

Łu Zil Män (Fish Lake)

LOCAL AREA PLAN

BACKGROUND REPORT

MARCH 2023

Submitted to:
Kwanlin Dün First Nation Heritage, Lands and Resources
Government of Yukon, Land Planning Branch

Welcome to Łu Zil Män

The Government of Yukon is pleased to undertake this joint planning initiative with Kwanlin Dün First Nation. The Łu Zil Män Local Area Plan will be developed in fulfillment of section 30 of the Kwanlin Dün *Self-Government Agreement*.

We look forward to collaborating with Kwanlin Dün First Nation, Ta'an Kwäch'an Council, residents, stakeholders and the public as we work towards developing this report and the future local area plan. We would like to thank the steering committee for their time and dedication to developing this project, which will help guide the future vision of the Łu Zil Män community, now and for future generations.

The Government of Yukon

"It's been a very productive area for people, because it was a productive ecosystem for animals and fish. So, these are the values that have been important for a very long time, and planning should strive to maintain these values for the future."

~ Christian Thomas
Government of Yukon Archaeologist

For thousands of years, Fish Lake has been an important area in the traditional seasonal round for Kwanlin Dün and our neighbouring First Nations. Our people would travel here from summer salmon camps on the Yukon and Takhini Rivers for trout in September and whitefish in November.

The Tagish Kwan are the original people who live and occupy the lands within Kwanlin Dün Traditional Territory. A Tagish Kwan story says Fish Lake is home to a pair of giant fish, a male and a female, who ensured there was always a good supply of fish.

In the Southern Tutchone language, Fish Lake is named Łu Zil Män, after the whitefish that spawn there in the fall. In the old days, access to a good whitefish lake was vital to ensure our people had enough food for the long winter months, particularly when the fall hunt for caribou or moose proved unpredictable.

According to Kwanlin Dün First Nation (KDFN) Elder Jessie Scarff, Fish Lake was also called Dis Hini - Moon Lake - in the Tlingit language, because people used to set nets for trout on Fox Point according to the phases of the moon.

Łu Zil Män is a traditional fall hunting territory for a number of First Nation families. Old foot trails run all around Fish Lake to productive hunting and trapping areas around Bonneville Lakes, the Ibex Valley, Coal Lake, and Primrose and Rose (Mud) Lakes. Large game, like moose and caribou were once plentiful throughout the area and sheep were found in upland locations. Small game, like gopher, groundhog, rabbit, ptarmigan and grouse were also an important food source.

The Fish Lake area holds deep cultural significance to the KDFN. Oral history and the archaeological record show that people have been hunting, fishing, trapping, gathering, working hides and making tools around Łu Zil Män from the early post-glacial period to modern day. Today, the significance of Łu Zil Män is reflected in the large amount of KDFN Settlement Lands located within the area, but the entire region is important to our people. For Kwanlin Dün families with traditional ties to the area, Fish Lake is home.

Department of Heritage, Lands and Resources Kwanlin Dün First Nation

"I feel very spiritually connected being on the land, you know, Fish Lake and other places, as well. I feel close to the creator when I'm there, and I also feel close to my ancestors. So, it's a pretty nice feeling to go out there to feel things like that, you know, and that's what - I think - the land brings to us; and I think that by getting back out there, you know, that's where we can do a lot of healing."

~ Gary Bailie
KDFN Citizen and Founder, Kwanlin
Koyotes Ski Club

List of Commonly Used Abbreviations

ATCO	ATCO Electric Yukon
GMS	Game Management Subzone(s)
KDFN	Kwanlin Dün First Nation
YG	Government of Yukon
TKC	Ta'an Kwäch'an Council

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Introduction



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In 2020, the Government of Yukon and Kwanlin Dün First Nation (KDFN) signed a Memorandum of Understanding and initiated a joint local area plan for the Łu Zil Män (Fish Lake) area west of Whitehorse, following the direction set out in Section 30 of the KDFN *Self-Government Agreement*.

The memorandum prioritizes cooperation between Yukon Government (YG) and KDFN and respect for the well-being of ecosystems and fish and wildlife populations. It also commits to using both Indigenous and Western ways of knowing during planning. Refer to Appendix A.

The need for local area planning is recognized in the *KDFN Self-Government Agreement*. A plan will encourage cooperation, help coordinate land uses and avoid conflicts between those uses. The plan will also try to balance the many interests and values in the area and consider generations still to come.

The plan isn't just about the end document, but about following a good process along the way. It's important that both the plan and the supporting process recognizes and promotes First Nation history, heritage and culture in the area and acknowledges its past and present use by both non-Indigenous and Indigenous Yukoners. The process also provides a way for the public to learn more about the Fish Lake area and better appreciate and enjoy what it has to offer.

The plan will create a shared vision for the Łu Zil Män (Fish Lake) area to benefit all Yukoners and answer questions such as:

1. What lands could be considered for residential or community development?
2. What areas need to be protected for wildlife or heritage?
3. How do we promote First Nations culture and history in the area?
4. How can we manage tourism and recreational activities?
5. What types of commercial or revenue generating opportunities are appropriate?

Once approved, all land use decisions by KDFN on Settlement Lands or YG on non-Settlement Lands must conform to the plan. The plan will also include recommendations for working together on community development and management goals that are identified through the process.

The following background report is the main outcome of the first phase of the planning process. It creates a shared foundation of knowledge about the planning area, including current conditions, uses, and values – simply put, the things that matter most. It also situates our present-day activities as a mere blip on a timeline that extends back many thousands of years to when people first lived there.

FISH LAKE/ ŁU ZIL MÄN

In the Southern Tutchone language, Fish Lake is named Łu Zil Män, after the whitefish that spawn there in the fall.

Throughout this report, the two place names are used interchangeably to honour both Indigenous and Western ways of knowing and talking about this special place.

TA'AN KWÄCH'ÄN COUNCIL

A portion of the planning area falls within the Traditional Territory of the Ta'an Kwäch'än Council (TKC). Many TKC families have traditional ties to the Fish Lake area. TKC has a long history of use and one site-specific parcel within the planning boundary (TKC S-60B).

The planning process will not apply to TKC Settlement Land; however, KDFN and YG will work with TKC to ensure their interests and perspectives related to the Fish Lake area are addressed in the plan.

JACKSON/LOUISE LAKE

"Jackson" is the common name for the larger, more northerly lake accessed off the Jackson Lake Road, although maps refer to it as "Louise". Jimmy Jackson trapped in the Fish Lake area and were one of many First Nation families who traditionally lived there.

Some locals say that the smaller lake adjoining Jackson is/was the actual Louise Lake, and the two were confused by cartographers. Notes in the Yukon Archives' John Scott fonds collection describes the lakes being named after the children of the manager of the nearby Pueblo mine and claims "someone in Ottawa changed the names to "Jackson".

This report and its accompanying maps use the common name.

The information contained in the draft version of this report originated from a wide range of sources, including subject matter experts from each government, previous studies and/or projects, and interviews. The report was compiled by a team led by Groundswell Planning, with mapping support provided by KDFN staff. The draft background report was reviewed internally through both governments and the project steering committee, consisting of appointees of both governments. The document will also be reviewed by the Ta'an Kwäch'än Council, stakeholders and the public prior to finalizing.

Overview of the Planning Area

The planning area is situated approximately eight kilometres southwest of downtown Whitehorse and encompasses a total area of about 460 squarekilometres. The planning area is located entirely within KDFN's Traditional Territory (TT).

The eastern plan boundary aligns with the City of Whitehorse administrative boundary, incorporating the western flanks and summit of Mount McIntyre, whereas the other boundaries follow natural features. Coal Lake/Ridge and the Wolf Creek drainage comprise the southern boundary. The western boundary follows the divide between the Fish Lake and Ibe Lake watersheds, and the northern boundary incorporates the lower reaches of Haeckel Hill, lower Jackson Creek and unnamed creeks flowing into Jackson Lake.

The primary vehicle access into the area from Whitehorse is the Fish Lake Road, which climbs into the alpine from the Alaska Highway. A major road spur about two kilometres west of the municipal boundary leads to Jackson and Franklin lakes. Refer to Figure 1.

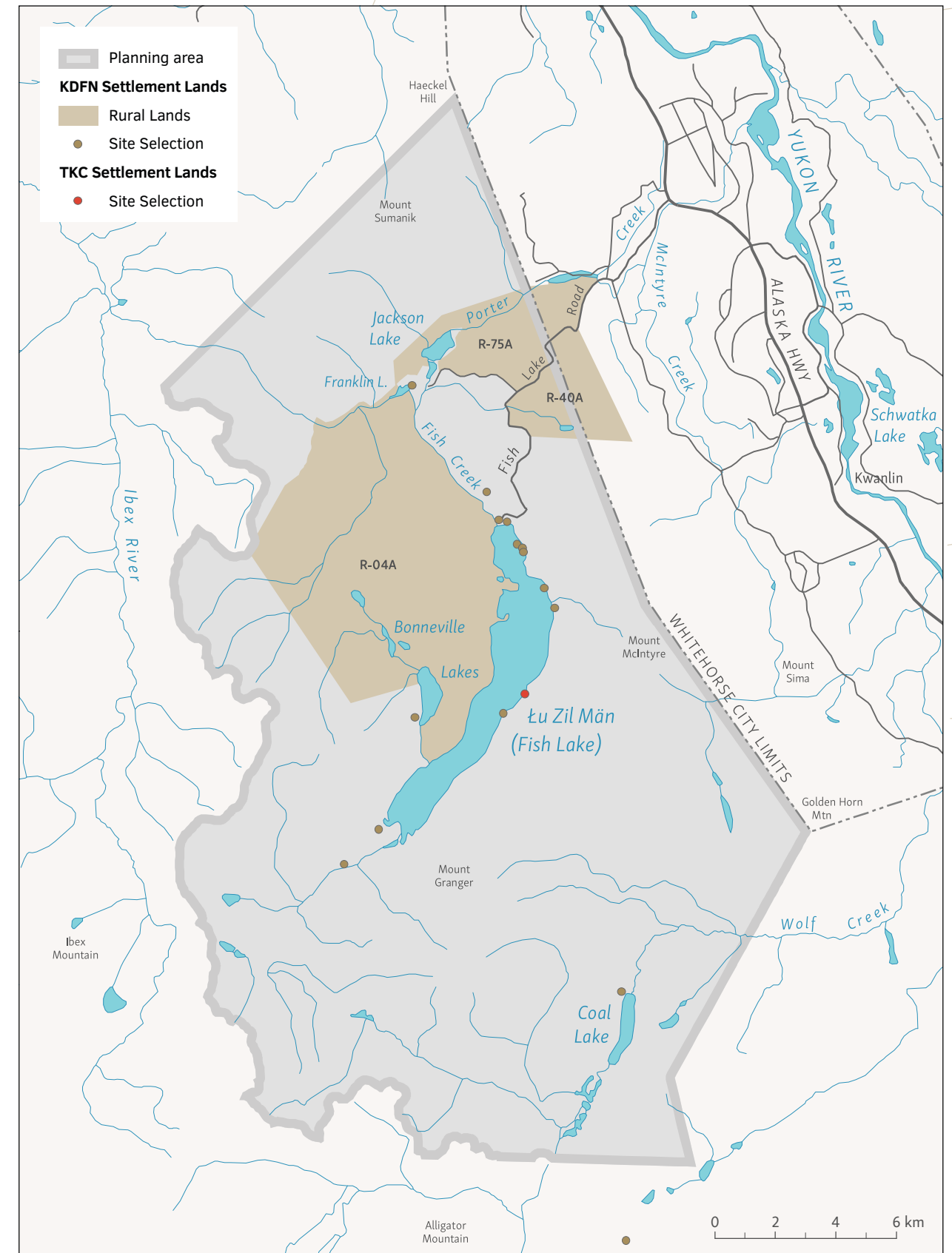


Figure 1. Overview of Łu Zil Män (Fish Lake) planning area

Part I. The History of Łu Zil Män



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How the Land was Shaped

The landscape of the Fish Lake area can be thought of as the most recent chapter in a long geological story - one in which glaciers have played the central character over the past 30,000 years.

The broad landforms of mountains and valleys around Łu Zil Män are generally the result of the underlying bedrock, most of which is sedimentary rock deposited in an ancient sea that covered the area around 180 million years ago, when dinosaurs roamed the earth. About 110 million years ago, magma from deep in the earth rose up and intruded into those sedimentary rocks. The magma cooled slowly, creating hard granite rocks that form the cores of the higher peaks found in the Fish Lake area today: Mount McIntyre, Mount Granger, Golden Horn and Mount Sumanik.

According to Kwanlin Dün traditional knowledge, the valley at the south end of Łu Zil Män was created by two giant bull moose fighting. The ground there is full of little hills, or moguls, where the giant bull moose churned it up.

The most recent ice age, called the McConnell glaciation in Yukon, started about 24,000 years ago. Glaciers grew out of northern BC and advanced into the southern Yukon, covering the entire region with ice. At the ice age's peak, glaciers covered the planning area and were thick enough to dwarf the summit of Mount Granger.

After the maximum extent of the glaciers had occurred, the ice began to thin and melt, retreating southward. This was not a steady retreat, however. The ice melted in fits and starts, with the melt stalling and the ice re-advancing at times. These re-advances helped shape the unique landscape and landforms of the Fish Lake area that we see today, some of which are highlighted in Figure 2.

Perpendicular ridges at the end of Łu Zil Män - As the ice melted back, it stalled at various locations, depositing gravel ridges off the end of the glacier. The start of the trail to Bonneville Lakes trail follows one of these ridges.

Old beach lines - With the northern Fish Lake and Ibex valleys dammed with ice from a re-advance, two large lakes formed and filled the valleys. The lake that filled the Fish Lake valley is referred to as glacial Lake McIntyre, and its water level was 120 metres higher than Fish Lake's level today. Old beach lines are still visible, especially on the western flanks of Mount McIntyre.

Gravel and sand deltas - Melting ice in the Whitehorse valley caused huge volumes of meltwater to pour over the low-points of Mount McIntyre and either side of Mount Granger. These meltwater flows moved and deposited sand and gravel deltas on the west side of Mount McIntyre, creating raised gravel benches. Meltwater flows south of Mount Granger deposited large volumes of sand and gravel between the Ibex and Fish Lake valleys.

Fish, Jackson and Franklin lakes - Even as the ice in the Whitehorse valley continued to melt and lose elevation, it blocked the valley between Whitehorse and Fish Lake. This blockage deposited sand and gravel in the Jackson Lake area, diverting drainage from Fish Lake into the Jackson Creek valley. The sand and gravel buried a block of glacial ice which later melted, creating depressions that are now Franklin and Jackson lakes. Melting water from the glacier also overflowed the north end of Mount McIntyre, creating the fan just north of Fish Lake - one that blocked the valley and caused the formation of the lake itself.

Permafrost - Following the full retreat of the glaciers, permafrost formed in the Fish Lake valley. Permafrost melt ponds and peat mounds are found at the south end of Fish and Coal lakes and permafrost is also found in alpine areas, especially on north facing slopes.

The Łu Zil Män area became fully ice-free about 11,000 years ago. This dynamic landscape has been changing and re-stabilizing since that time, with vegetation reclaiming the area in its long recovery from the ice age. In more recent times, humans have become an agent of geological change through the development of roads, trails and residential properties. The most significant human-caused change is likely the construction of the Fish Lake hydro project in the 1950s, which raised the water level in Fish Lake and diverted much of the flow from the Jackson Creek valley eastward into McIntyre Creek.

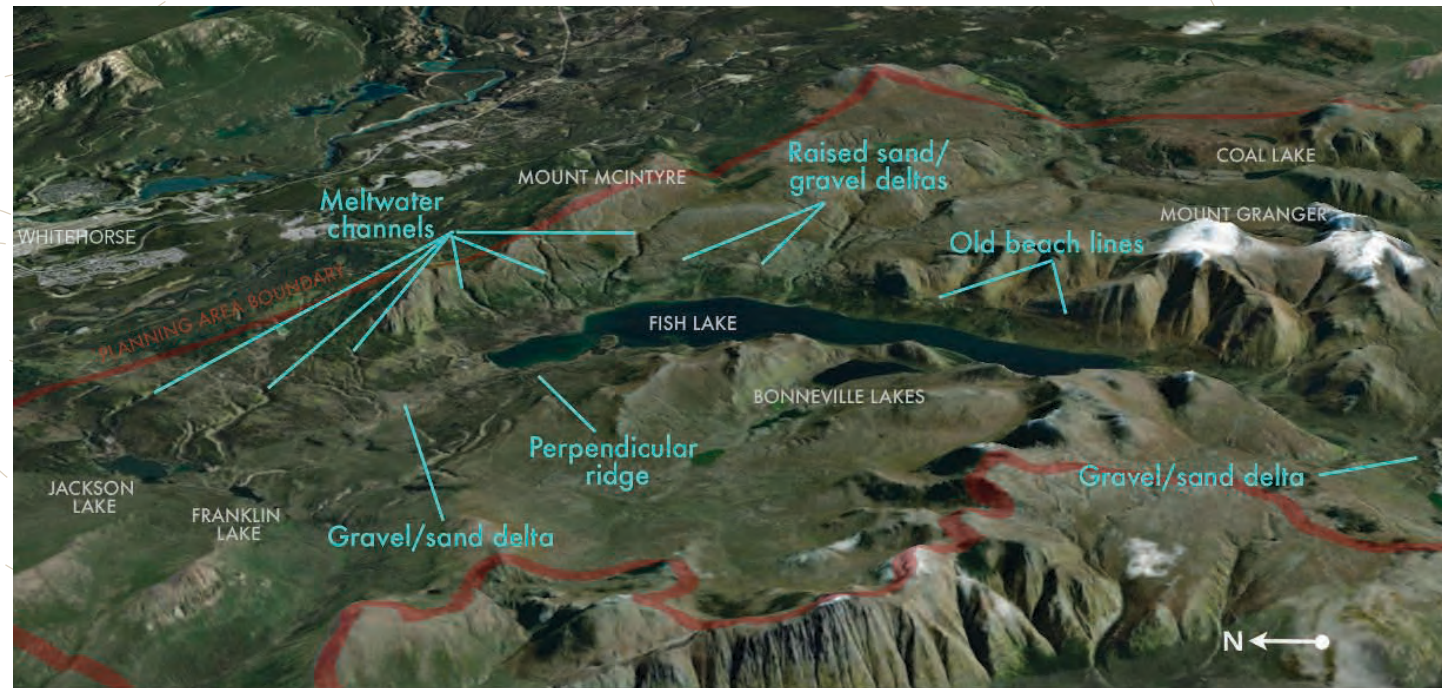


Figure 2. Glacial influences on the Fish Lake area landscape

Ancient Times

FIRST PEOPLES

Sometime after the glaciers receded, and possibly around the time that pro-glacial Lake McIntyre formed (10,000 to 14,000 years ago), people began to move into the Łu Zil Män area. These ancient peoples drew upon Łu Zil Män's wealth and variety of natural resources to survive and thrive. During the millennia that followed, Łu Zil Män became an area people depended on for subsistence but also became a place to meet and connect with neighbours, and an important node in a series of elaborate travel and trade networks throughout the southwestern Yukon. Map 1 shows an overview of some of these traditional routes.

Early inhabitants needed to constantly adapt to the changing post-glacial environment. The draining of the huge glacial lakes, deposition of fertile soils and a warming climate ushered in the arrival of shrubby plant and grasses. This new vegetation became forage for large game animals such as caribou, bison and elk, and hunters would have soon followed. Technology and food sources would have shifted as post-glacial sediments were flushed out making way for fish in the newly formed creeks, rivers and lakes 7000 years ago (KDFN 2013).

Evidence of distinctive technologies and stone tool types help us understand how ancient peoples occupied the Fish Lake area in the period following deglaciation. Clusters of archaeological sites have been identified around the north end of Fish Lake, the Bonneville Lakes, and Louise and Franklin Lake, and reflect the importance of these localities for subsistence pursuits in the past.

ANCIENT SITES

Among the oldest known archaeological sites in the Fish Lake area are Bonneville Lakes and a rock quarry site, which may have been occupied by some of the first arrivals to the region around 8000-10,000 years ago. These sites would have been above the elevation of pro-glacial Lake McIntyre at the time of its maximum extent, and show evidence of stone tools from the time period just after the glaciers melted.

Kwanlin Dün Elders describe Bonneville Lakes as a traditional basecamp for upland hunting. In this early period, the area was more grassland than forest, and hunting would have focused on caribou and bison. The rock quarry site found at Fish Lake shows evidence of people extracting and preparing local shale-like stone material for stone tools. Located on a high promontory, the quarry site would have provided a panoramic view to monitor the caribou and bison that roamed the area. There are many stone tool workshop sites located around the quarry, and Fish Lake was a place where many young people of the ancient past would have their first lessons making stone tools.

There are several sites located on the north end of Fish Lake that served as the main camps where people gathered on an annual basis for thousands of years. These camps provided access to important fishing areas and served as a home base for hunting camps in the alpine. Here, other day-to-day tasks of domestic life, such as tool production and repair, hide working, and fish and meat drying, also took place. The variety of stone tools found at these sites indicates that this has been an important camp for at least 5000-8000 years. A large lanceolate spear point and microblades found just above the ancient lake floor suggest occupation of the area likely occurred soon after deglaciation, when lake levels were higher than present.

Archaeological evidence shows that ancient hunting and fishing camps in the Jackson and Franklin lake areas have been seasonally occupied for the past 5000-8000 years. The presence of brush camps and remains of a sweat lodge in the area provide evidence of continuous use until fairly recent times. These sites contain evidence of a wide variety of harvesting, including birds, an important spring resource. More recent fishing camps can also be found at Fox Point, possibly because lake levels were higher prior to 3000-4000 years ago and the landform was under water.

The Mount Granger ice patch site preserves evidence of caribou and sheep hunting spanning millennia, including a large spear point encrusted with ochre (probably 4000-5000 years old) and an arrow with a barbed antler point. The Granger ice patch is clearly visible from the camp at the north end of Fish Lake. The tendency of caribou to seek relief from heat and insects on alpine ice patches would have been well known to past hunters. Stones

in the high alpine were assembled into blinds to disguise hunters from the game. This was almost certainly a location regularly visited over many thousands of years.

Traditional Use and Occupation

SEASONAL ROUND

The stabilization of the natural environment to something resembling its current state around 5000 years ago resulted in more consistent patterns of land use in the area that today's Elders were taught by their parents, grandparents and great-grandparents. These traditional ways were organized around the seasonal round – the pattern of movement between resource gathering areas during the different times of year. Today, First Nations people still follow and practice the

teachings of their ancestors in the Łu Zil Män area. Documented First Nations land use and occupancy sites in the planning area are represented in Map 2. A detailed land and occupancy study has not occurred in the planning area and would contribute significantly more information.

SUMMER AND FALL

In the late summer or early fall, many families would travel to camps at Fish Lake for trout and whitefish. The main camps were located at the north end of Fish Lake and at Fox Point, where people would set their nets for the trout at the open water. In October and November, nets were set for the whitefish around the mouths of the small streams coming into Fish Lake, and at the outflow to Fish Creek.

Moose, caribou and sheep hunting also took place in the fall, before and after the trout and whitefish harvest. From base camp, hunters travelled to surrounding upland areas to hunt large game in the fall, while others stayed in camp to process the harvest for winter storage or for sale in town. Jessie Scarff recalled that before the road was built to Fish Lake in the 1940s, people travelled to their hunting territories around Bonneville Lakes with dog pack and returned with dog sleds.

Early fall was also an important time for hunting and trapping small game like gopher (ground squirrel) and ground hog (marmot). The north end of Fish Lake was a good place for gophers, and both species were plentiful in the upland areas around Fish Lake and over towards Ibex Mountain. Gopher was a highly valued trade item. Hoodlua - Kitty Smith remembers one summer when her grandmother, Alice Cody, made a gopher skin blanket.

In the fall time, all kinds of berries could be found at Fish Lake, including high bush cranberries, raspberries, currants, low bush cranberries (lingonberry), blueberries and

mossberries/crowberries. Julia Joe said there were certain places up the mountainside that were best for berries, and Jessie Scarff remembers picking berries at the south end of Fish Lake. All the women did this together and sometimes set gopher snares at the same place. Rosie Charlie told a story of Bessie Burns and Jenny Laberge, who were out picking berries by Ptarmigan Pass one time when they came across a valley full of grouse. They set a fish net across the valley and caught over 100 grouse that way.

WINTER AND SPRING

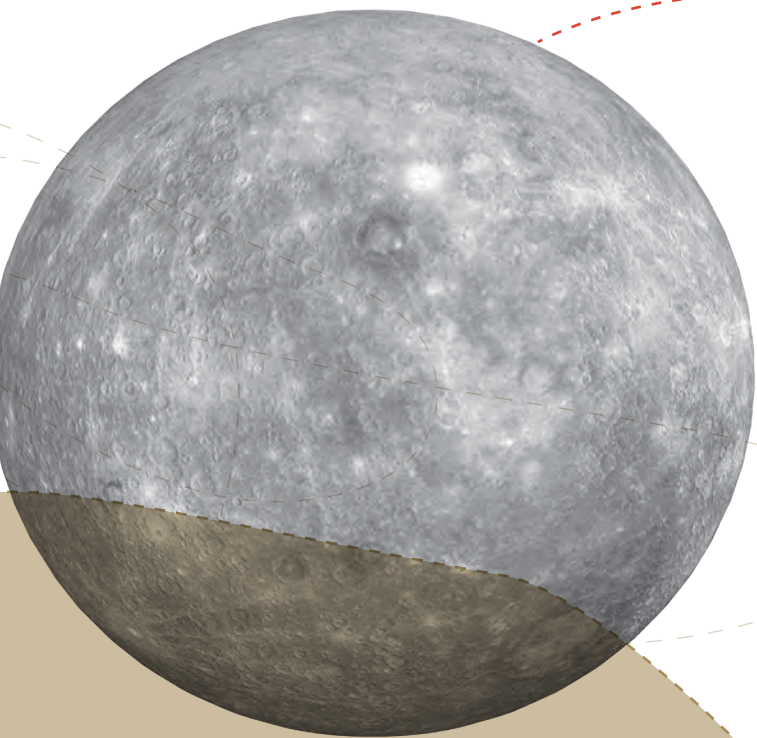
In winter and spring, people fished through the ice for whitefish and trout, hunted moose and caribou in the mountains, and trapped. Elders remember an abundance of mink, marten, lynx and sometimes coyote. Frank and Margaret McKay had several trapline camps around Fish Lake and the Ibex Valley. They would start out in early winter, and would travel in a circle, moving from cabin to cabin, trapping, hauling and caching meat.

