SURVEY DESCRIPTION

A survey was conducted in late August in and around the community of Carmacks for the Mt. Nansen Terrestrial and Aquatic Effects Study. The questions asked related to the use of the renewable resources within a 15 km area surrounding the Mt. Nansen minesite. The objectives of the survey were to determine what types of plants, animals and fish are harvested or have been traditionally consumed within the described area. The survey also investigated the extent of use, general location, timing and food parts consumed. In addition, concerns regarding the site and the various species affected were also discussed.

METHODOLOGY

Most of the participants in the survey were contacted beforehand by Leta Blackjack, a resident of Carmacks and a Little Salmon/Carmacks First Nation (LSCFN) member. Together, with Matt Power from *Environmental Dynamics Inc*., a total of 15 surveys were completed targeting community members who used the resources within the area described. Those surveyed answered questions related to their personal use of the area. Any extra information given, that was deemed important, was also documented and is included with the completed survey forms.

SUMMARY OF RESULTS

Upon completion of the survey, several food items stood out as possible study targets. One of those items is the porcupine. This animal was not originally included in the survey; however, it came up often in many interviews. Although, porcupine is not as substantial as moose or caribou, in dietary terms, the porcupine seems to be an animal of great importance to the LSCFN; and would likely migrate less than the aforementioned ungulate species. At least one porcupine is taken or consumed each year by those interviewed. Also of paramount importance and significant value are moose and caribou. In general, one of each animal is harvested on a yearly basis. As well, grouse and ptarmigan were also harvested (up to 35 per year in recent years). Rabbits and ground squirrels are also taken in and around the site. Bison are also hunted in the Mt. Nansen area. Few are taken, however, sightings in the vicinity of the mine are not uncommon.

Various fish species have been observed within the described 15 km study zone. Victoria Lake proved to be the most valuable fishing area with Arctic grayling, whitefish and northern pike being harvested. Arctic grayling are also harvested in Victoria Creek.

Fall was found to be an important period for the LSCFN. Most of the berry picking tends to peak during the fall months and coincides with hunting of large game such as moose and caribou. Harvested plants are extensively utilized by the LSCFN from the area in terms of a nutritional and medicinal resource. Labrador tea and ‘caribou horn’ were widely used for medicinal purposes for a number of various ailments. In terms of food sources, blueberries, cranberries and currants appeared to be most valuable.

Plants for food

Community members harvest a significant amount of plant-life around the Mt. Nansen minesite. Various types of berries are among the most vital in terms of a dietary resource and are harvested extensively throughout the area. Berries from such plants as blueberries and cranberries are used in a variety of dishes such as jams, juices and jello. Other significant plants are cloudberries and currants. Of those surveyed, most tended to stay some distance away from the minesite due to contamination concerns. Table A outlines the types of plants consumed for food.

Table A. Plants consumed for food.

Food Plants	***Parts consumed***	***Location***	***Comments***
Blueberry (*Vaccinium uliginosum*)	Berry	Harvested within 15 km	Alpine/swampy areas
Lowbush cranberry (*Vaccinium vitis-idaea*)	Berry	Harvested within 15 km	Mainly boggy situations
Red raspberry (*Rubus ideaus)*	Berry	Harvested within 15 km	Low to moderate elev.
Highbush cranberry (*Viburnum edule*)	Berry	Harvested within 15 km	Woodland thickets
Cloudberry (*Rubus chamaemorus*)	Berry	Within and beyond 15 km	Peaty/turfy places
Black Currant (*Ribes hudsonianum*)	Berry	Harvested within 15 km	Moist wooded areas
Red Currant (*Ribes triste*)	Berry	Harvested within 10 km	Moist woods/clearings
Bear root (*Hedysarum alpinum)*	Root	Harvested within 10 km	Sands and gravels
Crowberry (*Empetrum nigrum*)	Berry	Harvested within 15 km	Tundra, swamps/bogs
Rosehip (*Rosa acicularis*)	Rose bud	Harvested within 10 km	Streambanks/woodland clearings

While picking berries many consumed the berries unwashed; however, most did wash the berries once they arrived home, with the exception of one who preferred not to wash the berries on account that it took away from the taste. Most of the harvesting took place behind the mine in the vicinity of Mt. Nansen, Victoria Mountain, and Mt. McDade. Most of the harvesting of the berries takes place in the fall or summer (cloudberry) depending on their ripeness.

Medicinal Plants

Medicinal plants are essential to the well-being of the LSCFN and are considered a valuable resource where information relating to a certain plant is passed down from generation to generation. Labrador tea, which grows in abundance, was noted to have some medicinal properties and was harvested by a few of those surveyed. In general, there was a wide variety of plant life taken for medicinal purposes such as paper birch, subalpine fir and willow (Table B).

Caribou horn lichen, as referred to by the LSCFN, was the most important in terms of medicinal use as it was used extensively by most of those surveyed. Concerns arose regarding the medicinal properties of the plants harvested in terms of contamination through airborne dust particles and ground contaminants.

Table B. Plants used for medicinal purposes.

