Summary of Existing Traditional Knowledge for the Inuvik to Tuktoyaktuk Highway Study Area

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Prepared by:
KAVIK-STANTEC INC.
Inuvik, NT and Calgary, Alberta

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Abbreviations

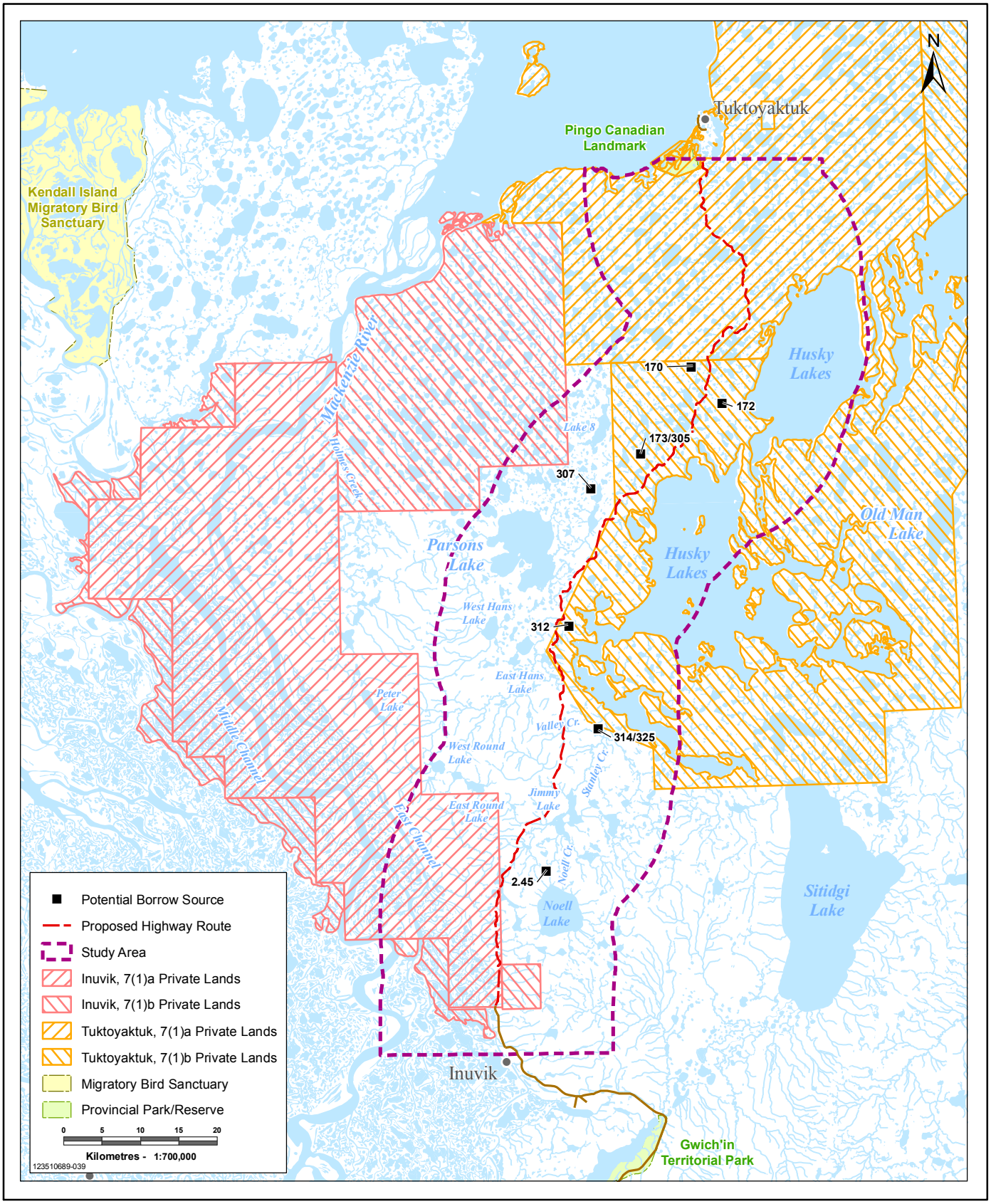
DFO ..... Department of Fisheries and Oceans
EISC ..... Environmental Impact Screening Committee
HTC ..... Hunters and Trappers Committee
ISR ..... Inuvialuit Settlement Region
TEK ..... Traditional Ecological Knowledge
TK ..... Traditional Knowledge
TLU ..... Traditional Land Use

1 INTRODUCTION

KAVIK-STANTEC was contracted by the Department of Transportation, Government of the Northwest Territories to compile and collect Traditional Knowledge (TK) in support of an application for the proposed Inuvik to Tuktoyaktuk all-weather road. A component of the TK compilation was a review of existing published TK for the general Program Area.