In early spring, beaver and muskrat trapping were important at Fish Lake. The Bonneville Lakes, especially the third one, was known as good beaver country. Jessie Scarff and her husband used to fly into Johns Lake to hunt beaver and muskrat around Ibex Lake, Mud Lake, Johns Lake, Takhini Lake and all the way down to the Yukon River. They would then walk back to Whitehorse with dog packs. Jimmy Jackson always went to his trapline on the lake that would become his namesake.

Grayling spawned in spring. The best place for grayling was Bonneville Lake. Jessie Scarff described how you could stretch a burlap sack across the lake outlet in the creek and get lots of fish every time. Don McKay remembers grayling so plentiful around Jackson (Louise) and Franklin Lakes that you could catch them in your hands in the creeks, especially in Jackson Creek.

“The moon, that’s ... how you set your net at Fish Lake. I was taught that ... back in 1942, when I first got married. My aunt Jenny Laberge is telling me. That’s this Fish Lake was actually, the Indians believed was run by the moon, because when you go set your net, you go which way the moon is... That’s why my aunt Jenny Laberge told me that Fish Lake was run by the moon. That’s the old-timer’s belief and I quite believe it too because I tried different ways. I could go up here when there’s a full moon. I know exactly where to set my net, over here or across that side. Or over, out a little ways, and things like that. I always get the fish.”

~ Jessie Scarff
KDFN Elder



CAMPS AND CABINS

The main traditional camp at Fish Lake was at the north end of the lake. People would gather here for the trout and whitefish in late summer and early fall. The site hosted large gatherings where people fished, hunted, traded, and held potlatches. This is also where the trail to Bonneville Lakes starts.

Other camps were located around the north end of the lake, including where a wilderness ranch now stands. Some families had cabins, but most stayed in tents and brush camps¹. First Nation families had hunting and fishing camps throughout the Fish Lake area, including:

- North end of Fox Point
- South end of Fish Lake
- Bonneville Lakes
- Jackson and Franklin lakes
- Coal Lake
- East side of Fish Lake

More family cabins and seasonal homes are known to have existed in the Fish Lake area, though exact locations are uncertain in some cases. Several cabins and camps were flooded when the lake was dammed in 1949, while others were destroyed or relocated to Whitehorse. Some families still have cabins and camps in the Fish Lake area, now located on KDFN Settlement Lands.

TRAILS AND TRADE ROUTES

From summer salmon camps above Kwanlin (Miles Canyon) and Lür Däyhèl (Takhini River at the mouth of the Little River), many trails led to Fish Lake. Kwanlin Dün elders remember Fish Lake as a place where lots of people always visited. Based on oral history and the archaeological record, this tradition can be seen to have a considerable time depth.

Old foot trails run all around Fish Lake to upland hunting and trapping areas in the Bonneville Lakes, Ibex Valley, Alligator Lake, Primrose and Rose (Mud) Lakes, and east to Coal Lake and Robinson. Most trails were used to go from one camp to another in association with hunting routes and traplines. There were also extensive trail systems connecting Fish Lake to Champagne, Lake Laberge, Marsh Lake and beyond.

Some modern-day travel patterns follow in these ancient footsteps. The traditional trail between Łu Zil Män and Whitehorse is now largely the route of the Fish Lake Road. Elders remember an old foot trail from the top of Robert Service Way to Fish Lake, possibly via Mount McIntyre. The popular Fish Lake Trail to Bonneville is an millennia old hunting trail.

Fish Lake was also part of an extensive trade network that extended into central and southeastern Alaska and northern British Columbia for thousands of years. Obsidian and other exotic materials arrived via this network into the Yukon interior and were exchanged with local resources such as moose hides and furs.

Don McKay described the trail from Fish Lake to sheep hunting territories around Ibex Mountain and Primrose Lake as part of a Tlingit trading trail that went all the way to the coast. The fact that Fish Lake has a Tlingit name suggests that this location was known to the Coast Tlingit traders.

“As far back as I can remember, when I was just a small boy that my father and mother used to trap furs between Fish Lake and up the Ibex, clear around to the south end of Fish Lake and back. They had cabins up in the Ibex and the cabin in Louisman Lake or Louise Lake, it’s called. And they used to go from cabin to cabin, depending on how much time and things they had. They used to work from one section, I guess start early in the trapping season and work their way up. I was just a small boy and I heard them telling stories about different things...

So in seasons thereafter, my father and them have gradually turned back to civilization ... to supply their family with more money because he couldn’t keep up the trapline to keep any money for subsistence and other things that he needed and [we] had started being a big family. A family of three boys and so he had to stop trapping and from there on out, I don’t know how he went about it but he went and found a job in the city and from there he let the trap line drop.

And from seasons thereon we lived in that area, trapped and hunted. But just did at small intervals. We used to hunt there, but there seems to be too many people, and the ranch moved in there and our hunting areas was moved back so far that we could no longer hunt in that area because it was too hard to carry the meat in and stuff. So, we just gradually let our hunting and trapline things... I don’t know what you would say.

Yeah we still, we still go out and once in a while and hunt and, not too often now, found that there is too many people in that area so we look forward to going down the rivers, or something like that”.

~ Don McKay
KDFN Elder



20th Century: Change Comes to Łu Zil Män

Traditional patterns of land use, and the intimate knowledge of Łu Zil Män's natural order, were passed down through generations of the people into the era of the arrival of peoples of European descent in the Yukon in the 1860s. While the first few decades of post-contact life saw relatively little disruption to the traditional ways, the discovery of gold in the Klondike in 1896 would drastically change the lives and land use patterns of Yukon First Nations people.

The Gold Rush, combined with the subsequent construction of the White Pass & Yukon Route railway, turned nearby Whitehorse into a transportation hub and mining district for a wave of new settlers. Railway development, sternwheeler traffic, and new settlements along the Yukon River all contributed to the decline of the salmon fishery around Whitehorse and the displacement of Tagish Kwan people from traditional summer fish camps. These impacts were exacerbated by the construction of the Lewes River dam in 1924 and commercial salmon fishing, particularly in Alaska.

First Nation families displaced from their traditional summer fish camps looked for other locations for their summer camps, including Fish Lake. The introduction of gill nets allowed for summer harvest of whitefish and trout at Fish Lake to mitigate the reduced salmon runs. As a result, numerous First Nation families began to stay there during the summer months as well. Jessie Scarff remembered her aunt, Jenny Laberge, saying that people used to gather often at Fish Lake, especially after the white men came.

“There was lots of people there ... they all stayed there they stay right there. They’re hunting dry meat, and dry fish. ... After, where they’re finished, they go to ... Tagish, and they fishing again, for salmon. They dry up salmon there.”

~ Gladys Huebschwerlen
KDFN Elder

KDFN Elders remember Fish Lake as a place for summer gatherings where lots of people always visited. Families from Carcross, Champagne, Aishihik, Lake Laberge and Carmacks came to fish, hunt, trade and hold potlatches. Gladys Huebschwerlen described potlatches that would last for two days and people staying on afterwards to dry their fish. Over 20 First Nation families have been identified as having seasonal camps, cabins and traplines at Fish Lake over the last century.

Commercial trapping at Fish Lake was also active during the early part of the 20th century. First Nation people earned good prices for pelts, which they sold in Whitehorse or traded for goods. When fur prices dropped after World War II, many families who stayed at Fish Lake continued to earn part of their living from traplines, even as the growth of Whitehorse and the local market economy made it more and more difficult to do so. The Jackson, McKay, Irvine and Scarff families, as well as Shorty Austin, all trapped in the Fish Lake area.

*Johnny Brass
scrapes a moose
hide at the Jackson
Lake Healing Camp.*

©GBP

The Squatter Policy gave people the opportunity to legitimize tenure on sites they had been informally occupying. Squatters would be able to enter into an agreement for sale or lease for their land site or relocate to another site if the current one was deemed unsuitable. Applications for tenure were reviewed for sound land management practices by a panel.

The development of permanent dwellings in the Fish Lake area and settlement of non-Indigenous people in the area followed the construction of the Fish Lake Road in the mid-20th century. The Department of Indian Affairs and Northern Development developed a seven-lot cottage subdivision on the east side of the lake in the 1960s. Two grazing leases were granted in the 1970s. The early 1980s saw the establishment of a 10-year lease for a ranch, while the latter part of the decade saw a handful of other residential lots formed out of the government's Squatter Policy.

Today's development pattern – essentially a handful of private dwellings and cabins interspersed around Fish Lake Road, Sunshine Valley, Jackson Lake and the northeast side of Fish Lake - was largely set by the early 2000s. The wilderness ranch's lease was converted to an agreement for sale for an expanded area and rezoned for commercial tourism.

The signing of KDFN's Final and Self-Government agreements in 2005 saw the Kwanlin Dün people's ancient and traditional ties to Łu Zil Män formally re-established in a modern treaty context. KDFN assumed ownership and legislative authority for over 1000 square kilometres of Settlement Land within its Traditional Territory, including three large rural blocks and 14 site-specific parcels in the Fish Lake area. KDFN also has a constitutionally entrenched right to participate in cooperative planning for all lands and resources throughout its Traditional Territory.

Since 2005, further development has largely been on hold pending land use planning, with the exception of a few land development and rezoning proposals. A rush of 31 rural residential spot land applications, submitted to YG in 2004, were deferred by the inter-governmental committee reviewing them on the basis of the potential cumulative impacts they posed and need for broader land use direction for the area.

Despite all of the changes that the past 120 or so years have brought, Kwanlin Dün citizens continue to use and occupy the Łu Zil Män area in a variety of traditional ways.

"That's why Fish Lake is important to me. Because as an elder, I want to go home. I grew up at Fish Lake, and I was taken away. ... I was taken from Fish Lake, and I never went back, and I'm 63 now, and I want to go home. That's my home."

*~Irma Scarff
KDFN Elder*

HISTORIC IMPACTS AFFECTING INDIGENOUS USE OF FISH LAKE

While Fish Lake became a refuge of sorts for First Nation people displaced by development in the nearby Yukon River valley, it was not long before the impacts followed them there. These impacts included:

Fox Farm & Commercial Fishing - Around the 1930s, a fox farm was established on Fox Point, purportedly by the sole non-Indigenous man living in the area at the time. As was the case on other Yukon lakes, the fur farming industry heavily depleted fish stocks at Fish Lake and is believed to have affected hare populations in the area as well. At the time, whitefish and trout were also being fished commercially at Fish Lake – including by First Nation families - to supply the markets in Whitehorse. In addition to overfishing, the high elevation of Fish Lake, combined with its size, depth and cold temperature prevented the lake from recovering fully. The lake was closed to commercial fishing in 1964 due to its low productivity. As a result, First Nation people used the lake less and less over the last 50 years. Only a few KDFN families still maintain fish camps in the area.

Road Access - According to Jessie Scarff, the Army first constructed roads into the Fish Lake area for wood during World War II. Further access into the Fish Lake area occurred through mining activity and hydroelectric development in the decades that followed. The development of road access to the Fish Lake area significantly increased its use by non-First Nation hunters. Elders have said that the increase in numbers of Whitehorse hunters made hunting unsafe and contributed to a depletion of moose, caribou and sheep. While some First Nation commercial hunting for the Whitehorse market also occurred at this time, it is not known if the practice was widespread or to what degree this contributed to hunting pressure on major game species.

Fish Lake Hydro Dam - Construction of the Fish Lake hydro facility in 1949 had significant effects on First Nation families in the area. The main fish camp site was partially destroyed by the construction of the dam and access road, and traditional camps and cabins were flooded by the (approximately) one metre rise in lake levels. Construction of the spillway and ditches also affected traditional family camps located at Jackson and Franklin Lakes. Elders remember important berry patches, productive gopher habitats, and underground food caches around the lakeshore all being lost due to flooding. The Fish Lake dam also affected the distribution and population numbers of all fish species in Fish, Jackson and Franklin lakes.

Land Development - In the latter half of the 20th century, occupation and use of the area by non-First Nation people increased significantly. Throughout the 1960s and 70s, the Government of Canada disposed of lands for residential, commercial and agricultural use. Don McKay remembers access to traditional grayling fish camps at Franklin Lake and Jackson Creek being blocked by newcomers, and seasonal cottages being built on traditional camp locations at Jackson Lake. The establishment of a wilderness ranch at the north end of Fish Lake in 1975 discouraged Kwanlin Dün people from camping at this important traditional site.

Over time, many First Nation families who came to Fish Lake to hunt and trap have had to move further into the backcountry to avoid conflicts with new property owners and other land users. Conflict and safety concerns between First Nation hunters and other land users continue today, though Kwanlin Dün beneficiaries continue to exercise their traditional hunting rights throughout the Fish Lake area. Other more recent concerns expressed by KDFN have related to residential and agricultural land dispositions in the Fish Lake area, as well as the significant increase in recreational and commercial tourism activities.

Part II. The Values



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Connection with the Land, Water and Animals

ECOREGION AND VEGETATION

The Łu Zil Män planning area is located within the Southern Lakes Eco-region of the Boreal Cordillera Ecozone. The lake's elevation is about 1112 metres above sea level, some 470 metres above the Yukon River at Whitehorse, while the summit of Mount Granger – the area's highest elevation - is around 2080 metres.

Vegetation cover varies widely within the planning area. The lower elevation vegetation includes open and closed canopy boreal forests that include white spruce, trembling aspen, balsam poplar, and paper birch. Drier sites include stands of lodgepole pine, with sub-alpine fir occurring at higher elevations. Alpine tundra with sedge-dominated meadows occurs at the higher elevations, along with rock fields colonized by lichen (Yukon Eco-regions Working Group 2004). A number of lakes exist within the southern, central and northern areas - with Fish Lake being the most prominent. Wetlands are present in low-lying areas. (O'Keefe et al 2020).

"And sometimes when I'm in Whitehorse here, we actually drive out to the Fish Lake Road and sit at the end of the lake, just to soak up all the energy that comes from the water and the trees and being out of the city and getting away from the phones and all the activities and things like that".

~ Margaret McKay
KDFN Elder

Tree cover information is available for approximately 80 percent of the planning area. Generally, all forested areas make up about 23 percent of the planning area, with white spruce and lodgepole pine and trembling aspen comprising about 20 percent. Forest cover is highest around the north end of Fish Lake and in the northeastern portion of the planning area, with further coverage in the Wolf Creek drainage in the southeast portion.

WILDLIFE

WOODLAND CARIBOU

Prior to the Klondike Gold Rush, Woodland Caribou (northern mountain ecotype) would have been present throughout the Southern Lakes region, including the Fish Lake area, and in large numbers. Woodland Caribou were a primary source of food, clothing, bedding and tools for First Nations (Kuhnlein and Humphries 2021). KDFN Elders speak of the historic presence of barren-land caribou in the area until the late 1930s. Elders also speak of a caribou fence at the north end of the lake, which was likely used to divert the migrating Fortymile herd. The Fortymile herd was estimated at 500,000 animals in the early 1920s and ranged as far south as Whitehorse (McDonald and Cooley 2004).

Since the Gold Rush, hunting pressure and human population growth have reduced the Woodland Caribou populations to a fraction of what they once were. Today, it is mainly the range of Ibex Woodland Caribou herd that overlaps with the Fish Lake planning area. Even though the Ibex and Carcross herd numbers have increased in recent decades it is highly

unlikely that their numbers will ever reach historic levels because of the cumulative effects of human presence and development, habitat loss and fragmentation, and climate change (Francis and Nishi 2015).

KDFN is presently working with five Southern Lakes First Nations and the governments of Yukon, British Columbia and Canada on a Southern Lakes Caribou Management Plan.

Ibex Herd

The high alpine peaks west and south of Fish Lake offering ideal caribou summer habitat. However, caribou GPS collar data indicate that caribou generally stay south and west of the area in the summer (Triska et al. 2020).

The Ibex herd's known fall and winter range (i.e., caribou GPS collar data) generally only overlaps with the southern and western portion of the plan boundaries (Triska et al. 2020). The herd uses sub-alpine and alpine areas east and west of Mount Granger in the winter because the snow is frequently windswept in these areas, allowing the caribou to more easily access lichen, their primary source of winter food.

“They got those woodland caribou there now, but there used to be all barren-land caribou, long time ago. They have barren-land caribou, eh? Yeah, it's all over the place, even Fish Lake. You can see, you go out in the bush you hang around you find old horns, you know. Caribou horns. They said these mountains, some of them were just crawling with caribou. So many of them, eh.”

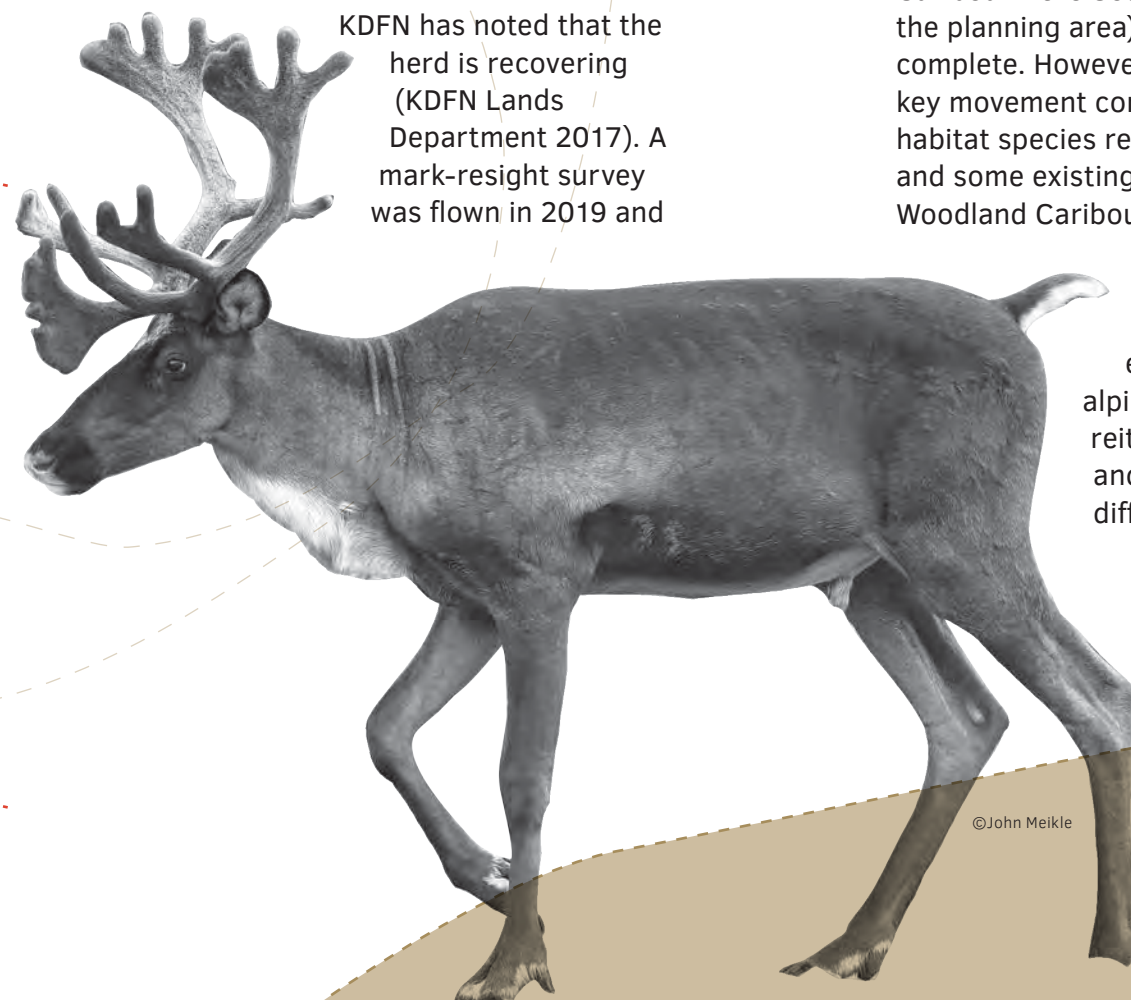
~ Ronald Bill
KDFN Elder

“Our elders talk of a time when the mountains used to move. They'd be black with caribou. So, it's very important to us. It's something that we've done, hunted and had a connection and a relationship with caribou for as far back as millennia before time, before colonialism or before contact.”

~ Brandy Mayes
KDFN Citizen and Lands Operations
Manager

YG's Wildlife Key Area for the herd's fall and winter distribution overlaps with the southern portion of the planning area and this generally fits well with the habitat suitability modeling and range data.

KDFN has noted that the herd is recovering (KDFN Lands Department 2017). A mark-resight survey was flown in 2019 and



indicated that the herd is expanding its range to the west of Kusawa Lake (YG 2021a). The herd population was estimated at 850 animals in 2011 (YG 2012) and at about 1160 individuals following the 2019 survey.

Carcross Herd

The Carcross herd range is generally located east and southeast of the planning area, and GPS collar data indicate that animals from the herd have rarely entered the area (Triska et al. 2020). The Carcross herd is more likely than the Ibex herd to be found below the treeline in the winter. Following a 2019 mark-resight survey, the South Carcross herd was estimated at 660 individuals and the North/Laberge Carcross herd was estimated at about 550 individuals, combining to a total estimate of around 1200 individuals (YG 2021). This represents an increase from the 2013 estimate of 775 individuals (Francis & Nishi 2015).

Movement corridor analysis for Woodland Caribou in the Southern Lakes region (including the planning area) is in progress but not yet complete. However, general inferences about key movement corridors can be made based on habitat species requirements, local topography and some existing data (GeoYukon 2021). Woodland Caribou will move between summer and winter habitats to find food, or seek out the warmer temperatures in a forest, or escape insects by moving into alpine areas. However, it is worth reiterating that the Carcross and Ibex herds behave slightly differently. Refer to Map 3.

HOW WE WALK WITH THE LAND AND WATER PROJECT

Habitat suitability models are in progress for the Fish Lake local area plan through the How We Walk with the Land and Water initiative being developed by Kwanlin Dün First Nation, Carcross/Tagish First Nation and Ta'an Kwäch'än Council.

The models show seasonal importance of different ecosystems for woodland caribou, moose and thinhorn sheep. These models identify wildlife habitat in the planning area which may be important for conservation.

The models are based on workshops conducted with Traditional Knowledge Holders from each First Nation and western scientific processes.

For more information about the project please visit howwewalk.org.

TRADITIONAL LAWS AND PRINCIPLES

Share, Care and Respect are the three pillars of Traditional Laws that guide First Nations interaction with the land.

Dooli Law says: “Take care of the land and the land will take care of you, and only take what you need.”

MOOSE

Moose, like Woodland Caribou, were and remain a very important resource for First Nations, being a source of food and having historically been used to make cooking utensils, clothing and rope to line canoes (Kuhnlein and Humphries 2021). The Fish Lake area was an important location for harvesting Moose (Gotthardt 2020). Elders speak of the Fish Lake basin being full of Moose, so much so that they would be seen walking around in groups of five to ten animals (ATCO 2009).

There is a variety of moose habitat throughout the planning area, with previous surveys showing late winter range. In the spring and summer, moose tend to locate around good forage areas near lake, stream or wetland habitat and disperse upslope in the late fall before harsher winter sub-alpine conditions push them back to lower elevations. With the variety of known habitat types within the planning area, from forest, sub-alpine to alpine, different areas are expected to provide various degrees of habitat value. Habitat use is

often seasonal, and depends on factors such as available forage, coverage from predation and snow depth. The planning area contains riparian areas that provide good foraging opportunities; however, summer habitat must also contain coverage from predation and there are significant alpine areas within the planning area. A 2014 habitat study indicates there are large tracts of suitable early winter habitat mostly throughout the planning area and mainly in the low alpine and sub-alpine reaches, including locations around Fish Lake (Wong 2014).

The Whitehorse South early winter Moose survey area overlaps with the planning area and a 2010 survey indicated that the Moose population had declined by about 30 percent since the 1980s but had been stable since 1995 (Jessup et al. 2013). The decline in the population since the 1980s has been attributed to high harvest rates rather than the quality or extent of suitable habitat; the extensive anthropogenic use of the

area may be a contributing factor to displacing moose and habitat avoidance. Licensed harvesting is currently very low in the area and the population does not appear to be recovering to pre-1980s numbers. A better understanding of subsistence harvesting activity would help evaluate the Moose population and implement any recovery program.

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The proportion of bulls in the population has increased, likely as a response to changes in licensed hunting restrictions in 1989. Moose density in 2010 was calculated at 149 per 1,000 square kilometres for the entire survey area (Jessup et al. 2013) which is much larger than the planning area and this number is roughly in the low to mid-range for the Yukon (100 to 250 Moose per 1,000 square kilometres).

Kwanlin Dün First Nation and the Government of Yukon work collaboratively to better understand wildlife management issues in the Whitehorse/Southern Lakes area, including Fish Lake. Projects include How We Walk With the Land and Water (led by KDFN, Ta'an Kwäch'än Council and Carcross/Tagish First Nation), moose and fish surveys, and a study of recreation impacts on caribou. The local area plan and future implementation efforts will strive to incorporate new knowledge and insights gained from such initiatives.

