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Nı hat'nı - Watchıng the Land:

Results and Implications of 2002-2003 Monitoring Activities in the Traditional Territory of the Lutsel K'e Denesoline

FINAL REPORT - Complete

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STUDY SUMMARY

The traditional territory of the Łutsël K'e Denesǫłıne, straddling the boreal forest and barrenlands of the Northwest Territories, Canada, is under tremendous pressure from industrial development (e.g. diamond mines, tourism, etc.) and the encroachment of other manifestations of western culture. In response, the Łutsël K'e Dene First Nation has designed, through the *Community-Based Monitoring* and *Traditional Knowledge in the Kache Tué Study Region* projects, a program for monitoring environmental and socio-economic change in the traditional territory as well as the community of Łutsël K'e.

During 2002-2003, cycles of monitoring around valued features of the traditional territory, the Denesǫłıne culture and the socio-economic context were conducted. Indicators, based upon traditional values and ways of knowing, were assessed and measured by adapting traditional ways of doing to the modern monitoring context. Based upon the results generated through the compilation of indicator information, Elders and land-users analyzed and interpreted environmental monitoring knowledge by comparing it with the collective, long-term oral history of the Denesǫłıne people. Through such comparison, it could be deemed whether indicator information represented either natural stability or unnatural change. Indications of unnatural change proceeded to be dealt with by community leadership, whereas information revealing natural stability was incorporated both into the traditional oral history and a digital traditional knowledge database. Socio-economic indicator information was analyzed using statistical database methods. Results were then presented to community organizations for interpretation and action. All results were incorporated into the database along with environmental knowledge.

This report presents the results of 2002-2003 monitoring activities under the auspices of the *Ni hat'ni - Watching the Land* program, as well as implications of this knowledge for Denesǫłıne Nëne and the community of Łutsël K'e. This knowledge will help the Denesǫłıne of Łutsël K'e assess the changes happening on their land and in the community, and provide direction in efforts to predict change, prevent and mitigate negative change, and encourage positive change in the interest of attaining community visions, goals and objectives.

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1.0 STUDY DESCRIPTION

The *Ni hat'ni - Watching the Land* monitoring program evolved and was designed over the course of approximately seven years, and arises from the amalgamation of two previously distinct projects: the *Traditional Knowledge in the Kache Tué Study Region (KK)* environmental monitoring project, and the *Community-Based Monitoring (CBM)* socio-economic monitoring project.

The environmental monitoring component of *Ni hat'ni - Watching the Land* was designed and evolved in three distinct phases. Phase One of the project followed the *harvesting patterns* of the Denesǫłine. These patterns were described through the spring geese and duck hunting season, through the summer fish harvest, the fall caribou hunt at Artillery Lake (?edacho Tué) and the winter harvest of fur-bearing animals. During this phase, researchers learned about the history of Denesǫłine tradtional territory as an area of *great diversity* and *abundance*. They also learned about how changes in the land were assessed using traditional means, from which preliminary *indicators of environmental change* were developed. Among the most important lessons was the importance of *respecting the land*. Researchers learned that those people who respect the land and live according to the knowledge of the Elders benefit from what the Creator has provided. An in-depth exploration of the results of Phase One can be found in the 1999-2000 Annual Report submitted to the WKSS.

Phase Two of the study focused more on documenting the *oral history* and *legends about the land*. These legends provided the researchers with tremendous insight into the spiritual and physical relationships between the Denesǫłine and the land. These legends also provided important *contextual information* for the *interpretation* of the previously developed indicators of environmental change. Community researchers also worked to address gaps in what had been documented in Phase One relating to the health of wildlife and wildlife habitat. Additional information was gathered about the grizzly bear, raven, moose and beaver. Results of Phase Two can be found in the 2000-2001 Final Report submitted to the WKSS.

Phase Three of the *Traditional Knowledge in the Kache Tué Study Region* project took place between April 2001 and March 2002. This Phase of the study was based upon the premise that Denesǫłine oral histories, knowledge and experiences concerning Denesǫłine Nëne form the essential foundation for the *monitoring of environmental change* within the traditional territory of the Denesǫłine people. This phase saw the synthesis of indicators of environmental change, contextual oral history, and traditional skills and experience into a working framework for community-based environmental monitoring founded upon Denesǫłine ways of knowing and doing. This phase also saw the testing of this framework through real-

world application. An in-depth exploration of the results of Phase Three can be found in the 2001-2002 Final Report submitted to the WKSS.

The framework of the socio-economic monitoring component of the *Ni hat'ni - Watching the Land* monitoring program was designed in the mid to late 1990s. In 1996, the *Community-Based Monitoring Pilot Project* took place in Łutsël K'e. Faced with unprecedented mineral resource development in the traditional territory, the goal of the *Community-Based Monitoring Pilot Project* was to design a tool that would increase the capacity of Łutsël K'e and other northern communities to address both the positive and negative socio-economic effects of such development.

Much as the environmental monitoring project, the socio-economic project was organized according to three phases. Phase One involved gathering ideas and Chipewyan terminology for concepts like monitoring, indicators and community health. During Phase Two, themes and indicators of community health were developed through open-ended home-visits with one hundred households in the community. In Phase Three, a four-step process of monitoring, encompassing information gathering, summarizing of information, evaluation and reporting, was designed and implemented. Actual monitoring activities have been ongoing in this regard for the past five years (including 2002-2003).

As of the beginning of 2002, the socio-economic monitoring program had been operational for four years, and the environmental monitoring program had just been designed and was in the process of being tested. 2003 saw a merging of these two projects to facilitate comparison between environmental monitoring results with those generated through the socio-economic monitoring program. Thus arose the *Ni hat'ni - Watching the Land* program, a comprehensive monitoring program for the community of Łutsël K'e and the traditional territory of the Denesǫłıne.

This report shall describe the results generated by the *Ni hat'ni - Watching the Land* program during the first year of its implementation (2002-2003) with coordinated socio-economic and environmental monitoring activities. It shall relay information resulting from the measurement of indicators, the interpretation, comparison and analysis of this information, and the potential implications of this information for the overall health and wellness of the traditional territory of the Denesǫłıne and the community of Łutsël K'e. Comprehensive descriptions of the design and structure of the monitoring program will not be herein discussed, as this is adequately addressed in the previous reports of *the Traditional Knowledge in the Kache Kue Study Region (KK)* and *Community-Based Monitoring (CBM)* projects. This is thus, in essence, a presentation of a year's worth of results generated through the *Ni hat'ni - Watching the Land* monitoring program.

2.0 OBJECTIVES

The specific objectives of the *Ni hat'ni - Watching the Land* program are as follows:

1. To gather information around indicators of socio-economic and environmental change, as developed primarily through the *CBM* and *KK* projects formerly funded by the WKSS (indicators from other projects initiated by the Wildlife, Lands and Environment Department, such *as Caribou Health and Movement* and *Stark Lake Fish Habitat*, are also incorporated). These are to be gathered in a series of annual questionnaire cycles for socio-economic indicators (i.e. adult and youth community health questionnaires, mine employee questionnaires). For environmental indicators, they are to be gathered in a series of seasonal cycles corresponding to the rhythms of the land and Dene life (i.e. spring duck-hunting season, fall caribou hunting season).

2. To organize indicator information in a searchable (AskSam), geo-referenced (GIS) database currently under development by the Wildlife, Lands and Environment Department.

3. To analyze and interpret indicator information using previously developed (*CBM*) statistical methods for socio-economic indicators and Elder / land-user analysis workshops for environmental/land-use indicators. Indicator information is to be analyzed and interpreted in order to determine the significance of perceived changes (in light of limits to acceptable change, cultural values and historical context). In addition to addressing the significance of changes, these workshops are to be used to form links between the measured effects of change and their probable causes.

4. To integrate the analysis and interpretation of socio-economic and environmental indicator information. Dene culture *is* nature, and thus both the socio-economic and environmental realities are intimately tied. The health and wellness of one mirrors the other. Environmental and socio-economic indicator information is to be interpreted in concert.

5. To design a system of Denesǫłıne land region classification for the traditional territory. Each land region will be determined based upon watershed limits, importance to plants and animals, and traditional and current land-use patterns. Limits to acceptable change for each Denesǫłıne land region will be determined by Elders and land-users.

6. To draw implications and conclusions for the traditional territory of the Denesǫłıne and the community of Łutsël K'e, as well as the greater Slave Geological Province, from the analysis and

interpretation of indicator information.

3.0 METHODS

The methods used to assess change through the *Ni hat'ni - Watching the Land* program arose from traditional ways of knowing and doing. These traditional ways of knowing and doing were adapted to the modern context of environmental and socio-economic monitoring, and are described below. A more comprehensive description of the design of these methods can be accessed in earlier reports of both the *KK* and *CBM* projects.

