

McIntyre Creek Protected Area Report

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Executive Summary

The McIntyre Creek area is recognized as a Regional Park by the City of Whitehorse. At 3,620 hectares in size, the park provides easy access to nature for City of Whitehorse residents, is visited regularly and reflects the high value City residents place on wilderness. The park links green space trails to nearby neighbourhoods and is a destination for people enjoying the outdoors. The area discussed in this report is approximately 4,600 hectares and focuses primarily on Regional Park lands. Yukon University endowment lands are recognized for the important role they play as neighbour to the park. The area includes important spiritual, cultural and historical connections to the land by the Ta'an Kwäch'än Council and the Kwanlin Dün First Nation. The lands also bridge Indigenous and non-Indigenous ways of knowing, inspire opportunities for storytelling and create spaces for learning together.

Receding glaciers and the power of wind and water created a confluence of water and forest leading to the Yukon River. This natural composition created trophic structures that supported diverse wildlife and lands where people gathered to take advantage of the natural resources. The area continues to be a gathering place for people to enjoy the natural resources found there.

The McIntyre Creek area experienced increased human activity as gold seekers arrived, industrial activity grew and settlers, settled. The once unbroken landscape increasingly became broken. What was once boundless became constricted. This phenomenon continues today.

The world is presently in the grips of a world-wide pandemic. Covid-19, a novel coronavirus, has encircled the globe killing millions and severing intimacies between families and friends. The boundless connection people had with each other has been restricted or outright broken. More than ever the world understands the fragility of connectivity and the significance of unbroken connections.

This relatively small land area within the City of Whitehorse, stands at the cross-roads of improved health or declining wellness of people and the natural environment. Recent calls for permanent protection repeat those made in the past. Presently, with mounting evidence of the critical importance of the area to wildlife movement and the health benefits that come from people connecting with nature, the creation of McIntyre Creek Protected Area (MCPA) is timely and arguably urgent.

Whitehorse, "the Wilderness City", along with the Yukon government, have a unique opportunity to act to protect what remains of a critical wildlife passage and ensure the long term protection of highly valued green space for City of Whitehorse residents.

As the world's response to COVID-19 shows, the need to have space for people to walk or exercise safely distanced from each other is urgently required. It is likely that the world will face more pandemics of the kind we are living through now. Connections and connectivity, movement and solace, are critical experiences to keep people well. Nature too, requires

connection and distancing. Wild animals need space to roam and connect away from people. The McIntyre Creek area holds promise to realize these necessary connections and isolation.

It will require significant thought, resources and cooperation between all levels of governments and citizenry to achieve permanent protection for the McIntyre Creek lands, but permanent protection is within reach. The necessary instruments are available to create the cooperation and structure for continued shared management of the land.

The Yukon government is favourably positioned to initiate the steps necessary to realize three important achievements. First, the creation of a governance and management arrangement that supports shared decision-making for the benefit of future generations of Yukoners, and second, the spatial arrangement of land that anticipates and responds to the need for human connection to nature and with each other during stressful times. Lastly, ensuring wildlife has uninterrupted space to roam.

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Organization of the Report

The McIntyre Creek Protected Area (MCPA) report is organized as follows. First, a statement of the report's purpose is provided to the reader followed by a location map. The reader is then introduced to a suite of essential ideas related to pressing environmental issues facing Yukon and to which MCPA can play a role in addressing. The ideas discussed are:

Biodiversity Loss

Climate Change

Landscape Connectivity

Socio-ecological Systems

Species Diversity

Following the report's discussion about the suite of essential ideas is a description of the significance of urban protected areas. Building on the significance of urban protected areas, local planning exercises are addressed, highlighting the relationship McIntyre Creek has with each.

The report then turns to planning exercises involving Kwanlin Dün First Nation and Ta'an Kwäch'än Council that have bearing on decision-making about McIntyre Creek and its surrounding lands. This leads to a discussion about how establishing McIntyre Creek as a permanent protected area can play a role toward reconciliation with First Nations. Addressing environmental and other risks related to land transfer are touched on, followed by a section about governance and management. Reasons for supporting permanent protection are presented leading to the report's conclusion with recommendations and next steps following.

Report Purpose

The purpose of this report is to provide information and present possible approaches that can be used by the Department of Energy, Mines and Resources (EMR) if permanent protection of McIntyre Creek is pursued in partnership with the City of Whitehorse, and potentially in cooperation with the results of the Fish Lake Local Area Plan which is anticipated to be completed in the next couple of years.

Location of McIntyre Creek Protected Area (MCPA)

The area discussed (Figure 1) is the same project boundary described by McCaw (2020) as "the creek system and surrounding intact ecosystems, excluding developed areas and private properties where relevant. The project area inside this boundary totals 46 km²" (p.7). The area includes McIntyre Creek Regional Park and some Yukon University endowment lands.

Historically, the Ta'an Kwäch'än Council and the Kwanlin Dün First Nation used the lands in ways that supported their way of life and informed their cultures. Kwanlin Dün First Nation and the Ta'an Kwäch'än Council, in cooperation with the Yukon government have improved their

respective understanding of human occupation of the area. Kwanlin Dün First Nation (2013) recounts:

Early occupation and use of this ancient pathway was researched in 2009 by the Yukon Government. An inventory of heritage resources along McIntyre Creek revealed fourteen pre-contact heritage sites with stone artifacts. The archaeologists also discovered four places where people had stripped bark from pine trees to reach the cambium beneath for food. This was only done when food was very scarce and speaks to some hard times in the past. In 2010, Yukon Government, Kwanlin Dün First Nation and Ta'an Kwäch'än Council partnered in the excavation of four sites along McIntyre Creek. Three Kwanlin Dün and two Ta'an Kwäch'än youth participated in the digs. The sites had numerous stone artifacts. Radiocarbon dating and the presence of microblades date these sites at 5,000 to 7,000 years before present (Ruth Gotthardt, Yukon Archaeology). This travel corridor has been used for a long time indeed. (p. 10)

Recently, McCaw (2020) in conversation with Yukon government archeologist Ty Heffner, reconfirmed the significance of the area to the First Nations. In her report, McCaw records that:

There are several archaeological dig sites along McIntyre Creek where stone artifacts have been discovered (Ty Heffner, personal communication, Sept. 2020). In 2009, an inventory of the creek between the Alaska Highway and Mountain View Drive crossings resulted in the finding of approximately 18 new archaeological sites (Ty Heffner, personal communication, Sept 2nd 2020). Some of the artifacts from McIntyre Creek have been dated to 5,000 to 7,000 years before present (Kwanlin Dün First Nation, 2013). The types of tools found along the creek indicate McIntyre Creek was used consistently for the past 8,000 years (Ty Heffner, personal communication, Sept. 2020). (p. 10)

Today, the lands remain important, relevant and culturally significant to these First Nations.

The area is also valued for its outdoor recreation opportunities by residents of the City of Whitehorse. The City of Whitehorse designated the area as a regional park following public consultation and engagement. People from different cultures, whether original inhabitants or newcomers, recognize the importance of the area for its history, access to nature, outdoor recreation opportunities and potential for healing and well-being.

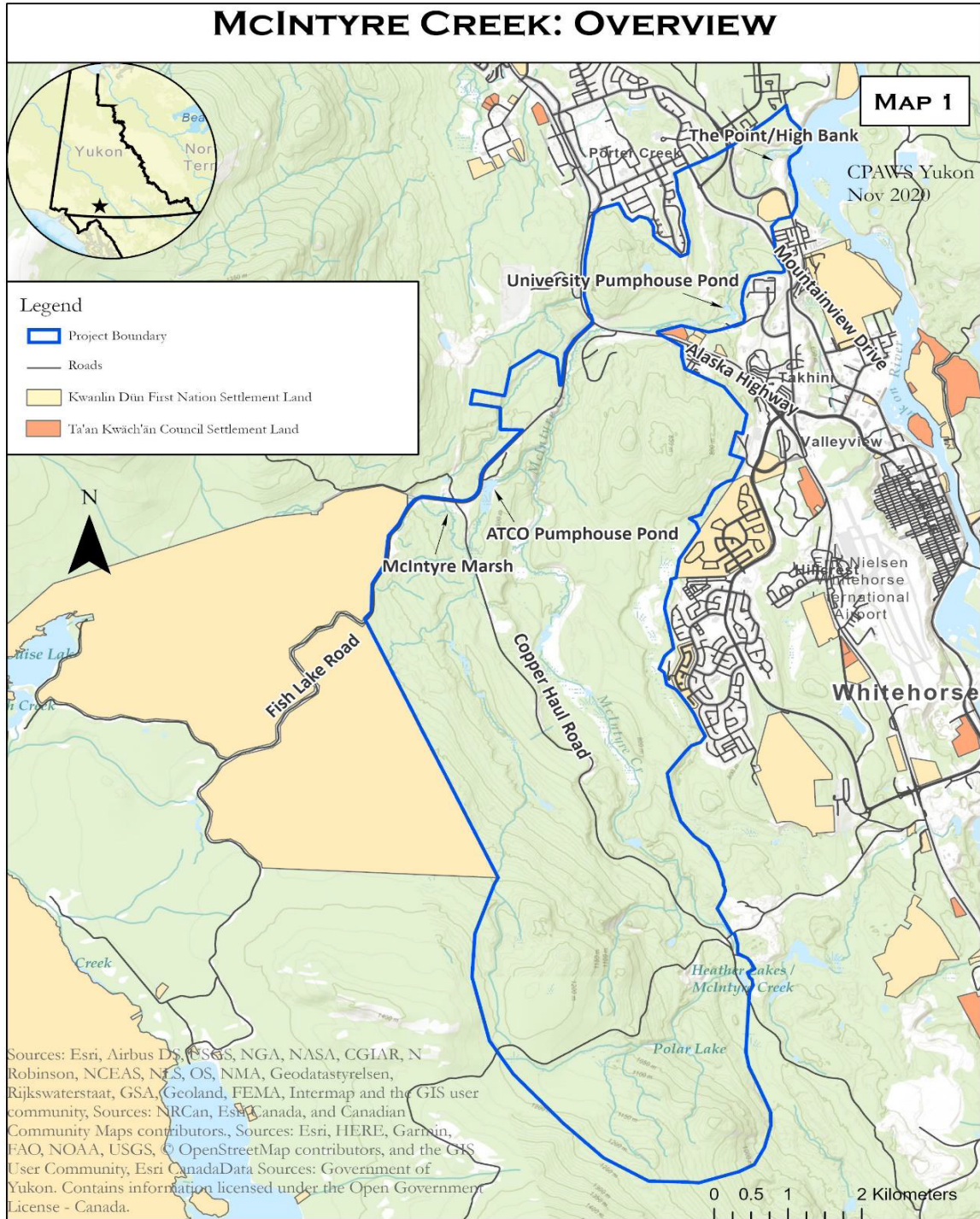


Figure 1 McIntyre Creek Study Area

Note. From McCaw (2020). *The History, Social Values, and Biodiversity of a Creek System in the Wilderness City* (p. 8). Whitehorse, Yukon.