THINHORN SHEEP (OVIS DALLI)

Dall's Sheep were historically hunted regularly for food by First Nations in the upland areas around Fish Lake (Gotthardt 2020) and sheep horns were also used to make weapons and utensils (Kuhnlein and Humphries 2021). In more recent times sheep were harvested less as a food source but to make tallow or bait traps. With increased development and tourism and recreational activity, it has become less safe for First Nations to hunt in the area (Gotthardt 2020).

Suitable lambing habitat consists of sub-alpine slopes with available forage and good vantage points for nursery groups of sheep to watch

for predators. This type of habitat exists in the south of the Łu Zil Män area (e.g., Coal Ridge and Mount Granger), at the southern end of Fish Lake, and west of the Bonneville Lakes. Summer habitat exists where there is forage within a reasonable distance of escape terrain. Summer habitat has been identified in the Mount Sumanik and Haeckel Hill areas, although surveys in the area have not located sustainable populations.

There is little evidence to suggest that the northern portion of the planning area is home to a regular sheep population. The results of a 2015/2016 survey indicate that sheep are present in the western and southern areas of the planning area, but the numbers are relatively low (around 105 non-lambs) compared to adjacent areas (e.g., Ibex Mountain and west of the Ibex Valley). Although there has been an increase in the population since the 1970s, the population has remained more stable since the 1990s (Hegel and Russell 2018). Some KDFN citizens have indicated that the sheep population has been roughly the same since the 1970s (KDFN Lands Department 2017).

The total number of sheep harvested within the planning area (subsistence and licensed combined) is not known. However, historically, up to seven sheep in any given year have been harvested by licensed hunters within the two overlapping game management zones. In the last ten years this has dropped to one to three per year (Hegel and Russell 2018; YG 2021b).

Movement corridor analysis for Thinhorn Sheep in the Southern Lakes region (including the planning area) is in progress but not yet complete. However, general inferences about key movement corridors can be made based on habitat species requirements, local topography and some existing data (GeoYukon 2021). Thinhorn Sheep will cross valleys to disperse into alpine and sub-alpine terrain to find forage habitat, usually close to steep terrain for escape from predators. Refer to Map 3.

RESPECT FOR ALL LIVING THINGS

“If we do not respect all creations on earth, back luck will happen (Dooli Law). Animals and plants were here long before man. When man arrived he was a pitiful creature. So all the animals got together and said that they need to help man. So Caribou went to the man and said:

‘Take my coat to keep you warm, and my meat for food, and my bones for tools and weapons, and my stomach for medicine...’

That is why it is so important we respect all creations, after all, animals and plants gave Man their lives for us to survive. Our stories were not about the past, but for the present and for the future. As I get to understand and interpret our oral traditions, it was not just for entertainment but, had valuable lessons of survival.”

~ Pat Joe,
KDFN Elder

BEARS

First Nations believe that bears are the protectors of the animal kingdom and help keep the land and ecosystem healthy. Kwanlin Dün Elders say that bears are sacred, and that bears and humans are equal and spirit brothers and sisters. Humans show respect by sharing the land, air and water with them.

Both American Black Bears and Grizzly Bears occur in the Łu Zil Män area. Denning of Grizzly Bears can be expected at the higher elevations and denning American Black Bears can be expected in lower, vegetated areas. A 2012-2013 Grizzly Bear study estimated that there were about 82 Grizzly Bears occurring in the broader Southern Lakes region of Yukon (YG 2017), which overlaps with the planning area. A conservation plan for Grizzly Bears was published in 2019 by the Government of Yukon and the Yukon Fish and Wildlife Management Board.

SMALL AND MEDIUM-SIZED MAMMALS

Mammals such as Common Muskrat (American Beaver, Hoary Marmot, Snowshoe Hare, Arctic Ground Squirrel are very important to First Nations for food and clothing. All of these species were regularly trapped in the Fish Lake area. Other species that are present in the area and have been trapped by First Nations include Canada Lynx, Red Fox, American Mink, American Marten and sometimes Coyote and Grey Wolf. Gary Bailie regularly sees a wolf pack with a large, black alpha male in the area. He also talks about many otters being present at the mouth of the creek flowing down from the Bonneville Lakes along the southwestern end of Fish Lake. While it is challenging to map and manage for smaller furbearing animals, they are of high value to First Nation traditional activities on the land.

Mice and voles occur throughout the area and are a food source for many animals including birds, weasels and Canada lynx. Collared Pika, a listed species, have been detected north, east and south of Fish Lake at higher elevations among talus slopes.

BIRDS

Various bird species, particularly grouse and waterfowl, have been traditionally hunted by First Nations for thousands of years. Elders have recalled hunting waterfowl at the south end of Fish Lake, catching grouse in Ptarmigan Pass (between Fish Lake and Bonneville Lakes) (Gotthardt 2020) and collecting gull eggs (ATCO 2009). Birds of prey and songbirds would be taken by First Nation people for food, feathers and sinew (Kuhnlein and Humphries 2021).

Over 260 bird species have been documented in the Whitehorse area (Yukon Bird Club 2010) and a vast majority of these species will occur in the diverse habitats of the Fish Lake planning area as they breed, nest and forage for food. In addition, many migratory species will stop over in the area when heading north to breeding grounds or returning south to their wintering habitat.

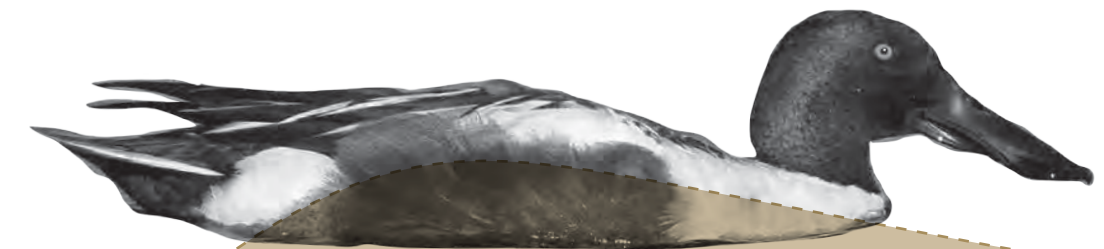
In the last 20 years, over 100 species of birds have been directly observed in the planning area including waterfowl and shorebirds (e.g., Northern Pintail, Blue-winged teal, Lesser Yellowlegs and Long-billed Dowitcher), migratory songbirds (for example, Horned Lark and Common Yellowthroat), gulls (e.g., Mew Gull and Herring Gull) and birds of prey (e.g., Great Horned Owl, Golden Eagle and Northern Harrier), as well as birds that are resident year-round (e.g., Red-breasted Nuthatch, White-winged Crossbill and Common Raven) (eBird 2021). Large areas west and south of Fish Lake are identified as summer

Bessie Burns and Jenny LaBerge were out picking berries by Ptarmigan Pass and they came across a valley full of grouse, not knowing how to catch them all, they decided to set the fish net across the valley and caught 100 grouse.

Due to a significant increase in human activity, ptarmigan hunting is no longer viable for citizens in some of their traditional resource areas around Łu Zil Män.

breeding and nesting habitat for Golden Eagle and Gyrfalcon, two predominantly cliff-nesting raptors (GeoYukon 2021).

The license for the Fish Lake hydroelectric facility includes various stipulations regarding the protection of shorebirds and shorebird habitat, the primary issue being the inundation of nesting sites at higher water levels in the springtime. ATCO Yukon Electric is required to monitor the effects of fluctuating water levels on nesting shorebirds and monitor and record annually shorebird presence at Fish/Louise/Franklin lakes and downstream riparian areas.



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FISH

The Łu Zil Män planning area encompasses two major drainage areas: one centered around Fish Lake, and the other based around upper Wolf Creek to the south. Arctic Grayling, Lake Trout, Round Whitefish and Slimy Sculpin are native to the area (Anderton 2005; Foos & Millar 2011; Millar et al. 2011; Gotthardt 2020), and Chinook Salmon are known to spawn in areas downstream of these basins. Rainbow Trout have been introduced to the area by past stocking efforts (Foos & Millar 2011; Millar et al. 2011), while Arctic Charr are known to occur in the lower Fish Lake basin because of escapees from two local fish farms. Refer to Table 1 for a complete fisheries inventory of the planning area.

In the early 20th century, Fox Point was a commercial netting area where KDFN families would fish for the Taylor & Drury company. Strips of moose skin were twisted together like twine and knitted to make the net structure, which would be placed in the water with stick poles holding it up. Fish were so plentiful that people would gig, gaff, dip net, dip in buckets or gunny sacks, as well as set nets.

Table 1. Inventory of fish species in the Fish Lake planning area

	Fish Lake Basin						Wolf Creek Basin	
	Fish Lake	Fish Creek	Jackson Lake	Franklin Lake	Bonneville Lakes	Porter Creek	Coal Lake	Wolf Creek
Arctic Charr						✓ ^C		
Arctic Grayling	✓	✓	✓*	✓	?	✓		✓ ^A
Chinook Salmon								✓ ^A
Lake Trout	✓		✓	✓	?		✓	
Rainbow Trout		✓	✓*	✓	?	✓		✓ ^{A, B}
Round Whitefish	✓	✓	✓	✓	?	✓		
Slimy Sculpin	✓	✓	✓		?	✓		

*Not detected during 2011 Surveys.

^A Uncertain if upstream range extends into the plan area.

^B Previously stocked in Mary Lake in 1960s, ambiguous public reporting in 2005 (Anderton 2005)

^C Assumed to occur due to escapees from Icy Waters hatchery

In the past, there was a commercial fishery for large Lake Trout in the area, but overexploitation reduced the population in both size and number (Gotthardt 2020; Millar et al. 2011). Fish Lake was closed to commercial fishing in 1964 (Gotthardt 2020). Round Whitefish have become more numerous, possibly in response to this change.

Jackson Lake has the highest recreational angling effort per area of any unstocked Yukon lake and there is a small population of Lake Trout present. Given the current catch limits there is the potential for fish to be over harvested in Jackson Lake (Sinclair et al 2020). Fish Lake also has a high angling effort but its Lake Trout population appears to be healthy (Sinclair et al 2020). Recent surveys conducted by YG and KDFN indicate that changes to fishing regulations may need to be considered to protect small-bodied Lake Trout in Fish Lake.

Citizens report that fish used to be bigger (up to two metres in length) and more plentiful (80 to 100 per net yield being common), and that the damming of Fish Lake changed spawning areas. Citizens have expressed concerns about fish wintering in McIntyre Creek and the need to ensure stability of their environment in dam/hydro operations. There are fears that higher water levels affect the temperature of lakes and harm spawning activity in the lakes and streams.

Wolf Creek and McIntyre Creek both have Chinook Salmon enrichment programs, although these occur downstream of the plan area.

SPECIES OF CONSERVATION CONCERN

Twenty-six species that occur in the planning area are protected under the federal Species at Risk Act, the Wildlife Act (Yukon), or are recognized as species of conservation concern under other legislation or working groups. A complete inventory of these species is included in Appendix C.

FISHERIES IMPACTS FROM THE FISH LAKE DAM

The Fish Lake dam, which was constructed in 1949, affected the distribution and population numbers of all fish species in Fish, Jackson and Franklin lakes.

The dam diverted the original drainage from the Takhini River to the Yukon River. The dam itself was located at the lake outlet where the whitefish traditionally spawned, and rising water levels also changed the location of the trout spawn. Ditches and diversions around Franklin Lake created a severe reservoir effect for the lake and resulted in the periodic dewatering of Jackson Creek, presumably with impacts on the formerly abundant grayling in these waters.

These dam-related impacts were augmented by those of commercial fishing and recreational fishing by a growing Whitehorse population.

Hydroelectric development in the Fish Lake area continues to be an important issue for KDFN. Flooding and shoreline erosion, low water levels, impacts on fish spawning and bird nesting habitat, and cumulative effects are ongoing concerns.

ATCO Yukon Electric's license to operate the Fish Lake facility specifies various fisheries-related conditions, including monitoring of abundance/age structure of fish populations in Fish/Jackson/Franklin lakes and maintenance of minimum water flows to support fisheries.

CLIMATE CHANGE

The average annual temperature in the Yukon has increased by two degrees Celsius in the last 30 years (twice the global average) and annual average precipitation has increased by about 6 percent over the last 50 years (YG 2020). Long-term data from the Wolf Creek Research Basin, which overlaps with the southern portion of the planning area, provides a good indication of how the local climate and landscape has changed since 1992, when the research area was established.

The basin includes the three main landcover types that are found in the wider Łu Zil Män area (i.e., boreal forest, sub-alpine shrub and alpine), as well as water bodies such as Coal Lake. Some of the key climate trends indicated by the Wolf Creek Research Basin data (Changing Cold Regions Network N.D.; and Climatedata.ca 2021) are summarized below, along with how changes may affect the area in the future⁵.

- **More Precipitation** - Annual precipitation has increased by about seven percent since 1950, mostly during the summer and fall, and about ten percent of the previous snow fall has been replaced by rain due to warming temperatures. Annual precipitation for the Fish Lake area is projected to increase by about ten percent between 2021 and 2050 (Climatedata.ca 2021). Increased precipitation and rises in lake levels may cause flooding of the lower lying areas, which in turn will cause changes in vegetation composition around Fish Lake and other water bodies. Increased flows in streams and other locations caused by more intense summer storms or faster snow melt will likely increase bank erosion, creating higher sediment concentrations in the water which can

affect fish and fish habitat⁶. Higher precipitation coupled with melting permafrost will likely lead to increases in groundwater levels and potentially destabilize slopes, leading to landslides. Annual precipitation is estimated to increase by as much as 25 percent by the end of the century.

- **Warmer Temperatures** - Mean annual temperatures have increased by about two degrees Celsius since 1950 and by over five degrees Celsius in the winter (Changing Cold Regions Network N.D.). Mean annual temperatures are projected to increase another 1.6 degrees Celsius between 2021 and 2050 (Climatedata.ca 2021). With that five degrees Celsius winter temperature increase already achieved, the amount of snowpack is expected to decline by 30 - 45 percent and the sub-alpine snow cover period is likely to be reduced by several weeks (Changing Cold Regions Network N.D.).

Warmer annual temperatures can lead to periods of drought that would affect vegetation composition through general intolerance, higher rates of evapotranspiration, or soil destabilization. Increasing temperatures usually give rise to an increase in wind speeds, making larger vegetation more vulnerable to windthrow and spreading dust over larger areas. Already, signs of warmer temperature adaptation are evident. Sub-alpine fir has colonized higher elevations on south facing slopes (Changing Cold Regions Network N.D.). White spruce and lodgepole pine have responded differently in separate areas. The sub-alpine landscape has undergone tree infilling and new tree growth since

1950, and both the height and coverage of shrubs above the tree line has increased markedly since 1950.

Warmer water bodies will likely affect fish species composition directly (e.g., Lake Trout that prefer colder water) or through changes in water quality (e.g., algal blooms that affect water pH). Overall temperatures are expected to rise by two to six degrees Celsius by the end of century with winter temperatures increasing by as much as eight degrees Celsius.

- **Diseases and Infestations** - Warmer temperatures (particularly in the winter) can lead to increased outbreaks of diseases or insect infestations in vegetation in the spring and summer (e.g., Willow Bloth Miner, Spruce Beetle or Large Aspen Tortrix). In addition, there is potential for an increase in infectious disease agents associated with a warmer and wetter environment (e.g., West Nile virus that affects corvids, equids and humans). Parasites may expand their geographic and host species range. Winter ticks are endemic in the resident elk population and represent an increased threat if they establish in moose, caribou or deer populations (Vanderkop, pers. comm), potentially leading to abnormal behaviour, poorer physical condition and even death (Department of Environment 2013).

Already KDFN Elders are concerned about the possibility of wild sheep disease and it has been noted that there should be no domestic sheep or goats in the Fish Lake area as a precautionary approach (Mayes, pers. comm). YG imposed a Control Order in 2018 to try and prevent contact with disease-causing organisms carried by domestic livestock.

The various climatic changes described above will undoubtedly affect wildlife. Temperature and moisture increases brought about by climate change may simply not be tolerated by some species, prompting them to move out of the area altogether or making it harder for them to maintain viable populations within a reduced and/or fragmented habitat. Movement corridors between suitable habitats may become fragmented or be removed altogether.

Habitat modelling linked to climate change for selected species in the Southern Lakes region was completed in 2021 and indicates a decline in summer and winter caribou habitat by the 2050s, whereas Moose habitat will likely remain stable or increase in some areas because of the increased shrub cover at higher elevations. Sheep habitat is also forecast to decline although high elevation data was not available to complete full habitat coverage (Triska and Heinenmeyer 2021).

WOLF CREEK RESEARCH BASIN

The Wolf Creek Research Basin was established in 1992 as part of the Department of Indian and Northern Affairs' Arctic Environmental Strategy. Today it is supported by the pan-Canadian Global Water Futures program and the Government of Yukon. The site was originally used to study water flows in northern climates, but the site has become important for monitoring and understanding climate change impacts both in the Whitehorse area and beyond. Scientists come from around the world to study and collect data from the basin.

⁵ There is a degree of uncertainty related to forecasts, largely because of how different climatic and landscape elements interact with one another.

⁶ However, overall annual stream flows have not changed over time and the reasons for this are not clearly understood.

FOREST FIRES

Although the heavily vegetated portions of the planning area are susceptible to forest fire, there are also large tracts of land that are sparsely vegetated or situated above the tree line, lowering the overall wildfire risk. For the most part, forest fires that have occurred over the past 50-60 years have missed the boreal portion of the planning area. Several wildland fires of note have occurred within the Fish Lake planning area since that time – one of which was human caused (Ibex) and the other (Haeckel) by lightning. Refer to Table 2.

PRESENT FIRE RISK

Fire risk areas occur where there is the right type and volume of fuel for a wildland fire. These risk areas mostly occur in the lower lying areas around the north end of Fish Lake through to Jackson Lake where there are stands of spruce and lodgepole pine and mixed wood with more than 75 percent conifers (TransNorthern Consulting et al. 2019). These areas also overlap with areas of highest human presence and activity.

Fire ignition data for 2003 to 2018 indicates that a large majority of wildland fires in the Whitehorse area were human caused. The average rate of fire spread has been estimated at more than 600 metres per hour for the area north of Fish Lake, with the intensity of fires also being highest in this area. Lower rates of spread and intensity are indicated northwest and south of Fish Lake. Fire mitigation and

fuels management are priorities for forest management planning in this area, as directed by the Whitehorse and Southern Lakes Forest Resources Management Plan.

WATER QUALITY

There is relatively little known about water quality in the planning area, but recent and pending initiatives are helping to bridge the information gap. This is important given the reliance of some residents on local waterbodies for potable water and concerns about increasing levels of motorized recreation that could potentially introduce hydrocarbons into the aquatic environment.

In response to KDFN concerns about water quality from horse grazing and recreation activities around Fish Lake, YG Water Resources Branch conducted a sampling program at five sites along Fish Creek in Fall 2018 to confirm or rule out the presence of coliforms and sweeteners, which are indicators for human or animal waste. The one-day sampling program along the Fish Creek flow path did not find indicators of impacts from human or animal waste in the creek.

Water samples were collected in October 2021 by Yukon Government Water Resources Branch to assess the quality of the water in the outlet of Fish Lake and the outlet of Louise Lake. The results indicated that the water was good at the time of sampling and the constituents that were measured did not exceed the guidelines

for the protection of aquatic life established by the Canadian Council of Ministers of the Environment. Furthermore, it did not exceed the standards established by Health Canada for drinking water. In addition, water samples were collected to measure 73 different types of hydrocarbons in the water at the outlet of Fish Lake and no hydrocarbon contaminants were measured by the laboratory in these samples (Environment Yukon staff, pers. comm).

CONTAMINATED SITES

In June 2008, approximately 100 litres of diesel were spilled from a stolen and vandalized drum of diesel fuel from the Navigation Canada Monitoring Station at Mount McIntyre. A contractor relocated less than one cubic metre of petroleum hydrocarbon contaminated material. There are no other known contaminated sites in the area.

LAKE LEVELS AND SHORELINE EROSION

The construction of the Fish Lake hydroelectric facility in 1949 caused an (approximate) one metre rise in lake levels⁷ and significantly altered the area's natural hydrology by diverting the original drainage of Fish Lake from the Takhini River (via Fish Creek, Franklin Lake, Jackson Creek, and Ibex River) to the Yukon River (via bypass ditches and diversions to Jackson Lake, Porter Creek and McIntyre Creek). The impacts of this alteration to the natural environment are still felt and a source of concern to KDFN.

The lack of environmental protection legislation at the time of the dam's construction means that it was likely built with little consideration given to - let alone scientific study of - impacts. This lack of pre-dam data skews our present-day understanding of natural conditions in the Fish

Lake system. For example, the environmental studies conducted in support of ATCO Yukon's relicensing in 2012 used 1960-2008 conditions as a baseline for assessing future impacts from dam operations. KDFN Elders describe large beach areas along the eastern and northeastern shores being flooded with the dam, making these areas marshy and hard to access. A comparison of 1946 air photos (taken three years prior to dam construction) and current satellite imagery aligns with this oral record. Refer to Figures 3 and 4.

Under the current human-influenced hydrological regime of the Fish Lake system, changes to lake elevations are determined by inflows to the lake (via snowmelt and rainfall), and the rate of outflow. Water levels are reduced during the winter months as water is released from the lake for hydroelectric generation. Levels reach their lowest point during early spring and increase steadily to a high point sometime in late summer or fall. Jackson Lake does not fluctuate seasonally like Fish Lake and is instead subject to changes in inflows (e.g., rainfall) or dam management activities. Shorelines with southerly aspects are more susceptible to wind induced erosion due to predominant wind direction during open water season; wind induced wave action erodes fine shoreline sediments and armours the shore by exposing coarser sediments (i.e., gravel, cobbles) underneath (ATCO 2012).

ATCO's 2012 relicensing background studies concluded that the effect of the proposed water storage regime on Fish and Jackson lakes over the 25-year operating cycle was deemed insignificant by ATCO Electric Yukon. The Jackson Lake Community Association submitted comments to the Yukon Environmental and Socioeconomic Assessment Board, citing significantly higher water levels at Jackson Lake

Table 2. Recent fire history around Fish Lake

Year	Location	Area Burned (ha)	Within Planning Area?
1991	Haeckel Hill	739	Yes
1998	Ibex Lake*	1566	Yes

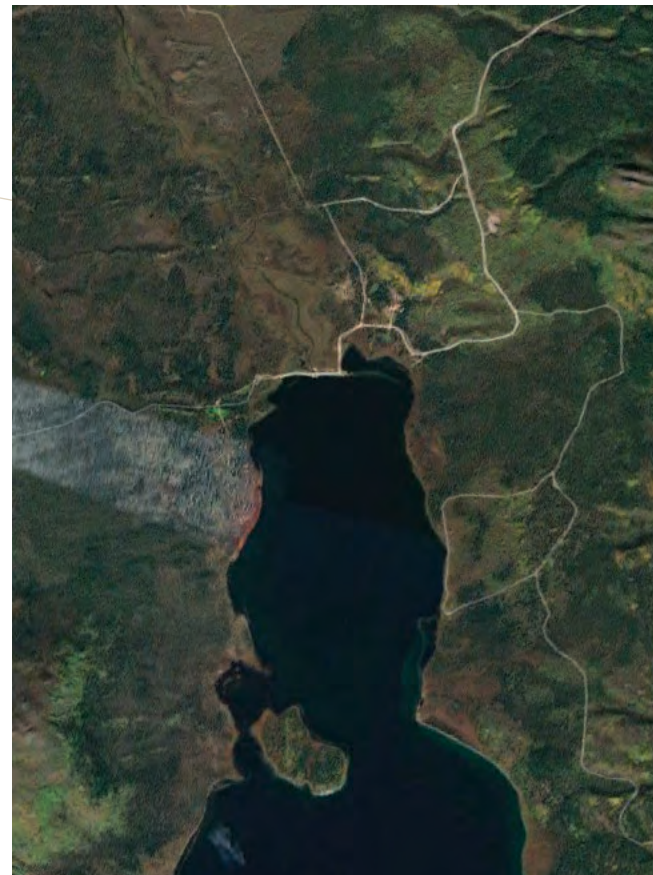
*Fire spread towards Fish Creek

⁷ The Jackson Lake Community Association estimates that Jackson Lake water levels rose approximately five feet based on vegetation impacts and map review.

since the mid-1990s and raising concerns about undercutting, soil washout and exposure of tree roots. KDFN citizens also hold a different view as to the impacts of fluctuating lake levels on shoreline habitat in the area.

Higher water levels are not the only threat to aquatic life and habitat; low water levels can also be problematic. In 2020, ATCO sought and received an emergency water license amendment for the hydro facility due to

concerns that Fish Lake levels would drop too low and negatively affect aquatic life (Williams, pers. comm). In this artificially controlled watershed, a combination of management decision-making and nature dictates water levels and corresponding effects on the broader aquatic and shoreline ecosystem of the Fish Lake watershed.



Figures 3 and 4. Comparison of Fish Lake and Fish Creek in 1946 (image at left) to 2022 (image at right)
(Source: Yukon Energy, Mines and Resources and Google Earth)

Gifts from the Land

GRAZING

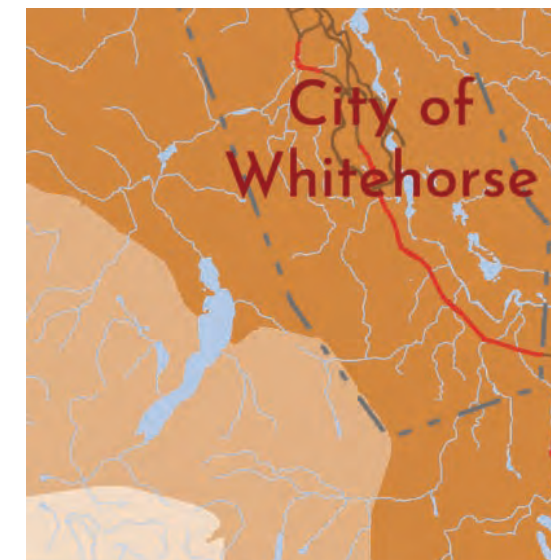
YG's original agriculture capability mapping only mapped suitable areas below 2500 feet (762 metres). Fish Lake is about 1125 metres so is considerably higher than what the original mapping examined. The area is subject to cooler temperatures, more cold air drainage, and a shorter frost-free season. YG Agriculture Branch considers the Fish Lake planning area generally only suitable for grazing activity under the Yukon Grazing Policy.