The Environmental Impact Screening Committee Guidelines defines Traditional Knowledge as "the knowledge, innovations and practices of the Inuvialuit and other aboriginal peoples embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity." (EISC 2011). Therefore TK incorporates a number of components which can be captured under two broad categories; Traditional Ecological Knowledge (TEK) and Traditional Land Use (TLU). TEK refers to the shared and collective knowledge of a community or people about the characteristics of the general environment and includes both historic and current knowledge about resource distribution, populations. schedules for resource harvesting, species specific habitat, weather, navigability of trails, landmarks, ice conditions and other environmental characteristics (Fedirechuk et al. 2008). TLU refers to how the people used and still use the land and its resources. TLU may include identification of trails, camps, subsistence resource use areas, cultural sites, burial and other places (Fedirechuk et al. 2008).

A TK study was conducted in the late 1990s (Rescan 1999) in support of an earlier assessment of the proposed Inuvik to Tuktoyaktuk all-weather road. Unrelated TK studies which included all or part of the current program are a (Figure 1-1) for the Inuvik to Tuktoyaktuk all-weather road have also been conducted in the past. This report provides a summary of the TK review.



Inuvik to Tuktoyuktuk Highway Study Area

Base Data provided by Government of Canada; Private Land data provided by the Joint Secretariat

PREPARED BY KAVIK-STANTEC

PREPARED FOR Northwest Territories Transportation

FIGURE NO. 1-1

Last Modified: July 5, 2012 By: jpetro

2 METHODS

In addition to TK collected in the past specific to the Inuvik to Tuktoyaktuk all-weather road, other TK studies were identified through internet searches and use of the Arctic Science and Technology Information System (ASTIS) database. For TK studies which had a larger geographic scope than the Inuvik to Tuktoyaktuk all-weather road Program Area, only the information pertinent to the Program Area was used in this summary.

3 RESULTS

The results presented in this report are divided into five environmental categories and one category pertaining to concerns, comments and suggested mitigation related to construction and operation of an all-weather road between Inuvik and Tuktoyaktuk. Environmental categories include the general environment, vegetation, mammals, birds, and fish.

3.1 General Environment

It was reported in ICC et al. (2006) that weather is becoming more difficult to predict and changes to the environment are happening quicker now. Break-up is occurring earlier while freeze-up is occurring later. In general winters are becoming shorter and warmer with fewer days of temperatures of -40^{o} Celsius or lower. Ice and snow in the spring-time now melts faster. The air feels damper whereas it used to be much dryer. Winds from the west are the most prevalent.

The changing climate is affecting the land (ICC et al. 2006). There is now more erosion of river banks and slumping. Some lake shores have breached causing the lakes to drain. Creek levels have been observed as being lower now than in the past. Some creeks such as creeks flowing into Noell and Jimmy Lakes now remain open all year round. Melting of the permafrost has also been observed (ICC et al. 2006).

3.2 Vegetation

Little traditional knowledge has been obtained regarding vegetation. Willow growth in the delta area is said to have accelerated (ICC et al. 2006). Berry harvesting is still an important fall past-time for residents. In the Husky Lakes area the most common types of berries harvested are cloudberry, crowberry, blueberry and cranberry (ILA 2011).

3.3 Mammals

3.3.1 Caribou

Caribou is a staple food item in the diets of community members of Inuvik and Tuktoyaktuk (ICC et al. 2006). The proposed Inuvik to Tuktoyaktuk road passes through the ranges of both the Cape Bathurst and Bluenose West caribou herds (Inuvik 2008; Tuktoyaktuk et al. 2008).

Caribou in the study area are continually moving, grazing when food is available. The caribou undergo seasonal migrations. These migration routes may vary between years allowing the land to replenish itself. Generally Bluenose West caribou migrate from the east in the fall or in November and December and remain around the Tuktoyaktuk area until about March when they head east towards Paulatuk. The Bluenose West caribou herd winter range is identified in the community planning area 701E (Inuvik et al 2008; Tuktoyaktuk et al. 2008). Some stragglers will stay in the study area throughout the summer (ICC

et al. 2006). It was reported that the main feeding area for caribou was along the shore of Husky Lakes and that the caribou migrate along the shore and not along higher ground where there is less food available (Rescan 1999).