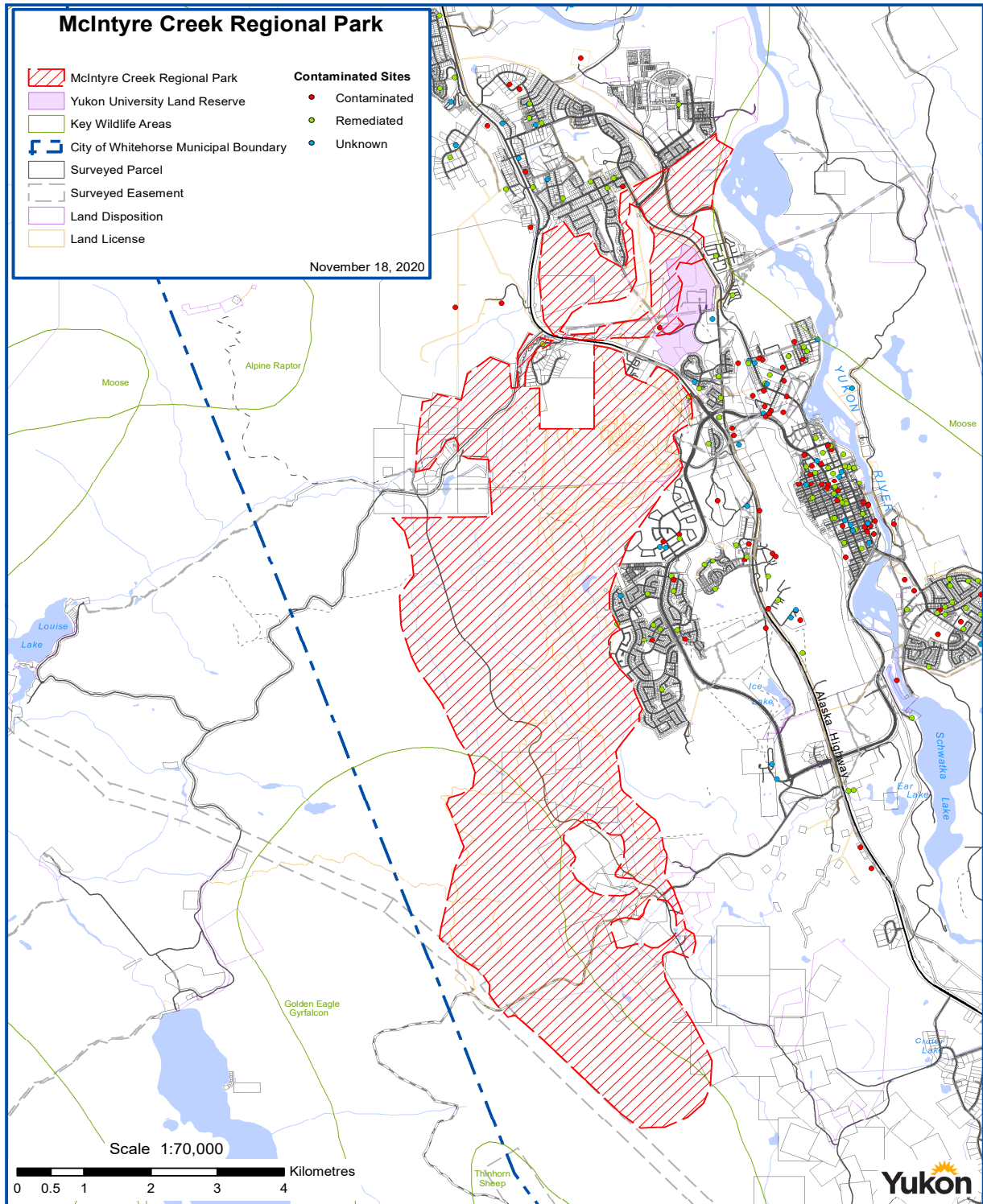


Figure 2 McIntyre Creek Regional Park

Note. From Yukon Department of Energy, Mines and Resources (2020). Whitehorse, Yukon.

Suite of Essential Ideas (Biodiversity Loss, Climate Change, Landscape Connectivity, Socio-ecological Systems, Species Diversity)

Biodiversity Loss

Secretary-General of the United Nations, António Guterres, points out that, “biodiversity is not just cute and charismatic wildlife; it is the living, breathing web of life” (Guterres, 2020). Unfortunately, “the living, breathing web of life” is failing due to climate change, ecosystem fragmentation, development and agriculture. Yukon Parks (2020), reports that:

The number of species at risk of extinction in Yukon has increased over time to 45 and is expected to continue to increase as more species are assessed by the Committee on the Status of Endangered Wildlife in Canada. (p. 9)

Reflecting on humanity’s relationship with nature and the emergence of zoonotic diseases, those diseases that are first found in animals and then transmitted to humans (and the source of COVID-19), Hockings et al., (2020) observes:

The origins of most zoonotic disease pandemics and epidemics, such as COVID-19, lie in a breakdown in that relationship [with nature], arising from an unsustainable exploitation of the natural world (Patz et al., 2004). (p. 8)

Reduced biodiversity causes hardening of social and ecological systems (socio-ecological systems) that support humans and human societies. Increased hardening or brittleness in these socio-ecological systems and their conduits, reduces their ability to absorb shock, surprise or change (Berkes and Ross, 2013). While socio-ecological systems can continue to function following shocks, their resiliency is tested, and recovery is not guaranteed. As plants and animals around the world and here in the Yukon become more similar than different, the risk to human health increases.

The spread of COVID-19 and nations’ responses to its threat are examples of social and ecological systems under stress and the consequences of their failing. Continued human encroachment into wildlife habitat increases the likelihood of disease transmission from wildlife to human. Zoonotic transmissions will increase as the human footprint on the planet continues to grow.

A key measure to inoculating against future pandemics is understanding the urgency for protecting nature and addressing climate change (The Nature Conservancy, 2020). Biodiversity loss and climate change are recognized by scientists around the world as dual crises (Watson and Venter, 2017). The World Economic Forum’s Global Risk Report 2020 imparts a stark warning about biodiversity loss and its effects on humanity:

The Forum’s multistakeholder network rate “biodiversity loss” as the second most impactful and third most likely risk for the next decade. The current rate of extinction is tens to hundreds of times higher than the average over the past 10 million years—and it is accelerating. Biodiversity loss has critical implications for humanity, from the collapse of food and health systems to the disruption of entire supply chains. (Franco, 2020, p.7)

In Yukon, biodiversity loss as reported by Yukon Parks (2020), tells us that:

The Government of Yukon’s Conservation Data Centre reports on the level of risk for Yukon wildlife and identifies 92 critically imperilled taxa (species, subspecies or varieties) and a further 780 that are imperilled or vulnerable. (p. 9)

Biodiversity in the McIntyre Creek area includes species that are abundant (Pelchat, 2011) and those that are not. For example, as reported by (McCaw, 2020, p. 23), and tracked by the Yukon Conservation Data Centre, species at risk of decline include, “leafy thistle (endangered), hookedspur violet (vulnerable), sparrow’s-egg lady’s slipper (vulnerable), north wind bog orchid (vulnerable), seep monkeyflower (vulnerable), red baneberry (vulnerable), broadleaf cattail (endangered), and interior lodgepole pine (vulnerable). Yukoners, more familiar with issues related to climate change may not share the same urgency about biodiversity loss. In part, this is due to the prevalence of messaging related to climate change and less about the loss of biodiversity (Legagneux, et al., 2018). One way to address biodiversity loss is by establishing networks of parks and protected areas.

Climate Change

Canada’s Changing Climate Report (Bush and Lemmen, 2019) indicates, “Canada is warming faster than the world as a whole — at more than twice the global rate — and the Canadian Arctic is warming even faster — at about three times the global rate”. This rapid warming is threatening the integrity of northern ecosystems and if compromised will result in changes to the availability of wild foods, fresh water and traditional ways of life.

In Yukon, recent research (see Porter et al., 2019) shows that central Yukon “has experienced warming of just over 2°C over the past century, which is above the global average and above the average of the Arctic region in general” (University of Toronto, 2019). The warming of northern latitudes and arctic environments is fundamentally changing how people know their environments (Box et al., 2019; Post et al., 2019).

To decrease the vulnerability of northern ecosystems as climate warms, space is needed to receive migrating species. Plants and animals moving north to occupy temperature ranges to which they are adapted need habitats that will sustain them. Climate change refugia and

networks for species dispersal are called for to safeguard against increasing species losses (Bellard et al., 2012; Costanza et al., 2020) and related hardening of social-ecological systems (Armitage et al., 2009).

“Our Clean Future”, released in September 2020 by the Yukon government gives direction to achieve fossil fuel reductions and advance renewable energy. Significantly, policy initiatives associated with “People and the Environment” highlight the importance of the natural environment to Yukoners. The language used to communicate why this is the case includes,

As the climate continues to change, it is important to improve our understanding of how the natural environment is responding, using a combination of Indigenous, local and scientific knowledge and ways of knowing, doing and being. Prepared with this information, we will take action to protect the ecosystems, wild species and their habitats that are so important to Yukoners. We will strive to maintain and strengthen cultural practices, recognizing that our ways of life are often interconnected with the land. We will also protect and enhance the health and wellbeing of Yukoners, which are dependent on the health of the natural environment. (p. 50)

The policy goes on to explain:

It is important that we better understand how climate change is affecting the natural environment and take action to minimize the impacts on ecosystems, wild species and their habitats, and the people that depend on them. (p. 51)

The policy direction contained in Our Clean Future, includes a commitment by the Yukon government to:

Continue to incorporate climate change into the design of protected and managed areas using landscape conservation science in order to allow native species to move, adapt and survive in the face of climate change. (p. 51)

McIntyre Creek Protected Area, serves as an opportunity to put into place tangible examples of the priority the Yukon government has placed on addressing biodiversity loss, climate change and the well-being of Yukoners.

Landscape Connectivity

It is, however, not enough to only protect single large or many smaller geographic spaces as part of a climate change response or otherwise. Protected areas must be connected to surrounding lands in ways that permit free movement of wildlife. Researchers from multiple

disciplines are calling for the establishment of large interconnected parks spanning landscapes as one way to address biodiversity loss and climate change. Saura (2018, p. 144) writes:

Protected areas (PAs) are critical for biodiversity conservation. Well designed and managed PA systems can effectively safeguard species and ecosystems, and deliver essential ecosystem services to people (Rands et al., 2010; Watson et al., 2014; UNEP-WCMC and IUCN, 2016). Connectivity of PA systems is necessary to facilitate large-scale ecological and evolutionary processes such as gene flow, migration and species range shifts. These processes are all essential for the persistence of viable populations, especially when facing climatic and environmental changes in increasingly transformed and fragmented landscapes (Kuussaari et al., 2009; Krosby et al., 2010; Beale et al., 2013). Improving or sustaining PA connectivity is therefore a primary concern for the effective conservation and management of biodiversity (Ervin et al., 2010; Laurance et al., 2012; Juffe-Bignoli et al., 2014)

Understanding species requirements for uninterrupted movement has evolved from bodies of knowledge associated with ecology, ecosystem based management and investigations into recreation ecology and ecological integrity. This collection of knowledge has influenced fields of study such as landscape scale conservation, road ecology and railway ecology.