Formal livestock grazing in the Fish Lake area dates to the 1970s. The activity was initiated, and continues to support commercial tourism (i.e., horseback riding) versus agriculture. Currently there are two active grazing agreements located off the Fish Lake Road, both of which are relatively recent renewals. A 288-hectare agreement abuts much of Fish Creek, while the other lease (232 hectares) abuts both the Jackson Lake and Fish Lake roads from the point of their intersection. Grazing agreements typically have a 30-year term. Refer to Maps 4 and 5.

FORESTRY

Traditionally, trees have been harvested by First Nations in the area for fuelwood and construction of small cabins and shelters, especially around the larger lakes (i.e., Fish, Franklin and Jackson). Forest resources permits are issued in the Fish Lake area, primarily for non-commercial personal use. The area has also been used for Christmas tree harvesting in recent years.

The Whitehorse and Southern Lakes Forest Resources Management Plan (2020) sets out forestry management direction for the area. Forest management planning will focus on reducing wildland fire risk, while protecting identified values, prioritizing the protection or enhancement of wildlife habitat and accommodating research and both commercial and personal fuel wood harvesting. Forest management planning will consider direction from other plans in the area, such as the local area plan. Refer to Figure 5.



LEGEND

Forest resources management zones

- Zone 1**
Timber harvest plans may be developed in this zone; reduce first risk in this zone.
- Zone 2**
Timber salvage after natural disturbances may occur in this zone; harvesting will avoid risk to existing values.
- Zone 3**
This zone is not identified for timber harvesting.

Figure 5. Forest resources management zones around Fish Lake
(Source: Whitehorse and Southern Lakes Forest Resources Management Plan)

HARVESTING PLANTS

Indigenous people have harvested trees, shrubs, grasses and flowers around the Łu Zil Män area for sustenance and medicine for millennia. KDFN Elders hold annual workshops on medicinal plants collected at Fish Lake and their uses, which include:

- Bear root
- Balsam sap/bark
- Soapberries
- Willow
- White spruce pitch/gum
- Rose-type root found on higher ground and used to treat cancer
- Labrador tea

Also gathered on the southeastern side of Fish Lake was a type of mushroom that was good for eating, tasting much like fried potatoes. Refer to Map 3 for plant harvest areas.

Fish Lake remains an important berry picking and wild plant harvesting area for all Yukoners, including KDFN citizens and beneficiaries. A 2021 research partnership between KDFN and the University of British Columbia (UBC) (Panchyshyn 2021) looked at wild plant harvest at Łu Zil Män in preparation for the local area plan. The most popular harvest locations and access route included the shores of Łu Zil Män, Mount McIntyre (specifically the Blown Away trail area), the Bonneville Lakes trail, Knuckle Ridge and along Fish Lake Road. Copper Haul Road, Haeckel Hill, Golden Horn, Coal Lake, and the Ibex Valley were also mentioned as important harvest spots.

Important harvest species are blueberry (huckleberry), bearberry, low and high bush cranberry, juniper, mossberry, and soapberry. Other resources included: balsam, spruce, birch and poplar (sap, bark and needles), arnica, colt's foot, dandelion, lungwort, wild sage or caribou weed, labrador tea, fireweed, yarrow, golden

rod, honey suckle (kinnikinnick or bearberry flowers), wild rose petals and hips, wild onion, wild rhubarb, devil's club and mushrooms of all varieties (most commonly wild oyster, morels, shaggy mains and boletus).

The KDFN-UBC research findings produced four key recommendations for supporting wild plant harvest values in the Fish Lake local area plan, including:

- 1. Increased recognition of wild plant harvest as a distinct and valued land use activity;**
- 2. Protection or management of key harvest sites;**
- 3. Collaboration between First Nation and non-First Nation harvesters; and**
- 4. Incorporating the harvester's knowledge in planning processes.**

HUNTING, TRAPPING AND OUTFITTING

HUNTING

The Yukon's licensed hunting regime allows for hunting for some wildlife species with permits issued via a lottery or open application system. Permitting and mandatory harvest reporting is organized geographically by Game Management Subzones (GMS).

The Fish Lake planning area overlaps with GMS 7-18, 7-19 and 7-21 (refer to Figure 6). The combined total area covered by these GMS is larger than the planning area; nonetheless, their combined harvest data gives some indication of licensed hunting activity within this boundary

over the past 18 to 25 years. Note that permitted harvest reporting does not include subsistence harvest by First Nation citizens.

Dall's Sheep have been harvested the most in these three GMS, followed by Moose and Grizzly Bear. However, the numbers of Moose, Dall's Sheep, Grizzly Bear and Black Bear harvested have declined since 2007. In addition to the licensed harvest, 21 Grizzly Bears and 25 Black Bears were killed in defense of life or property during the same approximate period. Refer to Table 3.

First Nations are concerned that the harvest rates of Dall's Sheep, Moose and Woodland Caribou are not sustainable for the area, even though licensed harvesting of these animals has been restricted in more recent years. There has not been any licensed harvesting of Woodland Caribou for at least 25 years, although there has been some subsistence harvesting. The high levels of recreational activity also make hunting less productive and safe.

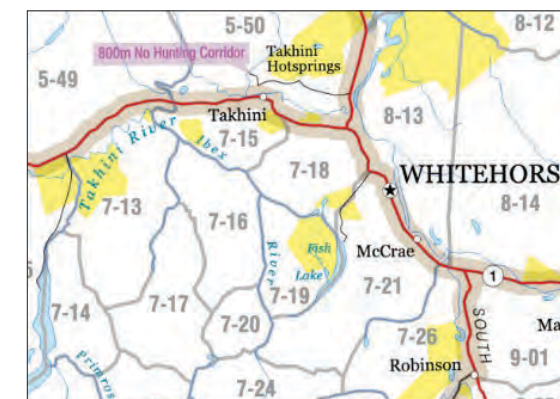


Figure 6. Game Management Subzones around Fish Lake

(Source: Government of Yukon)

Table 3. 1995-2021 licensed wildlife harvests in Yukon Game Management Subzones 7-18, 7-19 and And 7-21

Year	Species					Deer
	Woodland Caribou	Moose	Dall's Sheep	Grizzly Bear*	Black Bear*	
1995-6		3	5			
1996-7			3	3		
1997-8		3	2	2		
1998-9		2	6			
1999-00		1	4		1	
2000-1			2	3	2	
2001-2			1			
2002-3		1	4	1		
2003-4		2	3	1		
2004-5		2	4		1	
2005-6		1				
2006-7		1				
2007-8			1		1	
2008-9		1	3	1		
2009-10		1	1	1	1	
2010-11			1			
2011-12		2	3			
2012-13				1		
2013-14		1	1			
2014-15			2			
2015-16		2	1	1		
2016-17		1	1			
2017-18			1			
2018-19						
2019-20		1				1
2020-21			3	1		
Totals	0	25	52	15	6	1

*The numbers do not include bears killed in defense of life or property (Source: Government of Yukon, Fish and Wildlife Branch 2021)

KDFN HUNTING RIGHTS AT FISH LAKE

Subsistence hunting is a highly valued traditional activity for KDFN. Under the KDFN Final Agreement, Beneficiaries may harvest all species of wildlife and fish in all seasons within KDFN's Traditional Territory (except bison or elk).

Fish Lake is a particularly significant harvesting area for KDFN, as it is one of the only places within KDFN Traditional Territory that does not overlap with other Yukon First Nations' traditional territories. This means KDFN Beneficiaries have exclusive subsistence harvesting rights at Fish Lake. Proximity to Whitehorse also makes Fish Lake one of the most accessible traditional use areas for KDFN.

Subsistence harvesting opportunities for KDFN Beneficiaries are impacted by increased activity in the Fish Lake backcountry and ongoing development (due to restriction of hunting and trapping within one kilometre of a residence without permission). Maintaining opportunity for current and future generations to hunt and fish at Fish Lake is critically important to KDFN.

OUTFITTING

The Yukon has 20 outfitting areas in which an outfitter holds exclusive rights to guide non-resident hunters for a fee. The Fish Lake planning area is situated within Outfitting Concession #17, which includes the three GMS 7-18, 7-19 and 7-21 overlapping with the planning area (described on the previous page). Refer to Figure 7.

The current outfitter has held the concession since 2013. Similar to licensed hunting, non-resident hunting is reported by GMS; as such, the data does not indicate whether harvest occurred in the planning area. The only non-resident harvest reported during that period is two sheep harvested in GMS 721 in 2020.

The outfitter has an annual quota for one moose in the western portion of the concession area and caribou harvest is prohibited. The annual sheep quota is seven animals for the Arkell area⁸, and no sheep harvest is allowed in GMS 7-18 and 7-19. The grizzly quota is one female and five males in total over three years for the west portion of the concession⁹. All quotas will be changing to

an annual renewal system in the next year or so but no substantive change to harvest numbers is anticipated (Pinard, pers. comm).



Figure 7. Fish Lake outfitting concession area (Source: Government of Yukon)

TRAPPING

The planning area is straddled by registered trapping concession areas 287 and 294 which share a boundary along the north-south midline of Fish Lake. Concession area 409 occupies the northeastern shoreline and northwest aspect of Mount McIntyre. There is a trapping cabin lease located in the upper Wolf Creek drainage about 2.5 kilometres north of Coal Lake that is used by a wilderness ranch. Refer to Figure 8.

Between 2015 and 2020, 21 Canada Lynx, 10 Grey Wolf and five Wolverine were trapped (YG 2021b). These numbers only relate to permitted traplines and do not include any animals that were trapped for subsistence purposes (although that number is anticipated to be very low). Fur prices over the same period have been low and the trapping effort has likely been lower than in previous years.

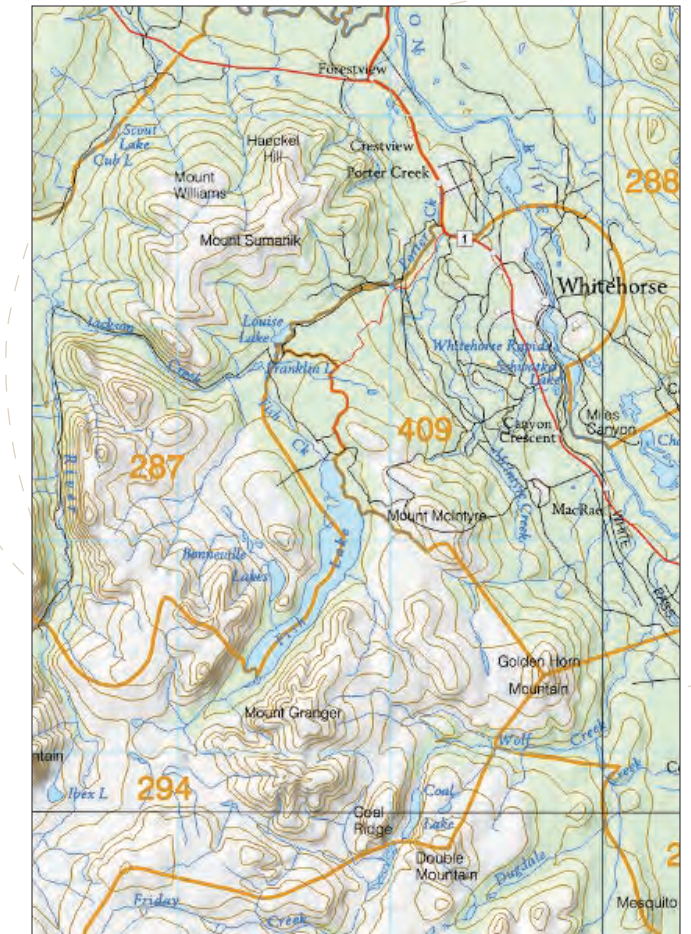


Figure 8. Fish Lake trapping concession areas (Source: Government of Yukon)



Signs installed at Fish Lake ask recreational users to avoid KDFN Settlement Lands during hunting season. Safety concerns between recreational users and hunters have increased in recent years.

"I remember when the hides used to drop – especially beaver or lynx hide, the price would drop, and my dad and my mom would freeze them. They wouldn't stretch them. They would freeze them like that, eh, until the price went back up. Then they'd take them out of the freezer. And I learned how to stretch them."

~ Irma Scarff
KDFN Elder

⁸ The Arkell area includes GMS 7-21 located in the planning area, along with six other GMS not located in the planning area.

⁹ The western portion of the concession includes all three Fish Lake planning area GMS (7-18, 7-19, 7-21) along with ten other GMS not located in the planning area

MINING AND MINERAL POTENTIAL

The Fish Lake planning area falls within the Whitehorse Trough, a northwest-trending basin comprised of volcanic and sedimentary rocks that makes up the northern end of the Canadian Cordillera, a system of parallel mountain ranges and intervening valleys and plains. The Trough consists of the Lewes River Group (predominantly clastic and carbonate sedimentary rocks), the Laberge Group (clastic sedimentary rocks), and the Tantalus Formation (clastic rocks and coal-bearing strata). These rocks were intruded by the Whitehorse batholith, a coarse-grained granite of variable composition.

COAL

The Whitehorse Trough features significant coal-bearing strata, which was actively mined in the Carmacks area from the 1920s to 1970s and extensively explored in the Division Mountain area southwest of Braeburn.

Emma Shorty describes Coal Lake as a place where KDFN people would collect coal to burn during the winter to keep warm. The area has never been industrially mined. There are three coal leases west of Coal Lake that were staked in 2003 and are due to expire in February and May of 2024. Refer to Map 5.

PLACER AND QUARTZ

The Fish Lake planning area lies immediately west of the prolific Whitehorse Copper Belt, a linear belt of over 30 known copper occurrences. The copper mineralization formed when the intruding Whitehorse batholith came into contact with limy sections of the Lewes River Group. The copper occurrences are mostly of the skarn deposit type and are often related to irregularities along the margins of the batholith. Mineralization can extend as much as 150 m from the contact.

Copper deposits in the belt were mined, on and off, from 1902 to 1982. Over this period, copper production totaled 129,521,094 kg. Gold

The first high-grade copper ore in the Whitehorse area was discovered in 1898 by John McIntyre, a newcomer from California. A year later, William Grainger of Kentucky acquired an interest in the property. Located near the start of the Fish Lake Road, the original Copper King mine began producing in 1900. This was the start of many copper mines in the area to the east of Fish Lake.

McIntyre died after going through the ice on Windy Arm during an Atlin mail run in 1902. Grainger died five years later in an underground accident at the mine. The prominent peaks and waterbody in the Copperbelt were named in their honour.

and silver production totaled 233,973 oz and 2,478,891 oz, respectively.

There are numerous localities within the Fish Lake planning area which are geologically similar to the adjacent copper belt; as such, they are prospective for copper mineralization of a similar style to that found in the belt. Please refer to Figure 9.

Mining claims are granted under a free entry system in the Yukon, meaning that prospectors can explore for minerals on public lands and then stake a claim to acquire rights to those minerals. There are restrictions on where claims can be staked, including Category A First Nation Settlement Lands, and parks and protected areas.

The *Quartz Mining Land Use Regulation* establishes a classification system based on varying levels of mining activity. Class I exploration is considered low impact activity and while notification is required, environmental

assessment is not. Class II-IV require government approvals and assessment under the *Yukon Environmental and Socioeconomic Assessment Act* (YESAA). The guidance and background information provided in a local area plan or any associated zoning regulations would likely be considered during the assessment.

There are about 30 active quartz claims in the planning area, the majority of which were staked in 2015 and due to expire in 2025. These include a handful of claims in the Jackson Creek/Lake areas, about a dozen surveyed mineral claims on the western flanks of Coal Ridge/Lake area, and a block of claims at the base of Haeckel Hill.

There is one valid Placer Class I notification with eight claims in the area. Although due to expire in 2022, annual renewal may extend this date. Refer to Map 4.

OIL AND GAS

The lack of subsurface data (i.e., seismic and wells) in the Whitehorse Trough (see previous section) makes it more difficult to assess the petroleum potential here than in other areas of the Yukon (e.g., Liard and Eagle Plain basins). Modern resource assessments were conducted for the Whitehorse Trough in 2001 and 2012 based only on surface geology and comparisons to geologically similar basins, including the southern part of the basin which extends into British Columbia.



©Sky High Wilderness Ranch

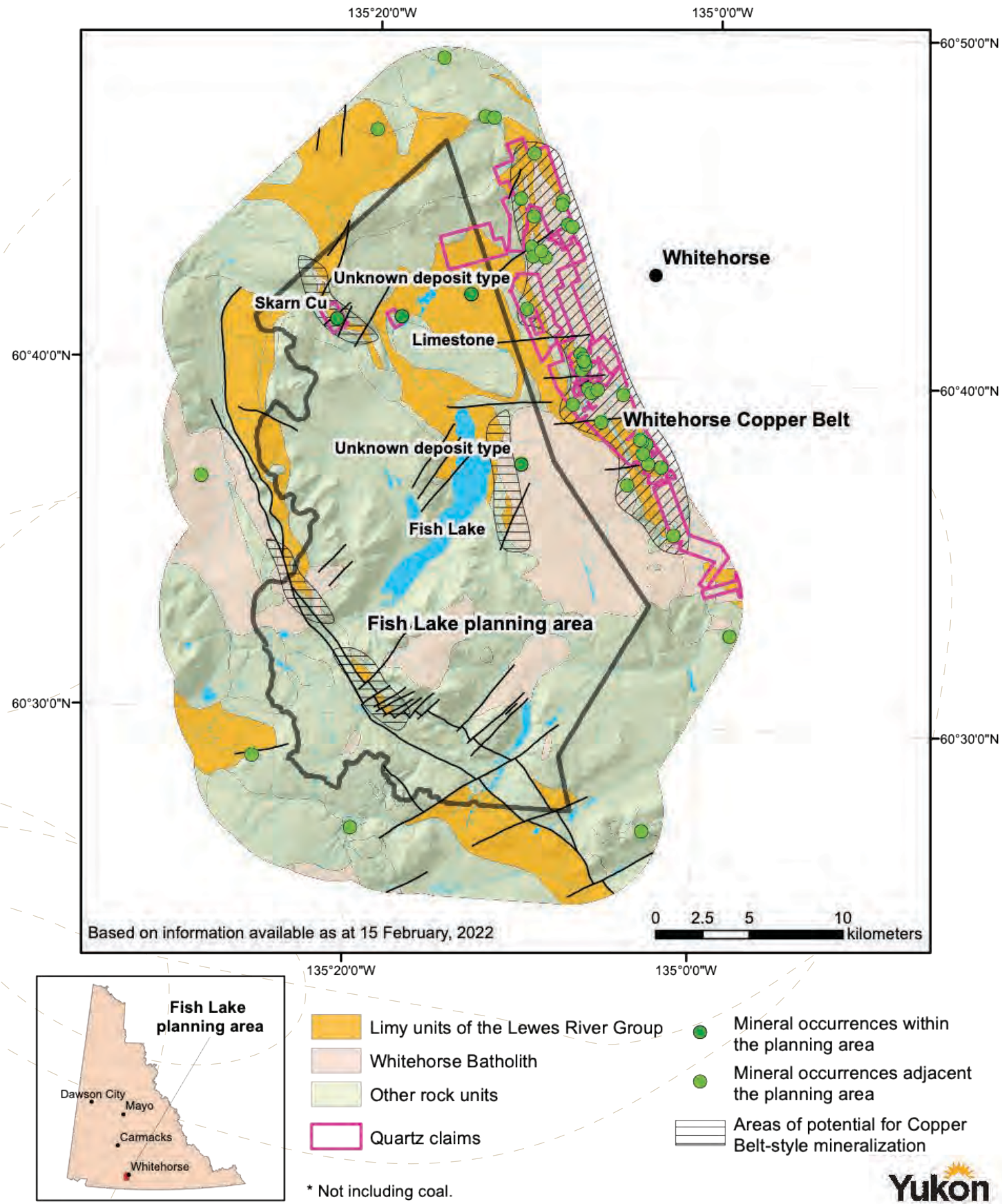


Figure 9. Mineral potential in the Fish Lake area (Source: Yukon Geological Survey)

Based on Hayes (2012), and bedrock mapping in the vicinity (Colpron 2011), there is potential for three petroleum plays¹⁰ in the Fish Lake planning area. These plays include the Upper Triassic Lewes River Structural, the Upper Triassic Hancock Stratigraphic, and the Lower to Middle Jurassic Richtofen Stratigraphic. The first two are conventional play types and have very low prospectivity for natural gas. The third play is speculative for unconventional tight/shale gas, meaning that no resource assessment was compiled for this play due to the lack of firm geological evidence. Hayes and Archibald (2012) suggest there is speculative moderate potential for deep basin shale gas in Whitehorse Trough generally; however, there is too little data available to confirm the presence of a resource.

An older resource assessment (National Energy Board 2001) identified three conventional oil and gas plays that could occur in the Fish Lake area, with mean probability of occurrence in all of Whitehorse trough being 11 percent, 10 percent, and 16 percent, respectively. It is unlikely that there will be development of oil or gas resources in the Fish Lake area while there is a ban on petroleum activities in all of Whitehorse Trough (since 2012), and a territory-wide ban on hydraulic fracturing (since 2016). In 2013, Kwanlin Dün First Nation passed a General Assembly Resolution prohibiting fracking anywhere within KDFN Traditional Territory.

The planning area is traversed by an easement for the Alaska Highway Gas Pipeline project under the Canada-Foothills Easement Agreement. The agreement dates back to 1983, and the easement is a recognized property interest in the *KDFN Final Agreement* (as well as

other Yukon First Nation Final Agreements). The agreement allows Foothills Pipe Lines Ltd. to conduct investigative work on easement lands subject to the approval of the Northern Pipeline Agency. Foothills Pipe Lines Ltd. has applied for numerous amendments to the agreement to allow additional time to begin construction; the likelihood of the project advancing is generally considered low. The current agreement expires in September 2022.

HYDROELECTRIC POWER GENERATION

The Fish Lake hydroelectric generation system has been in operation since 1950 and has undergone several upgrades since that time, the most recent concluding in 2016. The system includes two power plants and several control structures located along roughly 10 kilometres of waterway extending from the north end of Fish Lake through Fish Creek, Jackson Lake, Porter Creek and McIntyre Creek. The facilities, which generate 1.3 megawatts of power, are owned and operated by ATCO Electric Yukon. Refer to Figure 10.

ATCO is always monitoring and deciding whether to store or release water from Fish Lake into the power generating system. In addition to ATCO's water license requirements, that decision may be guided by the level of storage, current inflow rates (i.e., from creeks and precipitation), current and desired power generation levels, and other factors.

¹⁰ A petroleum play is a group of oil fields or prospects in the same region that are controlled by the same set of geological circumstances (http://en.wikipedia.org/wiki/Petroleum_play)



Full Supply Level – the normal maximum operating water level of the Fish Lake reservoir. If inflows result in the water level rising above the full supply level, ATCO must make controlled releases downstream.

Storage range – the range between minimum and maximum water levels that must be maintained in the Fish Lake reservoir.

The Fish Lake dyke regulates storage capacity, and discharge into Fish Creek is through a control structure in the dyke. The dyke is located on surveyed land with long-term tenure

and was not designed to be a public right-of-way or parking area. The dyke's narrow one-lane capacity and lack of proper turnarounds are becoming issues with the increasing levels of recreational use and traffic.

ATCO's 2012 relicensing was based on a long-term storage range of 1.75 metres and a Full Supply Level of 1,112.79 metres. In its Project Description, ATCO cited water levels of 1,112.69 metres or higher as being of concern for erosion¹¹. ATCO's modeling predicted that water levels would exceed this threshold only occasionally in September and October, and generally occur less than it did from 1960–2008. The effect of the proposed water storage regime on Fish Lake over the 25-year operating cycle was deemed insignificant by ATCO.