Medicinal Plants	***Parts Used***	***Location***	***Comments***
Caribou Horn (*Masonhalea richardsonii*)	Whole plant	Harvested within 15 km	Also known as tumble lichen – extensively used
Labrador tea (*Ledum groenlandicum*)	Leaf	Harvested within 15 km	Leaf is boiled for tea
Subalpine fir (*Abies lasiocarpa*)	Cone, branch, bark	Harvested within 15 km	Found in subalpine zones & moist, lower elevations
Willow (*Salix spp.*)	Leaf, bark, branch	Harvested within 15 km	Cures ailments such as headaches
Caribou Moss (*Cladina rangiferina)*	Whole plant	Within and beyond 15 km	Entire plant is harvested and boiled
Paper birch (*Betula paperifera*)	Bark, cambium	Harvested within 15 km	Bark is boiled
Juniper (*Juniperus communis)*	Stem, berry	Harvested within 10 km	Medicinal properties were not disclosed
Spruce, black /white (*Picea spp.)*	Fresh pitch/sap	Harvested within 10 km	Mixed with Vaseline, will cure many skin irritations
Blueberry (*Vaccinium uliginosum)*	Leaf	Harvested within 15 km	Tundra, swamps/bogs
Trembling aspen (*Populus tremuloides*)	Leaf	Harvested within 10 km	Leaves are eaten fresh off the branch
Bear Root (*Hedysarum Alpinum*)	Root	Harvested within 10 km	Located in sands & gravels

Wildlife

Moose are the most valuable wildlife resource harvested in the vicinity of the Mt. Nansen minesite. It was found that hunting moose has been a mainstay for many years for the LSCFN with everyone surveyed either harvesting or consuming moose from this area. It appeared that gathering of plants and other wildlife seemed secondary to harvesting a moose (i.e., collection of plants/berries is often conducted while hunting moose).

Caribou and porcupine were also found to be of great significance and were harvested whenever the opportunity arose. The Klaza caribou herd, according to one LSCFN member is in decline as he sees less and less each time he hunts in the area. However, this may be access related and due to the high traffic in the area. The occurrence of marmot, referred to as 'whistler' by some of the LSCFN, was an interesting discovery and information regarding it was indefinite as the population of these rodents was believed to be low and have been harvested sporadically at best. Table C lists the animals harvested in the minesite and adjacent areas.

Table C. Animals harvested in the vicinity of Mt. Nansen.

Wildlife	***Parts Consumed***	***Location***	***Comments***
Moose (*Alces alces*)	All edible parts	Harvested throughout area	Significant numbers have been encountered in winter
Caribou (*Rangifer tarandus*)	All edible parts	Harvested throughout area	Klaza herd is known to migrate through minesite
Porcupine (*Erithizon dorsatum*)	Tissue and organs	Harvested throughout area	Meat is believed to have medicinal properties
Ptarmigan (*Lagopus spp.*)	Tissue, kidneys, heart and gizzards	Harvested in higher elev. behind minesite	Usually >5 taken/trip
Spruce Grouse (*Dendragapus Canadensis*)	Tissue, kidneys, heart and gizzards	Harvested mainly along access routes	Usually >5 taken/trip
Snowshoe Hare (*Lepus americanus*)	Tissue and organs	Harvested mainly along access routes	Population thought to be increasing
Ground Squirrel (*Spermophilus parryii*)	Tissue	Harvested throughout area	No significant hunting pressures
Marmot (*Marmota spp.*)	Tissue	Harvested in higher elev. behind minesite	Only few taken in recent years
Bison *(Bison bison)*	All edible parts	Harvested throughout area	Only 1 reported harvest in recent years

Fish

Fishing appeared to be the least important activity for the LSCFN in the Mt. Nansen area. This may be due to the salmon fishery along the Yukon River. It was found that fishing in the lakes and streams around Mt. Nansen played a much more vital role in past times when the First Nations lived as nomads and were not centralized in a community environment. Evidence of this, as explained by one community member, is a described cabin situated along the shores of Victoria Lake.

Arctic grayling were reported to be abundant in the area and could be caught easily. Some of those surveyed often spoke of large size grayling being caught throughout. Oddly enough, there are also reports of grayling being present in high elevations where one wouldn't expect to see them. Burbot is said to be present in some regions of the Mt. Nansen drainage, most notably in Victoria Creek. Other sites that have been fished are Victoria Creek, Rawlinson Creek, Nisling River, Lonely Creek and Nansen Creek.

Table D. Fish species harvested within the vicinity of Mt. Nansen.

Fish	***Parts Consumed***	***Location***	***Comments***
Arctic Grayling (*Thymallus arcticus*)	All edible parts, including innards	Harvested within streams throughout area	Large grayling observed in all creeks throughout
Whitefish (*Corgonus clupeaformis*)	All edible parts	Victoria Lake and Nisling Lake	Mainly reported to inhabit chain of lakes to south of minesite
Northern Pike (*Esox lucius linneaus*)	All edible parts	Victoria Lake and Nisling Lake	Mainly reported to inhabit chain of lakes to south of minesite

LSCFN GENERAL CONCERNS

There were mixed concerns regarding the Mt. Nansen minesite ranging from levels of contamination in the food chain to the total reclamation of the site. While some members of the LSCFN showed no concern, others were very apprehensive about their ongoing use of the area.

The items of major concern seemed to stem from the on-going use of the land in the area. There was an apparent concern regarding the large ungulate population in the area. However, there may be evidence that a seemingly declining caribou population can be caused as a result of the area being very accessible to vehicles and ATV's.

When asked to provide any information regarding the minesite, most of those surveyed spoke of buried items such as fuel containers and transformers. Others spoke of oil/fuel spills and the leaking of the tailings pond. Those who were surveyed believed that there was an apparent disregard for the area by the mine's past operators. The present state of the open pit and tailings pond is an on-going issue and most LSCFN would like to see the entire site reclaimed to some degree.