Harvesting of caribou can occur in the study area at any time of the year when animals are available (Inuvik et al. 2008, Tuktoyaktuk et al. 2008). Community planning area 302C, 306C, 309C and 315 identifies spring, summer, fall and winter caribou harvesting areas (Tuktoyaktuk et al. 2008). Within the Program Area, planning areas 302C and 315C includes the area just south of Parson's Lake to Tuktoyaktuk; areas 306C and 309C includes a small area around the community of Tuktoyaktuk, Young male caribou are preferred for harvesting (ICC et al. 2006). Fall and winter were said to be the best times to harvest caribou as this is when the meat is better and has more fat. During spring and winter the main harvesting area is over the northern half of the study area while in summer and fall the harvest area is generally more restricted to closer to the community of Tuktoyaktuk in the northern edge of the study area (Tuktoyaktuk et al. 2008). Hunters from Tuktoyaktuk typically harvest caribou from northwest of Husky Lakes to the Mackenzie Delta. Inuvik hunters generally harvest in an area southwest and west of Parsons Lake. Harvesting of caribou can occur in the study area at any time of the year when animals are available (Inuvik et al. 2008, Tuktoyaktuk et al. 2008). Hunting of caribou is now banned around Husky Lakes (ILA 2011).

It was reported that many thought the caribou population was healthy although some said the numbers have been decreasing since the 1980s. One hunter was reported as saying that groups of caribou are smaller than in the past (ICC et al. 2006). In the summer caribou use coastal areas or areas of high ground to avoid mosquitoes. Bull caribou were reported as being healthiest in August and September before rutting season while cows were healthiest in November and December. One hunter reported that caribou are not as healthy as they were 15 years ago and that there were more white spots found on the liver and lungs now (ICC et al. 2006). In general caribou are healthier when there are cool summers as compared to when there are hot summers which is associated with more mosquitoes (ICC et al. 2006).

3.3.2 Wolves

Wolves are closely tied to caribou with the wolves following the caribou on their migrations. During TK interviews for the Mackenzie Gas Project one interviewee commented "Where there is caribou, there are wolves" (ICC et al. 2006).

Hunting of wolves is primarily conducted in the winter time. The wolves are hunted for their pelts which are sometimes used in clothing. Some hunters from Tuktoyaktuk travel the Husky Lakes trail to Hans Bay through to Parsons Lake and to the Mackenzie River to hunt wolves. In general it was reported that wolves are hunted anywhere in the ISR and hunting is usually conducted while harvesting other species such as wolverines or grizzly bears (ICC et al. 2006). The hunting of wolves may occur anytime between September and May although most harvesting occurs from November to March (Joint Secretariat 2003).

Denning is reported to occur around the Parsons Lake area and near creeks. Wolves become sexually mature around 2 years of age and are reported to have between 2 to 9 pups in a litter (Tuktoyaktuk et al. 2008). The average age of an adult wolf is 3 years old with the oldest observed wolf being 12 years of age. Wolves have been seen fishing in creeks and streams in the Parsons Lake area (ICC et al. 2006).

3.3.3 Grizzly Bears

Grizzly bears are often seen in association with caribou, wolves and foxes. Grizzly bears are also found in areas where there are abundant number of fish, such as Parsons Lake, Holmes Creek and Pete's Creek in the fall. Grizzly bears are found from Qikuryuaq to Hans Bay, southeast of Hans Bay to Parsons Lake and south of Iqalussaaq (ICC et al. 2006). Grizzly bears have large home ranges: females have home ranges of approximately 2000 km² and males approximately 7000 km³ (Inuvik et al. 2008).

Grizzly bears den from October to May (Inuvik et al. 2008). In ICC et al (2006) hunters from Tuktoyaktuk indicated grizzly bear dens in the big hills close to Parsons Lake while an Inuvik hunter indicated bear dens can be found in the area west of Sitidgi Lake northwest to the coast of Beluga Bay. Other hunters stated grizzly bear dens can be found all over the Program Area. Grizzly bears can be very aggressive and dangerous when they come out of their dens. They will hunt ravenously and cache carcasses for later consumption. Some hunters felt that grizzly bears were becoming more aggressive and dangerous (ICC et al. 2006).