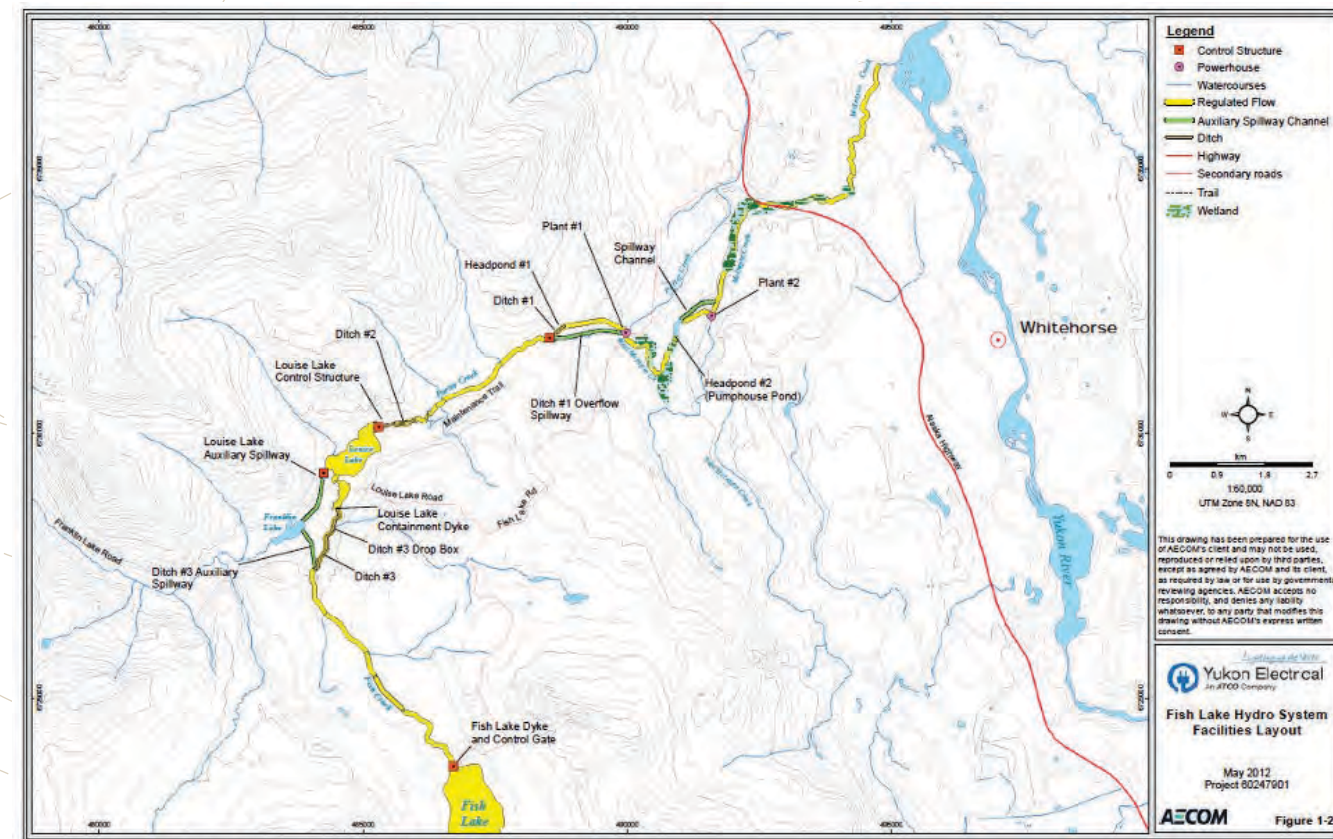


Figure 10. Overview of Fish Lake hydroelectric facility
(Source: AECOM, 2012)

Heritage

ARCHAEOLOGY

The Łu Zil Män (Fish Lake) area is one of the Yukon's archaeological resources despite the fact that most of the planning area remains unsurveyed for archaeological sites. Over the course of 32 investigations dating back to the 1960s, 43 archaeological sites have been identified in the Łu Zil Män area, mostly around the Fish, Franklin and Jackson lakes. Additional sites are very likely present in unsurveyed regions.

Only three of the area's archaeological sites – the north end of Fish Lake, a camp site on Jackson Lake and the Mount Granger ice patch – have been investigated in detail.

The 1993 Fish Lake Archaeology Project, a partnership between KDFN and YG, focused on the north end of the lake¹². Elders identified this as the principal area where people would gather for the fall trout and whitefish harvest and, archaeologists identified three sites extending over two kilometres. From this base camp, hunters travelled to surrounding hills for the fall hunt for caribou, moose and sheep, following the trails from the north end of the lake to the Bonneville Lakes and the Ibex valley.

At one of these sites, microblades reveal ancient use (5000–8000 years before present (BP)), and side-notched and leaf-shaped spear points, scrapers, stone knives, wedges and hide scrapers show evidence of a base

camp with continual use through time. Fishing occurred at these sites over many millennia, however fishing technology were made from organic materials that rarely preserves in the archaeological record.

The majority of the 22 archaeological sites that have been found to date in the Jackson and Franklin Lake areas appear to be hunting lookouts or seasonal camp sites associated with fishing or hunting around the lakes or surrounding upland areas. Excavations in 2003 at Jackson Lake recovered artifacts that suggest occupations spanned at least 8000 years.

ARTIFACTS AT FISH LAKE

The main camp at the north end of Łu Zil Män was almost completely destroyed when the road was built down to the boat launch at Fish Lake. Many archaeological resources remain vulnerable to the high levels of recreation and tourism activity in the area. Heritage experts believe that much of the archaeological wealth in around Łu Zil Män is still yet to be discovered. This material record helps us understand the ways people have successfully adapted to changing environments and can provide important clues about sustainable resource use through time.

¹¹ This elevation is cited by ATCO as being generally consistent with the toe of the upper bank that is not armoured for much of the shoreline.

¹² "Refer to the publication "Uncovering the Past" at <https://emrlibrary.gov.yk.ca/Tourism/archaeology%20and%20palaeontology%20booklets/lu-zil-man-fish-lake-archaeology-1994.pdf>

A traditional cremation site was described by Rosie Charlie as being a flat, sandy area on the east side of Fish Lake. The exact location of this site is not known; however, it was likely a proglacial alluvial fan. Cremation was common practice before the influence of Christianity prompted Indigenous people to bury their dead.

The ice patch at the summit of Mount Granger is one of the oldest of approximately 35 ice patch sites in the southern Yukon that was visited over many thousands of years. Side-notched spear points and an arrow with a barbed antler point, dating back as far as 4000-5000 years ago, were discovered here in 1998. A stone hunting blind located near the ice patch was likely used for sheep or caribou hunting.

Another significant archaeological site in the area is a stone quarry site where local shale was extracted and prepared into stone tools. Here, elements of large blade production, microblade cores, and various spear and dart point blanks reveal ongoing quarrying activity over the entire history of human occupation of Fish Lake. The presence of finished scraping tools also suggests this location was used as a camp, likely associated with upland hunting and berry picking. A number of other seasonal campsites, fishing spots, and hunting lookout sites have been identified at Bonneville Lake, Fox Point, and the lower reaches of Mount McIntyre and Mount Granger.

The distinctive beige artefacts native to Fish Lake (the colour being a by-product of shale losing its silica content through exposure to air and moisture) are not the only stone sources found in the area.

These incredible finds likely represent only a fraction of the archaeological record in the planning area; an undetermined amount has been lost to human activity or has yet to be discovered. One of the main camps was almost

completely destroyed with the construction of the road to the boat launch. Rising lake levels from the dam have also flooded an unknown amount of sites. During the 2014 drawdown of lake levels by ATCO large number of artefacts and fragments of ancient bison bone (radiocarbon dated to as early as 3800 BP were revealed). Heavy recreational visitation of the north end of the lake has undoubtedly led to further loss of and/or impacts to the archaeological record. Given that most upland regions have yet to be surveyed, many undiscovered archaeological sites are still likely present throughout the area.

Chert from the nearby Coast Mountains and exotic stone such as chalcedony, agate and obsidian were also found throughout the area. The presence of obsidian at numerous Fish Lake sites confirms the area's location within a broader network of trade and exchange in the Yukon and neighbouring Alaska and British Columbia. The obsidian data indicate the involvement of people in the Fish lake, and Louise and Franklin Lakes area in an extensive exchange network that moved exotic materials throughout northwestern North America.

HISTORIC RESOURCES

In addition to archaeological sites indicating millennia of occupation by the ancestors of the Kwanlin Dün people, there are several historic sites within the planning area. These include the Fish Lake fox pens, Jessie Scarff residence, Fish Lake cabin and Louise Lake cabin, which represent some of the physical evidence of more recent land use (e.g., fur farming, hunting and trapping) in the area. With the exception of the fox pens, these sites are located on privately owned or KDFN Settlement Lands. Many more

historical sites are likely present throughout the area but have not yet been recorded.

The *Historic Resources Act* is the key territorial legislation overseeing the protection and preservation of tangible, land-based heritage resources on public land, and can also apply to Settlement Lands. Generally speaking, it is unlawful to alter the character of a heritage site. The Act also talks about providing financial assistance and support for the maintenance and interpretation of heritage sites. However, the Act only applies to physical heritage resources. There are many other important heritage resources (berry patches, knowledge, language) that are not covered under the legislation.

“And my ties are like that for Fish Lake. My ancestry lived there. There are old burial grounds out there from our ancestors from a long time ago. So, we can’t just go out there and start digging around and, “Oh, I’m going to build this here and build that there.” No, because those are sacred grounds out there. Some places, my mother told us we couldn’t walk. We weren’t allowed to go up there and play on that one knoll, because that was an old burial place. She said, “You can’t go there. You don’t go nowhere near it.” So, we never, and even if we had to walk all the way around, that’s what we did.”

~ Irma Scarff
KDFN Elder

TTC Elder Margaret Douville (left) and KDFN Elder Dianne Smith (right) rinse a moose hide.

©GBP

Tourism and Events

COMMERCIAL TOURISM

Formalized tourism in the Fish Lake area began around 40 years ago with the establishment of a wilderness ranch. For the first twenty or so years, tourism remained small-scale. Over the past twenty years, the area has become one of the most valued and active areas of the Yukon from a tourism standpoint. Given the industry's strong presence in the area, KDFN commissioned a study in 2020 to better understand tourism trends, impacts and opportunities.

The study found that, since 1999, the number of annual commercial tourism clients at Fish Lake has increased from about 500 to just over 5000 – an approximate 900 percent gain (Groundswell 2020). Most of that growth has been in winter tourism. 2006 marked the onset of substantial winter visitation; those numbers

YUKON WILDERNESS TOURISM REGULATORY AND MANAGEMENT REGIME

The key legislative and management tool that applies to Yukon wilderness tourism is the Wilderness Tourism Licensing Regulation (WTLR), which issues licenses and sets standards for safety, reporting and environmental practices. A host of other agreements and legislation – including the KDFN Final and Self Government agreements, – directly or indirectly apply to Fish Lake tourism. See page x for more details.

steadily increased each year up until 2019. In 2019, about 700 people purchased summer/fall commercial trips around Fish Lake, compared to 4300 people who purchased a winter trip. Refer to Figure 11.

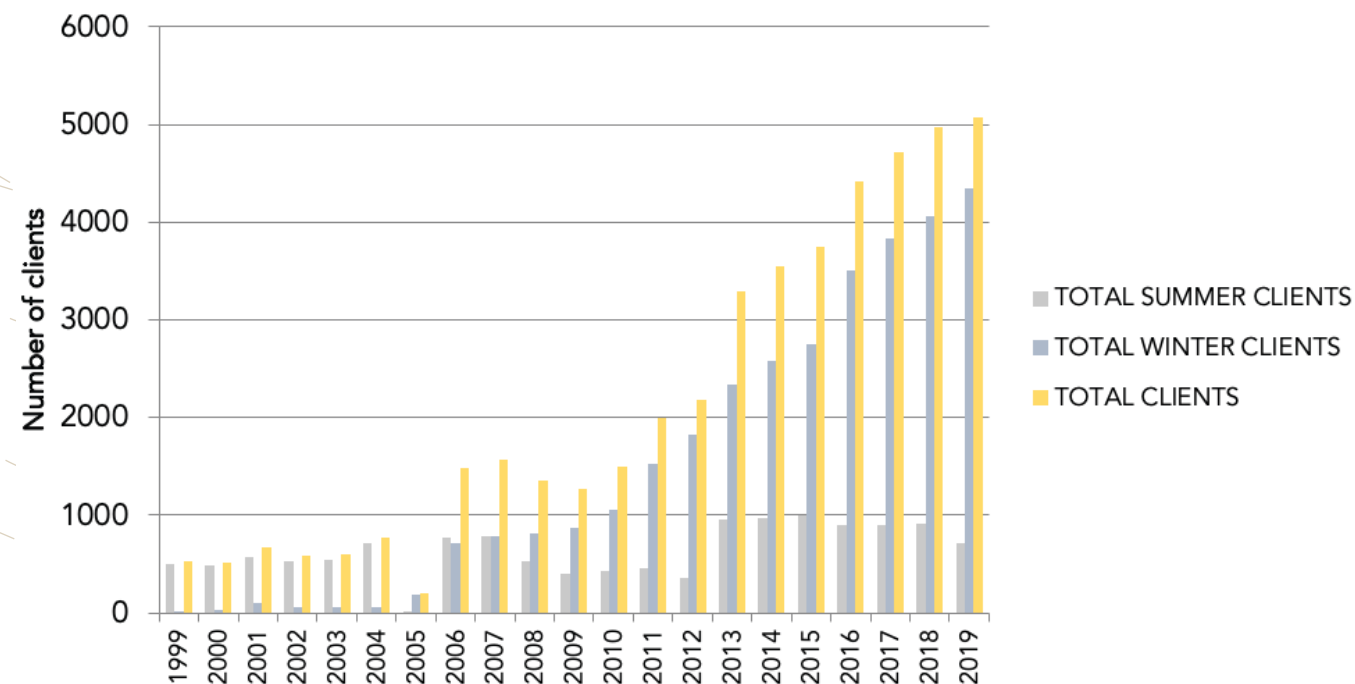


Figure 11. How many clients have operators hosted at Fish Lake each year since 1999? (Source: 2020 Fish Lake Commercial Wilderness Tourism Study)

During that 20-year timeframe, an average of six companies operated at Fish Lake. Most of the growth in tourism visitation is due to the business expansion of two longstanding operators. Other companies have come and gone and typically served a much smaller client base.

A wide range of wilderness activities is offered at Fish Lake in the summer/fall (May to October) and winter (November to April) seasons. Horseback riding accounts for over 90 percent of summer/fall trips purchased, while dog mushing, snowmobiling, and a multi-activity packages account for 56 percent, 19 percent, and 11 percent of winter trips, respectively (Groundswell 2020). Refer to Figures 12 and 13.

Based on reports from 2016-2019, the vast majority of both summer and winter clients purchased trips lasting a half-day or less; only a small fraction spent multiple days in the area. Multi-day trips typically base clients out of accommodations off the Fish Lake Road with one or two-night visits to backcountry camps.

Commercially guided trips around Fish Lake utilize routes and trails throughout the planning area boundaries, but most tourists visit a relatively small area encompassing the north end of the lake, Sunshine Valley, and Fish Lake Road. In both winter and summer/fall, there are almost 20 times more visitors at the north end of Fish Lake than at the south end (Groundswell 2020). Most visitors utilize established trails; a handful of informal winter and overland routes are also used.

The Yukon Department of Tourism and Culture released a ten-year Tourism Development Strategy in 2018. Improved governance and decision-making, including sustainability indicators and an improved regulatory framework to support tourism, are key actions in the strategy – along with developing experiences for sport, event and wilderness tourism. The department has noted a general desire for more opportunities for commercial accommodation in rural settings to be built into local area plans and zoning.

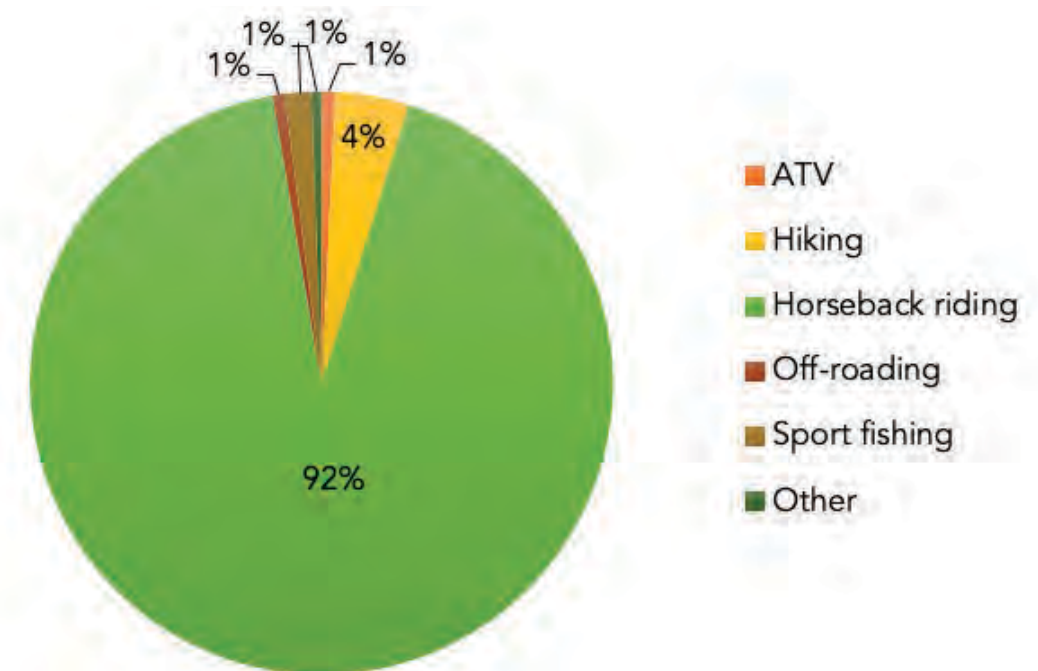


Figure 12. What is the breakdown of activities that summer/fall clients participated in at Fish Lake since 1999? (Source: 2020 Fish Lake Commercial Wilderness Tourism Study)

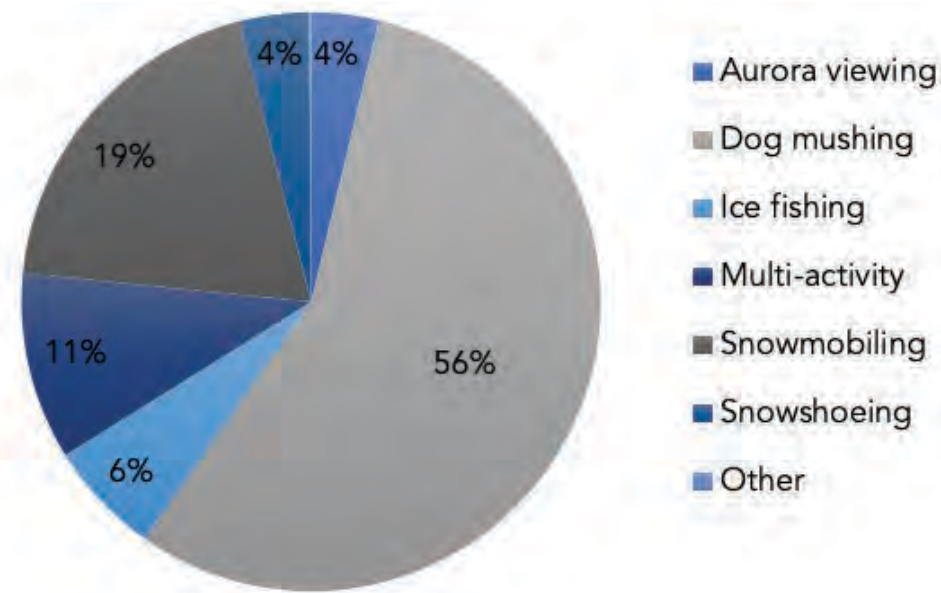


Figure 13. What is the breakdown of activities that winter clients participated in at Fish Lake since 1999?
 (Source: 2020 Fish Lake Commercial Wilderness Tourism Study)

INDEPENDENT TOURISM AND EVENTS

Tourists who purchase commercially guided trips do not represent all of the non-resident visitation to Fish Lake. Unguided tourists, event participants, and clients of unlicensed operators (estimated at about 1 in 10 companies) also visit the area. Over the past five years, three events – the Granger Grind dog sled race, Reckless Raven ultra-marathon, and the Gravel Growler bike race – have utilized the Fish Lake area. The Granger Grind hosts about 15 participants, all Yukon-based, and utilizes the lake and winter trails connecting over to the Annie Lake Road area (via Alligator Lake) (Groundswell 2020). The Raven attracts over 100 participants - including many non-residents – and uses a combination of established trails and roads and overland routes in the planning area in a counter-clockwise direction, starting from Haeckel Hill and exiting via Mount McIntyre (Ibid). The Gravel Growler gravel bike race utilizes the Copper Haul and Fish Lake roads and attracted 50 local participants in its fall 2021 edition.

It is difficult to estimate the number of unguided tourists who visit the area with their own transportation. An average of 550 people stayed

in rented accommodations at Fish Lake each year between 2016 and 2019 (Groundswell 2020). The number of visitors staying in accommodations elsewhere and visiting the area on day trips is likely higher. The proportion of self-guided visitors is likely much higher in summer than winter due to the availability of lower-barrier activities such as hiking and warmer weather.

TELEVISION, FILM AND COMMERCIAL PRODUCTIONS

Fish Lake has served as an outdoor set for a variety of television, film and commercial productions over the past few decades and is one of the most popular shooting locations in the territory (MacKenzie, pers. comm). Similar to tourism, the area’s close proximity to Whitehorse and scenic attributes are major draws. Filming is further aided by nearby tourism infrastructure, which is used for staging and accommodation. Fish Lake has hosted televised events such as Hockey Day in Canada and the Fulda Challenge, television productions like Amazing Race Canada, film productions and promos for “The Last Trapper” and the “Fast and Furious” franchise, and BMW commercials,

among many others (Ibid). A cabin built on KDFN Settlement Land has been featured in a number of these productions.

Fish Lake has also provided a scenic backdrop for numerous Yukon Department of Tourism photo shoots over the years, with the resulting images used for marketing the Yukon as a premier scenic and adventure-oriented destination.

Recreation

The Fish Lake area’s unique set of attributes makes it a highly visited and appealing destination for recreation. These attributes include its stunning mountain scenery, multiple trails and access routes into the alpine, waterways, early and late snow cover, wintertime temperature inversions, and easy, year-round vehicle access from Whitehorse. Winter recreation activities can begin earlier and continue longer than anywhere else around the capital city.

Whitehorse residents visit the area year-round for a wide variety of outdoor recreation activities. Their numbers have grown significantly, the most pronounced increase being over the past five or so years – at least as evidenced by road and trail traffic and number of parked vehicles at key access points. This growth has been estimated at between 100-400 percent over the past decade and is linked to increased population, road improvements, new motorized technologies, lack of reliable snow at lower elevations, and more accessible information courtesy crowd sourced and curated trail websites.

INDEPENDENT RECREATION

The following is a brief overview of the most common recreation activities in the planning area and is not intended to be an exhaustive list. Refer to Map 6.

Biking - Mountain biking is a popular activity in the eastern-most portion of the planning area. Mountain bikers visit the area via the McIntyre access road and ride the singletrack trails Blown Away and Starbucks Revenge, both of which were built for mountain biking. These trails connect to the Fraser Loop, Goat and Mount McIntyre Ascent trails that form the alpine portion of the trail network maintained by the Whitehorse Cross Country Ski Club. The Coal Lake Road has featured in guidebooks for around 30 years, although its wider, variable surface is not considered a premium mountain bike experience.

The regular grooming of winter trails throughout the Fish Lake area has been a boon to Whitehorse fat bikers¹³, who rely on well-packed snow to ride. The most frequently traveled routes include loops on Fish Lake and the Bonneville Lakes loop. A busy day with perfect conditions may see a handful of small groups riding the Bonneville loop (DeLorenzo, pers. comm).

Another longer but relatively common fat bike route is the McIntyre Loop. More adventurous fat bikers will venture further afield to the Coal Lake area and connect over to Friday Creek/ Annie Lake Road area via the Alligator Lake Trail (DeLorenzo, pers. comm).

Boating - Motorized boating on Fish Lake is aided by a public boat ramp located on the eastern end of the ATCO dyke. Canoeing, kayaking and stand-up paddle boarding happen as well. Motorized boat traffic has apparently increased in recent years but is generally limited to under a half dozen boats on busier days.

¹³ “Fat bikes are similar to mountain bikes but have oversized tires designed to facilitate riding on soft, unstable terrain such as snow, sand, etc.

“Yes, it gets really rough and really quick; and because we’d lived on that lake and lived around it, we know how it acts and when to move off of it, and you’ve just got to let it calm down before we go across it or whatever. We know the weather, the way it works, and the seasons and when to fish...”

I can remember going down to the end of the lake on the ice with my parents. Like, I’d be inside the boat. The dog would be pulling the boat, and my parents would be pushing it, and I’d be sitting inside of it. I was, like, four or five years old, and I remember going down there in the wintertime. And my father and my mother talked about safety and things like that. So, we had our boat, we had trees across the boat so that if the weight of the boat broke the ice, we’d still have a way to get out, you know, things like that.”

~ Margaret McKay
KDFN Elder

Dog mushing - Recreational dog mushers follow many of the same routes as off road vehicle riders, fat bikers, and snowmobilers. They may base off the Copper Haul Road and do all or some portions of the McIntyre and Bonneville Lakes loops or connect to or from the Mud/Rose and Alligator Lake trails.

Fishing - Fishing is a popular year-round activity in the Fish Lake area. Jackson Lake and Pumphouse Pond (off the Fish Lake Road just east of the planning area boundary) are top rainbow trout and Arctic Grayling fishing spots. Ice fishing is popular as well, with private ice

fishing shacks being a common sight in recent years at the northern end of the lake. There are also reports of ice fishing shacks being skidded down to the south end of the lake in recent years.

Hiking/Running/Snowshoeing - Hiking is likely the most popular activity in the Fish Lake area. The most frequented hike, known as the Fish Lake Trail (or Bonneville Lakes Trail) is the most popular in the area, if not the entire Whitehorse region (refer to Table 4). The trail was well used by horses after the grazing areas were established in the 1960s and 1970s, but horses use it far less now due to the much higher volumes of hikers. The fall colours at Fish Lake are a particularly busy time, but this trail is used year-round; even in the winter months steady use generally keeps the trail packed to the saddle overlooking Bonneville Lakes.

Knuckle Ridge has been gaining in popularity since its incorporation in the Reckless Raven ultra-marathon course, which started about five years ago (see Tourism and Events). A network of horse trails can be linked together to form loops or connect over to the Starbuck’s Revenge and Goat trail area. Coal Lake and Mount Granger are other hiking options in the area and typically accessed from the Coal Lake Road. Snowshoeing is another option for any of these established trails, or off trails as well.

Table 4. Fish Lake Trail web statistics 2013-2020

Year	Page Views	Popularity
2013	2,028	#1
2017	5,827	#1
2019	5,653	#3
2020	4,530	#2

(Source: Yukonhiking.ca)

Kite skiing/boarding - Kite skiers and boarders have been taking advantage of Fish Lake’s wide-open space, snow coverage, and funnelled southerly winds for almost two decades, albeit in greater numbers in more recent years as the sport grows. Kiteers may use the lake as soon as it is reliably frozen and snow-covered; however, they tend to congregate in greater numbers during the sunny/windy days of late winter. A busy late winter day may see about a dozen kiteers out at a time. The lake is not typically used for water-based kiting in summer.