3.1 METHODS USED IN ENVIRONMENTAL MONITORING

The functional centerpiece of the environmental monitoring aspect of the *Ni hat'ni* program is the Denesǫłıne cycle of knowledge as developed by Elders, land-users and WLE staff. This cycle is detailed in the report *Ni hat'ni – Watching the Land: Cumulative Effects Assessment and Management in Łutsël K'e* (LKDFN and Ellis 2001). The Denesǫłıne cycle of knowledge represents the flow of information through Denesǫłıne culture. It demonstrates how information is gathered and processed using Denesǫłıne values and techniques. This cycle of knowledge was integrated with environmental indicators into a cohesive, modern monitoring program, and is summarized in the subsequent paragraphs.

3.1.1 Information gathering

Dene ways of knowing are fundamentally experiential in nature. They only operate effectively when people engage in traditional activities on the land - hunting, fishing, gathering, traveling and camping. Having people in close contact with the land ensures that new information about the land is continually being generated through observation and experience. The closer to the land people are, and the longer they spend on it, the richer the information that is derived from experience. This is the fundamental "information gathering" aspect of the Dene way of knowing - people experiencing the land making empirical observations about it. This gathered information is transmitted orally to Elders who validate and interpret the new information in light of their collective experience and history. This is essential for the continual evolution of Dene knowledge - without people on the land gathering information and sharing it with the Elders, Dene knowledge can simply stagnate and eventually become outdated.

The following means of data gathering were used:

- The gathering of information around indicators developed through the three phases of the *KK* project.

- The use of standardized question sets to gather environmental observations from community Elders and land-users. Environmental indicator questions will be asked of land-users in personal interviews (questionnaires) while they are on the land, or just after they have returned to the community after they have been on the land.
- The gathering of environmental observations from land-users participating in WLEC sponsored on-the-land activities, for example during the fall caribou hunt at Artillery Lake or the spring community hunt at Daisy Lake.
- The gathering of environmental observations from land-users after each different harvesting season. For example, information about fish could be collected after the fall fishing season, while information on fur-bearers could be collected after the winter trapping season. Different harvesting seasons corresponded with different monitoring cycles.

The methodology employed to gather information around environmental indicators primarily featured semi-directed, informal interviews with land-users. Environmental interview questions were based around issues of seasonal abundance, distribution, condition and context. Land-users were asked to talk and tell stories about the abundance, distribution and condition of animals, plants and people on a seasonal basis. Such questions sought to illuminate the population health, dynamics and resilience of animals, plants and people, as well as how they interact with each other across the greater landscape. These land-user observations are important for detecting changes occurring in natural cycles and patterns, especially as a database of knowledge is built up season after season. Finally, contextual stories relating to the setting and circumstance in which observations are made are fundamental for the interpretation of land-user observations and the derivation of implications for the larger ecosystem.

Land-users were provided with an expert consultation fee for participation in indicator questionnaires. This varied between $25-50 depending upon time required to complete an interview.

3.1.2 Information organization

Once indicator information was gathered from land-users, it was organized and stored in an accessible fashion. In this interest, researchers designed a traditional knowledge database. In addition, gathered indicator information was put into a format that is conducive to Elder analysis and interpretation. The following means of indicator organization were used and tested:

- The recording of interviews on audio-disc or videotape.
- The transcription of interviews into English so they could be understood by people who may not speak or read Dene Yati.

- The input of interview transcripts into the traditional knowledge database.
- The mapping of spatial indicator information for comparison with subsequent years of information gathering. This was primarily done using a GIS system, effectively displaying the relationship between various spatial patterns upon the land.

Indicator information was also be organized into general themes in preparation for analysis by Elders and land-users. In this interest, researchers simply studied indicator information transcripts for each cycle in order to assess what the *majority* of participants are saying in response to identical questions, as well as any particularly *unique* responses.

Upon organizing indicator information into thematic elements, community researchers assessed whether indicator information for a particular cycle indicated either *stability* or *change*, based upon the judgement of land-users who acted as respondents. If indicator information indicated stability, the information was simply input into the database as a baseline record, as concurrent with "what has always been" in the eyes of the Denesǫłine. Information indicating change proceeded to the next level in the monitoring cycle: analysis and interpretation.

3.1.3 Information dissemination, analysis and interpretation

Indicator information revealing change was analyzed by Elders and land-users in Interpretation Workshops held at the end of every monitoring cycle (only if information indicating change was gathered, however). In these workshops, Elders and land-users compared indicator information with the collective experience and knowledge of the Denesǫłine people, as held in the minds and stories of the older generations. This "database" of environmental knowledge holds a deep understanding of nature and its relationships, and comprehends well how ecosystems with integrity should look and function. These workshops also served to communicate new environmental information and incorporate it into the collective oral narrative of the Denesǫłine people. Thus new knowledge is disseminated. This insures that Denesǫłine knowledge remains contemporary: otherwise, this knowledge could simply become a relic with only a historical relevance.

By comparing the information gathered with what is known to be true through the experience of the Elders, information can be determined to either fall within the natural cycles of nature or without. Information can be weighed against a collective environmental knowledge that has withstood the test of time, knowledge about the land and how it changes that has proven time and time again to be reliable.

Indicator information representing change that corresponds to the collective experience and knowledge of the Denesǫłıne was deemed *natural change*, or in tune with the rhythms of nature. Such information was considered a record of baseline information ("what has always been") and was subsequently entered into the database. Some changes that were deemed natural would progress to the unnatural change designation if they persisted for a number of years. This type of change could be categorized as *potential unnatural change*.

Any indicator information that did not coincide at all with the Denesǫłıne record of time and history was perceived to represent *definite unnatural change*. Indicator information about unnatural change was interpreted in order to evaluate its meaning and consequence. Elders and land-users evaluated it against the experiential history of the people and the land. In such a way they began to explain the reasons for why things may be changing as they were. The Elders also took the new knowledge and evaluated it against the values and traditions of the Dene people. In such a way they began to determine whether the new knowledge represented a concern or a matter of little consequence to the land and its people.

The interpretation of knowledge was completed at the end of each seasonal cycle, if change was noted in participant responses. Specific workshops were held to interpret information gathered for each monitoring cycle that yielded indicator information potentially representing change. As well, Integrative Interpretation Workshops were held to compare environmental results with socio-economic results in areas of pertinence and interest to the community of Łutsël K'e.

3.1.4 Completing the knowledge cycle

Once the Elders and land-users interpreted knowledge about the land, it was communicated to the Wildlife, Lands and Environment Committee (WLEC) for decision-making and for providing further direction to the study process. Information representing unnatural change is a high priority, potentially revealing impacts to nature that need to be addressed by community leadership. This process of communication for action was facilitated by the fact that some Elders sit on the WLEC, and thus could share the new knowledge directly with the entire committee membership. The WLEC in turn provided the study with direction for further research and monitoring activities, as well as acted upon information of concern. This was a means to insure that pertinent information about the community and land was being gathered and analyzed, and that specific issues of concern were being addressed. In such a way did the whole Cycle of Knowledge continue, from information gathering to evaluation and back around again.

3.2 METHODS USED IN SOCIO-ECONOMIC MONITORING

While the Denesǫłıne cycle of knowledge informed the format of assessing socio-economic change, these endeavors were primarily rooted in more conventional methods of social scientific inquiry. Socio-economic indicators developed by the community of Łutsël K'e were measured through the application and consideration of surveys / questionnaires, which encourage Łutsël K'e residents to supply information around indicators of socio-economic change.

3.2.1 Information gathering

Gathering of socio-economic indicator information revolved around the application of quantitative and qualitative surveys, applied at distinct intervals during the yearly cycle of monitoring. The centrepiece of socio-economic indicator information gathering is a highly quantitative "counting questionnaire" survey, administered at the start of every calendar year. This survey is very general and broad in nature, the results of which can be quantified to glean information about the overall state of community health. This *Community Health Survey* was developed with Dr. John O'Neil from the University of Manitoba. The questionnaire was administered to all community members 10 years old and over. Because of issues related to literacy in the community and the relative unfamiliarity of community members with this kind of tool for information gathering, the community researchers visited each community member and filled out the questionnaire with them.

In addition to the more general *Community Health Survey*, other surveys were devised to elicit information of a more specific nature and of direct concern to the community of Łutsël K'e. A *Mine Employee and Spouse Survey* was specifically developed in order to explore in further depth the impacts of the mining economy upon families in Łutsël K'e. The *Youth Survey* explored issues of relevance to youth in the community, whereas the *Cultural Survey* addressed the overall vitality of Denesǫłıne culture, as perceived by the Denesǫłıne themselves. A *Leadership Review* survey sought to evaluate the community's level of satisfaction with the leadership.

These specific surveys largely followed the format of the "counting questionnaires" developed for the *Community Health Survey*, though the questions were more focussed around specific topics and in some cases required answers that were in sentence form i.e. (non-quantifiable).