Grizzly bears breed in June and July (Inuvik et al. 2008). Grizzly bears have one to two cubs (ICC et al. 2006) although sometimes 3 cubs have been observed (Inuvik et al. 2008). Cubs emerge in spring when the water begins to flow or when the mosquitoes emerge (ICC et al. 2006). There will be more grizzly bears if the caribou are plentiful. In ICC et al. (2006) hunters commented that there has been an increase in grizzly bear numbers with a corresponding decline in their food, in particular ground squirrels. Some hunters felt the increase in grizzly bears was due to the increase in caribou. One hunter thought grizzly bear populations may decline with the decline in their food source such as ground squirrels. Grizzly bears feed on caribou, mice, ground squirrels and fish (ICC et al. 2006).

Grizzly bears were traditionally hunted for food and their hides which were used as mattresses. Generally Inuvialuit do not harvest grizzlies for food anymore, instead hunters get tags to use in taking clients on sport hunts. Grizzly bears are generally hunted in winter and spring (ICC et al. 2006; Inuvik et al. 2008).

Grizzly bears are known to be sensitive to traffic and are not seen close to the ice roads. It was also said that the use of helicopters negatively affects bears and may scare them away from their normal range (ICC et al. 2006).

3.3.4 Black Bears

Black bears are not discussed in TK studies for the Program Area to the same extent as grizzly bears. Black bear numbers have been said to have increased ICC et al. 2006). They are now found around Husky Lakes but were not previously seen in this area. Some individuals felt that they are a nuisance as they break into cabins. Black bears are said to den in the delta and hibernate through the winter (ICC et

al. 2006). Denning occurs the same time as grizzly bears from October to May (Inuvik et al. 2008). Some hunters say the black bear is tastier than the grizzly bear (ICC et al. 2006).

3.3.5 Wolverine

Wolverine is an important fur bearing animal trapped by community members of both Inuvik and Tuktoyaktuk and are also said to be important for maintaining balance in nature (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). The wolverine was considered by some to be the counterpart to the grizzly in that there movements are similar. Although wolverines were said to be found in many places some areas identified by hunters included, Husky Lakes, North Storm Hills, Zed Lake and Parsons Lake. Wolverines are known to be able to travel long distances in a day (ICC et al. 2006). Wolverine will use caves, rocks, crevices, fallen logs, holes in snow and burrows for shelter (Inuvik et al. 2008; Tuktoyaktuk et al. 2008).

Wolverine breed in March through May and generally has 1-2 young but can have up to 5 young. The young leave the mother in the fall time (Inuvik et al. 2008; Tuktoyaktuk et al. 2008).

Hunting for wolverines is often conducted in the winter and at the same time as hunting for other furbearers such as wolves and foxes. Community planning area 314C identifies the winter harvesting area for wolverine which includes all of the Program Area from Noel Lake to Tuktoyaktuk (Tuktoyaktuk 2008). Some harvesters have indicated that wolverines as well as some other furbearers are becoming harder to find. Wolverines have up to two young which are born in June or July (ICC et al. 2006).

3.3.6 Other Fur Bearing Animals

Other fur bearing animals discussed in traditional Knowledge studies include lynx, fox, muskrat, beavers, mink, martin, otter, ermine and ground squirrels (Inuvik et al. 2008; ICC et al. 2006; Tuktoyaktuk et al. 2008).

Lynx are found in areas of rivers and their tributaries, preferring areas with trees and rabbits. Although lynx are widespread they were said to be plentiful in the Inuvik area (ICC et al. 2006). Population cycles for lynx are closely connected to rabbit population cycles: when rabbits are plentiful then lynx populations increase. Lynx are also known to feed on ptarmigan and muskrats. Lynx have their young from June to August and it is said that the young stays with the mother for a long time (ICC et al. 2006). Lynx are highly valued for their fur and as food (Inuvik et al. 2008; Tuktoyaktuk et al. 2008).

There are coloured and white (arctic) foxes in the Program Area. Coloured foxes are found anywhere but are more common in the area of the tree line. White foxes are found along the coast (ICC et al.2006). Fox populations can be unpredictable from year to year. It has been stated that they follow a four year cycle which depends on the cycles of lemmings and rabbits Inuvik et al. 2008; Tuktoyaktuk et al. 2008). There are a lot of coloured foxes between Pete's Creek and Holmes Creek. Foxes have been seen pulling fish from creeks around Parsons Lake (ICC et al. 2006). Foxes are harvested for their fur but are not trapped as often anymore. Fox pelts are at their prime if harvested during the winter months (ICC et al.2006). Coloured foxes den in May and can have between 1- 13 pups (ICC et al. 2006). White foxes may have up to 20 pups (Inuvik et al. 2008; Tuktoyaktuk et al. 2008).