Off-Road Riding - Off-road vehicles include All-Terrain Vehicles and Utility Terrain Vehicles¹⁴ (UTVs) are well suited to the variable conditions of the old mining access roads in the planning area. The Coal Lake and Mount Granger areas are common off-road riding destinations accessed via the Coal Lake Road. The McIntyre Loop is also popular. One noted shift in this motorized activity is winter UTV use of trails groomed (formally or informally) by snowmobiles and dog mushers.

Skiing/Snowshoeing - Whitehorse Cross Country Ski Club operates the popular Skyline Trail, which starts about two kilometres north of the dyke and traverses the northern flank of Knuckle Ridge before connecting to the Fraser Loop portion of the Whitehorse Cross Country Ski Club 90 km trail network. The lake is popular for late winter skate skiing once trails are unusable at lower elevations. Ski touring is aided by the many established trails and winter routes; the area is not generally known as a destination for more gravity-oriented backcountry skiing, however. Snowshoers utilize many of the same trails and routes as skiers.

Snowmobiling - The Fish Lake area is a top destination for Whitehorse-area snowmobilers, in part because of the variability of snow conditions at lower elevations in the Yukon River

Some of the routes and trails recreationalists enjoy around the Łu Zil Män area today have ancient origins. The popular Fish Lake Trail is an ancient hunting trail connecting the traditional main camp site at the northern end of the lake to hunting camps in the Bonneville Lakes area. This trail connected to the vast network of trails used by First Nation people for subsistence, travel, and trade throughout the region.

valley. The area can accommodate all genres of the sport, from leisurely, non-technical trail riding around on the lake or well-used routes to advanced powder riding in the alpine valleys. The Bonneville Lakes loop is popular, as is the trail between Jackson Lake and Icy Waters (see the biking section). The Coal Lake and Mount Granger areas are frequently visited by snowmobilers, and typically accessed via the Copper Haul and Coal Lake roads.

The Klondike Snowmobile Association grooms portions of the McIntyre Loop and even goes as far out as the Mud/Rose Lake trail, which is fairly well used (Daniels, pers. comm). The association typically brushes out the Coal Lake and Mount McIntyre roads in summer.

Wildlife Viewing - Wildlife viewing and bird watching can be the sole purpose for an outing, or an add-on to other activities. The planning area is not believed to be a major destination for either activity, at least in comparison to other more recognized (and promoted) spots such as the McIntyre Marsh, located at the intersection of the Copper Haul and Fish Lake roads.

¹⁴ Also referred to as “side-by-sides”, UTVs are larger and more powerful than ATVs and can seat passengers side-by-side.

ORGANIZED RECREATION

A variety of groups use the planning area for organized recreation. KDFN's Recreation Department offers youth activities, such as ice fishing, and the Kwanlin Koyotes ski group typically visits in the late winter to skate ski down to the south end of the lake. Other recreation groups that use the area include the Yukon Horse and Rider Association, Klondike Snowmobile Association, Contagious Mountain Bike Club, Dog Powered Sports Association of Yukon, and Whitehorse Cross Country Ski Club.

The Fish Lake area is familiar to many school groups from the Whitehorse area (Jewell, pers. comm). The Wood Street school outdoor experiential education programs will visit the area in winter and spring/fall. A classic multi-day winter trip is skiing or snowshoeing with pulks around the Bonneville Lakes loop. Fall and spring visits usually consist of day hikes on the Fish Lake Trail. Jackson Lake is used in the spring and early summer for canoeing instruction.

"I've seen a lot of changes to our land, to the people that come there today, to what it was when I was growing up when nobody was around except for the Native people that camped and hunted and fished in the area. Today it's totally different. Like, there are so many people, you can't even find a parking space on the weekends. People are ice fishing and doing whatever. That's why I really think we need stuff to be put up out there; but in the long run, because I have my ties to Fish Lake to my family's history, it's been handed down to the family."

~ Irma Scarff
KDFN Elder



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Part III. The Planning Context



©Government of Yukon

Present-Day Land Tenure & Occupation

The arrival of people of European ancestry into present-day Yukon in the 1860s marked the beginning of a pattern of naming, organizing and disposing of the lands and waters in keeping with Western concepts of exclusive use and ownership. This pattern played out in the Fish Lake area and has ultimately resulted in our modern-day understanding of who owns and controls the land, and how it can be used.

PUBLIC LANDS

Most of the lands in the planning area – almost 39,000 hectares – are under the control of the territorial government. About 19,000 hectares of the land under YG’s authority are used by third parties via leases, licenses, and other types of dispositions. The remainder is unsurveyed.

There are six reservations in the planning area. The largest is the Wolf Creek Research Basin. This reserve is almost 16,000 hectares and is located in the southeastern portion around Coal Lake. The next largest reservation is 938 hectares and is for wind monitoring in the Mount Sumanik area. Other reservations are for the Fish Lake Road, a potential gravel pit expansion, and parks and recreation.

YG leases about 779 hectares comprised of nine land parcels for a variety of purposes, including coal exploration, private quarrying, a trapping cabin, residential and recreation. ATCO Yukon Electric has four licenses of occupation, totalling about 19 hectares, for components of the Fish Lake hydroelectric system. Placer and quartz claims account for 820 hectares of public land.

Refer to Table 5 and the tables on Maps 4 and 5 for more detail.

Table 5. Land tenure in the planning area

Type of Tenure	Number of Parcels	Total Area (ha)
PUBLIC LAND		
Agreements (for sale)	2	.1
Agreements (grazing)	2	520
Claims (placer)	28	746
Claims (quartz)	8	74
Leases	6	779
Licenses	1	19
Reservations	6	16,977
Surveyed parcels (no title)	17	20
Unsurveyed land	-	19,135
SUB-TOTAL		38,741
KDFN SETTLEMENT LAND		
R-blocks	3	7,234
Site-specific sites	14	57
SUB-TOTAL		7,291
TKC SETTLEMENT LAND		
Site-specific sites	1	2
TOTAL		2
PRIVATE LAND		
Private titled lots	19	67
TOTAL		67
TOTAL – PLANNING AREA		46,101

KDFN LANDS

KDFN has a total Settlement Land area of 7291 hectares comprised of three Rural Settlement Land parcels (R-blocks) and 14 Site-specific (S-sites). Settlement Land parcels in the Fish Lake area were selected for a variety of purposes, including traditional use areas, existing camps and residences, future camps and residences, ecotourism, heritage sites and archaeological sites.

Current records indicate numerous Historic Land Submissions in the Fish Lake area, on both R-blocks and S-sites. Historic submission are existing interests held by KDFN Beneficiaries and Citizens (land set aside, band council resolution, or similar documents) for residential or traditional use purposes. With the passage of the *KDFN Lands Act*, historic land submissions are now in the process of being reviewed and authorized under KDFN’s Managing Existing Occupants and Historical Submissions for Land Policy.

There are a handful of encumbrances on KDFN lands, including guaranteed rights of access across R-4A for tourism purposes and the Foothills Pipeline easement. In 2013, KDFN and ATCO signed an easement and license agreement for use of portions of R-4A and S-363B for hydro operations. Refer to the tables on Maps 4 and 5 for more detail.

KDFN’s largest development footprint in the area is the Jackson Lake Healing Camp, an integral part of KDFN’s land-based programming. The camp consists of about a dozen cabins, large one-storey log home with a kitchen and group eating space, wash house with showers and laundry, and other outdoor elements. The camp is busy with programming year-round, including trauma camps for women and men, family camps, youth camps and retreats for Elders, women and men.



©John Meikle

PRIVATE LAND

19 of the 36 surveyed land parcels in the planning area, comprising 67 hectares, are privately titled. Most of the privately titled lots are held by individuals; a few are held by ATCO and other companies. Refer to Table 5 and Map 4 and 5.

LAND USES

Describing land uses in the planning area is more complicated than tenure.

The vast majority of the planning area is open space, (or wilderness) that is undeveloped but nonetheless utilized for a wide range of human activity such as subsistence harvest, tourism and recreation, in addition to ecological processes.

Coal, quartz and placer mining dispositions account for the next highest land use strictly on a land quantity basis (1584 hectares), but this should not be interpreted as the amount of land being mined or even actively explored. Similarly, the land utilized for power production (979 hectares) and quarrying (49 hectares) reflects both active (i.e., Fish Lake hydro and Franklin Lake quarry) and potential or future (i.e., Mount Sumanik wind and YG gravel pit) uses. Refer to Table 6.

Commercial tourism presents the opposite scenario: the amount of land formally designated for it (24 hectares) is a vast understatement of the geographic coverage of this activity. Factoring in visitor use of public and First Nation lands, grazing leases that support tourism activity, and private properties that are not zoned for tourism but nonetheless utilized as such, commercial tourism use may well exceed mining in terms of land area. Refer to Table 6.

Table 6. Top 8 land uses

Type of Land Use	Total Area (hectares)
Open space*	42,423
Mining dispositions	1,584
Utility/power generation	979
Grazing	520
Residential [□]	50
Gravel/rock quarrying	49
Commercial tourism [°]	24
Roads	20

* includes public and First Nation lands with no development-related encumbrances

□ includes privately titled lots assigned to private individuals and Site-specific parcels with "D" notation

° includes only titled parcels zoned for commercial tourism

RECENT LAND USE APPLICATIONS AND/OR APPROVALS

Since the 2004 rush of spot land applications, there has been relatively little in the way of new applications and/or approvals for land use or disposition. One 2018 land use application to convert a portion of a grazing lease to titled land for guest cabins was recommended by the Yukon Environmental and Socio-economic Assessment Board to proceed but ultimately rejected by YG. Two other applications for rezoning Rural Residential lots to Multiple Rural Residential zoning, to legitimize accommodations and/or site uses. These applications are awaiting Cabinet review and decision. There are two agreements for sale for small land parcels for residential purposes.

Local Population

There is a small local population in the Fish Lake area living in residences along the Fish Lake Road and in the Jackson Lake area. Rough roads access a handful of other cabins on the western and eastern shores of the northern end of Fish Lake. Refer to Maps 4 and 5.

About half of the privately titled lots in the planning area are understood to be occupied year-round. An estimated 30 people live on properties adjoining the Fish Lake Road (Janin, pers. comm). Another 30 people are associated with the 10 titled lots at Jackson Lake; of those, 11 are long-time permanent residents, and the remainder are part-time residents, some of whom plan to return to full-time residency in the future (Elliot, pers. comm). Most of the dwellings on Settlement Land are occupied seasonally or intermittently.

All of the year-round Jackson Lake residents have lived there for at least a decade; some have lived there for over 30 years, and one has family ties dating back to the 1960s (Elliot, pers. comm). There is more turn-over in Fish Lake Road residents; about one-third have lived in the area for more than a decade (Janin, pers. comm). One Fish Lake Road area resident has lived continuously in the area since the 1960s.

Demographic information is not available for this area. Anecdotally, it is understood that working-age residents of the planning area generally fall into three categories: those who work for and/or operate businesses in the area, those who commute to Whitehorse for work, and those who work remotely for employers based in Whitehorse or elsewhere. Slightly less than half of full-time residents commute to Whitehorse for work (Janin, and Elliot, pers. comm).

The Jackson Lake Community Association was formed in 2010 for the purposes of representing the interests of property owners in the Louise Lake subdivision. The association

has participated in consultations on a variety of local licensing and land use issues with various government departments, the Yukon Water Board and ATCO Yukon Electric since that time. A group of residents based off the Fish Lake Road are in the process of establishing another association to represent their interests and concerns, both during local area planning and more broadly.

Area residents have expressed concerns about increasing levels of activity and visitation around Fish Lake and the associated impacts on the local environment and quality-of-life. The harvest of Christmas trees, impacts from off-road vehicles, cutting of green trees for campfires, irresponsible fishing practices and noise, garbage and partying activity are among the main concerns of area residents (Elliot, pers. comm). Motorized vehicle use (i.e., boats, snowmobiles, etc.) is a particular concern to area residents who haul water from Fish Lake due to the potential for fuel to enter the lake system (Janin, pers. comm). During the Fish Lake Commercial Tourism Study (Groundswell 2020), increased noise, parking congestion along Fish Lake Road and at the dyke, and wintertime roadside accidents were noted as concerns related to more Whitehorse residents and tourists visiting the area.

Infrastructure and Services

ROADS

The Fish Lake Road is a 16.1-kilometre-long road that provides year-round access to Fish Lake from the Alaska Highway. The secondary access is a dirt road that starts from the intersection of the Copper Haul and McLean Lake roads and climbs to a Navigation Canada Visual Flight Rules omnidirectional range beacon (for air navigation) at the summit of Mount McIntyre.

These two access roads into the planning area are connected by a 4x4 track that is used year-round as a recreational trail and informal property access. Other old roads/trails into the area (i.e., Coal Lake Road, Alligator Lake Trail, Mud Lake Trail) are similarly suited only for off-road vehicles.

The Fish Lake Road is maintained by the City of Whitehorse up to the City's administrative boundary and by YG's Transportation Maintenance Branch for the remainder. The Branch also maintains the Jackson/Franklin lakes access road. Maintenance is generally limited to snow clearance and occasional grading. The road was surfaced with bituminous treatment in the 1980s from the Alaska Highway to ATCO's hydro generating station.

Many sections along Fish Lake Road do not meet Transportation Association of Canada standards for horizontal and vertical alignment and sight distances. The road's intersection with the Alaska Highway is considered mildly problematic from a safety standpoint. The Transportation Engineering Branch (TEB) has established a right-of-way reserve on both sides of the road from the city boundary to Fish Lake in anticipation of future upgrades being required.

Results from a TEB traffic count program established that, between 2001 and 2006, maximum daily traffic tended to occur between May and August and maximum Average Monthly Daily Traffic figures ranged from 145 to 296. Year-round Average Daily Traffic (ADT) increased slightly from 128 in 2001 to 142 in 2006.

TEB also ran weeklong counts in 2018 and 2019. The 2018 program ran in early November (one of the quietest periods for tourism and recreational activity) and yielded an ADT of 125. The 2019 program in late May/early June yielded an ADT count of 224. This would indicate that early summer Fish Lake Road traffic is now in the mid-to-higher range of 2006 ADT for the entire May to August period.

¹⁵ YG Environmental Health Services has noted issues with bedrock, clay and varying water tables on some properties along Fish Lake Road.

WATER AND WASTEWATER

There are no piped water and/or wastewater systems in the planning area. Individual dwellings manage with on-site septic disposal systems¹⁵. Water is provided via a combination of private wells and water delivery. There are three recorded wells within the planning area in the Yukon Water Well Registry and groundwater conditions vary. Two wells provide a high yield at reasonable depths, while one well was dug to 300 feet and did not encounter any water.

POWER AND COMMUNICATIONS

There is currently no ATCO or Northwestel service to the planning area; the closest link is the ATCO power plant. Residents rely on onsite power generation (i.e., solar, diesel generation, etc.) and mobile/ satellite networks for their communications. Cellular coverage is spotty throughout the planning area; the parking area/ boat launch and Fish Lake Trail are generally good, while some of the private properties have poor reception (Leblanc, pers. comm). A Navigation Canada Very-High Frequency Omnidirectional Range (VOR) system is situated on the summit of Mount McIntyre and used to aid air navigation.

SOLID WASTE

There are no solid waste facilities in the planning area. Residents transport solid waste to the Whitehorse landfill facility.

GRAVEL

In 2004, YG established a 42-hectare gravel reserve just north of the Mount McIntyre trail connector. The reserve was intended to be both a borrow pit source for future Fish Lake Road improvements and a material source for erosion protection improvements to the ATCO Yukon Electric dam structure.

Future Development

KDFN DEVELOPMENT OPPORTUNITIES

KDFN has set out intentions for development in the Łu Zil Män area through various planning processes. Kwanlin Dün's 2017 Traditional Territory Land Vision identifies the Fish Lake area as helping to achieve the nation's Community Development, Wildlife, and Heritage goals. According to the Land Vision, the potential development envisioned for each KDFN Settlement Land parcel includes:

- Campground (R-40A and/or R-4A)
- Culture camp (R-4A)
- Healing centre (R-4A)
- Residential subdivision for citizens (R-40A)

Refer to Figure 14.

A marked difference between the Łu Zil Män process and previous local area planning processes in the Whitehorse periphery is that the *Lands Act* gives KDFN the ability to administer interests in its Settlement Lands to both Citizens and non-Citizens for a variety of purposes.

RECREATIONAL AND COUNTRY RESIDENTIAL LOT DEMAND

Whitehorse's population has increased significantly since 2010, from 26,761 to 33,285 in September 2020 (Yukon Bureau of Statistics, 2020). This total 24.4 percent increase represents a remarkably steady annual rate of 2.2 percent. This growth, along with demographic, supply and economic factors, has contributed to a strong demand for housing and housing lots within and around the city.

YG is responsible for developing and selling (via lottery) residential and cottage lots on

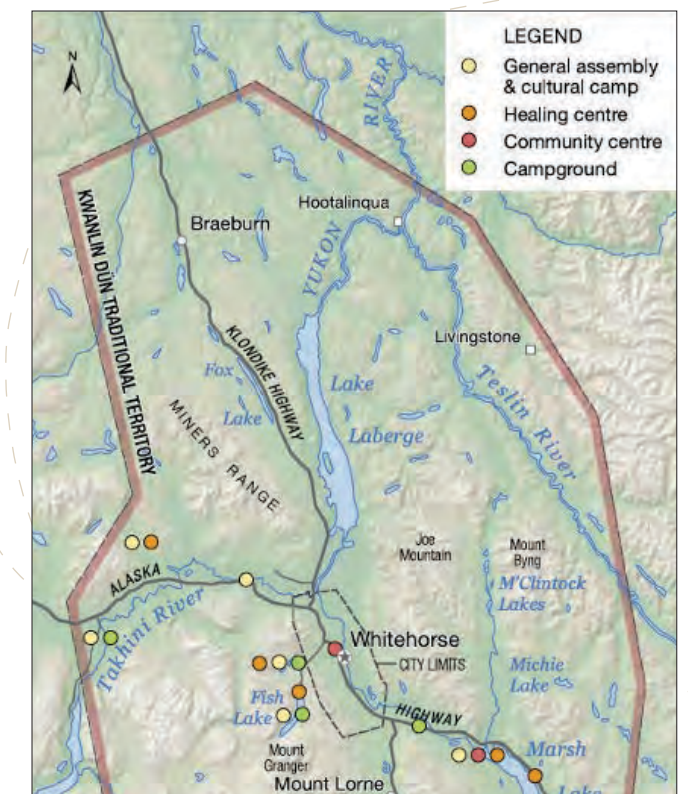


Figure 14. Map of KDFN community infrastructure needs
(Source: KDFN Traditional Territory Land Vision)

public land throughout the territory, as well as administering spot land applications received from the public. The 31 applications near Fish Lake in 2004 provides some indication of the level of interest in living in the area. The past decade's lottery results for rural and cottage properties – some of which were much less accessible – would further indicate those types of lot at Fish Lake would be in very high demand. Refer to Table 7.

Yukon Bureau of Statistics' population projection sees Whitehorse growing by another 10,928 people, to 44,213, by 2040 – an increase of 33 percent compared to the current size. The City of Whitehorse's updated Official Community Plan, which is currently underway, will partially determine how – and where – those new residents are housed. However, it is YG's rural land development program, in concert with affected First Nations, that will help determine

whether the continued demand for country residential and cottage lots in and around the capital can or should be accommodated in areas such as Fish Lake. To date, the lack of a regional growth strategy has hindered a more holistic approach to this challenging development issue.

The City of Whitehorse was opposed to the 2004 spot land applications due to anticipated road upgrade needs and other associated strains related to the development, without any tax revenues to offset.

Table 7. Selected rural residential and cottage parcel lottery results, 2011-2021

Year	Location	# Lots	# Applicants
2011	Grizzly Valley Phase 1*	30	26
2016	Kluane Lake	11	65
2017	Tagish Lake•	7	60
2017	Bennett Lake•	7	
2018	Grizzly Valley Phase 2*	20	5
2019	Cowley Creek	2	100
2021	Hidden Valley	5	123

* 45-minute drive from Whitehorse •boat/snowmobile access (Source: YG Land Management Branch)

DEVELOPMENT COSTS AND CONSTRAINTS

The extent and nature of future land development in the Fish Lake area will be dictated not only by broader land use decisions, but how well the land is suited for lots, houses or other built infrastructure. For example, sites with well-drained soils and flat or mildly sloping topography are typically suitable for

¹⁶ ATCO recently provided an order-of-magnitude estimate of \$150,000 per kilometre to extend an overhead, single-phase power line from Plant #1 to the lake (an 8-kilometre distance), roughly double the 2007 cost estimate. For rough estimation purposes, it is assumed this doubling of costs applies across all infrastructure categories. For ease of reference, the 2007 estimate for extending fibre optic cable and associated control unit to the periphery of a new country residential subdivision was \$315,000, and estimated construction costs of \$1.5-\$2 million dollars for a realigned and improved roadbed structure and surfacing for 16.1 kilometre of the Fish Lake Road. The cost of roads internal to a new country residential subdivision was additional.

development, whereas steep slopes and/or poor soils (i.e., permafrost, flood-prone areas and near-surface bedrock, etc.) are generally avoided.

A high-level evaluation of the Fish Lake area identified pockets of good development potential coinciding with developed areas along the Fish Lake Road and Sunshine Valley, but also in the Bonneville Lakes valley and subalpine plateaus in the Golden Horn Mountain and Coal Lake areas. Refer to Map 7. Note that this evaluation does not consider other land use values and is based purely on the physical landscape.

A 2007 study was commissioned by YG to better understand the technical feasibility of developing country residential lots around Fish Lake (see Figure 15). The study determined that the terrain was generally conducive to development, but that the lack of nearby power and communications infrastructure and need for road upgrades created significant costs - in the order of \$90,000-\$110,000 per lot for a 30-50 lot development (in 2007 dollars).

Based on estimates received from ATCO in 2021, the approximate costs for a 30-50 lot development in 2021 would likely be at least double the 2007 estimates - in the order of \$180,000-\$220,000 per lot, or a total of \$5.4-\$11 million dollars¹⁶. Further site-specific geotechnical and hydrogeological analysis would be required prior to a decision to develop (or not).

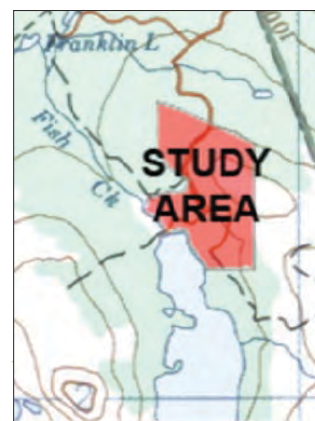


Figure 15. 2007 residential development study area

(Source: Inukshuk Planning & Development)

Relevant Agreements, Legislation and Plans

The local area plan for Łu Zil Män will not be developed in isolation. Rather, numerous pre-existing agreements, legislation and plans already apply - directly or indirectly - to lands and land use activities there. These include the KDFN Final and Self-Government agreements, territorial legislation, and First Nation-YG resource and wildlife management efforts.

This pre-existing framework affects planning in various ways. First and foremost, the plan must avoid offering contradicting direction. Second, the plan can remain silent on some issues that are already covered. Third, the plan can leverage the strengths and try to address the weaknesses of that framework.

One key strength to build on may be the resources already in place by virtue of existing legislation, such as YG conservation officers, KDFN land monitors, and YG's wilderness tourism reporting system. Newly passed legislation, such as KDFN's *Lands Act* and

“meanwhile the growth of land use in the valleys and trail access into the mountains has compromised habitat and increased hunting pressure on caribou, moose, sheep and other species. These impacts heighten the need to proactively manage the settlement lands and the portions of the Traditional Territory that remain undeveloped. Opportunity remains to limit further development and trail extensions into the area south and west of Whitehorse, including Fish Lake...”

~ KDFN Traditional Territory Land Vision

“As Whitehorse has grown, it has historically accommodated population growth through new greenfield development... Although there are many benefits to this (suburban) lifestyle, suburban development commonly results in issues and challenges...due to the significant amount of new land areas and costs associated with accommodating the future growth.”

~ City of Whitehorse 2040 Official Community Plan “Emerging Directions”

Territorial Off-Road Vehicle Regulations, offers new opportunities to manage land use on and off Settlement Lands in the Fish Lake area.

Challenges for the plan to acknowledge and potentially navigate around include a lack of sufficient resources (i.e., human, financial, etc.) to fully enact and/or enforce legislation. For example, enforcement of the Whitehorse Periphery Development Regulations are typically complaint-driven. As are the *Wilderness Tourism Licensing Regulation*, furthermore, there is little capacity to organize and apply the tourism data collected towards better management.

Other challenges that the plan could try to address are legislative gaps. For example, the scope of zoning is limited to what occurs on private properties and/or grazing agreements, and is not intended to address off-site activities and potential impacts that occur on public and Settlement lands. The *Wilderness Tourism Licensing Act* allows for regulations for environmental standards and to place limits on tourism activity for conservation purposes; to date, these have not been developed.

A selected list of agreements, legislation, plans and initiatives with potential relevance to the planning process follows in Table 8.

Table 8. Select agreements, legislation, plans and initiatives relevant to Fish Lake planning

*There are other agreements, legislation, plans and initiatives that are not included in this list as they do not play a strong active role in Fish Lake Planning purposes.

