure 5 Tatâga access to water along the Red Deer River Trail.



Figure 6 Stoney Nakoda Technicians crossing the Wodeja Sa Wapta (L-R: Conrad Rabbit and Toby Dixon).



Figure 7 Tatâga foraging areas along the Red Deer River Trail.



Figure 8 More Tatâga foraging areas along the Red Deer River Trail.



Figure 9 Tatâga Wallows along the Red Deer River Trail.



Figure 10 Stoney Nakoda Technicians make their final approach back to Ya Ha Tinda Ranch.



Figure 11 Lead by Toby Dixon, the riders arrive at Ya Ha Tinda Ranch.



Figure 12 The field team back at Ya Ha Tinda Ranch historical cabin (L-R: Karsten Heuer (Parks Canada), Ollie Benjamin (Wesley Rider), Rob Jennings (Field Support), Toby Dixon (Bears paw Rider) and Conrad Rabbit (Chiniki Rider).

“My people say: “If you destroy nature and the environment, you are destroying yourself. But if you protect the environment and safeguard the water, ultimately you are protecting yourself.” Wisdom harnessed with technology can go a long way in creating a better social order, a world in which all creation can survive and enjoy life to the fullest.”

Chief John Snow, These Mountains are our Sacred Places