What is known is that linear disturbances such as roads, railways, power lines, fences and trails, each fragment the landscape reducing its wholeness and connectedness (Borda-de-Água et al., 2017; Hilty et al., 2019; McInturff et al., 2020). The landscape in and around the City of Whitehorse has less ecological integrity now, than ten, twenty or fifty years ago.

Broken landscapes interrupt the gene flow of wild species, impede their natural movement, and stress plant communities that require regeneration that comes from connectivity. Unless steps are taken to restore connection to the surrounding landscape, it will continue to depreciate in wholeness. Returning strong human connections to nature and natural connections within nature is critical to the health of ecosystems and social systems.

The Yukon Parks Strategy 2020-2030 presents robust policy direction that reflects important thinking about protected area governance, management and protected area systems. It communicates firmly the significance of Yukon's wilderness to the world as the world faces precipitous declines in biodiversity and adjusts to address climate change.

The Strategy calls for landscape scale conservation planning in networked systems as a response to these dual challenges:

Conserving Yukon's biodiversity in the face of climate change will require conservation planning on a landscape-scale to ensure that protected

areas, buffers and corridors work together to allow wildlife to adjust their ranges as their habitats change. (p. 9)

The strategy also reminds readers that the Yukon is part of only six major wilderness areas left on earth, positioning Yukon to play a significant role in protecting the last great wildernesses in the world. It pointedly communicates approaches to conservation planning and implementation to which MCPA can contribute. These include:

[The application of] landscape conservation science to build a network of protected areas and other lands that allow native species to move, adapt and survive in the face of climate change. This will include using well-established international standards and concepts such as traditional knowledge, protected area design, ecological buffers, climate change resilience and landscape connectivity. (p. 22)

Parks and protected area networks are recognized as one of the best tools we have to conserve wildlife and the ecosystems they rely on in the face of climate change. (p. 22)

Conservation science makes it clear that we can no longer think of parks as “islands of conservation.” To meet conservation goals, we need to think about parks, protected areas and conserved lands working together as a network across the landscape. (p. 22)

Landscape level conservation planning will inform the thoughtful selection of future parks as we work toward this goal. (p. 22)

Integrating conservation science and traditional knowledge is essential to managing Yukon’s parks. (p. 22)

Pointedly, what was once an unbroken landscape in and around McIntyre Creek is now fragmented and what remains is “the only wildlife corridor that passes through the City of Whitehorse” (McCaw, 2020, p. 37). The lands that include McIntyre Creek Regional Park and Yukon University lands, function as a wildlife nexus for wildlife movement east – west and north – south through the city. This forced wildlife movement corridor has at times resulted in human-wildlife conflicts (Pelchat, 2011), particularly when bears take advantage of unsecured food sources such as garbage and recycling bins in nearby neighbourhoods.

Designation of some of the lands as a regional park has limited development and created space where wolves, coyotes and foxes can use the McIntyre Creek lands to hunt, den and raise their pups and kits. Multiple species of birds shelter and find habitat on these lands, absent of disturbances found in neighbouring developed lands. Greater food, forage and defence opportunities for animals are present where development is absent.

Wildlife movement though is not unobstructed. The Alaska Highway generally is a major barrier to wildlife movement. Rabbit's Foot Canyon particularly presents a challenge for road ecology design. Similarly, Range Road and Mountain View Drive require assessment against updated standards for achieving ecological connectivity (Hilty et al., 2020; Pelchat, 2011).

Permanently protecting McIntyre Creek is one step to providing the necessary green infrastructure to ensure ecological integrity of the area and beyond. Necessarily, barriers to wildlife movement must be addressed to realize maximum benefits to Yukon and Yukoners (Pelchat, 2011). From Fish Lake to Ddhaw Ghro and Marsh Lake to Kusawa, connecting the landscape to ensure species movement, requires technical expertise and cooperation across multiple jurisdictions and leadership by First Nation and non-First Nation governments.

Socio-ecological Systems

The health of the land brings Yukoners together and is arguably a defining characteristic of who Yukoners are. Clean air, clean land, and clean water are what all Yukoners want. Ways of knowing about the land provide opportunity for people to learn together and share knowledge about the plants, animals and places that are special to Yukoners. Western scientists speak about ecosystems and connectivity, First Nations talk about "all my relations" and that everything is connected. Non-Indigenous people talk about going camping and getting into the outdoors. Indigenous people talk about going to fish camps and being on the land. Indigenous people see themselves as part of the ecosystem, and non-Indigenous people are remembering they are too. Complex interconnections between people and the environment reveal socio-ecological systems that support the health and well-being of humans and nature (Everard et al., 2021).

In Yukon, cancer remains the leading cause of death with rates higher than in the rest of Canada. Chronic lower respiratory diseases outrank national averages, likely due to historically higher rates of smoking, and chronic liver disease and cirrhosis result in Yukoners twice as likely to die compared to Canadians overall. Concern for Yukon's youth remains high in that in 2015 "nearly one quarter of Yukoners aged 12 and over admitted to heavy drinking at least monthly, with a similar share reporting daily or occasional smoking" (p. 28). Intentional self-harm (suicide) within Yukon's population remains a serious concern.

The evidence of the benefits that nature provides in the form of physical, emotional, and psychological ecosystem services to humans continues to grow (Bratman et al., 2019; Ferraro et al., 2020). As reported by Bratman, (2019) these benefits include, "increased happiness and subjective well-being, ... a sense of meaning and purpose in life; improved manageability of life tasks" and "decreases in mental distress" (p. 3). The authors acknowledge that contact with nature has shown improved sleep, reduced stress, reductions in anxiety, attention deficit and hyperactivity disorder (ADHD), and depression. Clearly, being in nature and having access to nature benefits humans.

However, Bratman et al., also warn:

As direct nature experiences become progressively unavailable to new generations, this creates an ever-narrowing spectrum of nature experiences (65). An “environmental generational amnesia” and “extinction of experience” (66) may stem from each generation’s reduced experience of “wildness” (or increased experience of environmental pollution)—shifting the baseline of reference points for the acceptable quality, richness, and variation in nature experiences (67). (p.3)

The increasing brittleness of the socio-ecological systems that support Yukoners and their way of life is not easily detectable. What is known by one generation and lost, is not recognizable as a loss to a later generation. As a result, an impoverished biological state is accepted as normal because the “better” condition is not known or experienced. This phenomenon is known as “shifting baseline syndrome” (Pauly, 1995). Worryingly, as people “become more accustomed to a degraded environment, they will perceive future environmental degradation as less important” (Soga and Gaston, 2018, p. 225)

A key defence against shifting baseline syndrome is familiarity with the natural environment and the frequency and duration of time spent in it. Urban populations are particularly vulnerable to loss of connection with nature because of its scarcity and difficulty to access. Both points could be easily turned aside by those home in the “wilderness city”, however, biodiversity loss continues in Yukon, the climate continues to warm, and people are distracted from nature by other leisure choices.

Protecting McIntyre Creek and its connections to surrounding lands present a unique opportunity to proactively address climate change, biodiversity loss, contribute to socio-ecological resilience and ensure wildlife movement. The goal therefore is to permanently protect the area known as McIntyre Creek in partnership and cooperation with others.

Species Diversity

Investigations into the variety of plant and animal species present in the McIntyre Creek area have taken place over the years. For example, Applied Ecosystem Management Ltd., reported in 2000 on key wildlife areas. Foos and Millar, reported on angler harvest in 2003. Applied Ecosystem Management Ltd., reported again in 2003 about fish and fish habitat and Pelchat (2011) characterized “the occurrence and distribution of wildlife within Middle McIntyre” (p. 1).

Each of the reports communicates the presence of species important to the maintenance of ecosystem health across trophic levels. Applied Ecosystem Management’s 2000 report at Map 16B identifies the McIntyre Creek river corridor within McIntyre Creek Regional Park as having “high wildlife values and high environmental sensitivity”. Pelchat (2011) observes that, “development may limit movement of bears and moose between habitat patches on either side of Whitehorse, the effect of the reduced movement will not affect regional moose and bear populations” (p. 16). Most recently McCaw (2020) prepared a comprehensive investigation into

the history, social values and biodiversity of McIntyre Creek. It captures an impressive amount of valuable information about the presence or absence of at risk species.

McCaw's report along with the early work completed by Applied Ecosystem Management Ltd., and Pelchat, demonstrate the presence of unique water communities, varied terrestrial environments, and the distribution of many different species in a complex interconnected mosaic commonly known as nature. Taken together, these reports deliver important information about the social and ecological significance of the McIntyre Creek area. Based on this information and knowledge about the value of protected areas to ecological and human health, ecosystem services, access to nature and ecological connectivity, McIntyre Creek lands are unique, and deserving of higher order protection.

Urban Protected Areas

The earliest example of a city "park" in Canada is The Halifax Common. Established by the Lieutenant Governor of Nova Scotia in 1763, lands for public use inspired the creation of such municipal parks as: Toronto Island Park 1867, London Ontario's Victoria Park (1869), Montreal's Mount Royal Park (1876) and Vancouver's Stanley Park (1889). Higher order governments followed suit establishing, Niagara Falls (1885), Banff National Park (1885), and Algonquin Provincial Park (1893). Most recently, the establishment of Rouge National Urban Park, (2015) continues what McFarland described as "early recognition of the advantages of open space for public use, especially if it could be obtained from senior government or through private gift" (p. 7).

Urban protected areas clean the air, land and water urban residents rely on. They mitigate against climate change, moderate the stress of modern day living, and contribute to the healthy maintenance and healing of mind, body and spirit (Government of Canada, 2013). Urban protected areas also safeguard against loneliness, isolation, and class distinction. They contribute to the local economy through tourism, local visitation and increased property values. Urban protected areas as part of a city's green infrastructure improves the city's environmental, social, and institutional resilience (Buijs et al., 2016).

Strikingly different from remote protected areas is the diversity of visitors to urban parks and the degree to which they are unfamiliar with nature, and the skills necessary to engage with nature in wild settings. Frank et al, (2019) point to the growing "disaffection and disconnection between people and nature" making "protected areas situated in or around large population centres key places for a wide range of people to experience, enjoy and learn about natural environments and species" (p 720).