Beavers are harvested for their fur between October and June but traditionally mostly in the spring. Beavers preferred habitat is typically lakes and streams along the delta ((ICC et al. 2006; Inuvik et al. 2008; Tuktoyaktuk et al. 2008) but people feel that populations are increasing in numbers and their range is moving further north (ICC et al. 2006). Traditional Knowledge interviewees have suggested that the increase in the numbers of beavers has led to changes in river and creek flows and drainages leading to alterations in fish distribution. Beavers have 3-4 young every spring (ICC et al. 2006).

Muskrat population numbers have been said to be low, having been this way over the past 25-30 years. Muskrats are mainly trapped in the delta but some are also trapped between Inuvik and Tuktoyaktuk (ICC al. 2006). Muskrat are harvested for their fur but also occasionally as a food resource (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Harvesting generally begins in March and continues through into May. More muskrats are harvested by residents of Inuvik than Tuktoyaktuk. Muskrats mostly live and feed in the water and spend little time on land. They feed on vegetation from the bottom of lakes. In the winter, muskrats build houses which include what is called a push-up as it sticks above the surface of the ice on lakes (ICC et al. 2006). Some community harvesters have said climate change is affecting muskrat populations. One example given is lakes breaching more often. When a lake breaches muskrat habitat is lost. Muskrats have a population cycle of 5-7 years (ICC et al. 2006). Muskrats give birth from mid-June to mid-August and can have more than one litter per year (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Litters can range from 6-17 young (ICC et al. 2006) but more typically litter size ranges from 6-8 young (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Cold, low snow winters can negatively affect muskrat populations (ICC et al. 2006).

Snowshoe hare (rabbits) are an important component of the food chain. They are used for both food and their skins. It was said that when caribou was scarce people had to rely on hare for food. Hunting for hares generally occurs in winter, spring and fall (ICC et al. 2006).

Population levels of other fur bearing animals are not well known. Mink and martin are harvested in winter from November through January. Otters were thought to be increasing in numbers as some creeks do not freeze to the bottom anymore due to climate change. Ground squirrels are sometimes harvested for their fur (ICC et al. 2006).

3.4 Birds

Birds in the ISR are generally considered healthy with no diseases being observed. General observations indicated that there are fewer song birds but more birds of prey (ICC et al. 2006).

3.4.1 Waterfowl (geese, ducks, swans and loons)

Waterfowl are used as a food source and the feathers are used as filling in clothes such as in parkas (ICC et al. 2006).

Spring harvest time for waterfowl such as geese generally starts in May and is an important family time. Geese are also harvested in the fall (ICC et al. 2006). Spring goose harvesting areas are identified under Planning Area 304C and within the Program Area include the coastal area around Tuktoyaktuk and Husky Lakes (Tuktoyaktuk et al. 2008). Geese are also harvested in the vicinity of Parsons Lake (ICC et

al. 2006). Fall harvesting is mainly in coastal areas in the vicinity of Tuktoyaktuk (Tuktoyaktuk et al. 2008) Canada geese and yellow-legs (white-fronted geese) appear in the ISR first followed by snow geese (ICC et al. 2006). Brant gee se are also known to occur in the area (T uktoyaktuk et al. 2008) G eese migrate throughout the ISR ho wever migration patterns were said to hav e changed with more geese now flying east ove r Hu sky La kes. Can ada a nd sno w ge ese mi grate south to their wi ntering grounds in e arly September (Inuvik et al. 2008; Tuktoyaktuk et al. 2008).

Ducks commonly found in the area include mallards, pintails, widgeon and long-tailed duck (formerly old squaw) (Inuvik et al. 2008; Tuktoyaktuk et al. 20 08). Ducks migrate around the same time as geese. It has been reported that the ir migration routes h ave also changes like tho se of gee se (ICC e t al. 2006). Ducks are g enerally foun d a round th e la rger la kes. M oulting occu rs d uring the summer period. Harvesting can occur throughout the Program Area (ICC et al. 2006).

There are two types of swans which can be found in the area: the tundra swan which is the most common swan species; and. the tru mpeter swan which are seen only occasionally (ICC et al. 2006). Swans nest in pairs and do not congregate to nest the way ge ese do. Swans can be found on lakes between Inuvik and the coast (ICC et al.2006). Swans will lay betwee n 2-6 eggs (average 5) in June (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). The swan s will stay in the vicinity of their nests until the fall migration in September (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Moulting occurs around the second week of July. In August/September young swans start flying (ICC et al. 2006). Community members have commented that some swan populations are decreasing while others remain the same or increasing (ICC et al. 2006). Swans are h arvested both for food an d their feathe rs which are use d in clothi ng. Swan is often eaten during special occasions (ICC et al.2006).