Document	What it is/does	Why it matters
KWANLIN DÜN FIRST NATION LEGISLATION		
Final Agreement (FA)	A constitutionally protected modern treaty that sets out the rights of KDFN within its Traditional Territory	Many chapters of the FA are relevant to planning and management of the Fish Lake area including: chapters 6 (Access), 11 (Land Use Planning), 12 (Development Assessment), 13 (Heritage), 14 (Water Management), 16 (Fish and Wildlife), 17 (Forest Resources), and 18 (Non-Renewable Resources).
Self-Government Agreement (SGA)	A constitutionally protected modern treaty that sets out the self-government authorities of KDFN on its Settlement Lands	The SGA creates numerous mechanisms of potential relevance to management of land use in the Fish Lake area, including the ability to enact laws of a local or private nature on Settlement Land. SGA Section 30 provides for cooperative local area planning.
Lands Act	Enabling legislation under which regulations addressing access to and use of Settlement Land can be enacted	<p>The <i>Lands Act</i> contains a number of mechanisms that could impact land use on KDFN Settlement Lands around Fish Lake. These include the granting of interests, prohibitions and authorizations relating to access and use, and enforcement. The Act may be a way to formalize currently informal commercial tourism use on KDFN parcels.</p> <p>The Lands Act allows KDFN to grant leasehold interests in Settlement Lands to KDFN citizens and non-citizens for a variety of purposes. It also requires that any land interest issued by KDFN must conform to land use planning.</p>
GOVERNMENT OF YUKON LEGISLATION		
Lands Act	Legislation for the administration of Commissioners land (lands administered by YG previous to devolution)	Allows for the sale and lease of Commissioners land including agricultural uses.
Lands Regulation	Covers the sale and lease of lands on Commissioners lands in the Yukon	<p>Establishes terms and conditions for the sale of land (pricing and agreements for sale), identifies classes of land that are available for sale (residential, recreational, commercial, etc.)</p> <p>Also addresses the sale/leasing of agricultural land as well as sales to municipalities.</p>

Document	What it is/does	Why it matters
GOVERNMENT OF YUKON LEGISLATION		
Historic Resources Act	Legislation for the protection of tangible, land-based heritage resources that are older than 45 years, abandoned and of historical significance on public lands. This legislation can apply to settlement lands through law of general application in the absence of First Nation legislation.	There are legal implications for disturbing a site protected under the Historic Resources Act (HRA). The definition of heritage in the HRA is specific to tangible resources and does not include resources First Nations may consider heritage (e.g., berry patches, knowledge, language etc.). Chapter 13 includes provisions for First Nations to define their own heritage and develop their own legislation, yet implementation has lagged behind creating a legislative gap in the types of heritage and heritage resources that are protected in the Yukon.
Territorial Lands (Yukon) Act	Overarching legislation governing management of public land in Yukon (lands transferred to YG from Canada at devolution)	The Act enables the creation of Land Management Zones, selling and leasing of land, harmonizing with the Lands Act, and regulations governing them (Lands regulations, Land use regulations, ORVMA regulation, Resource road regulation, etc.).
Territorial Lands Regulation	Covers the sale and leasing of crown land (formerly federal land) in the Yukon	Establishes basic terms and conditions of the selling and leasing of land (cost of lease/title, term of lease, etc.).
Territorial Land Use Regulations (TLUR)	Establishes the entire territory as a Land Management Zone and prescribes specific thresholds of activity for which a land use permit is required	Establish the thresholds to determine when a land use permit is required (e.g. use of explosives, number of person(s) involved as part of work, fuel storage, etc.). Some development and tourism activity may be subject to permitting and environmental assessment under TLUR but land use permits are primarily issued to mining, oil and gas and other industrial activities (power lines).
Area Development Act	Legislation to regulate orderly development in unincorporated areas of Yukon	The Act is the overarching legislation for numerous zoning regulations throughout the Yukon, including the <i>Whitehorse Periphery Development Area Regulation</i> (WPDAR). Cabinet may designate development areas and make regulations pertaining to zoning and land allocation, buildings, built public amenities, public health, fire protection, animals, and discharge of firearms.

Document	What it is/does	Why it matters
GOVERNMENT OF YUKON LEGISLATION		
Grazing Regulations	Sets out the authority of YG to enter into grazing agreements with individuals, corporations, or societies	Commercial horseback riding is supported by two grazing agreements in the Fish Lake area. Agreements can be renewed for up to 27 years after an initial 3-year term. In determining the terms and conditions of an agreement, the Director of YG Agriculture Branch is to consider the type of land and animals involved, other land uses; and the need to protect wildlife habitat.
Off-Road Vehicle Management Regulation	Allows for the creation of ORV management areas to protect sensitive areas from extensive ORV use and allows for new ORV areas to be established out of land use planning	The Alpine Off-Road Vehicle (ORV) Management Area applies to alpine areas over 1400 metres elevation (which covers much of the Fish Lake planning area) and limits ORV use to existing trails only. Theoretically, a Fish Lake-specific ORV area could be a recommendation coming out of the LAP.
Wilderness Tourism Licensing Act (WTLA)	Governs wilderness tourism in the territory to protect wilderness values and enhance the quality of tourism product	WTLA applies to the commercial tourism activities already occurring in Fish Lake and would also apply to any First Nation cultural interpretive tours that may be developed in the future. Cabinet may make regulations involving reporting, requirements for low impact camping, limiting wilderness tourism activities for “conservation purposes or sustainability of the wilderness resource”, and numerous other licensing and operating elements.
Wilderness Tourism Licensing Regulation (WTLR)	Sets out the requirements for a license application and outlines obligations of operators under the WTLA	WTLR is the primary mechanism through which tourism activity at Fish Lake is managed and monitored. WTLR requires operators to report their wilderness tourism activities, inventory staff, confirm Workers Compensation Act compliance and provide proof of public liability insurance and First Aid certification. WTLR also establishes requirements for waste disposal and low impact camping.
Parks and Land Certainty Act (PLCA)	Establishes parks that: implement obligations of the Final Agreements; provide for the protection of significant and special places; provide recreational opportunities; and encourage understanding and enjoyment of Yukon’s natural environment	While there are four main reasons why territorial parks are established, the main interest in the planning area may be protection. PCLA establishes the goal of protecting one representative core area within each of the 20 ecoregions located primarily within the Yukon. There is currently no core area protected within the Yukon Southern Lakes Ecoregion of which Fish Lake is a part; only 6.2 percent is protected in small nodes.

Document	What it is/does	Why it matters
GOVERNMENT OF YUKON LEGISLATION		
Whitehorse Periphery Development Area Regulation (WPDAR)	Governs land uses in the unplanned areas surrounding the capital city for which localized zoning regulations have not been developed	WPDAR sets out that all lots (i.e., surveyed/titled parcels) within the development area are zoned Rural Residential (unless otherwise provided). One property in the Fish Lake area was rezoned Commercial Tourism in recognition of the existing use. Permitted uses for Commercial Tourism include any use permitted for rural residential, lodges, guest cabins, and guiding. Staff cabins are allowed as an accessory use. There are no additional restrictions placed on commercial tourism zoned properties.
FEDERAL LEGISLATION		
Yukon Environmental and Socioeconomic Assessment Act (YESAA)	Legislation resulting from Chapter 12 of the Yukon Umbrella Final Agreement that applies to all lands within Yukon	YESAA requires the consideration of the environmental and socioeconomic effects of projects prior to proceeding. Section 42(1d) also directs the Yukon Environmental and Socioeconomic Board (YESAB) to consider the significance of any adverse cumulative environmental or socioeconomic effects of a project in combination with other proposals and/or activities. The direction provided in a LAP would likely form part of YESAB’s review of a project and potential cumulative effects.
PLANS & OTHER INITIATIVES		
Kwanlin Dün First Nation Traditional Territory Land Vision	Creates a guiding vision for KDFN Settlement Land to support detailed planning and work with other governments.	The Land Vision establishes four land-based goals (Community Development, Wildlife, Heritage and Revenue Generation), along with guiding principles and values. The document outlines the areas and even parcels which are prioritized for the achievement of each goal.
City of Whitehorse 2040 Official Community Plan	Guiding document that describes how (and where) growth will be managed, land uses, and other matters relevant to safe and orderly development	The OCP is still under development but the August 2021 Emerging Directions document offers a preview. Key policy directions that could indirectly relate to the Fish Lake area include the focus on new residential development within existing neighbourhoods and close to Downtown, a clear signal that the City is trying to curb urban sprawl. The document also proposes the redesignation of the Lower McIntyre Creek area (i.e., Porter Creek D) to reflect environmental and cultural values. This aligns with the Yukon Liberal Party’s 2021 election promise to create a McIntyre Creek park – which was also committed to (and broadly mapped) in the City’s 2010 OCP.

Document	What it is/does	Why it matters
PLANS & OTHER INITIATIVES		
Whitehorse and Southern Lakes Forest Resource Management Plan	Plan developed in partnership between YG and three First Nations (including KDFN) that provides a management framework	The northern portion of the planning area falls within the Interface zone, with the priority to “protect values through timber harvesting and other forest management activities.” Timber harvest plans may be developed in this zone to help reduce wildland fire risk through landscape-level fuel reduction, while prioritizing the protection or enhancement of wildlife habitat and accommodating research and both commercial and personal fuel wood harvesting. Most of the remainder of the planning area is zoned Provisional, meaning that forest management can occur under certain conditions. Timber salvaging may occur following natural disturbances such as wildland fires, flooding, insect infestations or disease. Fuel management may also occur.
Yukon Sustainable Tourism Framework	A product of the Yukon Tourism Development Strategy	Fish Lake is one of the most visited wilderness areas in the Yukon. The strategy, due in 2022, may provide guidance in helping balance tourism alongside other values such as wildlife, subsistence harvest and recreation.
Regional Assessment of Wildlife in the Yukon Southern Lakes Area	Provides the Southern Lakes Wildlife Coordinating Committee’s recommendations to recover and conserve wildlife populations and habitat	The document prioritizes areas of collaboration between YG, KDFN and Carcross/Tagish First Nation and sets direction for many aspects of management and monitoring of keystone species in the Fish Lake area, including caribou, moose and thinhorn sheep. Any wildlife related matters or recommendations in the LAP should align with and support this work.
Human Recreation in Caribou Country Study	Joint YG-KDFN initiative to study impacts of recreation on caribou populations	This study, in the final stages of review, may yield useful recommendations that can be incorporated into the management of Fish Lake recreational activity in areas of known caribou presence or higher value habitat.
Species Management Plans	Address conservation and/or community concerns for a specific species and assist with management approaches and regulations	A number of species management plans may pertain directly or indirectly to the Fish Lake area. These include plans for Wolf, Amphibians, and Grizzly bear. Southern Lakes caribou planning is still underway.

Document	What it is/does	Why it matters
PLANS & OTHER INITIATIVES		
Special Management Area (SMA) and Habitat Protection Area (HPA) Plans	Help maintain the Yukon’s important natural landscapes and cultural features. SMAs and HPAs are jointly created by YG, First Nation governments, Renewable Resource Councils, and others.	SMAs and HPA arise primarily from Chapter 10 of the Umbrella Final Agreement, may be completed through Chapter 11 processes and are nominated for consideration under the <i>Wildlife Act</i> (by Environment or another body such as a board/council or private interest). The Lewes Marsh and Kusawa Park HPAs are identified in KDFN’s Final Agreement and are both located not far from the planning area. The Lewes Marsh process has yet to start. These nearby protected and conserved areas should be considered in order to prevent any incidental and unintended impacts to these areas. Further, there may be direction or guidance applicable to the shoreline habitat and aquatic management aspects of Fish Lake.
Recommended Kusawa Territorial Park Management Plan	To establish management goals and objectives to fulfill the parks’ objectives including balancing cultural, environmental, and recreational values.	A Steering Committee recommended a draft management plan to the Parties in 2016. It is still being reviewed and finalized by KDFN, YG, Carcross/Tagish First Nation, and Champagne and Aishihik First Nations. There may be direction or guidance applicable to the key values and multiple interests in the Fish Lake area. This nearby protected area should be considered to prevent any incidental and unintended impacts to it.

Key Planning Issues and Opportunities

The Łu Zil Män (Fish Lake) Local Area Plan will need to consider the wide diversity of land values in the area, attempt to address known issues and challenges, and pursue both existing and new opportunities in order to fulfill a future vision that is shared by local residents, KDFN citizens and other parties with interests in the area. The following section highlights some of the key issues and opportunities that are likely to arise during the planning process to come.

ZONING CONSIDERATIONS

Local area plans usually apply to developed areas and result in new zoning regulations. The nature of the uses and issues in Fish Lake, a largely undeveloped area, may require a different approach that places more emphasis on recreation and conservation values than previous local area plans and development area regulations have. It is common to restrict new development and various land uses in these areas, however recreation activities cannot be effectively restricted in zoning regulations unless it is tied to development. As such, governments may need to rely on other forms of legislation or processes to ensure effective implementation of the plan.

“And it’s an area that our elders and our ancestors would want us to...look after..., and they would want us to make a plan, and we should make sure that we’re taking care of it and that we are respecting it and carrying on those stories and the use of the land and how it’s so important to us and the significance of how they looked after it and continue that on for future generations.”

~ Brandy Mayes
KDFN Citizen and Lands Operations Manager

“Of course, we would love to stop illegal dumping, the garbage and everything, people mistreating the land up there... what I’m hoping for this Fish Lake local area plan that everyone will use this plan to more responsibly use Fish Lake, I guess, more than we are today..”

~ Cheyenne Bradley
KDFN Citizen and Land Steward

VISITOR AND IMPACT MANAGEMENT

With the 900 percent increase in wilderness tourism clients between 1999 and 2019 and substantial growth in recreation over the same timeframe, some people are concerned that Łu Zil Män risks being loved to death” by those seeking out its beauty and adventure. Kwanlin Dün citizens and government have long expressed concerns about the impacts this visitation is having on the land and animals. Litter is being left behind, trails are widening and braiding, and parking congestion is a persistent issue on the weekends.

Some of the potential solutions are self-evident and don’t necessarily require a plan to identify and begin implementing. These could include education and etiquette programs, infrastructure such as outhouses and garbage cans, formalized and managed trails and access points, and off-road vehicle (ORV) management areas. The latter two strategies may require more detailed trail planning conducted independent of, or in association with, the potential designation of the area under the *Off-Road Vehicle Management Regulation*.

There have been a few efforts in this regard to date. KDFN has posted caribou signs at the trailheads to Bonneville Lakes and Coal Lake. The ongoing dialogue around the planning process will provide a useful forum for YG and KDFN to chart out a collaborative approach and determine which actions can be agreed to and initiated while the plan is underway, and which actions should wait. Opportunities to harness the knowledge of KDFN citizens and year-round presence of tourism operators could be explored.

RECONCILIATION

The Łu Zil Män area is the setting for a proud yet difficult story, one in which millennia of use and stewardship by Indigenous people gave way to their displacement by 20th century settlers. The patterns of land use and development that characterize Fish Lake today are the result of these actions. The plan will need to contemplate what reconciliation might look like, both in terms of the plan process itself and its outcomes. Courage and compassion will be needed from everyone taking part in this highly sensitive conversation.

BALANCING ECOLOGICAL, CULTURAL AND RECREATION/ TOURISM VALUES

Although Fish Lake is not a park or protected area, the predominance of highly valued wilderness within the planning area would suggest that some type of protected or conservation designation for should be considered during the planning process. Parks have the dual mandate of managing for recreation and ecological conservation. While such a designation might eliminate high impact activities - such as some types of natural resource extraction - from the mix of acceptable land uses, it still leaves the challenge of managing the cumulative effects of lower impact activities.

A central dilemma in parks planning for valued wilderness areas is how to make tourism and recreation sustainable in a sensitive environment. The cultural importance of subsistence harvest to Indigenous peoples, let alone the rights set out in the Final Agreements, makes the protection of animals and animal habitat doubly important. KDFN citizens want to see mapping and monitoring of wildlife habitat, improved regulations for fishing, and other measures aimed at ensuring Łu Zil Män remains a productive home to animals as well as humans.

Attempting to balance many different land interests at stake along with biodiversity and sustainability may require the adoption of planning tools such as Limits of Acceptable Change, which basically asks: how much change is acceptable? Recreation activity may be compatible in some areas but incompatible in others because it threatens too much change to the spatial and temporal needs of wildlife and supporting natural processes.

“You know, I’m a white person. I feel like I need to do more to educate people. And it’s easy to say, “Welcome to Sky High. We’d like to acknowledge that we’re surrounded by Kwanlin Dün and the Ta’an Kwäch’än First Nation,” but for me, it’s just words. Something needs to be done.”

~ Jocelyne Leblanc
Partner/Office and Marketing Manager
Sky High Wilderness Ranch

EDUCATION AND INTERPRETATION

Traditionally, Indigenous peoples relied on education, versus rules and regulations, to reinforce norms about how to treat people, animals, and the environment. Today many KDFN citizens look to education and awareness as important tools to help mitigate the growing use pressures on the Fish Lake area. Education could take many forms. Trail user etiquette could be communicated via signage at parking areas and trailheads. KDFN could also lead a tourism operator and visitor education program that shares KDFN values and stories. The planning process itself can teach people about the area and the values it holds to so many people and animals.

“But for myself, I’ll go there for the rest of my days until I can, you know, hopefully be part of helping to make sure that the land is preserved and hopefully, this includes sharing the land with other user groups; because I’ve noticed recently that there’s a lot of people going up there, doing everything from ice fishing to kite skiing to, you know, just cross-country skiing, snowmobiling. Like, a lot of things are going on up there, and there needs to be some thought going into how we’re going to protect the land, because there is an impact being made there...”

~ Gary Bailie
KDFN Citizen and Founder, Kwanlin Koyotes
Ski Club

CHOOSING THE APPROPRIATE LEVEL OF DEVELOPMENT

Restoring broken connections to the Fish Lake area is a long-term priority of KDFN government and citizens. KDFN has expressed interest in developing new community infrastructure, such as a healing centre, gathering area and campground, as well as residential areas for citizens. YG may also wish to develop new lots in the area knowing that demand for country residential and recreational properties is very high from a rapidly growing Whitehorse population. Central to these discussions will be the prospect of new roads.

While some types of development could help manage visitors to the area (e.g., a campground could help contain visitors who may otherwise camp in the backcountry), development also has the potential to displace animals, habitat, and valued subsistence and recreation areas.

“When you look at the archaeological record...what you see is that land use and land use traditions on the lake were actually fairly consistent for thousands and thousands of years... So, when you change radically how you manage a landscape, that will bring new obstacles and challenges. So, we need to consider that this was a very conservatively used landscape in the past, and now, we’re bringing a lot of different land uses to the table in the modern era, which will be difficult to manage.”

~ Christian Thomas
Government of Yukon Archaeologist

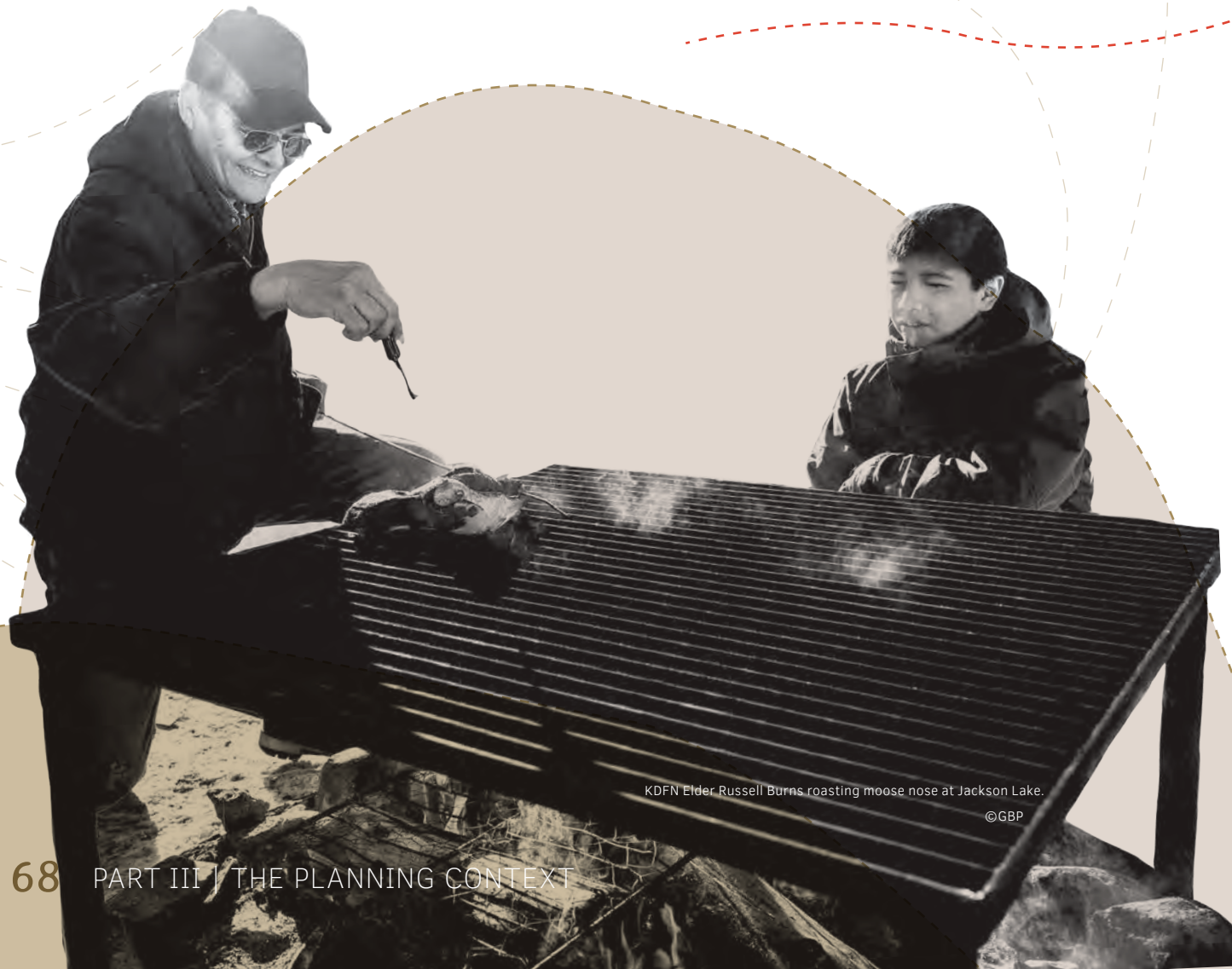
There are known wildlife corridors in the north end of the planning area, where land development and land use pressures are higher. Determining how much, and where, development should occur poses both practical (e.g., cost, servicing, terrain, sensitive habitats, etc.) and philosophical (e.g., reconciliation) challenges.

INDIGENOUS TOURISM

KDFN citizens have expressed an interest in getting more involved in tourism as a means of educating visitors, sharing their traditions, and creating new economic benefits for their people. A campground and tourism lodge with a visitor’s centre that showcases KDFN culture are two popular ideas that could be pursued. Existing tourism companies in the area could also benefit from incorporating more KDFN knowledge, culture and citizens into their operations. New and exciting partnerships and job opportunities could form from this.

COLLABORATION AND IMPLEMENTATION

Under the Land Claim Agreements, land use planning is intended to ensure that First Nation values and interests on non-Settlement Lands are incorporated into decision-making. KDFN and YG have committed to joint planning, but each party retains authority for approval and implementation of plan recommendations on their own lands. This may reinforce a “business as usual” approach that could undermine consistent and holistic land management practice across boundaries. These silos are reinforced by the fact that local area plans are advisory in nature and the resulting recommendations and policies are non-binding on each government. Mechanisms that build trust, commitment to implementation, cooperation and accountability may be worth exploring.



KDFN Elder Russell Burns roasting moose nose at Jackson Lake.

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“It’s important for the First Nations and the public to be engaged in a process like this, because different people bring different values to a discussion. So, there is no one resource or no one value that one person can bring to the table. So, it is important to gather as many perspectives on the management and the values at Fish Lake as is possible to come up with the best plan that is needed to ensure that everybody gets to enjoy that landscape.”

~ Christian Thomas
Government of Yukon Archaeologist

SETTING A GOOD PRECEDENT

Plans usually attempt to balance a diversity of interests and uses, and Fish Lake will be no exception. Meaningful consultation, engagement and collaboration with the many interests at the table will help to build trust in the process, and an appreciation for the complexity of the issues at hand. Setting a good precedent might mean that the public supports to cooperative planning and management and partnerships and participation are maximized. This would help future planning processes for other well-used wilderness areas around Whitehorse, which are likely to experience similar use pressures as the population grows.

FAIRNESS, EQUITY AND TRANSPARENCY

There may be expectations that the plan balances all interests and users in a fair and equitable manner. This expectation may apply not only to how Indigenous and non-Indigenous land users are treated, but also to different user groups, such as tourism operators and recreationists. For example, some tourism operators are concerned that restrictions will be placed on them but not on recreationists, not because their impact is different but because it is easier to manage a small group of companies than a large and diverse public audience. Transparency, open dialogue, respectful relationships and a willingness to come together will be needed from all parties to create a successful plan.

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APPENDIX A

Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING Respecting the development of a local area plan for the Fish Lake area

AMONG:

Kwanlin Dün First Nation as represented by the Department of Heritage, Lands and Resources (hereinafter referred to as the "Kwanlin Dün First Nation" or "KDFN")

AND:

The Government of Yukon as represented by the Department of Energy, Mines and Resources (hereinafter referred to as the "Yukon government" or "YG")

Being the Parties (collectively referred to as "the Parties") to this local area plan for the Fish Lake area

1. PREAMBLE

- 1.1. **WHEREAS** YG is responsible for local area planning on lands within its jurisdiction in Yukon, including private lands;
- 1.2. **AND WHEREAS** KDFN is responsible for local area planning on its Settlement Lands;
- 1.3. **AND WHEREAS** the Parties share an interest in developing a local area plan for the Fish Lake area;
- 1.4. **AND WHEREAS** the Parties recognize the benefits of entering into an agreement to provide for cooperative local area land use planning, in accordance with the provisions of Section 30 of the Kwanlin Dün First Nation Self-Government Agreement;

NOW THEREFORE the Parties agree as follows:

2. PLANNING AREA

- 2.1. The planning area for the Fish Lake Local Area Plan is shown on the map which is attached to and forms part of this Memorandum of Understanding as Appendix A.
- 2.2. The planning process will apply to privately titled lands, public lands, and KDFN Settlement Lands, but does not include Ta'an Kwäch'än Council Settlement Land parcel (TKC S-60B).