In 2017, leaders of parks organizations at the municipal, provincial, territorial, and federal levels across Canada acknowledged in "Parks for All" that parks in all forms:

Offer natural solutions to many of our current environmental and societal problems. They sustain animals and make room for healthy ecosystems

that self-regulate and help control climate, supplying plentiful, clean water and food to all species. They provide spaces that can inspire creativity and energize us through play and recreation. Parks act as a shelter for Nature, and we are all part of Nature. We can connect with ourselves there. (p. 2)

James B. Harkin, Canada's first Commissioner of National Parks, while writing about the creation of national parks, spoke about the importance of connecting people with nature. He recognized protected nature provides "the raw material of intelligent optimism, great thoughts, noble ideals" and that in nature "all the people", would be made "better, happier, and healthier" (Williams, 1957, p. 15).

McIntyre Creek as a Regional Park already plays an important role in supplying such restorative powers. This role can be enhanced as can its service to greater ecosystem function, landscape connectivity and cooperative management by designation of McIntyre Creek as a permanently protected area by a higher order government. The Yukon government through Yukon Parks or other arrangements, is well situated to achieve this.

City of Whitehorse Official Community Plan

The City of Whitehorse is in the process of writing a new Official Community Plan (OCP). "Whitehorse 2040", initiated in late 2018, will replace Whitehorse's 2010 OCP and its 2018 Update.

The 2010 OCP vision for Whitehorse recognized the need to "conserve[s] wilderness spaces for future generations" (p. 7) and lists seven values in support of the vision. The first of the values listed is "Whitehorse Residents Value the Natural Beauty and Closeness to Nature". The OCP goes on to explain, "our residents value the nearby access to the wilderness. Residents value the wildlife, green spaces and trails in our neighbourhoods and the connection to other neighbourhoods. We value clean air and clean water" (p. 7).

The 2010 OCP and 2018 Update describe many important factors that ensure the protection of nature, green spaces, critical wildlife habitat and wildlife corridors. Protecting the natural environment and enjoying its associated benefits were top of mind for residents of Whitehorse during the OCP consultation process.

Input to "Whitehorse 2040", repeats the priority Whitehorse residents place on the natural environment, wildlife, wilderness and its protection. Responses to "Whitehorse 2040" public survey instruments indicate that to continue to protect and improve green spaces, one important action the city could take is to "enhance wildlife corridors". Other actions include, removing potential wildfire fuel, restoring degraded areas, increasing the protection of regional parks, planning more recreation amenities and expanding regional parks (City of Whitehorse, 2019, p. 15).

A controversial subdivision expansion into the McIntyre Creek lands is known as “Porter Creek D”. Introduced first in 1994, the initiative is recognized in successive Whitehorse OCPs and remains formally recognized to date. However, indications are that the present Mayor and Council do not support “Porter Creek D”. Despite this, the lands remain at risk of future development.

Residents of the City of Whitehorse have repeatedly over time told local elected and non-elected officials how strongly they feel about protecting nature within the city. Residents recognize the importance of parks and protected areas for the survivability of wildlife and the city’s livability. Clearly, according to Whitehorse residents, accessing nature, maintaining a healthy environment and protecting wilderness are important values that must be maintained.

The 2010 OCP planning process attenuated these priorities when “following strong public input from Phases 1 and 2, the OCP process was then lengthened to allow for the creation of a Green Space Network Plan (Map 1) [in the OCP] in the summer of 2009” (City of Whitehorse Official Community Plan, 2010, p. 12). The Green Space Network Plan (Figure 3) is a strong visual representation of key concepts related to the significance of green spaces, social and ecological connectivity, wilderness and access to nature for the benefit of City residents.

City of Whitehorse Sustainability Plan 2015-2020

Following a series of planning exercises beginning in 2007 about the City’s Integrated Community Sustainability Plan, the City of Whitehorse Sustainability Plan 2015-2020 attempts to balance competing interests for land, resources, protection and development.

Informed by earlier iterations of the 2010 OCP, its attendant update, and community engagement about the Sustainability Plan, what is revealed is that Whitehorse residents place high value on being close to nature and having nature close by. Urban wilderness is prized by City residents.

Expressed as part of the vision of the Sustainability Plan is a call for Whitehorse to lead in the “management and conservation of wilderness... .” (City of Whitehorse, 2015, p. 5). This intention is supported by a value statement that reads, “Whitehorse residents value the beauty and closeness of nature” and is explained further with:

The Yukon River runs through Whitehorse and our city is surrounded by mountains. Our residents value the nearby access to the wilderness. Residents cherish the wildlife, green spaces and trails in our neighbourhoods and the connections to other neighbourhoods. We value clean air and clean water. (p.6)

To enliven the vision and values that support engagement with nature, the Sustainability Plan calls for both increased use and protection of the natural environment, acknowledging that

“social equity, economic vitality and environmental health are interrelated and mutually dependent” (p. 10).

To achieve these priorities the Sustainability Plan promotes City actions to, “manage greenspace to rehabilitate, limit access and limit fragmentation, consider park expansion, and educate the public on wilderness values and wildlife conflict” (p. 20).

Challengingly, the Sustainability Plan calls for both increased use and protection. The Plan even anticipates the need to address increasing human-wildlife conflicts as more people engage in outdoor recreation on the trails and in the parks within the city.

Residents of Whitehorse value the relationships they have with nature and are concerned about effects this relationship might have on the ecological, social and economic well-being of the City. To this end, the Sustainability Plan communicates important concepts about community involvement in decision-making and governance related to those things that most affect people. The Sustainability Plan points out that:

For the City to move to new levels of sustainability, citizens must be engaged like never before. The [Whitehorse Sustainability Plan] reflects a shift in thinking from citizens being informants and advocates to being actively involved in stewardship of Whitehorse’s public infrastructure and natural resources. In this way, citizens are recognized as important partners in achieving long-term sustainability goals. (p. 8)

Engagement with nature is an important subject for Whitehorse citizens and related environmental decision-making. How decisions will be made about trails, parks, wilderness and the species that depend on undeveloped spaces requires attention. In the context of this report, citizen engagement in how MCPA will be governed and managed is a critical consideration.

Regional Park Planning

The 2014 Regional Parks Plan provides the overarching vision and direction for the city’s parks. It brings under guidance McIntyre Creek Park and four others (Chadburn Lake Park, Paddy’s Pond/Ice Lake Park, McLean Lake Park and Wolf Creek Park) that were created as part of the 2010 Official Planning Process. Together, these parks set aside “about 30% of the land within the municipal boundary” (City of Whitehorse Regional Parks Plan, 2014, p. 6).

Significantly these 5 parks are the core elements of Whitehorse’s “Green Space Network Plan” (City of Whitehorse Official Community Plan, 2010, p. 74). Whitehorse’s early recognition of the need for a connected system of parks placed it in the forefront of urban park planning.

Different from other jurisdictions in Canada where cities with no or little wilderness attempt to protect what remains of wilder areas, Whitehorse has an abundance of wilderness immediately

available to its residents. Connecting wilderness areas through urban trails and greenways, encourages daily interaction with nature and promotes healthy living.

Wilderness and wilderness values are, according to the City of Whitehorse's Regional Parks' Plan, important reasons why people choose to live in Whitehorse. Responding to these public values, Regional Parks protects wilderness in the City to "ensure future generations have wilderness at their doorstep" (City of Whitehorse Regional Parks Plan, 2014, p. 6).

Presently, McIntyre Creek Regional Park does not have a management plan (McCaw, 2020, p. 15). However, the Regional Parks Plan "is the first step towards park management planning by providing high-level direction. Future management planning will explore park-specific elements" (City of Whitehorse Regional Parks Plan, 2014, p. 16). The initiation of management planning for McIntyre Creek Regional Park has not yet been announced.

City of Whitehorse Trail Plan 2020

The health benefits of access to nature are reported widely (Lemieux et al., 2012; Romagosa et al., 2015; Schwartz et al., 2019; Watson et al., 2018). For many urban residents, accessing nature requires well thought out and maintained trail systems. Whitehorse remains a leader in Canada in this regard. Presently, "within City of Whitehorse municipal boundaries is estimated to include approximately 850 km of mapped trails" (Lee and Associates, 2020, p. 7).

Comparatively, this translates to:

Approximately 33.9 km of trails per 1,000 residents based on population estimates (Statistics Canada, 2016). This provision of trails is higher than the Canadian average which, in 2018, was a median of 0.9 km per 1,000 residents (Yardstick, 2018)". (Lee and Associates, 2020, p. 7)

The City of Whitehorse has, "placed a high priority on the importance of the trail network by creating a Projects & Trails Co-ordinator position and a dedicated Trail Crew" (Lee and Associates, 2020, p. 35). This arrangement, in cooperation with other City staff deliver the necessary maintenance, planning and administration to support Regional Parks.

Results of a public online survey conducted in 2020 by the City of Whitehorse revealed that 97% of the 1,415 respondents use Whitehorse's trails for walking or hiking and 94% of respondents use the trail network daily or weekly (Lee and Associates, 2020, p. 11). Other highly ranked opportunities included, cross-country skiing, dog walking and mountain biking.

The City of Whitehorse Trail Plan recognizes the need to encourage public use of Whitehorse's trails in ways that provide quality outdoor recreation and protect the environment. Particular attention is paid to addressing best management practices in ecologically significant areas and that:

Trails must reflect environmental sustainability and cultural stewardship. The Trail Plan and subsequent planning and management must maintain the integrity of our natural environment, advance the City's commitment to build resilience to climate change, and respect cultural and heritage values. Trails provide opportunities to foster understanding and appreciation of the City's unique natural environment, culture and heritage. (Lee and Associates, p. 16)

McIntyre Creek lands and trails are shared by people and animals moving within and through the area. Whitehorse residents clearly value the existing trails within Whitehorse and are hoping to see more trails with increased connectivity between neighbourhoods. Residents also expect standards implemented that result in environmental and cultural protection. As such, landscape scale connectivity planning is required to meet the many competing social and ecological needs of the area.