3.2.2 Information organization and analysis

Community researchers entered indicator information into an Excel database specially designed with the guidance of Dr. John O'Neil and technical assistance from Tamarack Computers. This database allowed survey information to be sorted and categorized, with trends and patterns effectively displayed statistically using bar graphs and pie charts. By examining statistical results, the community researchers could answer questions about the community and the indicators using independent variables such as age, gender, employment status, and overall health rating.

3.2.3 Interpretation of knowledge

Indicator information already organized and verified must be interpreted in order to evaluate its meaning and consequence. Community researchers presented survey information to Elders and community leaders in Interpretation Workshops, where new information generated through the monitoring program was evaluated against the values and experiential history of the people and their community. In such a way, explanations and implications of socio-economic change began to be considered and explained. Interpretation Workshops were held at the end of each survey cycle with community organizations of pertinence. The community researchers conducted presentations in the community to present results of all survey cycles to the Wildlife, Lands and Environment Committee, the Chief and Council and the public. Specific information related to various local agencies (i.e. housing, Health and Social Services, Municipal Services, local Committees) was also presented to relevant organizations, so that they might offer their expertise in interpretation. As well, Integrative Interpretation Workshops were held to compare environmental results with socio-economic results in areas of pertinence and interest to the community of Łutsël K'e.

3.2.4 Completing the knowledge cycle

Once knowledge about socio-economic change was interpreted, it was communicated to the WLEC and the Chief and Council for decision-making and for providing further direction to the study process. The WLEC and Chief and Council, based upon survey results and their own agendas, could in turn provide the study with direction for further research and monitoring activities. This was a means to insure that pertinent information about the community was being gathered and analyzed, and that specific concerns were being addressed. In such a way does the whole Cycle of Knowledge continue, from information gathering to evaluation and back around again.

3.3 CHRONOLOGY OF ACTIVITIES

The study objectives were met through a series of tasks and activities outlined in the following chronology:

April 2002

Preparation and staff training for monitoring cycles

May 2002

Duck and Goose Cycle

- Cycle of interviews around duck and geese indicators during and after the spring duck and goose hunting season
- Transcription and organization
- Interpretation workshop

June 2002

Muskrat and Beaver Cycle

- Cycle of interviews around musk-ox indicators during and after the spring muskrat and beaver hunting/trapping season
- Transcription and organization
- Interpretation workshop

July 2002

Summer Angling Cycle

- Cycle of interviews around angling indicators during and after the summer angling season
- Transcription and organization
- Interpretation workshop

Leadership Review Survey

- Cycle of interviews around leadership effectiveness indicators

- Transcription and organization
- Interpretation and dissemination workshop

August 2002

Cultural Vitality Survey

- Cycle of interviews around the health of Dene culture and traditions at the Desnedhe Che spiritual gathering. (Summer on-the-land workshop)
- Transcription and organization
- Interpretation and dissemination workshop

Youth Survey

- Cycle of interviews around issues of pertinence to community youth
- Transcription and organization
- Interpretation and dissemination workshop

Berry Cycle

- Cycle of interviews around berry indicators during the berry-picking season
- Transcription and organization
- Interpretation workshop

September 2002

Fall Fishnet Cycle

- Cycle of interviews around fish indicators during the end of the summer angling season
- Verification workshop
- Transcription and organization
- Interpretation workshop

Fall Caribou Hunt Cycle

- Cycle of interviews around caribou indicators during and after the fall hunt at Artillery Lake. (Fall on-the-land workshop)
- Transcription and organization
- Interpretation workshop

October 2002

Rabbit and Chicken/Ptarmigan Cycle

- Cycle of interviews around rabbit and chicken indicators during and after the rabbit and chicken hunting season
- Transcription and organization
- Interpretation workshop

Mine Employee and Spouse Survey

- Cycle of interviews around indicators specific to mining and its impact upon the community
- Transcription and organization

November 2002

Mine Employee and Spouse Survey

- Interpretation and dissemination workshop with mine employees and spouses.

Integrative Interpretation Workshops

- Cross comparison of knowledge from the environmental and socio-economic cycles

December 2002

Land Region Workshop

- Determination of different land regions in the traditional territory

Moose Cycle

- Cycle of interviews around moose indicators after the moose hunting season
- Transcription, organization and database input
- Interpretation and dissemination workshop

January 2003

Community Health Survey

- Cycle of interviews around indicators of community health

Winter Caribou Cycle

- Cycle of interviews (field surveys) around caribou indicators during January harvesting activities

February 2003

Marten, Mink, Weasel and Lynx Cycle

- Cycle of interviews around fur-bearer indicators during the trapping season. (Winter on-the-land workshop)
- Transcription and organization
- Interpretation workshop

Winter Caribou Cycle

- Cycle of interviews (field surveys) around caribou indicators during February harvesting activities

Community Health Survey

- Cycle of interviews around indicators of community health
- Transcription and organization
- Interpretation workshops

March 2003

Winter Caribou Cycle

- Cycle of interviews (field surveys) around caribou indicators during harvesting activities in the March
- Transcription and organization
- Interpretation workshops

Integrative Interpretation Workshops

- Cross comparison of knowledge from the environmental and socio-economic cycles

4.0 THE STUDY REGION - THE DENESǪŁINE TRADITIONAL TERRITORY

Not long ago I remember people stayed around here on the north shore of Mcleod Bay. Louis Drybones and his two brothers Michel and Morris Baniya – they were the last ones to stay here [year-round]. They stayed at the Waldron River along the shoreline. People used to take care of what they gained and had in the olden days. Some people starved around here because of the meat shortage. Sometimes it was hard and difficult because of the cold winter weather, the lack of food. When there was no caribou it was tough. Abele Nitah also stayed here. He had a cabin at Bedford Bay. These canoe routes and trails into the barrenlands have been here for generations. Our ancestors (Thai Dene) used these routes and trails. Now we still use them to go hunting for caribou. It has been passed on from our great ancestors to today – from Taltheilei to Fort Reliance. (ML 31 08 00)

The north shore of Kaché Tł'azí (Mcleod Bay) in the East Arm of Great Slave Lake is the Kache Tué region, part of the homeland of the Denesǫłıne people. The Kache Tué region is within the greater landscape of the Kakınëne - the rich land. The Kakınëne is described by the Elders as a region "beyond the end of the lake" – in other words, the area including and beyond Kaché Tł'azí, the north shore of the East Arm. The Kakınëne extends from Nıdítagh Tué (MacKay Lake) and Tła Gaı Tué (Aylmer Lake) in the north to Kaché Tł'azí in the south, from ?edacho Tué (Artillery Lake) in the east to Łu Tué (McKinlay Lake) in the west (**Figure 1**). Straddling the transition between the boreal forest and the barrenlands, the Kakınëne is a diverse ecosystem rich in wildlife, plants, and the camps and trails of the Denesǫłıne people.

Tu Nedhe (Great Slave Lake), to the south of the Kakınëne region, forms another critical components of the Denesǫłıne traditional territory, particularly the East Arm. This lake serves as a major transportation route in summer and winter, the source of the fish that constitute much of the Denesǫłıne diet, and the people's relationship with this great lake forms a major part of the culture. Its southern shores are where the Denesǫłıne spend the greater portion of their lives, where their camps, cabins and burial sites are concentrated. Tu Nedhe and its southern shores, along with the Kakınëne, is Denesǫłıne Nëne, the traditional territory of the Denesǫłıne people.

Denesǫłıne Nëne is the heart and spirit of the Denesǫłıne way of life. Within this area, cultural and environmental features of value to the Denesǫłıne people are represented, existing today much as they were in the days gone past. It is here that the Denesǫłıne people have lived, laughed and loved over the

centuries. The Elders describe this region as rich with resources. People would always go to this area to harvest caribou, to trap for furs, to gather berries, etc. - traveling by dog team, by canoe and on foot. People always knew they could find food in this area. This is the breadbasket of the Denesǫłıne people.