- 2.3. A portion of the planning area falls within the Traditional Territory of the Ta'an Kwäch'an Council (TKC). TKC has a long history of use and a site specific parcel within the planning area. TKC will be kept informed of major milestones throughout the planning process, and have opportunity to review and comment on key deliverables (including background report, draft and recommended local area plans). In addition, the Parties agree to work with TKC to ensure their interests and perspectives related to the Fish Lake area are addressed in the plan.
- 2.4. An administrative hold will be established within the planning area identifying the types of land use applications which can and cannot be considered while the plan is underway, as described in further detail in Appendix C of this Memorandum of Understanding.

3. PLANNING PRINCIPLES & OBJECTIVES

- 3.1. The following principles will apply when developing the plan:
 - 3.1.1. the principles of cooperation between the Parties (KDFN SGA 30.2.2);
 - 3.1.2. the well-being of ecosystems, biodiversity, and fish and wildlife populations is respected; and
 - 3.1.3. the process will embrace two ways of knowing (see Section 4 for further explanation).
- 3.2. The objectives of this collaborative local area planning process are to:
 - 3.2.1. develop and recommend a common land use plan for the Fish Lake area;
 - 3.2.2. promote coordinated land use within the planning area and minimize potential for conflict between land users;
 - 3.2.3. recognize and promote the history, heritage and culture of Yukon First Nation people in the Fish Lake area;
 - 3.2.4. understand and acknowledge past and present use of the planning area by Yukon First Nation people and other Yukon residents;
 - 3.2.5. balance the diversity of interests in the Fish Lake area and ensure all land users are fairly represented in the plan, including future generations;
 - 3.2.6. utilize the knowledge and experience of Yukon First Nation people and other Yukon residents in order to achieve effective land use planning;
 - 3.2.7. provide learning opportunities about Fish Lake environment, history and culture to enhance public awareness, appreciation and enjoyment of the planning area; and
 - 3.2.8. share information, knowledge and technical expertise between the Parties.

4. TWO WAYS OF KNOWING

- 4.1. Both Indigenous knowledge and western knowledge will be incorporated into plan development by integrating modern and traditional approaches to research, learning and communicating about the Fish Lake environment, history and culture. To establish a balanced and fair representation, Indigenous knowledge:
 - 4.1.1. will be given equal weight to western knowledge in the formation of this plan;
 - 4.1.2. will have access to equal resources, and will be released with the consent of KDFN to be shared among the Parties;
 - 4.1.3. will be rooted in an Indigenous context, and will not be used to supplement, bolster or validate western knowledge;
 - 4.1.4. will not require explanation beyond the Indigenous context from which it is rooted (will not require a western explanation); and
 - 4.1.5. will be presented as living, modern, contemporary knowledge.

5. PLAN CONTENT

- 5.1. The Fish Lake Local Area Plan shall include the following:
 - 5.1.1. a description of the planning area (geographic, historical, cultural, etc.);
 - 5.1.2. a description of land tenure and land users and associated values;
 - 5.1.3. a description of key land use issues;
 - 5.1.4. mapped information that may be associated with key issues to be addressed in the plan, including existing tenures, wildlife habitat, ecosystems, recreation potential, development suitability and limitations, etc.;
 - 5.1.5. relevant guidance from other existing plans which apply to the planning area;
 - 5.1.6. Indigenous knowledge including cultural, historical, and archaeological information on the indigenous history at Fish Lake;
 - 5.1.7. any additional relevant and available information;
 - 5.1.8. a description of public input received through the planning process;
 - 5.1.9. a land use map for the planning area with proposed land use designations and associated policies and management guidelines;
 - 5.1.10. strategies for plan implementation; and
 - 5.1.11. strategies for plan review, amendment and indicators of success.

6. STEERING COMMITTEE

- 6.1. A Steering Committee will be established to guide to planning process and assist the Parties in developing a draft plan for the Fish Lake area, as outlined in Fish Lake Local Area Plan Steering Committee Operating Procedures: Appendix B.
- 6.2. The Steering Committee shall be composed of three (3) KDFN representatives and three (3) Yukon representatives.
- 6.3. Planning staff from the Yukon and KDFN may participate as ex-officio members of the Steering Committee in a technical support capacity.
- 6.4. TKC Lands, Resources and Heritage staff may also participate as observers to the Steering Committee and in a technical support capacity.
- 6.5. The Steering Committee shall:
 - 6.5.1. make best efforts to coordinate the planning process and program of work to prepare a local area plan within two (2) years of Committee establishment;
 - 6.5.2. consider Indigenous knowledge, available scientific and technical information, and public input in the development of the plan;
 - 6.5.3. review and assist in the development of a communications and public consultation plan prepared for the planning process;
 - 6.5.4. review and assist in the development of draft plans as they are prepared; and
 - 6.5.5. recommend a local area plan to the Parties.

7. INFORMATION SHARING

- 7.1. The Parties agree that they shall exchange information necessary for the preparation of the plan in a timely manner and on a regular basis.
- 7.2. Indigenous knowledge may be shared subject to the agreement and permission of KDFN, or other Yukon First Nations as required including Ta'an Kwäch'än Council.

8. PLAN APPROVAL

- 8.1. The Steering Committee shall submit a recommended local area plan to the Minister of Energy, Mines and Resources, and the Chief and Council of KDFN for review and approval.
- 8.2. Each Party shall approve, reject or modify the recommended local area plan in accordance with Section 30.4 of the KDFN Self-Government Agreement.

- 8.3. The Parties will endeavor to reach consensus on a joint plan for the entire area, although each government reserves the right to proceed independently with a local area land use planning initiative, in accordance with Section 30.5 of the KDFN Self-Government Agreement.
- 8.4. The Parties will make the best effort to complete the plan within two (2) years of the establishment of the Steering Committee, or as otherwise agreed to by the Parties, subject to the availability of financial resources and personnel to prepare the plan.

9. PLAN REVIEW

- 9.1. The plan shall be reviewed at least once every ten (10) years following approval, subject to the availability of funding and personnel, or as otherwise agreed to by the Parties.
- 9.2. The plan may be reviewed earlier if deemed necessary (if both Parties consent), based on new or unanticipated events, or as a result of significant development proposals.

10. EFFECTIVE DATE

- 10.1. The Memorandum of Understanding comes into effect on the day of signing by the Parties.

11. TERM, TERMINATION, AND AMENDMENT OF THE MEMORANDUM OF UNDERSTANDING

- 11.1. Unless the Parties agree to extend it, the Memorandum of Understanding shall remain in effect until the completion of the plan.
- 11.2. The Memorandum of Understanding may be amended by written agreement of the Parties.
- 11.3. Any Party may withdraw from the Memorandum of Understanding by providing the other Party with thirty (30) days written notice of withdrawal.
- 11.4. Upon withdrawal of one Party, this Memorandum of Understanding shall be terminated.
- 11.5. If the plan is not completed within 2 years from the signing date of this Memorandum of Understanding, the land use prohibitions outlined in Section 2.4 (Administrative hold) may be reviewed and amended.

Appendix A - Fish Lake Planning Area

12. PLAN FUNDING

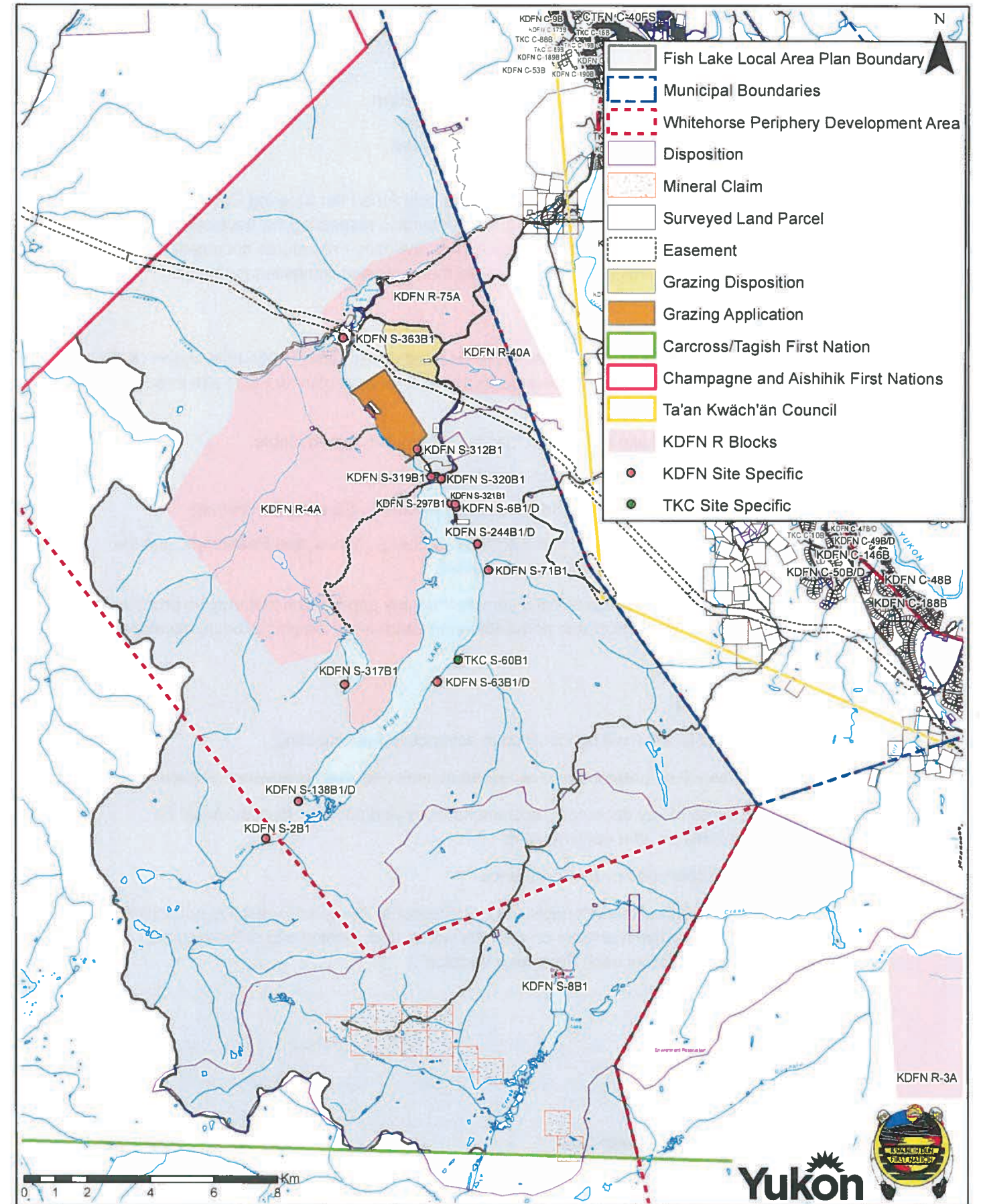
- 12.1. Yukon will support a planning consultancy contract(s) and costs associated with the planning process.
- 12.2. Unless otherwise agreed to by the Parties, the Parties will fund their respective technical support and data inputs.

[Signature]
 Greg Thompson, Director
 Department of Heritage, Lands and Resources
 Kwanlin Dün First Nation

March 12 2020
 DATE

[Signature]
 Manon Moreau, Assistant Deputy Minister
 Department of Energy, Mines and Resources
 Government of Yukon

March 20/20
 DATE



APPENDIX B:

Fish Lake Local Area Plan Steering Committee Operating Procedures

The composition and the responsibilities of the Fish Lake Local Area Plan Steering Committee (Committee) are described in the "Memorandum of Understanding respecting the development of a local area plan for the Fish Lake area". The purpose of this Operating Procedures document is to provide additional guidance regarding the conduct of the members and committee meetings.

1. Mandate

The role of the Committee is to guide the planning process and assist Kwanlin Dün First Nation (KDFN) government and the Yukon government in developing a draft local area plan for Fish Lake through a public process.

- 1.1. To ensure that the Fish Lake Local Area Plan is realistic, fair and equitable.
- 1.2. To promote an honest, inclusive and co-operative process.
- 1.3. To adhere to the Memorandum of Understanding (Section 6 - Steering Committee).
- 1.4. To forward the recommended plan to the Minister of Energy, Mines, and Resources, and the Chief and Council of KDFN for review and approval.
- 1.5. The Steering Committee may review and comment on any applications that may be proposed in the planning area on Settlement and non-Settlement Land, while the plan is being developed, as described in Appendix C.

2. Meeting Procedures

- 2.1. Meeting dates and location will be identified in advance of each meeting.
- 2.2. Meeting agendas will be prepared and circulated at least one week in advance of each meeting.
- 2.3. Meeting summaries of key decisions, recommendations and points of discussion will be prepared and circulated after each meeting.
- 2.4. Meetings may be convened by teleconference.
- 2.5. The Committee will strive to reach decisions by consensus. Where consensus is not achieved, the views of the respective members on a matter will be documented and referred to the respective senior officials of each Party for a decision.

3. Quorum

- 3.1. At least four of the six members of the Steering Committee must be present for valid transaction of business by the committee. Of these four, at least two appointees from each of the Parties must be present.
- 3.2. Members may participate in person or by teleconference.

4. Committee Members

The responsibility of an individual Committee member is as follows:

- 4.1. Keep informed about matters of relevance to the work of the Committee including the perspectives of the Parties on these matters and any public input received;
- 4.2. Participate fully in Committee meetings;
- 4.3. Review all relevant meeting materials prior to Committee meetings;
- 4.4. Attend meetings on a regular and punctual basis; and
- 4.5. Facilitate effective communication between the Committee, the Parties, and the public.

5. Secretariat Support

Secretariat support for the Committee will be provided by Yukon government and KDFN. Responsibilities will include:

- 5.1. Scheduling and arranging meetings;
- 5.2. Preparing materials to assist the Committee to carry out their work;
- 5.3. Preparing meeting summaries and distributing to Committee members (including technical staff from YG, KDFN and TKC) and follow-up on action items as required;
- 5.4. Responding to information requests;
- 5.5. Tracking Committee decisions for future reference and review;
- 5.6. Bringing issues to their respective governments for direction as required;
- 5.7. Providing technical and/or policy advice to the Committee as required;
- 5.8. Developing and managing public communications for review and approval by the Committee;
- 5.9. Working with TKC to ensure their interest and perspectives related to the Fish Lake area are addressed in the plan; and
- 5.10. With the involvement and advice of the Committee, hiring planning consultants, drafting documents, developing work plans and supporting the completion of the plan.

6. Non-member Participation

- 6.1. Committee members may request persons with specialized knowledge, skills or information about the planning area or the planning process to attend meetings in an advisory capacity.
- 6.2. TKC Lands, Resources and Heritage staff may also participate as observers to the Steering Committee and in a technical support capacity.

APPENDIX C:

**Administrative Hold Agreement within the
Fish Lake Local Area Plan Boundary**

BETWEEN:

The Government of Yukon, Department of Energy, Mines and Resources, the Land Management Branch, the Land Planning Branch and the Agriculture Branch.

AND:

The Kwanlin Dün First Nation, Department of Heritage, Lands and Resources.

hereinafter referred to as "Parties"

1. PURPOSE

The purpose of this Administrative Hold Agreement is to provide further clarity on an administrative hold to be established in the Fish Lake planning area by identifying the types of land use applications which can be considered while the planning process is underway.

2. SCOPE

The administrative hold will apply to all lands within the planning area, as shown in Appendix A of this Memorandum of Understanding.

The administrative hold will remain in place for 2 years or until the completion of the planning process. If the planning process takes longer than 2 years, the Parties agree to review the terms of this agreement two years from the signing date of the Memorandum of Understanding and then, if required, annually to identify any emerging needs or issues which may warrant a revision to the terms of the administrative holds.


The administrative hold does not apply to resource authorizations issued by Forest Resources Branch or Mineral Resources Branch.

Table 1. Administrative holds within the Fish Lake Local Area Plan boundary managed by the Government of Yukon.

EMR Branch	Type of authorization or disposition	Applications considered?	Additional notes
Land Management	Individual land application (rural residential, commercial/industrial, institutional)	No	
	Lot enlargement (rural residential, commercial/industrial, institutional)	Case by case	Lot enlargements will be considered only if they support the needs of the occupants of principal residences and are intended to resolve existing or emerging critical health and safety concerns such as water or septic replacement, or to adapt to changing slope stability or erosion affecting the structural stability of a dwelling or infrastructure related to human health and safety.
	Lease (commercial/industrial, outfitting concessions, water lot)	No	Public utility leases such as hydro or electrical may be considered.
	Gravel reserves (administrative reserves for granular resources)	Case by case	No new gravel reserves will be issued. Development within existing gravel reserves will be allowed.
	Quarry lease and permit	Case by case	Existing leases will be considered for renewal or reissue. Replacement quarry permits will be considered. Development of new quarry areas, for lease or permit, would not be considered.
	License of occupation	Case by case	Any licenses issued during development of the Fish Lake LAP will be reviewed following plan approval to ensure compliance with the plan.
	Planned lot development	No	
	Land use permit	Yes	
Land Planning	Private-land subdivision	Yes	
	Zoning amendments	Yes	Application driven rezoning applications for privately titled lands may be considered. Upon completion of a draft plan, or two years from the signing date of the Fish Lake Memorandum of Understanding (whichever occurs first), the Parties will revisit how rezoning applications will be evaluated for the remainder of the planning process.
Agriculture	Individual land applications	No	
	Lot enlargement	No	
	Grazing rights agreements (grazing agreements)	Case by case	Existing grazing rights agreements will be considered for reapplication and renewals. New grazing rights agreements would not be considered.
	Planned agricultural lot development	No	

Table 2. Administrative holds within the Fish Lake Local Area Plan boundary managed by Kwanlin Dün First Nation.

KDFN Department	Type of authorization or disposition		Applications considered?	Additional notes
Heritage, Lands and Resources	Existing Residents	Allocation (traditional use, residential)	Yes	Applications to grant an interest in Kwanlin Dün First Nation Settlement Land for existing residents will be considered while the plan is in development.
		Leases	Yes	
	Expressions of interest	Allocation (traditional use, residential)	Yes	Applications to grant an interest in Kwanlin Dün First Nation Settlement Land for existing expressions of interest holders will be considered while the plan is in development.
		Leases	Yes	




Greg Thompson, Director
Department of Heritage, Lands and Resources
Kwanlin Dün First Nation

March 12 2020
DATE




Jerome McIntyre, Director
Land Planning Branch, Department of Energy, Mines and Resources
Government of Yukon

March 16, 2020
DATE



Colin McDowell, Director
Land Management Branch, Department of Energy, Mines and Resources
Government of Yukon

March 17/2020
DATE



Matt Ball, Director
Agriculture Branch, Department of Energy, Mines and Resources
Government of Yukon

March 18, 2020
DATE

APPENDIX B

Species of Conservation Concern

Species of conservation concern known to occur in the fish lake local area plan boundary

Common Name	Scientific Name	Species at Risk Act (Yukon Status) ²	COSEWIC (Yukon Status) ³	CESCC 2016 (Yukon Status) ⁴	Wildlife Act (Yukon) ⁵
MAMMALS					
Grizzly Bear	<i>Ursus arctos</i>	Special Concern	Special Concern	Vulnerable	-
Woodland Caribou Northern Mountain Population	<i>Rangifer tarandus caribou</i>	Under consideration for Status Change	Special Concern	Vulnerable	-
Wolverine	<i>Gulo collars</i>	Special Concern	Special Concern	Vulnerable	-
Collared Pika	<i>Ochotona collaris</i>	Special Concern	Special Concern	Vulnerable	-
BIRDS¹					
American Kestrel	<i>Falco sparverius</i>	-	-	Imperiled	-
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Threatened	Imperiled	-
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	Not at Risk	Critically Imperiled	-
Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	Vulnerable	-
Golden Eagle	<i>Aquila chrysaetos</i>	-	Not at Risk	Vulnerable	-
Greater Scaup	<i>Aythya marila</i>	-	-	Imperiled	-
Greater Yellowlegs	<i>Tringa melanoleuca</i>			Vulnerable	-
Gyr Falcon	<i>Falco rusticolus</i>			Vulnerable	Specially Protected
Killdeer	<i>Charadrius vociferus</i>			Vulnerable	-
Lesser Yellowlegs	<i>Tringa flavipes</i>	Under consideration for Status Change	Threatened ⁶	Apparently Secure	-
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	-	-	Vulnerable	-
Mountain Bluebird	<i>Sialia currucoides</i>	-	-	Vulnerable	-

Common Name	Scientific Name	Species at Risk Act (Yukon Status) ²	COSEWIC (Yukon Status) ³	CESCC 2016 (Yukon Status) ⁴	Wildlife Act (Yukon) ⁵
BIRDS					
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Threatened	Special Concern	Vulnerable	-
Peregrine Falcon (anatum)	<i>Falco peregrinus anatum</i>	-	-	Vulnerable	Specially Protected
Red-necked Phalarope	<i>Contopus cooperi</i>	Special Concern	Special Concern	Vulnerable	-
Red-throated Loon	<i>Gavia stellata</i>	-	-	Vulnerable	-
Rusty Blackbird	<i>Euphagus carolinus</i>	Special Concern	Special Concern	Vulnerable	-
Surf Scoter	<i>Melanitta perspicillata</i>	-	-	Vulnerable	-
Townsend's Warbler	<i>Setophaga townsendi</i>	-	-	Vulnerable	-
Trumpeter Swan	<i>Cygnus buccinator</i>	-	Not at Risk	Apparently Secure	Specially Protected
Tundra Swan	<i>Cygnus columbianus</i>	-	-	Vulnerable	-
PLANTS					
Hooker's Oatgrass	<i>Avenula hookeri</i>	-	-	Imperiled	-

Notes:

¹ The bird list is based on consolidated bird detections documented on eBird (2021) within the FLLAP area, Wildlife Key Areas for Golden Eagle and Gyrfalcon (Government of Yukon 2021) and Yukon Conservation Data Centre (2021) Information.

² Federal *Species at Risk Act*. Species at Risk Registry (2021).

³ Committee on the Status of Endangered Species in Canada (2021). Definitions provided below.

- a. Special Concern: A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats
- b. Threatened: A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
- c. Not at Risk: A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

⁴ Canadian Endangered Species Conservation Council (2016). Status provided only for those species that are vulnerable or worse (i.e., "apparently secure" and "secure" species that have been documented in the area are not necessarily listed). Definitions are provided below.

- a. Critically imperiled: At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
- b. Imperiled: At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- c. Vulnerable: At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- d. Apparently Secure: At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

⁵ *Wildlife Act* (Yukon). O.I.C. 2012/84

⁶ Lesser Yellowlegs was listed as Threatened by COSEWIC in November 2020.

APPENDIX C

Development Potential Methodology

MEMORANDUM



TO: Jane Koepke, Groundswell Planning	FROM: Forest Pearson, P.Eng., Geological Engineer
RE: Fish Lake Local Area Plan Development Potential Mapping	PROJECT No.: 2035216
	DATE: 7/1/2021

The land development capability evaluation identifies areas that may contain potentially suitable sites for light development (residential, commercial and/or light industrial) and areas of aggregate resource potential. This high-level evaluation was developed by interpreting the existing 1:50,000 surficial geology mapping to identify terrain types and landform areas that may have suitability. This classification was then further refined by a slope analysis to both identify areas of relatively mild topography and screen out steep areas. The slope analysis was generated from the 30 m Canadian Digital Elevation Model, which is suitable for a background study of this scale. Interpretation was complemented by the project team’s strong and extensive local knowledge of the study area.

Note that the results of the development potential mapping identifies area where there is higher potential for locating sites suitable for light development based on physical attributes. This is a high-level assessment. Thus, further assessment and on-site investigation is required to identify specific sites and confirm site conditions are suitable for the desired use. Conversely, there is potential that suitable sites can be found within areas of lower potential, however the likelihood is lower in those areas. Finally, the development potential does not consider other factors such as environmental, social, access, climate or other values; it is based purely on the physical (geological) landscape.

Development potential classification is based on mapped surficial materials, landforms, and applicable geomorphic processes. Existing 1:50,000 scale surficial geology mapping provided by Yukon Geological Survey (Bond et al, 2005¹) was classified based on polygon attributes in a GIS environment. Polygons with desired material type and acceptable geomorphological processes were identified for their development potential, described as follows. Once the initial classification was completed, these polygons were intersected with slope classification polygons to modify the terrain-based development potential with slope conditions.

The classification is as follows:

- **Good Development Potential** – areas with few to little physical limitations to development. Within these areas, there may be sporadic areas of adverse (steep) topography, but generally most of the area has relatively mild topography (<5% slope). Classification is polygons mapped with well drained soils (fluvial (F) or glaciofluvial (F^G)) as the primary or secondary terrain classification
- **Good Development Potential with Some Areas of Constraints** – these are areas with relatively good development potential, mild slopes, but may have more constraints due to less desirable soils, such as tills (M) as the primary or secondary terrain type.
- **Moderate Development Potential** – these are areas with some development potential, but likely face terrain challenges associated with steep topography and near-surface bedrock that may limit development or make development difficult and/or more costly. These will be areas with good development potential, but with steeper slopes (between 5 and 15%)

¹ Bond, J.D., S. Morison and K. McKenna, 2005: Surficial geology of Whitehorse (1:50 000 scale). Yukon Geological Survey, Geoscience Map 2005-7

- **Poor Development Potential** – these are areas that face multiple terrain challenges that would make development difficult and costly. Classification includes (but not limited to) any polygon mapped bedrock (R) as the primary soil type, steep slopes (>15%), permafrost, organic (wetland soils) or prone to flooding.

Aggregate potential is an overlay interpretation that identifies where there is higher potential for locating substantive gravel resource. Specifically, these are polygons with glaciofluvial (F^G) as their primary terrain classification, regardless of slope or other geomorphological processes. Areas with existing aggregate resource development are also included.



Joe Migwans and a youth pack firewood.

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Yukon