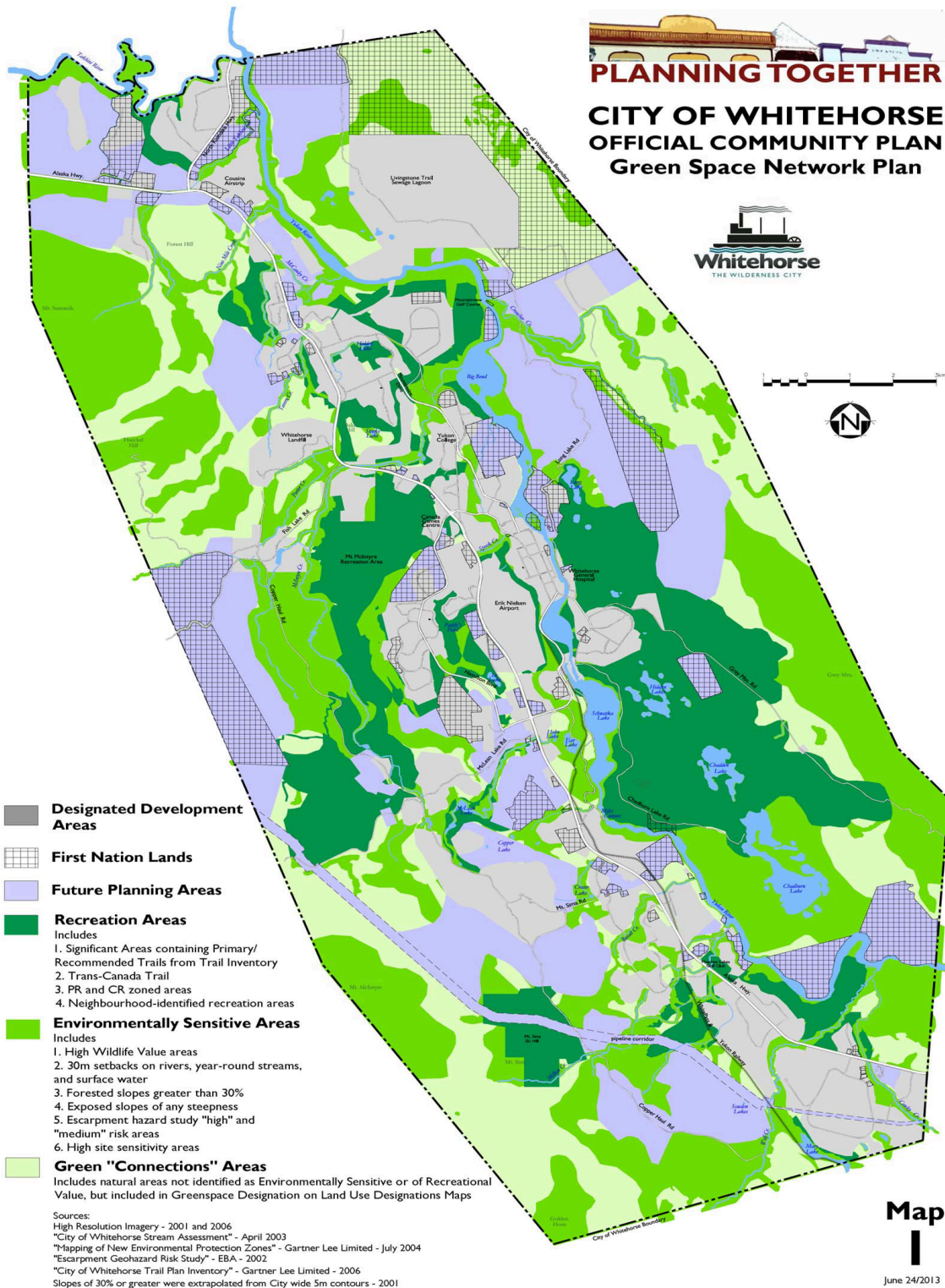


Figure 3 City of Whitehorse Green Space Network Plan

Note. From City of Whitehorse (2010). *Official Community Plan* (p. 96). Whitehorse, Yukon.

Land Use Planning and Links to First Nation Priorities in the Area

Kwanlin Dün First Nation Community Lands Plan

Released in 2020, by Kwanlin Dün First Nation, the Kwanlin Dün First Nation Community Lands Plan describes how settlement lands in Whitehorse will be used and developed. The land vision presented by Kwanlin Dün First Nation is based on values and guiding principles from which four goals were established: Community Development; Wildlife; Heritage; and, Revenue generation. For the purposes of this discussion, goals 2 and 3 have considerable bearing.

Together, the values and guiding principles are critically important to understanding how the goals were confirmed. The full Community Lands Plan should be reviewed as part of approaching decision-making about McIntyre Creek lands. Helpfully, the Community Lands Plan reports on common overarching values in two broad categories. They are:

1. Well-being of the land – values and ideas relating to respecting the land and animals, honouring people’s historical use of the land, taking care of the land and maintaining a spiritual relationship with the land.
2. Well-being of the people – values and ideas relating to using the land in a respectful way to provide for people’s needs and ensuring that the land and animals will be there for the benefit of future generations (p. 25).

These values of well-being demonstrate deep understanding about the connection between land and people. In fact, as described in the Community Lands Plan, “the general areas within Whitehorse that our people identified as being particularly important for heritage, are largely the same as those areas identified for wildlife” (p. 41). Surfacing quickly is the challenge of potential conflicts between protection of heritage and wildlife within areas outside of Kwanlin Dün First Nation community lands within Whitehorse. Accordingly, the Community Lands Plan recognizes, in regards to wildlife:

Much of the land within the boundaries of Whitehorse, including the KDFN Community Lands, remains in a relatively natural state and supports a wide range of wildlife species including moose and caribou. Streams, such as McIntyre and Wolf creeks, continue to provide spawning habitat for salmon, and ecologically important habitat such as wetlands, south-facing slopes and remnants of old-growth forests provide habitat for a diverse range of wildlife.

The current challenge for wildlife management in Whitehorse is how to maintain healthy wildlife populations in and around an urban environment. Cooperation with the City of Whitehorse will be essential if

our First Nation is to realize the goal of protecting lands for wildlife within the city boundaries.

On our Community Lands within the city that, ultimately, are not developed, KDFN intends to protect ecological integrity, maintain the health of wildlife populations and preserve opportunities for our people to engage in their traditional activities, such as fishing, medicinal plant gathering, berry picking and the practice of ceremony. (Kwanlin Dün First Nation, 2020, p. 62)

The resolution to the challenge rests with two important decisions. The first being, what form of governance will be selected to best care for McIntyre Creek lands and second, the priority placed on advancing landscape scale conservation, and ecological connectivity planning. Kwanlin Dün First Nation has resolved to “work cooperatively with the City of Whitehorse to protect significant wildlife habitat and establish an interconnected network of protected spaces and corridors within the municipal boundaries on KDFN Community Lands and City land, as appropriate” (Kwanlin Dün First Nation, 2020, p. 63).

Ta’an Kwäch’än Council Lands

Ta’an Kwäch’än Council settlement lands play an important role in supporting healthy wildlife populations in and around Whitehorse and throughout Yukon. Wildlife movement across Ta’an Kwäch’än lands including crossing the Yukon River, necessitates land use planning and zoning that accounts for the protection of wildlife habitat and ecological connectivity.

Without ecological connectivity across landscapes “ecosystems cannot function properly, and without well-functioning ecosystems, biodiversity and other fundamentals of life are at risk” (Hilty et al., 2020, p. 2). The work presently underway by the Män Tl’ät /Shallow Bay Zoning Committee reflects the need for local area planning that protects critical habitats and larger landscape scale planning for the broader area (Government of Yukon/Ta’an Kwäch’än Council, 2020, p. 13).

Earlier, governments of the Ta’an Kwäch’än Council, Kwanlin Dün First Nation and Yukon recognized the importance of regional ecosystem connectivity. In their Revised Visioning Report (2018) for the Fox Lake Local Area Plan, planning efforts are called on to recognize the priority for healthy ecosystems, and that the “relationships between fish, wildlife, their habitats and people” must be taken into account (p. 2). The document further requires that “broader regional connectivity is recognized and impacts both from and to places outside the planning area boundaries are considered” (p. 2).

Unfortunately, the ecological connectivity and heritage values present on the Ta’an Kwäch’än lands adjacent to and nearby the City of Whitehorse are under threat due to environmental impacts. In a webpage posting to the Yukon public, the Lands, Resources and Heritage Manager, describes negative effects on the land, including: destruction of cultural sites, habitat

degradation caused from off-road vehicles; specifically snow machines, cutting trees, creating trails, and increased littering and dumping. Pointedly, the posting asks that “the public refrain from using Settlement Land sites to allow the land, water, and wildlife populations time to heal” (Ta’an Kwäch’än Council, 2020).

The call for restraint drives to the core of what is at risk if human behaviours fail to align with ecosystem needs. Wildlife populations require not only the time to heal but also the space and connectivity to remain healthy. The area proposed as MCPA is an important ecological corridor that serves Ta’an Kwäch’än Council priorities and those of adjacent First Nations.

Łu Zil Män (Fish Lake) Local Area Planning Exercise

Łu Zil Män (Fish Lake) area planning was initiated through a Memorandum of Understanding (MOU) between the Government of Yukon and Kwanlin Dün First Nation in March, 2020. Approximately 460 km² of land west and adjacent to City of Whitehorse and its municipal boundaries, is under active local area planning (Figure 4). The Łu Zil Män (Fish Lake) area includes lands directly across the Alaska Highway at Rabbit’s Foot Canyon from McIntyre Creek Regional Park.

The Alaska Highway at Rabbit’s Foot Canyon creates a hard barrier for wildlife including fish and other species that rely on aquatic connectivity. To honour the principle that “the well-being of ecosystems, biodiversity, and fish and wildlife populations” (Government of Yukon and Kwanlin Dün First Nation, MOU, 2020, p.2) will apply in the development of the Łu Zil Män (Fish Lake) plan, addressing how species move safely over, across or under the Alaska Highway must be resolved. Key dimensions of ecological connectivity include, “gene flow, movement of individuals, metapopulation dynamic, migration, seasonal dispersal and flows of ecological processes (Hilty, et al., p. 48). Fortunately, McIntyre Creek lands are only a few hundred metres away making connectivity resolvable.

Yukon’s Department of Highways and its expertise in road ecology can take a leadership role in determining practical, proven options for the design and building of wildlife crossings that connect lands across the Alaska Highway. Early engagement on this subject is important given government budget cycles and planning horizons.

As suggested by Figure 4, nature does not stop at a line on the map. The challenges already identified for the Łu Zil Män (Fish Lake) area planning team are the consequences of past policy and management decisions. Future decision-making about the land will need to account for climate change, biodiversity loss, human health and safety, and the likelihood of species survivability following decisions. Ensuring the lands in the Łu Zil Män (Fish Lake) area are part of a system of connected lands that have conservation as a primary purpose, will safeguard against future cultural and environmental threats.