Loons are not generally harveste d. Lo ons arrive in May and lay 1-2 e ggs in June on small islands in lakes (ICC et al.2006; Inuvik et al . 2008; Tuktoyaktu k et al. 2008). Different speci es of loo n are said to use similar habitats (Inuvik et al. 2008; Tuktoyaktuk et al. 2008).

3.4.2 Sandhill Cranes

Sandhill cranes arrive in the ISR around the end of April/early May. before the snow geese arrive. They lay 1-2 eggs around the middle of M ay which hatch in mid-June (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). San dhill crane s can be found around th e Husk y Lakes area. althou gh they can p otentially be found throughout the ISR. They are occasionally harvested for food but only during the spring (ICC et al. 2006).

3.4.3 Birds of Prey (eagles, hawks, falcons and owls)

Golden eagles are the most common eagle in the area although more bald eagles are now being reported (ICC et al. 2006). It has been said that eagle populations have been increasing and appear to be moving further north as the clim ate is wa rming. Eagles nest around the tree line a nd Husky Lakes (ICC et al. 2006).

There is little publi shed TK on ha wks. Ha wks a re said to nest along th e tree line (ICC et al. 2006). Rough-legged ha wks lay 2-5 e ggs a nd fee d o n l emmings and g round squirrels (Inuvi k et al. 20 08; Tuktoyaktuk et al. 2008).

Peregrine falcons and gyrfalcons may be found in the Program Area. Both species nest in cliffs and the gyrfalcon may also nest in trees. The peregrine falcon mainly feeds on small birds while the gyrfalcon feeds mainly ground squirrels, ptarmigan and sometimes hare (Inuvik et al. 2008; Tuktoyaktuk et al. 2008).

There are several species of owl that can be found in the area. Most snowy owl migrate to the region in April although some may be year- long residents (Inuvik et al. 2008). Snowy owls make their nests on elevated ground and lay 5 – 10 eggs in May. Snowy owl populations are cyclic with less offspring being produced when there is less prey to feed on (ICC et al. 2006). Snowy owls are edible and were eaten in the past (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). The claws of owls can make good fish hooks (ICC et al. 2006).

3.4.4 Other Birds (Ptarmigan, ravens, whiskey jacks, snow buntings etc.)

Willow ptarmigan can be found throughout the Program Area while rock ptarmigan are mainly found along the coast. It is reported that there are lots of ptarmigan on the trail from Tuktoyaktuk to Parsons Lake (ICC et al. 2006). Males will stay in the area all winter. Ptarmigan bunch-up in the fall and winter. In the spring the ptarmigan pair-up to breed. Willow ptarmigan lay 5-10 eggs while rock ptarmigan lay between 6-15 eggs (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Ptarmigan populations have been commented on as being cyclic in nature with populations fluctuating yearly. Ptarmigan feed on willow buds, pebbles, berries and winter willows. Predators of ptarmigan include eagles, hawks, owls, falcons, lynx and fox (ICC et al. 2006). Ptarmigan are harvested are said to be a well-liked food source (Inuvik et al. 2008; Tuktoyaktuk et al. 2008) but are not said to be an important food source (ICC et al. 2006).

Ravens live in the study area all year round. Ravens nest in trees (ICC et al. 2006).

Snow buntings arrive in March/April. There are differing comments on song bird populations. Some have said that there are now fewer song birds while others say there are more (ICC et al. 2006).

3.5 Fish

Fish are an important component of the diet to the residents of Inuvik and Tuktoyaktuk. Much of the Program Area is within the special lands designated area 704C “Fish and Lakes” which encompasses important fish harvesting areas for residents of Inuvik and Tuktoyaktuk (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Most of the fish species harvested spawn every year upon reaching maturity; however. some species only spawn every 2-3 years. Juvenile fish may be found in any watercourse or waterbody regardless of its size (ICC et al. 2006). Noell Lake, Parsons Lake and Husky Lakes are commonly referred to as important fishing areas (ICC et al. 2006, Inuvik et al. 2008; Tuktoyaktuk et al. 2008), Jimmy Lake is also important for fish harvesting (Kiggiak-EBA 2011). Creeks where fishing has previously occurred includes Jimmy Creek, Trail Creek, Hans Creek and Zed Creek (Kiggiak-EBA 2011)

3.5.1 Whitefish (broad whitefish, lake whitefish, ciscoes and inconnu)

When commenting on whitefish, residents of Inuvik and Tuktoyaktuk are generally referring to broad whitefish. Lake whitefish are often referred to as crooked-backs or humpbacks. Least and Arctic ciscoes are generally referred to as herring although least cisco are also sometimes referred to as big-eyed herring. Inconnu are commonly referred to as coney (ICC et al. 2006).