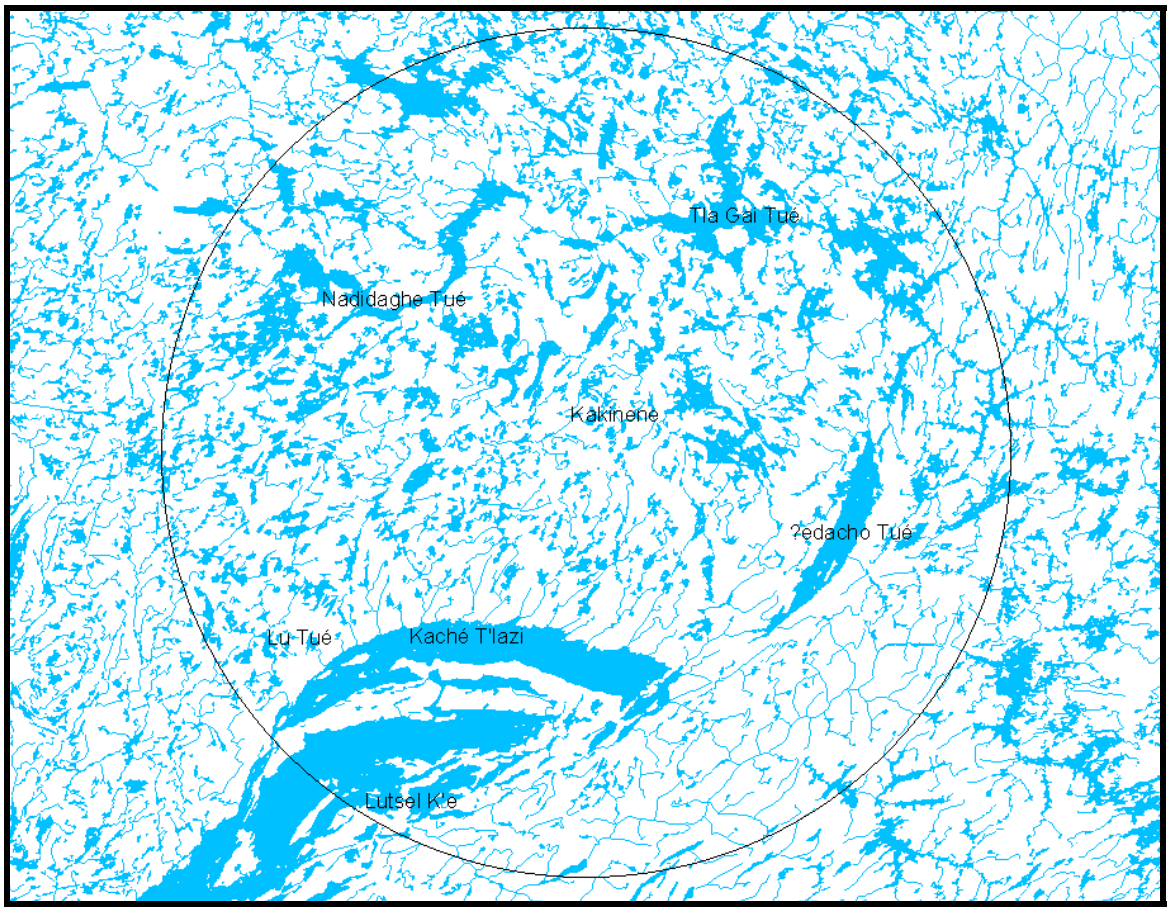

Figure 1. Denesǫłıne Nëne (northerly regions)

Within the greater landscape of the Kakınëne, the Denesǫłıne recognize many different regions, each unique in the roles they play relative to water flows (watersheds), animals and plants, and the traditional and current land-use practices of the people. The Denesǫłıne land regions of the Kakınëne, as identified and described by community Elders, are shown in **Figure 2**.

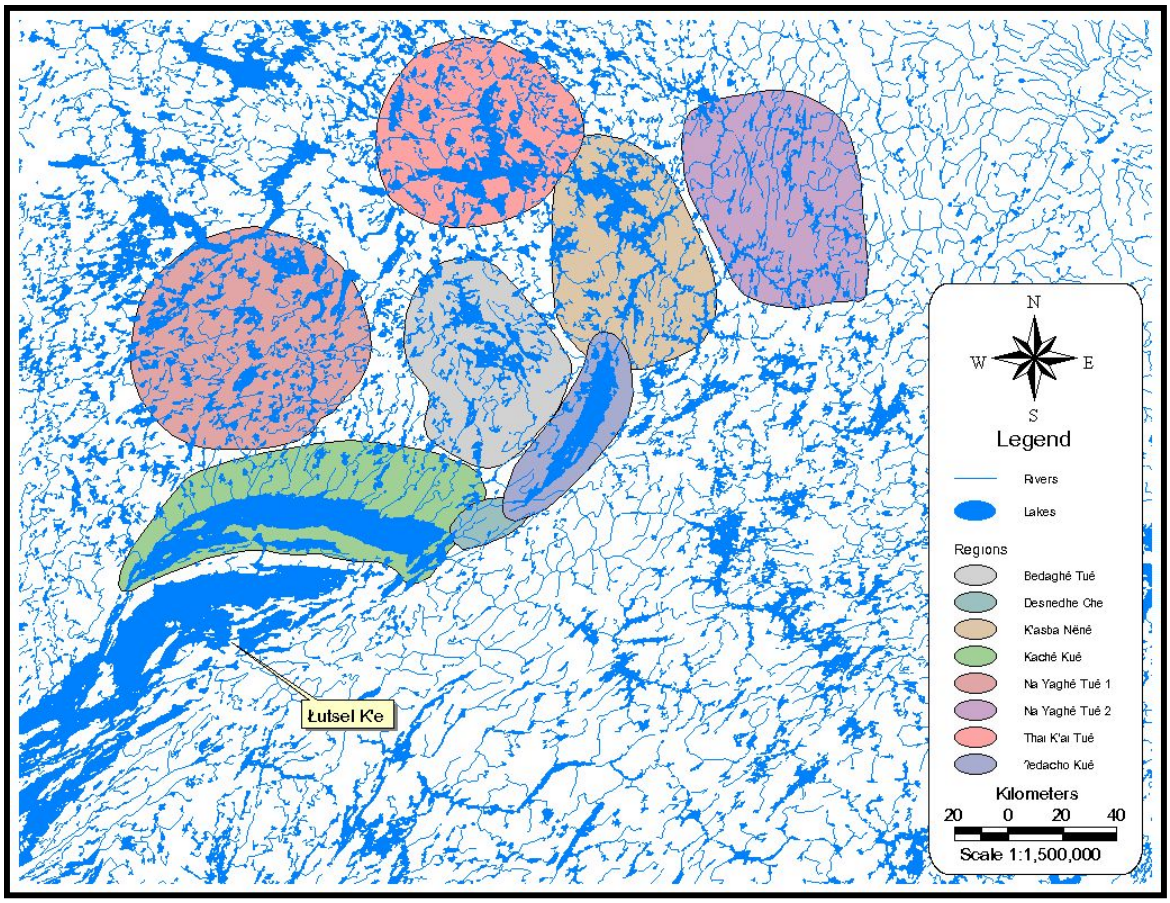

Figure 2. Denesǫłıne land region classifications in the Kakınëne

The Kache Tué region comprises the Kaché Tł'azí (McLeod Bay) portion of the East Arm of Tu Nedhe, as well as the watersheds of the smaller rivers (Indian Mountain, Waldron, Barnston, Hoarfrost) on the north shore of this large, deep bay. This area is known as one of the primary overwintering sites of the Bathurst caribou herd, and Denesǫłıne hunters often travel to this area to harvest caribou in the winter. This area is also renowned for trapping purposes, being an area where land-users often go in the winter to trap animals associated with caribou populations (i.e. wolf, white fox). The fish of the Kache Tué region are considered richer and more flavorful then those harvested elsewhere in the East Arm, largely due to the pure, cold waters that flow into this bay from the barrenlands. The Denesǫłıne travel these waters heavily in the summer months, especially in August during the spiritual gathering at Reliance.

Desnedhe Che, encompassing the Lockhart River between ?edacho Tué and Tu Nedhe, as well as Pike's Portage, is the spiritual and cultural heart of the Denesǫłıne people. Pike's Portage remains the main route used by the Denesǫłıne when traveling to and from the barrenlands. Seasonally migrating back and forth across the treeline allows the Denesǫłıne to access resources from three great ecosystems - the

boreal forest, the barrenlands, and the deep water of Tu Nedhe. Relationships with these three ecosystems define Denesǫłıne culture, and the route of Pike's Portage is key to fostering these relationships.

The spiritual well-being of the Denesǫłıne centers around another profound relationship with the Desnedhe Che land region. T'sakuı Theda (Parry Falls), or the "Old Lady of the Falls", is the spiritual focal point for Denesǫłıne tradition and culture. People regularly visit this site to pray and heal, and the old lady continues to watch over the Denesǫłıne people.

Another land region of great significance to the Denesǫłıne is ʔedacho Tué, defined by the water, shores and areas inland of ʔedacho Tué (Artillery Lake) itself. It is here that the people go to harvest plentiful caribou as they return south from their calving grounds. Caribou from both the Bathurst and the Beverly herds tend to migrate into the land region in autumn, and spend time in the area fattening up for the winter. Due to the abundance of caribou, many Denesǫłıne used to live either seasonally or year-round in this region, as exemplified by the old community at Timber Bay on the northwest shore of the lake.