Appendix A - Fish Lake Planning Area

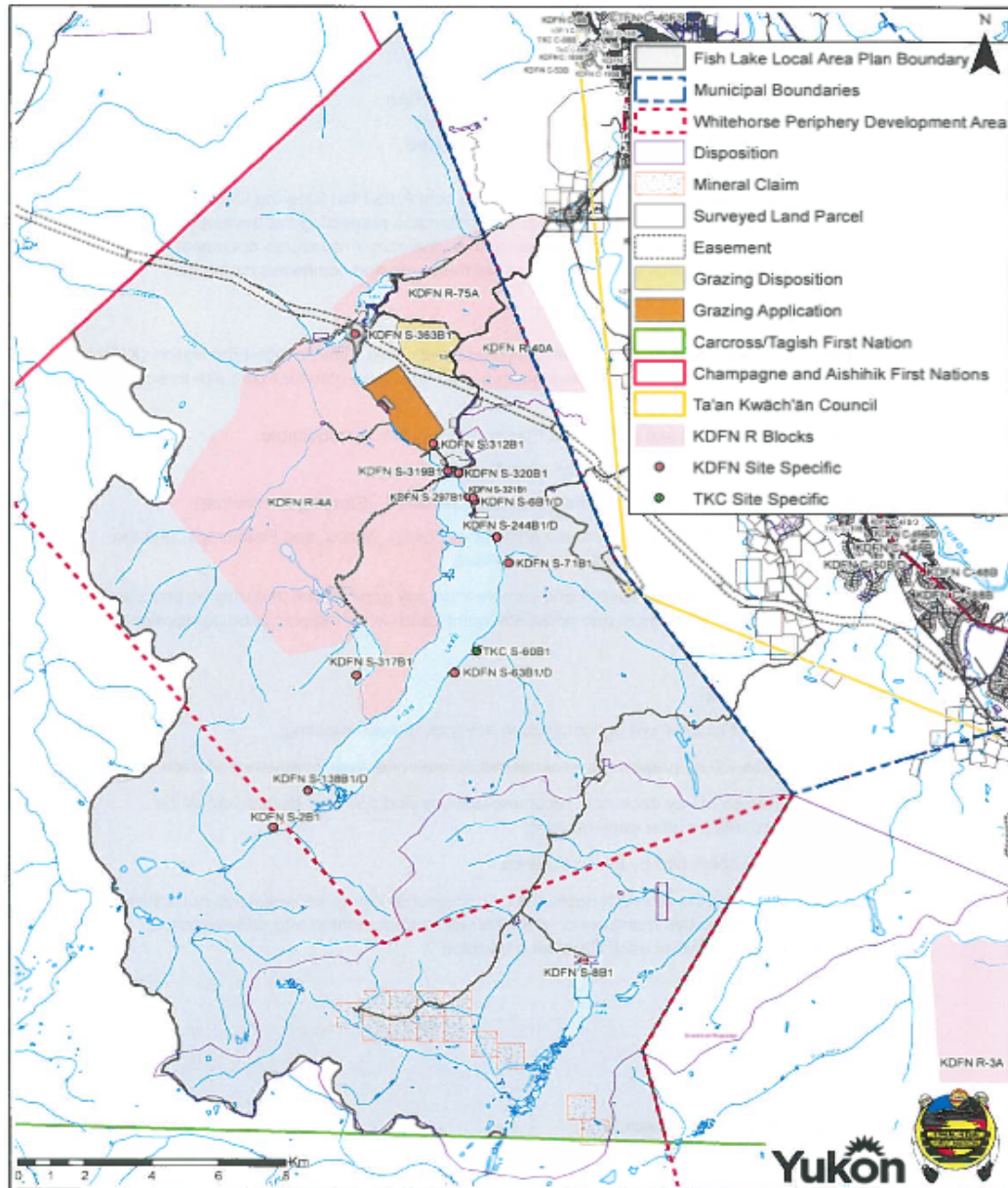


Figure 4 Proposed Łu Zil Män (Fish Lake) Local Area Plan Boundary

Note. From Memorandum of Understanding Respecting the Development of a Local Area Plan for the Fish Lake Area. Yukon Department of Energy, Mines and Resources (2020). Whitehorse, Yukon.

Yukon University Endowment Lands

Yukon University Ayamdigut Campus shares borders with McIntyre Creek Regional Park and McIntyre Creek itself. Prior to University designation in 2020, Yukon College developed a Campus Master Plan of which its first principle is:

Connect to the environment: Protect environmentally sensitive areas + make compelling visual, physical and programmatic connections to the natural setting. (Yukon College, 2015, p. 3)

The campus plan acknowledges its responsibility to the unique environment within which the university is located. It describes the campus as “immediately adjacent to McIntyre Creek, a sensitive environmental zone that borders the College” (Yukon College, 2015, p. 6).

Applied Ecosystem Management (2000) assessed the McIntyre Creek area for high value wildlife habitats, environmentally sensitive areas and potential private land ownership conflicts (p. 2). Their report confirms:

The Middle McIntyre Creek Wildlife Area is the middle reach of three wildlife areas identified along the McIntyre Creek corridor. This Wildlife Area is considered to be the entire McIntyre Creek corridor from the wetlands adjacent to Fish Lake Road, east to Mountain View Drive (Map 16B). The majority of this wildlife area occurs on Yukon College Endowment Lands. This area was identified for its mature riparian forest and wetland habitat characteristics. The most important forested area along this riparian corridor occurs behind Yukon College and is comprised of mature, highly structured spruce-feathermoss (SF) and spruce-willow (SW) ecosystems. Portions of this drainage contain residual forest patches that escaped the early 1920s fire event that affected most of Whitehorse West. Along with Wolf, Cowley and Croucher Creeks, these lowland forests provide some the best examples of mature riparian spruce ecosystems in Whitehorse. These riparian forests exhibit a large degree of vertical structure and contain a wide range of tree sizes; this diverse stand structure creates a number of different habitats for forest birds.

Several significant wetlands occur within this Wildlife Area. Adjacent to the Fish Lake Road, a marsh (MR) with scattered live and dead mature spruce (SW) provides important bird habitat. A section of McIntyre Creek just east of the Alaska Highway was straightened as part of a hydroelectric diversion project, creating an area of shrub and marsh. The main wetland in this area occurs behind Yukon College. It is comprised of a marsh and shallow open water (OW). Beaver activity has maintained

high water levels in this wetland. A grass-sage (GS) overlooks the Yukon College wetland. (p. 42)

Additionally, Pelchat (2011) notes that the University lands located in the Middle McIntyre Creek area, while not remarkable from a large mammal perspective (black bears, moose, Canada Lynx), the lands “can be considered a movement corridor”. He goes on to explain that these animals are “likely to use Middle McIntyre as a movement corridor” (p. 16).

Critical elements of ecosystem health including forest structure and wetland presence are also associated with Yukon University’s lands. In April 2018 the Minister of Energy, Mines and Resources, and the Minister of Environment jointly announced the intention of the Yukon government to develop a wetland policy for Yukon. The policy is in its 6th draft and scheduled for public and technical reviews throughout winter 2021. The policy’s draft wording communicates to readers the significance of wetlands to ecological processes, and their fundamental value to First Nations culture. It alerts readers to the threat climate change has on wetland structure and function and recognizes the importance of wetlands to ecosystems. Importantly, the policy cautions that significant knowledge and data gaps about wetlands in the Yukon exist (Yukon Department of Environment, 2020, p. 3). Yukon University’s endowment lands can assist in meeting the Yukon government’s commitment to building greater knowledge about northern wetlands through longitudinal studies established at nearby wetlands. Yukon College’s Master Plan describes the opportunity this way:

To the west of the campus is the area adjacent to McIntyre Creek. This land is zoned for Environmental Protection in the City of Whitehorse's Zoning Bylaw. It is an integral part of a number of Yukon College programs and courses, offering unique opportunities for field experiences for students. The diversity of nearby habitats (i.e. wetlands, creek and various forest types) significantly enhances instructional opportunities. (p. 10)

Yukon University lands play an important role in connecting campus life to the outdoors and in turn, proximity to nature connects Whitehorse residents with the broader university community. The lands, according to the University’s campus plan already support outdoor recreation including, hiking, cross-country skiing, snowshoeing and berry picking. This socio-ecological relationship is an example of how people and the environment connect to strengthen shared well-being. The University will continue to be an important neighbour to any permanent protection assigned to McIntyre Creek.

First Nations and Reconciliation

Much has been presented to this point about how protected areas and ecological corridors connect people to the land and with each other. The opportunity that MCPA presents goes even further. It speaks to reconciliation between Indigenous and non-Indigenous peoples.

Connecting Kwanlin Dün First Nation to lands of the Ta'an Kwäch'än Council, through the City of Whitehorse, is a startling opportunity to share what is important about these lands with all Yukoners and assist with:

- a) Increasing Whitehorse residents' awareness and understanding of treaty rights related to the land
- b) Honouring the original peoples of the area
- c) Telling the stories of the land and increasing environmental literacy
- d) Protecting wildlife and their habitat
- e) Encouraging proper outdoor recreation behaviours
- f) Educating about safe outdoor travel throughout the Yukon

The lands discussed were once resided on, used, travelled over and lived with by Kwanlin Dün and Ta'an Kwäch'än people. That connection was severed when non-Indigenous people arrived and settled in the Whitehorse area. Later, through the creation of reserves, the enforcement of the Indian Act, the imposition of residential schools, forced disassociation with the land and its teachings, Kwanlin Dün and Ta'an Kwäch'än were unwelcome on lands that were once home.

Opening discussions about how to best manage and protect lands that are understood to be under the authority of non-Indigenous governments with Indigenous governments, signals willingness to share power and decision-making for the good of the lands that support Kwanlin Dün and Ta'an Kwäch'än ways of life. Healing broken connections to the land can take many forms, some of which are already known.

Regional parks and trails are understood to hold opportunity for improved relations and increased understanding between peoples (Lees and Associates, 2020). Commitments to engaging with the Ta'an Kwäch'än Council and the Kwanlin Dün First Nation have been made by the City of Whitehorse in the past and recently. For example, the Regional Parks Plan commits that, "the City will make special efforts to reach out to First Nation communities to encourage participation in Regional Park planning and management" (City of Whitehorse, Regional Parks Plan, 2014, p. 17).

The City of Whitehorse Trail Plan 2020 identifies, "Action #14: Continue to integrate indigenous languages and traditional place names into the trail network in partnership with First Nations". Further actions include:

Collaborate with Ta'an Kwäch'än Council and the Kwanlin Dün First Nation on opportunities to develop signage and wayfinding that celebrates traditional place names and trails across the City to increase awareness of their traditional territories.

Integrate traditional place names and signage in indigenous languages into the trail network, especially within the Yukon River Corridor.

Consider enhancing sites with images and stories and adopting traditional place names where appropriate to support learning and language revitalization. (Lee and Associates City of Whitehorse Trail Plan, 2020, p. 27)

The process to establish McIntyre Creek as a Territorial Urban Park or other type of protected area can be a deeply significant step toward reconciliation by the City of Whitehorse and the Yukon governments. Firmly understanding the significance of MCPA lands in relation to Kwanlin Dün First Nation and Ta'an Kwäch'än Council lands, is fundamental to successfully establishing and managing MCPA.

Environmental and Other Risks Related to Land Transfer

A significant consideration for any government taking on new lands is environmental risk related to contaminants. Preliminary mapping (Figure 2) of McIntyre Creek Regional Park by the Department of Energy, Mines and Resources, indicates an absence of recorded contamination. However, given the history of mining activity, old roads, and industrial activity, it is prudent to engage a more fulsome investigation of the area. Water borne contamination originating outside of and upstream of McIntyre Creek should be carefully considered. For example, McCaw, (2020) points out that Icy Waters, under water licence regulation, processes and releases effluent into McIntyre Creek.

The Alaska Highway at Rabbit's Foot Canyon intersects with McIntyre Creek. Spills occurring in this area can quickly enter McIntyre Creek resulting in downstream contamination. Similar risks occur where other roads intersect with McIntyre Creek on its course to the Yukon River.