Broad and lake whitefish are widely distributed throughout the Program Area. In the springtime around break-up some broad whitefish move into bigger lakes while others are migrating out from these lakes. There are also broad whitefish migrations into lakes in August and September. The streams on Tuktoyaktuk Peninsula which whitefish use to migrate between different systems are said to be important fish habitat (Inuvik et al. 2008). Broad whitefish were said to spawn in creeks and rivers during October or November where there is fast water (ICC 2006); however. harvesters have also reported catching crooked back (lake whitefish) that are full of ripe eggs (Tallman and Reist 1997). Lake whitefish are said to spawn earlier than the broad whitefish with spawning occurring in September or early October. Noell Lake is said to contain large lake whitefish (ICC et al. 2006).

Ciscoes (no species given) are captured in Husky Lakes. Inconnu are known to occur in Parsons Lake and Husky Lakes. All whitefish species are mainly harvested during the spring and fall (ICC et al. 2006).

3.5.2 Lake Trout

Lake trout are generally harvested during the spring and fall. Husky Lakes has large lake trout and are said to be of both freshwater and marine forms (ICC et al. 2006). Lake trout mainly feed on cisco, smelt, sticklebacks and sculpin although in some lakes they feed on plankton and crustaceans (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Lake trout in Husky Lakes are often found with their stomachs full of herring (ICC et al. 2006). Lake trout are fall spawners and spawn typically on shoals in lakes or shores of windswept islands (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Lake trout spawn within Husky Lakes (Kiggiak-EBA 2010). Lake trout are said to be smaller in Parsons Lake and Zed Lake (ICC et al. 2006).

3.5.3 Burbot (Loche)

Burbot can be found in lakes and creeks throughout the Program Area. In lakes burbot are generally a greenish colour except in Noell Lake where they tend to be blackish in colour. No explanation was given for the colour difference in Noell Lake (ICC et al. 2006). Burbot are thought to migrate in the fall and spawn during the winter between January and March (ICC et al. 2006; Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Burbot are best harvested once the ice gets thick (ICC et al. 2006).

3.5.4 Northern pike (Jackfish) and Arctic grayling

Northern pike are found throughout the study area and are often found in the branches of creeks and rivers as well as lakes (ICC et al. 2006). Northern pike spawn on aquatic vegetation in the spring, sometimes before the ice has melted (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Northern pike eat a variety of animals including muskrats, birds and other fish (ICC et al. 2006).

Arctic grayling require clear water which is often associated with small creeks (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Grayling spawn in the spring around the time of ice-break-up (Inuvik et al. 2008; Tuktoyaktuk et al. 2008). Grayling are also found in Noell Lake, Parsons Lake and Husky Lakes (ICC et al. 2006).

3.6 Identified Comments, Concerns and Mitigation

The scope of the TK study reported in Rescan (1999) pertained to concerns of elders regarding an all-weather road between Inuvik and Tuktoyaktuk. This study interviewed elders in Inuvik and Tuktoyaktuk as well as in Aklavik and Gwich'in communities. The following summary includes the input of Inuvik and Tuktoyaktuk participants only. Comments and concerns from other communities are reflected in the comments made by the Inuvik and Tuktoyaktuk elders. Table 3-1 provides a summary of comments, concerns and mitigation identified by community elders of Inuvik and Tuktoyaktuk.

Table 3-1 Summary of Comments, Concerns and Mitigation (modified from Rescan 1999).

Category	Comment/Concern	Mitigation
Animal migration	• Caribou cross the Dempster Highway • Reindeer move away • It wouldn't bother caribou or moose • Concern that the road could bother calving if it was in the calving grounds • Main feeding for caribou is along the shores of Husky Lakes, Caribou migrate along shore not on higher ground (where proposed route is) there is not much feed up there.	• for the sake of people's feelings they should move road away from caribou
Modern camp	• There are some modern camps along proposed route – which proposed route not identified • should make it easier for people to reach fishing camps	• ask camp owners what they feel
Historic camp (archaeological)	• People used to live in the area a long time ago and road builders should watch for their sites • Mammoth tusks and fossils are along the proposed route • Never seen any historic sites • There are some historic sites that haven't been excavated but not along proposed route • Indian/eskimo wars in this region traditionally, shamans lived in area.	• Builders should keep a lookout for graves • oral history program is needed.