Legends abound about the ʔedacho Tué region. Elders tell stories about how this lake was created by the damming of the Lockhart River by a giant beaver, and geological landforms throughout the lake attest to an epic struggle between this giant beaver and the giant Hachoghe who sought to kill it. This land region is truly a land of legend, and fundamental to the identity of the Denesǫłıne.

To the north of Kache Tué and ʔedacho Tué is the land region called Bedaghé Tué. This region features one of the main routes used by the Denesǫłıne to access the barrenlands, second only to Pike's Portage in the Desnedhe Che region. Stories tell of how groups of Denesǫłıne families would travel together from Kache Tué into the Bedaghé Tué region, and then split off into smaller family units as they headed off in different directions towards their traplines and hunting grounds. In the springtime, these families would regroup in the region for the journey back to Tu Nedhe. The very name of this land region, which means "bag lake", tells of how families returning to this region in the spring could see the bags and sleds of other families waiting for them on the shores of the main lakes.

Central to this land region are the lakes called Tué Cho (Fletcher Lake), Datthı Tué (Walmsley Lake), and K'ezus Tué (Cook Lake). These lakes are renowned for their quality fish, and their clear waters feed the Hoarfrost River, largest of the north shore lakes that flow into Kaché Tł'azí. This land region contains some of the great migration trails used by the Bathurst caribou in their late summer travels from the Lac de Gras region to ʔedacho Tué. Many great caribou crossings are found on the bigger lakes in the region, with which are associated many Denesǫłıne camps and travel routes. In recent times, musk-ox have begun to be spotted making heavy use of the area, representing a westward shift from the traditional distribution.

The K'asba Nëne land region encompasses the big lakes of K'asba Tué (Ptarmigan Lake) and Łudaghe Tué (Clinton-Colden Lake), and the barrenlands that surround them. Elders define this land region as an area that was used extensively in earlier times by Denesǫłıne white fox trappers. This land region also contains the headwaters of the Hanbury River, used by the Denesǫłıne to travel east towards the Thelon River valley. Muskoxen are known to be abundant in K'asba Nëne, and many a Denesǫłıne trapper has managed to overwinter in the area by hunting these resilient animals.

Northwest of K'asba Nëne lies the Tła Gaı Tué land region. Centered on the lake bearing the same name (Aylmer Lake), this region encompasses the headwaters of the great Lockhart River watershed, as well as those of the Back River flowing towards the Chantrey Inlet. The clean, pristine waters that flow through the K'asba Nëne, ?edacho Tué, and Desnedhe Che regions originate in the Tła Gaı Tué, eventually spilling into the waters of Kache Tué. These are, in truth, the clean waters that provide life and vitality to the Denesǫłıne people.

Elders speak of this land region as rich in wildlife, with many sandy eskers providing habitat for grizzly bears, wolves, and other tundra mammals. Signs still remain of the Denesǫłıne trappers who lived in this area, getting thick winter furs from foxes and wolves around the little lakes immediately to the south of Aylmer. Bathurst caribou are also known to travel through this area in abundance, moving east and south from Lac de Gras in the late summer. While many of these caribou are now hunted later in the year when they migrate further south into the ?edacho Tué region, the Denesǫłıne occasionally holds community hunts in this area.

The Elders described two other distinct land regions within the greater Kakınëne. One, to the north of Kache Tué and west of Bedaghé Tué encompasses a very rocky region entitled Na Yaghé Tué. Much of this region is considered to be difficult to travel in due to the prevalence of boulders and sharp rocks. Elders tell that caribou tend to travel through much of this area in smaller groups. The exception is in the northerly reaches of this land region, where some great caribou migration trails exist to the south of Nıdítagh Tué. While the Denesǫłıne have not traditionally hunted or trapped in this region in any great number (except around MacKay Lake), Elders stress the importance of this region for maintaining the integrity of caribou migration patterns. Caribou overwintering in Kache Tué and westwards will normally move northwards towards their calving grounds through Na Yaghé Tué, crossing Nıdítagh Tué at its central narrows.

Another land region to the east of K'asba Nëne shares the name Na Yaghé Tué. This region is renowned for it rockiness, cited as virtually impassable by all but the most experienced and competent Denesǫłıne.

This region, described by Elders as a "forest of sharp, tall rocks", is said to be traversable by only one tortuous route. However, those who make the journey are rewarded by lands to the northeast rich in musk-ox and migratory birds.

For further information about the history and legends surrounding the land regions of the Kakınëne, refer to the reports entitled *Denesǫłıne Land-Use in the ʔedacho Tué and Desnedhé Che Region – Report #1: Traditional Practice - The Land of Legend* (LKDFN and Ellis 2002) and *Denesǫłıne Fishing Knowledge of the East Arm of Tu Nedhe (Great Slave Lake)* (LKDFN and Williams 2002a).

The eight land regions described above, as defined by Denesǫłıne Elders, comprise the greater Kakınëne. The health and integrity of this rich, natural land is of tremendous importance to the Denesǫłıne way of life. The Denesǫłıne understand well that maintaining these land regions in as pristine a state as possible is critical for the survival of their identity as aboriginal people. In this interest, Elders were asked to discuss some potential limits to acceptable change for each of the eight land regions in the Kakınëne, particularly in the context of industrial development.

Denesǫłıne Elders stressed that the land is a whole, and that each component from the greatest land region to the smallest individual plant has a role to play in maintaining environmental health and integrity. Elders were loath to assign different levels of importance to different land regions, stating that they all have an important role in maintaining the health and well-being of the land and its people. This connectivity is clear when we think of water flows in the Kakınëne. Tłą Gaı Tué, K'asba Nëne, Bedaghé Tué, ʔedacho Tué, Desnedhe Che, and Kache Tué are all part of a system that brings water to Tu Nedhe, including the greater Lockhart River watershed. Each region is of equal importance for insuring the pristine nature of the waters in the Kakınëne, and maintaining the integrity of one is as important as the preserving the integrity of another.

In the end, Elders are unwilling to set varying limits to acceptable change for the land regions of the Kakınëne. They take a much more holistic view. They understand that while land regions may have different roles to play in maintaining environmental health and integrity, these roles are equal in their importance. As such, Elders assert that the whole of the Kakınëne, as opposed to its component regions, requires protection from rampant industrial development. Industrial development proposals will have to be examined by the Denesǫłıne people on a case-by-case basis in the context of the entire Kakınëne, if not all of Denesǫłıne Nëne.

5.0 RESULTS

> *The report that has been put together is about our culture and our way of life. The documents show how we see things. The people here know exactly what is happening. When I was young - I didn't go to the store. I survived on the land. I put my snowshoes on in the winter and this is how we survived. Today it's not like the olden days. This document here won't go away. It will be around for many years. It tells what we understand about the animals and how they behave and how we live on the land…some of the young people don't know the whole story. The documents that are made will let them know it. We can pass on stories about the rivers and how they made a dam without our consent [Talston Hydroelectric Development]. That dam in that area has damaged the area. That area used to be good for hunting - now it's ruined. We have told the government but they said it wasn't their fault. We also tell stories about the mining exploration and how they are working out there without the consent of the people. When we talk about the land, these are the things we are talking about. We are not playing around. It is not a game. What we are talking about - it is very serious. The Elders know what is happening. The stories that have been collected tell what has happened in the past. (ZC 28 06 00)*

So do the words of the late Zepp Casaway eloquently describe the importance of listening to and recording the stories of the Elders and land-users. These stories are the record of how things were and how they are changing. This is particularly true of the natural and socio-cultural world of the Denesǫłine, which of course is intimately understood and particularly important to the people. The Denesǫłine live in close proximity with the land, in constant contact with the cycles of water, animals, plants and weather. Their lifestyle depends completely upon this relationship. Denesǫłine knowledge of this land, its cycles, and its effects upon their lives and culture is the foundation of understanding how the study region and its people are changing through time.

5.1 ENVIRONMENTAL MONITORING RESULTS

This section will detail the results of environmental monitoring efforts carried out during 2002-2003. Firstly, information gathered in different monitoring cycles for the pertinent animal and plant indicators will be presented. Then, the analysis, contextualization and interpretation of this information in light of Denesǫłine traditional knowledge and oral history will be detailed. Implications of this new monitoring

knowledge for the land and people of the Kakınëne will be presented in conjunction with socio-economic monitoring results.

5.1.1 2002-2003 indicator information

A selection of the preliminary indicators of environmental health and change outlined in the 2001-2002 Phase Three report of *Traditional Knowledge in the Kache Tue Study Region* were monitored during the 2002-2003 yearly cycle of the monitoring program. Whereas all the four indicator suites (abundance, distribution, condition and respect) for caribou, fish, small fur-bearing animals, chickens / ptarmigan, berries, ducks and geese, and moose were monitored, not all of the indicators contained within each suite were monitored. This was largely due to a lack of resources and personnel (and in some cases, special equipment) needed to completely monitor some of the indicators, some which require fairly time-consuming and resource-intensive procedures to monitor completely and correctly. However, the indicators that were monitored in 2002-2003 represent those that are most economical and expedient, and provide a good, overall impression of the health and well-being of the animals, plants and ecosystems of importance to the Denesǫłıne.