Other risks related to jurisdictional transfer relate to old mine entrances, shafts and their proximity to existing trails. McCaw (2020) observes, "as nature gradually reclaims abandoned sites, old mine shafts may cave in and the edges of open pit mines are sloughing, posing a safety hazard to those who venture too close" (p. 17).

The potential for conflict between mechanized and non-mechanized users is a concern. Going forward, careful review of the existing circumstance and recent trail planning for the City of Whitehorse will help assist in understanding the extent of the issue.

Encroachments into Regional Park lands by residential property owners is known. Detailed inventorying of such encroachments is necessary to understand the extent and complexity of the situation.

Governance and Management

The idea of cooperation and power sharing is not new to protected area management, but it is persistent. Dearden (1996), pointedly observed that "local communities must be included in

planning activities. No park can survive if it is surrounded by an antagonistic population” (p. 137). Grumbine (1997) gave early indication of the significance of power to cooperation:

Everyone who has experience with the cooperative process has noted that the work is not easy, but few are insightful enough to recognize unequal power distribution as a major problem ... experience shows that, the greater the power imbalance in any group, the less chance there is for success. (p. 44)

Graham et al., (2003) describe governance as fundamentally “about power, relationships and accountability: who has influence, who decides, and how decision-makers are held accountable” (p. 3). The authors go on to say governance includes, “the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say” (p. 3).

Governance, according to Jentoft et al., (2007) may be performed by governors, who represent stakeholders from “state, market and civil society” (p. 5). Others interpret governance as more about steering while management is more about directing (Graham et al., 2003; Vallega, 2001).

A critical distinction is that governance is not management. Management includes planning, organizing, leading and evaluating (Worboys, 2015). More directly, management involves the setting of goals and objectives (outcomes) and the distribution and monitoring of human and financial resources necessary to achieve the goals (operations). Armitage et al., (2012) report in the context of conservation, “management involves operational decisions to achieve specific conservation outcomes” (p. 246). Lockwood (2010) indicates that management is about the “resources, plans and actions that are a product of applied governance” (p. 755).

Time is spent here highlighting the differences between governance and management in protected areas because how the Yukon government wishes to proceed in determining a governance approach for MCPA will influence what management approach it wishes to put in place. Local circumstances and context provide necessary information to make such determinations.

At the 5th World Parks Congress on protected areas in 2003, research into governance of protected areas was called for as a priority area for focus. Since that time considerable understanding has been gained about protected area governance (Borrini-Feyerabend et al., 2013; Borrini-Feyerabend and Hill, 2015; Frank et al., 2019; Jones, 2014; Lockwood, 2010). While many frameworks have been proposed, Dearden’s 2009 “continuum of inclusivity” remains current. According to Dearden, governance of protected areas falls on a continuum where at one end government is the sole decision-maker and at the other, stakeholders have full control over decision-making. Figure 5 presents the range of governance approaches the Yukon government may wish to consider as it contemplates the creation of MCPA.

Options for governing protected areas

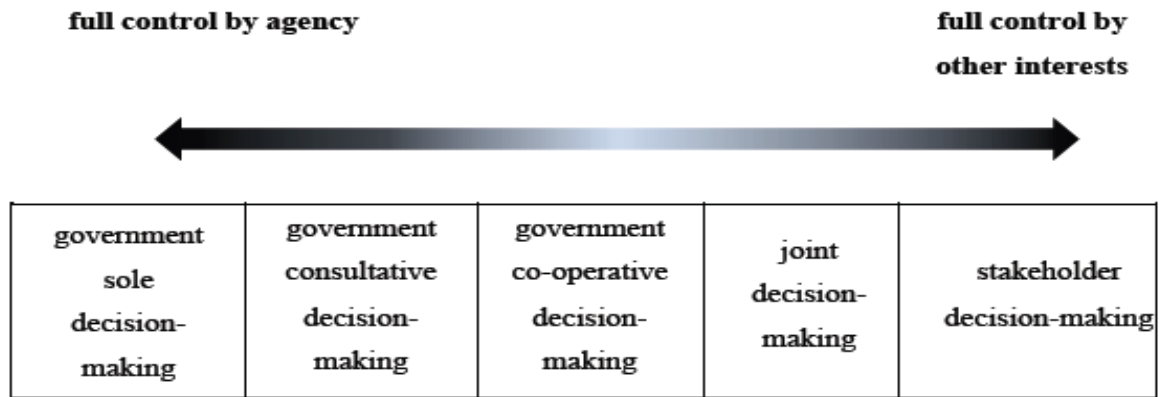


Figure 5 The Spectrum of Power Sharing in Protected Areas

Note. From Dearden, P. (2009). In P. Dearden & R. Rollins (Eds.), *Parks and Protected Areas in Canada: Planning and Management* (Third Edition, p. 468). Don Mills, Ontario, Canada: Oxford University Press.

In Canada, federal, provincial and territorial governments reserve the power to establish, govern and manage protected areas on lands for which they are solely responsible. They also recognize the importance of public participation in the selection of lands for protection and their purpose for protection. For example, Yukon’s Parks and Land Certainty Act (2002).

Governance arrangements for protected areas in Canada remain steadfastly with the Crown holding the majority of power in decision-making. However, there are arrangements for degrees of citizen involvement and power-sharing for the management of parks and protected areas. Notably, the Niagara Parks Commission and the St. Lawrence Parks Commission in Ontario demonstrate how delegation of management and operational decision-making takes place through legislation. In both examples, a Minister of the Crown remains responsible for the administration of the respective Acts and citizen participation is confirmed through legislation and memorandums of understanding. The legislation that created the Niagara Parks Commission in 1885 is one of the oldest examples of park establishment in Canada, rivalling the creation of Banff National Park.

Introduced as the Niagara Falls Act, the intention of the Act was to preserve and protect the natural and cultural heritage of Niagara Falls, and the Niagara River corridor. Seventy years later in 1955, a similar model was used to establish the St. Lawrence Parks Commission (Parks of the St. Lawrence).

The formation of the Niagara Falls Parks Commission in 1885 is one of the first examples of a government recognizing the value of placing the responsibility for decision-making about parks and protected areas closest to those most affected by such decisions. Since then, governments

across Canada and around the world have shared decision-making responsibility for protected areas through various instruments (Borrini-Feyerabend and Hill, 2015).

These arrangements are known as cooperative management, collaborative management and co-management approaches to decision-making. A characteristic often found in such arrangements is final decision-making rests at the senior most levels of the institution responsible for the management and operations of the protected area. In Canada, this means, the federal minister responsible for the lands in question (Canada National Parks Act, 2000; Rouge National Urban Park Act, 2015), the provincial or territorial minister responsible for the protected area, (Government of British Columbia Park Act, 1996; Yukon Land and Certainty Act, 2002) and at lower levels of government, elected local Mayors and Councils (Province of British Columbia Local Government Act, 2015).

To illustrate the authority held by the Yukon Minister responsible for parks, the Yukon Land and Certainty Act, 2002 directs, “the Minister shall manage a park in accordance with its purpose, type, approved management plan and any directions or conditions for development or use of the park contained in the order establishing the park” (p 16). However, arrangements in Canada for management and operational decision-making of a protected area or a system of protected areas, often includes citizen participation through advisory committees. For example, a “Class C” provincial park in British Columbia, “must be managed by a local Board appointed by the Minister” (B.C. Parks, 2020, p. 3). At the federal level, Canada’s National Parks Act requires that the Minister “shall, where applicable, provide opportunities for public participation at the national, regional and local levels” (Government of Canada, 2000, p. 6). Less ambiguous, Canada’s National Marine Conservation Areas Act, 2002 requires the Minister establish “a management advisory committee to advise the Minister on the formulation, review and implementation of the management plan for the area” (Government of Canada, 2002, p. 11).

As a result of unique governance arrangements in Yukon that arise from modern land claims, Yukon Parks has considerable experience addressing park management arrangements that are inclusive to local interests. Accordingly, “joint steering committees develop and review park management plans and park management committees help guide ongoing park management” (Yukon Parks, 2020, p. 9).

Confirming the governance-management relationship and the space in which both operate, addresses the critical need to match governance with context and management with authority (Bujis et al., 2016; Folke et al., 2005; Ward et al., 2018). Should the two systems not communicate and learn from each other, the very reasons for the existence of the protected area might be lost to administrative confusion and other government priorities.

Support for Permanent Protection

Canada is becoming a country of urban residents (Government of Canada, 2013). Growth in cities is greater than growth outside of cities (Yukon Bureau of Statistics, 2020). Peoples’ access

to nature decreases as cities grow and transform nature into pavement, roads and buildings. A nature deficit is realized to account for increased urban prosperity. Even if nature is accessible, competition for leisure time is resulting in more sedentary behaviours and less time outdoors (Scott et al, 2021). The resulting increases in childhood obesity and other related chronic health issues reported in children and adults has garnered serious concern by medical professionals (Barrett et al., 2014). Children are less likely to be left alone or explore the outdoors with their friends due to worries about their safety from strangers and parents' unfamiliarity with the natural environment (Louv, 2005). Increasing warnings about the dangers of sun exposure, tick bites, the presence of wild animals and the absence of people and lighting in parks, together, create barriers for people to feel comfortable in nature. Yukon's growing population is not immune to these same worries.

Whitehorse, already the largest city in Yukon, continues to grow by population and subdivision. Changing demographics alerts policy makers to the likelihood of increasing unfamiliarity with Yukon's natural environment and safety concerns for those new to Whitehorse's wild nature. In addition, Yukon faces certain health risks at or above national rates. Of particular concern are Yukon's seniors and youth (Yukon Government, 2018).

Scientific literature records the benefits that humans experience when in nature (Scott et al, 2021). Medical reporting describes the benefits accrued to patients recovering from surgeries or illness who have access to nature (Zhang et al., 2014). Social and psychological studies show the benefits to wellbeing experienced by people in nature (Bratman et al., 2019). Health care costs shrink as a result of active lifestyles and greater feelings of happiness (Schwartz et al., 2019). For the benefit of society, it is clear, parks and protected areas do good for those who visit.

Parks and protected areas raise up the importance of landscapes to cultural identity by connecting people to their history and the significance of place in contemporary terms (Walton, 2016). Parks and protected areas reflect what are important to people.

Ecologically, the benefits of parks to people include, protection of critical habitat that support species, their genetic dispersal and persistence. Filtering functions that result in clean air, land and water are supplied within protected areas (Lemieux et al., 2012) and strengthened when parks and protected areas are connected. For some though, the importance of connection is experienced through culture.

McIntyre Creek and its surrounding lands connected the Tagish Kwan with other peoples in the region. Oral histories held by Kwanlin Dün, "tell of our ancestors moving across the land to visit family, trade and harvest" (Kwanlin Dün First Nation, 2020, p. 10). Unbroken landscapes provided the necessities for food, water, shelter, medicines and cultural and economic well-being to the Kwanlin Dün and Ta'an Kwäch'än. Now, returning to and maintaining unbroken and respectful connections to the land, plants and animals are urgently called for by the Kwanlin Dün First Nation (2020) and Ta'an Kwäch'än Council (2020).