Category	Comment/Concern	Mitigation
Fishing	• Husky Lakes is important for fishing, pollution from road and road chemicals could affect them • Road could provide easy access for fishing • We can go rod and reeling, picnicking, good for us to. • We don't fish along there, we fish on east side, road won't hurt • Inuvialuit must give permission to hunt and fish and issue permits • They used dynamite for seismic work for years and that killed lots of fish • Others (government) just wants road there so they can fish off it • Only go there in the spring to jiggle for fish	• Road needs to be further away from the lakes • Catch and release should be enforced for tourists • Build good bridges so it doesn't bother fish
Hunting	• Road would provide easy access for hunting, it would be better for cleaning animals and keep the land clean. • There are hunting camps starting at Husky Lakes and a road could affect them • There are trap lines along the route • Better for Gwich'in and Inuvialuit to manage caribou herds • Littering is dangerous for animals • Don't goose hunt there, hunt on coast • Road is good for hunters and trappers • Won't affect caribou • No hunting from Inuvik to Husky Lakes, mostly just around Parsons Lake except for 10 days in November • Main food source so for generations to come we have to preserve caribou.	• Road needs signage where it crosses trap lines
Berries	• Road good for gathering berries	
Permafrost	• Care needed to build on permafrost	

Category	Comment/Concern	Mitigation
General comments	• Calling for strict environmental rules and enforcement (not like DEW line sites) • Route near gravel makes sense • Cheaper groceries, fresh fruit to Tuktoyaktuk • Nice and cool along coast – no mosquitoes • Road will benefit region and territory • Concern about who will pay for the road • Good for youth, training and jobs, make way for a new way of life • Concern over the road being of a standard to prevent accidents • Comments on waste of money and danger of ice road • Easier and cheaper access to medical services • Could visit friends • Been waiting since the 70's, we want the road • Access to gravel is good, cheaper and faster • Proposed route looks good, provides better access to Husky lakes for people • Reindeer herder who knows area well, knows the proposed route is best • Road won't affect Husky Lakes, more important than a few fish lost to tourists • Too close to Husky Lakes, tourists will take all the fish • People with camps will have break-ins and stuff stolen – move road further inland • Better for grandchildren, young want road and many don't go on land anyway • Ice road is dangerous and save money • Booze and drugs are here already • IRC should help fund the road then it will get built better and faster • Sell tourists handicrafts and other goods • Northern store is so expensive, this will make things cheaper • Visit relatives anytime, not depending on airlines	• Re-route road north of Parsons Lake straight north (possibly along power line). • Re-route along hydro line, there is a lot of gravel and easier for hydro maintenance • Road should be further west along high ground along river, Ikhil and pipeline road • Follow old Navy Road, it's already cut • Stay on west side of Otto Binder's to avoid creek

4 REFERENCES

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APPENDIX A

Community Conservation Plan Areas

Community Conservation Plan Areas:

302C	Spring Caribou Harvesting Areas - Tuktoyaktuk
303B	Spring Moose Harvesting Areas - Tuktoyaktuk
304C	Spring Goose Harvesting Areas - Tuktoyaktuk
305C	Spring Fishing Areas - Tuktoyaktuk
306C	Summer Caribou Harvesting Areas - Tuktoyaktuk
307C	Summer Fishing Areas - Tuktoyaktuk
309C	Fall Caribou Harvesting Areas - Tuktoyaktuk
310C	Fall Fishing Areas - Tuktoyatuk
312C	Fall Goose Harvesting Areas - Tuktoyaktuk
314C	Winter Wolverine Harvesting Areas - Tuktoyaktuk
315C	Winter Caribou Harvesting Areas - Tuktoyaktuk
316C	Winter Fishing Areas - Tuktoyaktuk
322C	Critical Grizzly Bear Denning Areas
701E	Bluenose-West Caribou Herd Winter Range – Inuvik and Tuktoyaktuk
704C	Fish Lakes and Rivers – Inuvik and Tuktoyaktuk
705E	Husky Lakes – Inuvik and Tuktoyaktuk
719C	Inner Mackenzie Delta – Inuvik and Tuktoyaktuk
728E	Pingo Canadian Landmark – Inuvik and Tuktoyaktuk