This section will outline which indicators were monitored during each monitoring cycle, as well as representative samples of participant responses to monitoring questions.

Due to intellectual property concerns, copies of questionnaires used during the environmental monitoring cycles are not provided in this report. They can, however, be obtained upon reasonable request by contacting: Chair Charlie Catholique, Wildlife, Lands and Environment Committee, Łutsël K'e Dene First Nation, Box 28, Łutsël K'e, NT, XOE 1A0.

5.1.1.1 Caribou (Etthën) indicator information

The indicators monitored during the caribou monitoring cycles were the following:

- Numbers of caribou harvested by local hunters in the traditional territory.
- Locations of caribou harvesting activities.
- Presence / numbers of caribou at traditional lake / river crossings during peak crossing seasons.
- Amount of fat noticed while dressing caribou.
- Color and consistency of marrow.
- Visual aesthetic of caribou.

- Behavior of caribou.
- Movement ability of caribou.
- Presence of discolorations or parasites in muscle or internal organs.
- Quality of hide.

Caribou indicator information was gathered during two distinct cycles during the 2002-2003 monitoring period. These two cycles were as follows:

- The *Fall Hunt Caribou Cycle* was completed during and after the annual fall community hunt at the great caribou crossing at ʔedacho Tué (Artillery Lake), which took place in mid to late September, 2002. Approximately twenty hunters and their families participated in this hunt. Twelve of these hunters consented to participate in caribou monitoring activities while engaged in the caribou hunt.

- The largest caribou monitoring cycle, the *Winter Caribou Cycle,* took place between the months of January and April, 2003. At this time winter was in full swing and the East Arm of Great Slave Lake was completely frozen. Caribou had returned to their wintering grounds around Great Slave Lake. During this time many hunters traveled about the Kakınëne and other parts of the traditional territory in search of the caribou to feed their families. This hunting period was not defined by any large, organized hunting event. Rather, land-users went hunting consistently throughout this time. A caribou researcher traveled with prominent hunters during their hunting activities, administering field surveys during and immediately after harvesting events. These field surveys provided good on-the-spot information about the condition of individual animals, as well as the distribution and abundance of the herd.

Fall Hunt Caribou Cycle

Hunters that participated in the *Fall Hunt Caribou Cycle* at Artillery Lake were asked to respond to questions concerning the abundance and distribution of caribou in the area. These are some of their responses and stories:

> *The caribou migration through this area is the same as it has always been, year after year. This year is no different. The bulls are waiting for the cows to come down from the north. The cows are following the wind to come to this place. (ND 25 09 02)*

Most of these caribou are coming from the north, and are a part of the Bathurst herd, you know. But there aren't too many around this year - hard to find caribou to hunt - maybe some of the herd is migrating elsewhere, maybe to the west more. Sometimes both this herd and Beverly mix up at this place, they are both coming to spend the winter near ***Łutsël K'e****. Some people are saying that the Beverly herd are here this year too, all mixed up with the Bathurst. (RE 27 09 02)*

In most years you can just wait at the caribou crossing at Artillery Lake and shoot caribou. This year, like the past few years, it's different. We really have to search hard for the caribou, mostly scattered around near the top of the lake, not the south like we're used to. I only shot one caribou, and some others didn't get so many. Though I know Joe shot more than the rest of us. Not so many caribou around anymore. (ND 25 09 02)

Overall I harvested less caribou this time around. There weren't many caribou in the area. Also, because we were out in the barrenlands, I had to spend a lot of time getting wood for fires. (AE 29 09 02)

Hunters also spoke about the condition of the caribou they had observed and / or harvested:

The caribou I harvested were all really fat, with lots of fat on the back and the brisket. (TE 27 09 02)

The ones that I hunted were all really fat. I've only seen fat caribou. The caribou are always fat around this time of year at Artillery Lake. That's why we come here. (RE 27 09 02)

The hides look thick and shiny, pretty good. Therese said the same thing. (NC 30 09 02)

One of the caribou I shot had pus in the meat, and some bruises. It didn't look very healthy. But my other caribou were good meat. (RE 27 09 02)

I shot a cow that had foam coming from her mouth. Maybe it was sick or something. (KE 26 09 02)

I saw a few caribou limping around, and some just standing there like they couldn't move. These were very skinny caribou, and we Chipewyan don't harvest those kind. Alec saw a hurt caribou too, limping around. (RE 27 09 02)

One caribou was injured, and was standing on its points for protection. There seem to be more of these caribou with hurt legs around these days. (AE 29 09 02)

The map in **Figure 3** displays the distribution of caribou harvesting activities during the 2002 fall hunt at Artillery Lake.

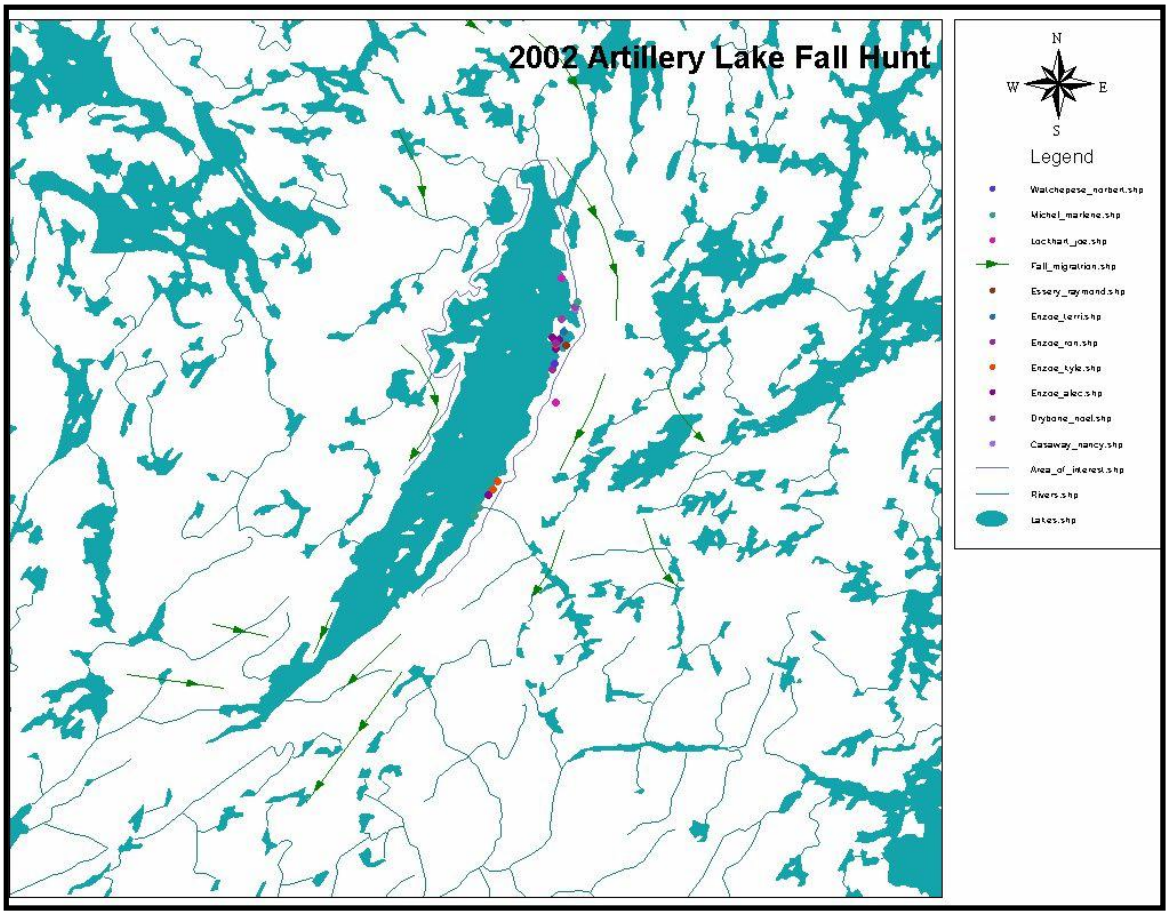

Figure 3. Caribou harvesting locations during 2002 Fall Hunt.

Winter Caribou Cycle

The winter is when the Bathurst and Beverly caribou herds over-winter in the forests of the traditional territory of the Denesǫłıne. This is the time of plenty, when harvesters are continually on the land hunting caribou. Caribou are truly the staff of Denesǫłıne life, providing everything from sustenance to material for clothing to cultural well-being.