As circuit breakers to the spread of pandemics, as insurance against climate change and continued rates of biodiversity loss, parks and connected park systems can also serve as inclusive spaces for individuals and groups otherwise facing isolation. Urban parks are increasingly understood to play important roles in regards to each.

Society's increased awareness of the importance of connection to each other and nature has been heightened due to the Covid-19 pandemic. Urban parks have proven popular places for people to visit as they adjust to the stresses of Covid-19. In the United States, outdoor recreation areas, parks and day use recreation sites are recording increased visitation, including significant increases by first time visitors (Utah State University, 2020). Nearby, in the province of B.C., the regional park systems in Vancouver and Victoria have experienced upwards of 30% increases in visitation (M. McIntyre, personal communication, December 24, 2020). Hockings et al., (2020) in an early investigation into the effects of Covid-19 and protected areas writes,

At this critical time, we assert that effectively and equitably managed networks of well-connected protected and conserved areas, by maintaining the ecological integrity of natural ecosystems, provide one of the most important ways in which to strengthen and repair the relationship between people and the natural systems on which they depend. (p. 8)

Healthy nature is not only the tonic for many modern-day maladies, it is a fundamental requirement for healthy living. As we now better understand, broken landscapes interrupt social, psychological, emotional, spiritual and ecological pathways to human well-being. Like the provisioning and regulating services that nature performs such as, cleaning the air, land, and water, nature also helps heal mind and body. In both instances however, action is needed to guarantee improved wellness for all Yukoners.

Conclusion

For many Yukoners, outdoor recreation and connecting with nature is a lifestyle priority. Repeatedly, residents of the City of Whitehorse have made it clear that access to parks, trails greenspace, nature and wilderness is important. As the City continues to grow and take up lands, and as the population increases, access to the outdoors, close to home, will continue to grow in importance. The Ta'an Kwäch'än Council and Kwanlin Dün First Nation have ancient connections to the lands in and around Whitehorse and responsibilities for its health and well-being.

Protecting McIntyre Creek presents a unique opportunity for the Yukon government to secure forever the space needed for animals to move across the landscape from north to south and east to west. Permanent protection also means thousands of residents of Whitehorse are certain that access to nearby wilderness and nature will continue.

The proximity of the proposed MCPA to Yukon University is of particular importance to the stewardship role the University has for its lands. Irrespective of ownership, the lands managed as one socio-ecological system creates opportunity for land-based learning in social, natural and applied sciences. The land connects the university community with the community of Whitehorse. Shared decision making about the land will build trust between organizations and communities of interest.

Similarly, trust building through engagement with local residents will be necessary to ensure common understanding about management priorities and operational requirements for MCPA. Without the help of citizens and citizen groups, the Yukon government's capacity to protect the space will be insufficient to meet the challenges.

Importantly, the MCPA lands represent relationship building opportunities for the Yukon government with the City of Whitehorse, the Ta'an Kwäch'än Council and Kwanlin Dün First Nation. Each government recognizes the importance of protecting the environment to address cultural, social and individual needs of the citizens for which they are responsible. Establishing MCPA is an opportunity for the governments of Whitehorse and Yukon to advance cultural and ecological priorities that are shared by the Ta'an Kwäch'än Council and the Kwanlin Dün First Nation. McIntyre Creek Protected Area is not only the nexus of wildlife movement in the City of Whitehorse, it can also be a place where ways of knowing about the land and the animals come together for the benefit of First Nations and non-First Nations. In this way, establishing MCPA is another step in understanding how reconciliation might take place between Indigenous and non-Indigenous governments.

Recommendations

Permanent Protection

McIntyre Creek be permanently protected.

- Reason(s): The composition of natural values, long time support by local citizens for protection, amount of day use, proximity to neighbourhoods, amount of the land available, the function the lands play as a wildlife connector and ecological corridor, the benefits to people from exercise and connecting with nature.

Type of Protected Area Option 1.

The Yukon government establish MCPA as a Recreation Park under the Yukon Parks and Land Certainty Act, unless an alternative is identified that will confirm protection in perpetuity.

- Reason: Existing recreational use patterns, abundance of environmentally sensitive areas within an urban environment, opportunities for interpretation, outdoor education, and outdoor learning match the intent of a Recreation classed park in Yukon Parks.

Governance

McIntyre Creek Protected Area be jointly managed through a cooperative management arrangement empowering a Cooperative Management Board consisting of representatives

from the Ta'an Kwäch'än Council, the government of the Kwanlin Dün First Nation, the Yukon government and the government of the City of Whitehorse.

- Reason: The Minister retains the authority to administer the park per the Yukon Parks and Land Certainty Act and achieves shared power and decision-making with citizens for management of the protected area.

Management

That a manager for MCPA be appointed by the Minister, following receipt of advice from a Cooperative Management Board formed to assist with the management of the protected area.

- Reason: The Minister retains overall administrative responsibility and is responsive to the expectation that local people will be involved in decision-making.

Cooperative Management

The duly appointed Cooperative Management Board be supported in its duties by park management advisory committees whose members are selected from the Ta'an Kwäch'än, Kwanlin Dün and City of Whitehorse, citizens.

- Reason: Confer power from government authorities to local First Nation and non-First Nation citizens.

Or

Type of Protected Area Option 2.

The Yukon government establish MCPA through separate legislation unique to the circumstance.

- Reason: Authorize decision-making closest to those most affected by the decisions made.

Governance

McIntyre Creek Protected Area be governed by the McIntyre Creek Protected Area Commission. The Commission is formed through an Act to establish MCPA as a Yukon Territory Urban Park. This would be a new classification of Territorial Park, unique to its urban context. The Commission would be delegated the authority to manage the park for established purposes. The Commission members would be selected jointly by: The Ta'an Kwäch'än Council, the Kwanlin Dün First Nation, the Yukon government and the government of the City of Whitehorse.

- Reason: Maximize citizen empowerment in this unique circumstance.

Management

That a manager for MCPA be appointed by the MCPA Commission, following a recommendation from the Commission.

- Reason: Empowering the MCPA Commission to be accountable for the management of the protected area.

Cooperative Management

The MCPA Commission be supported in its duties by Management Committees selected from Ta'an Kwäch'än Council, Kwanlin Dün First Nation and City of Whitehorse, citizens.

- Reason: Granting power and authority for decision-making about the MCPA closest to the people most affected by the decisions.

Internal to Yukon Government

An interdepartmental committee consisting of representatives from the departments of EMR, Environment, Health, Community Services, Highways and Public Works, and ECO (Office of the Science Advisor) be established to provide the necessary natural and social science information and guidance for the effective management of MCPA.

- Reason: The structure of government results in silos and barriers to communication. Immediately establishing the expectation that knowledge and expertise, shared, will improve decision-making about MCPA. This is a significant opportunity to exemplify a whole of government approach.

Next Steps

The following steps are for consideration and guidance. The steps are not exhaustive nor final. They provide the reader with a list of considerations that are subject to change as new information becomes available. The numbering assists with readability and is not intended to communicate an order of priority.

1. Establish an interdepartmental team to review and validate information provided in this report and expand on it where necessary.

Lead: EMR

The interdepartmental team at a minimum should include:
Environment
Energy, Mines and Resources
Highways and Public Works

Others that may need to be involved at this stage include:

Health
Community Services
ECO (Office of the Science Advisor)

2. Confirm draft boundaries of the McIntyre Creek Protected Area. Delineating the proposed MCPA is needed before entering into discussions with various audiences. The boundaries should be identified as draft for discussion.

Lead: EMR

3. Investigate and confirm options to achieve permanent protection of McIntyre Creek lands within the authorities of the Yukon government.

Assuming designation is through the Yukon Parks and Land Certainty Act, the Department of Environment is best positioned to create drafting instructions.

Lead: Environment

4. Inventory and confirm environmental risks.

This exercise is to identify and inventory any known or likely contaminated sites or sources of ongoing contamination to the lands and waters of the proposed protected area. More broadly, mines and other built structures now abandoned should be identified and inventoried as part of a risk analysis.

Lead: EMR

5. Begin work to identify wildlife crossing options at Rabbit's Foot Canyon.

Working with Highway and Public Works, begin scoping the work to ensure proper design and planning for necessary fish and wildlife crossings along the Alaska Highway and in particular, where Fish Lake Road and the Alaska Highway intersect in Rabbit's Foot Canyon.

Lead: Highways and Public Works

6. Initiate discussions to determine the necessary social science research program to measure changes to human health and well-being by those visiting MCPA.

Lead: ECO (Office of the Science Advisor)

7. Confirm visitation numbers to McIntyre Creek Regional Park with the City of Whitehorse.

Determine baseline information for use in operational planning.

Lead: Environment

8. Integrate information from Fish Lake Local Area Plan and Kwanlin Dün First Nation Community Lands Plan.

Critical information associated with wildlife movement and protection priorities to be identified through review and analysis of the work undertaken to date.

Lead: EMR

9. Minister of EMR and Minister of Environment meet with officials from Ta'an Kwäch'än Council and Kwanlin Dün First Nation.

At an appropriate time the Minister of EMR requests a meeting with appropriate elected officials of the Ta'an Kwäch'än Council and Kwanlin Dün First Nation to discuss the government's intention to advance permanent protection of McIntyre Creek lands.

Lead: EMR

10. Minister of Environment and Minister of EMR meet with Yukon Environmental non-Government Organizations to discuss the government's intention to advance permanent protection of McIntyre Creek.

Lead: Environment

11. Confirm governance model for protected area.

Advance with interested parties the Government's intention to govern MCPA under the Parks and Land Certainty Act, and that the Minister of Environment would hold administrative authority per the Act, or that the Government intends to create stand-alone legislation for the purposes of permanent protection for McIntyre Creek.

Lead: Environment.

Key Messages

- McIntyre Creek is deserving of permanent protection
- McIntyre Creek is culturally important to Kwanlin Dün First Nation and the Ta'an Kwäch'än Council
- City of Whitehorse residents highly value McIntyre Creek for outdoor recreation
- McIntyre Creek lands have high wildlife values and high environmental sensitivity
- McIntyre Creek lands form the only wildlife corridor that passes through the City of Whitehorse
- Residents of Whitehorse have continuously supported protection for McIntyre Creek
- There is public support for protecting wildlife corridors in the McIntyre Creek area
- Kwanlin Dün First Nation recognizes the importance of working cooperatively to protect significant wildlife habitat
- Kwanlin Dün First Nation supports establishing an interconnected network of protected spaces and corridors within the municipal boundaries
- Ta'an Kwäch'än Council recognizes the importance of working cooperatively to protect significant wildlife habitat and landscape connectivity
- The area proposed as McIntyre Creek Protected Area is an important ecological corridor that serves Ta'an Kwäch'än Council priorities and those of Kwanlin Dün First Nation
- McIntyre Creek connects people to the land and with each other
- Connecting people to nature helps people live healthier and happier lives
- The lands that are included in McIntyre Creek Protected Area are at risk of development without permanent protection

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