Monitoring activities during the *Winter Caribou Cycle* are conducted differently than all the other monitoring cycles. In the interest of generating more specific information about caribou, field surveys are administered around caribou indicators for individual harvested caribou. These indicators are more quantitative in nature than the other types of indicators, and thus will be presented not as transcripts but as graphs. Overall, indicator information was gathered for 212 individual caribou during the 2002 *Winter Caribou Cycle*, elucidating information about caribou distribution, abundance, and condition. Results of the analysis of this indicator information are presented in the figures below.

Figure 4 displays the proportion of the total 212 monitored caribou harvested in each month of the *Winter Caribou Cycle*:

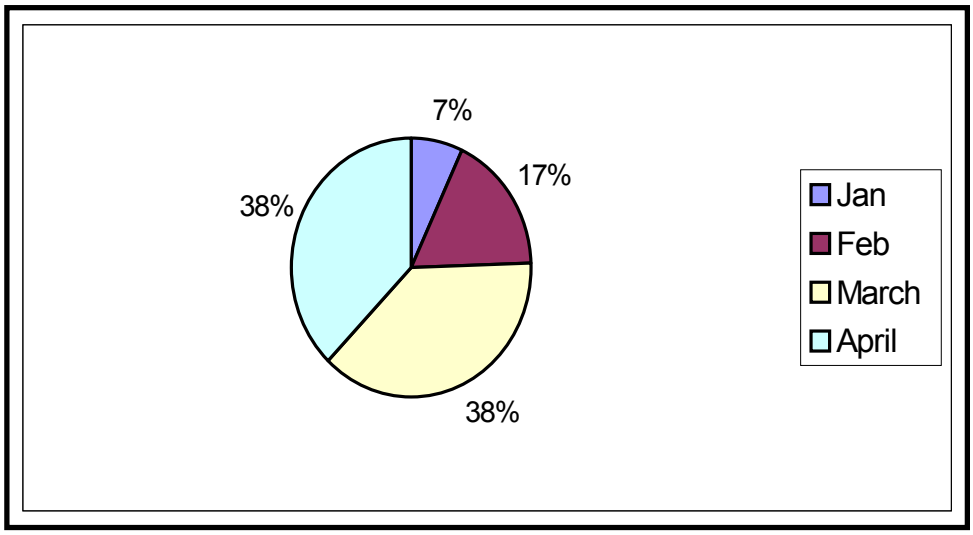

Figure 4. Proportion of caribou harvested per 2003 winter month.

March and April, when the majority of caribou harvesting activities took place (and consequently monitoring), represent those months where caribou were both in proximity to Łutsël K'e and were in abundance. Conversely, January and February show little relative caribou harvesting activity, as caribou had not yet reached their overwintering grounds in the boreal forest, also the traditional hunting grounds of the Denesǫłıne.

Figures 5 and **6** display maps showing the distribution of caribou harvesting activities during the winter of 2003. The map marked "February" also displays some caribou harvesting locations from early March, whereas the map marked "April" includes the distribution of caribou harvesting activities in late March. Together, the two maps show harvesting and monitoring locations from early February to late April.

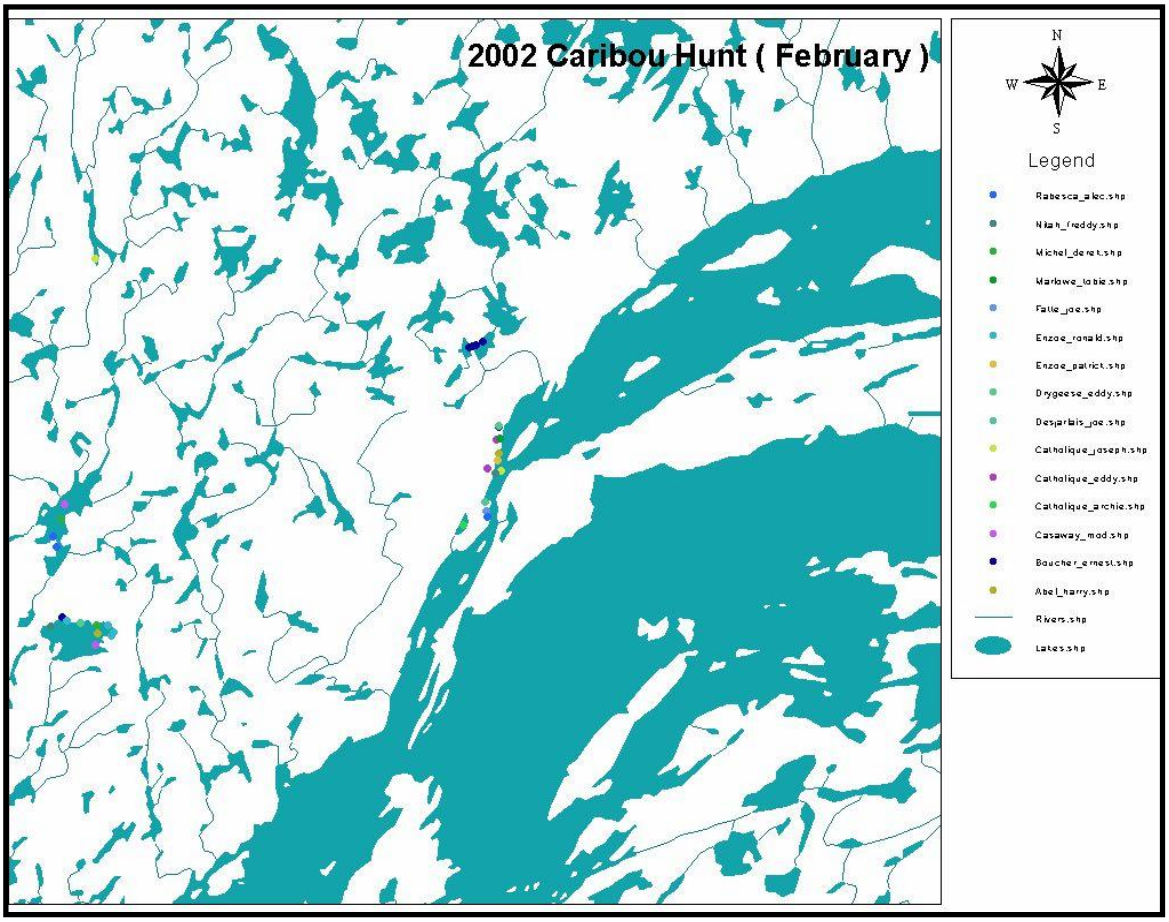

Figure 5. Caribou harvesting locations in early winter 2003.

Most (indeed, almost all) caribou harvesting activities took place on the north shore of the East Arm of Great Slave Lake. In February, when caribou were just beginning to reach this area in numbers, most caribou were sighted and harvested in the Taltheilei Narrows and McKinley Lake areas. In late February and early March, caribou continued to be seen around these areas, but had moved further inland towards the Francois Lake and Desperation Lake areas. Consequently, caribou harvesting activities shifted to this region.

In late March and early April, caribou again shifted their activities from the Francois Lake and Desperation Lake areas towards the northeast. Denesǫłıne hunters pursued the caribou in the Toad Lake and McKinley Lake areas, as well as around the lake known only in Chipewyan as ʔenıkue thetı kué. This trend continued in late April. In early May, caribou began to move northward at a rapid pace as the weather warmed, beginning their northerly migration to their calving grounds around Bathurst Inlet. At this point,

caribou moved out of the range of Denesǫłine hunters, and caribou harvesting activities effectively ceased.

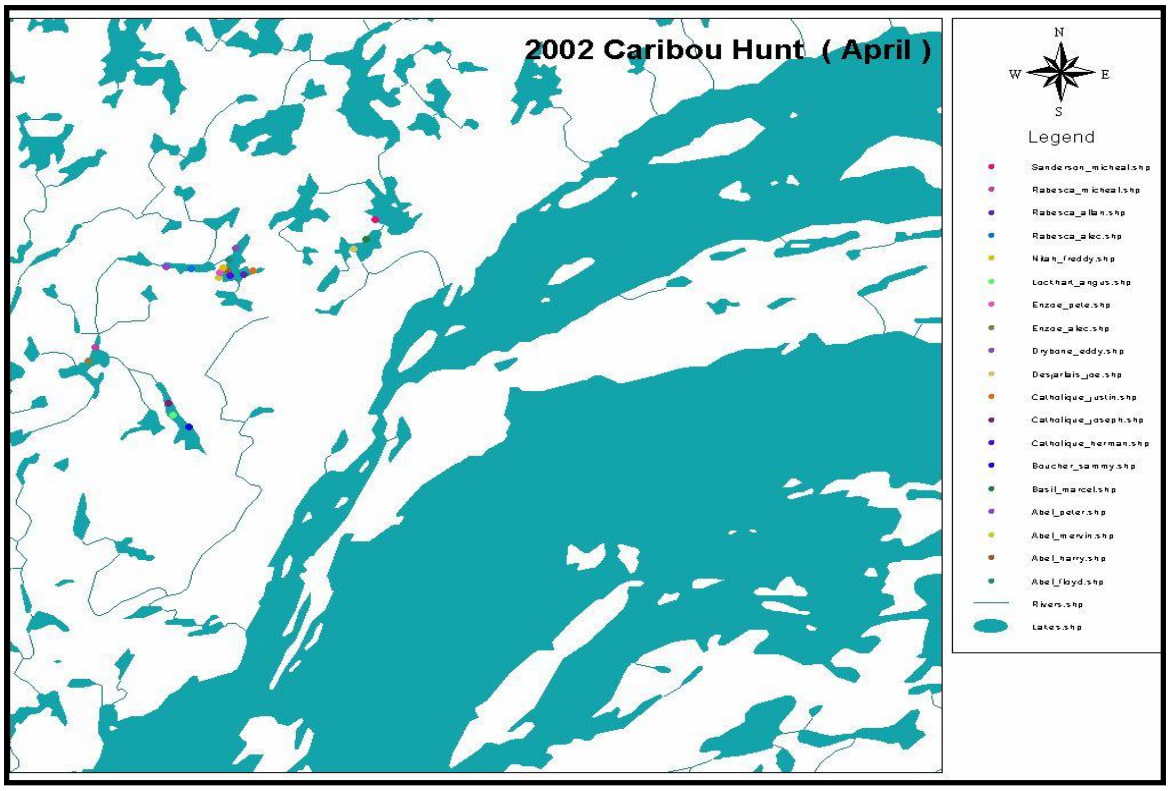

Figure 6. Caribou harvesting locations in late winter 2003.

Denesǫłine land-users usually had a specific reason for selecting a particular caribou for harvesting. This information is detailed in **Figure 7**.

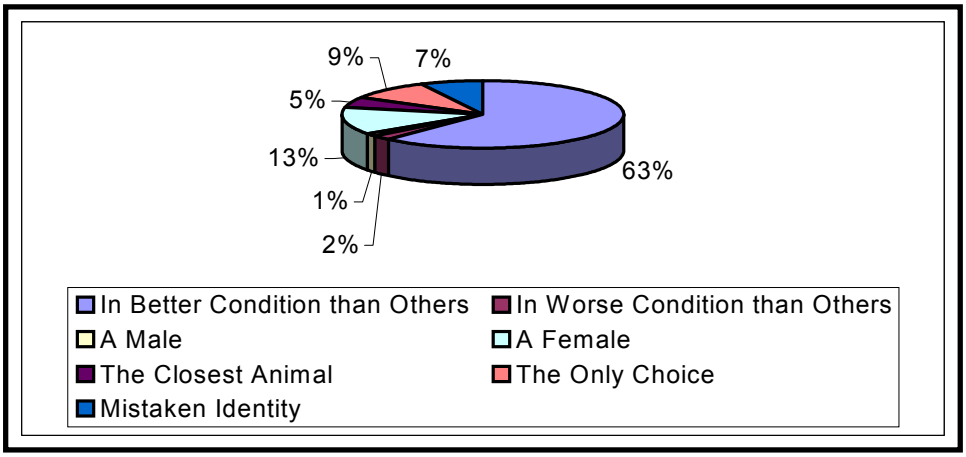

Figure 7. Harvested caribou selection criteria.

Most commonly, hunters select for caribou that they perceive to be in better condition than others in a group or herd. There are a number of visual clues that the Denesǫłıne use to assess better condition, from behaviour to shape to antler type. Other times, the Denesǫłıne will harvest a caribou because it is alone and is the only choice, or is simply the closest and thus the easiest to harvest. In the winter, female caribou are generally considered to be more desirable than the males (fatter), and so often harvesters select for females. Sometimes a caribou in poor condition is deliberately harvested. The Denesǫłıne believe that suffering animals should be relieved of their misery, and so harvesters will sometimes shoot these animals. Finally, some caribou are erroneously harvested due to mistaken identity. For example, a harvester may shoot a caribou he/she believes to be a female, only to find that it is a male upon dressing.

Figure 8 displays the gender and age distribution of the 212 caribou monitored during the 2003 *Winter Caribou Cycle*:

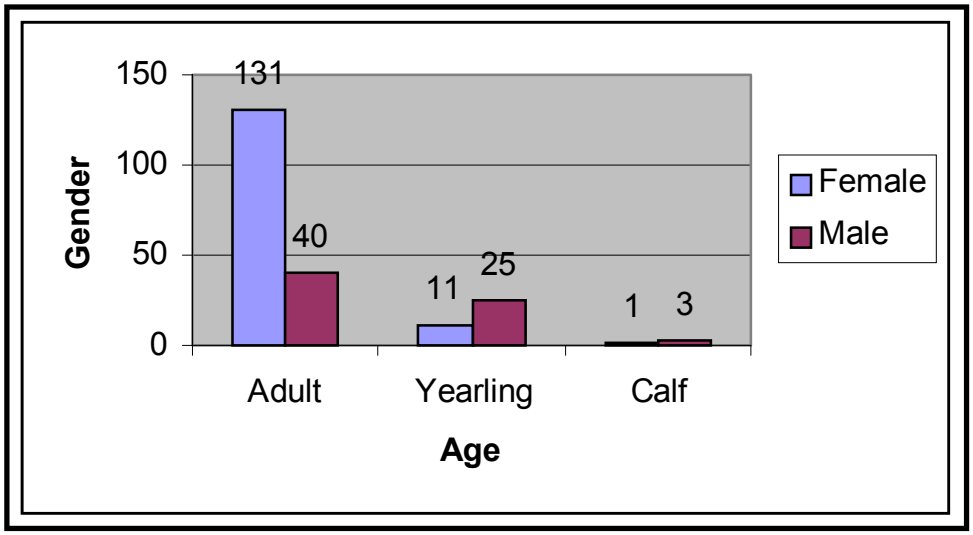

Figure 8. Age and gender distribution of harvested caribou.

Upon examination of **Figure 8**, it is plain to see that most of the caribou harvested in the winter of 2003 were adults, and of these the great proportion were female. A small proportion of yearlings was also harvested, and these were primarily male. A few incidental calves were harvested.

Figure 9 demonstrates the depth of brisket and back fat measured on caribou harvested and monitored during the 2003 *Winter Caribou Cycle*:

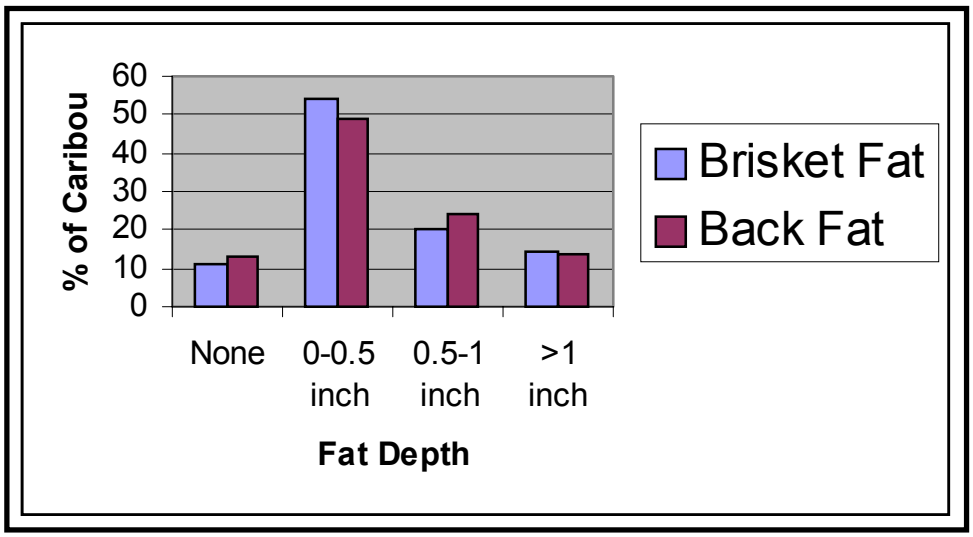

Figure 9. Brisket and back fat depth of harvested caribou.

This figure demonstrates that approximately half of all the caribou monitored possessed brisket and back fat to a depth of 0-0.5 inches, whereas about 40% of the caribou displayed fat deposits greater than 0.5 inches. A little more than 10% possessed no brisket or back fat at all.

The following figures show results from other observations made around indicators of caribou condition. **Figure 10** displays the meat and liver condition of the harvested caribou, **Figure 11** displays the movement ability, and **Figure 12** provides information concerning the bone marrow of the caribou. Finally, **Figure 13** shows the condition of the hides taken from the caribou harvested during the 2003 *Winter Caribou Cycle*:

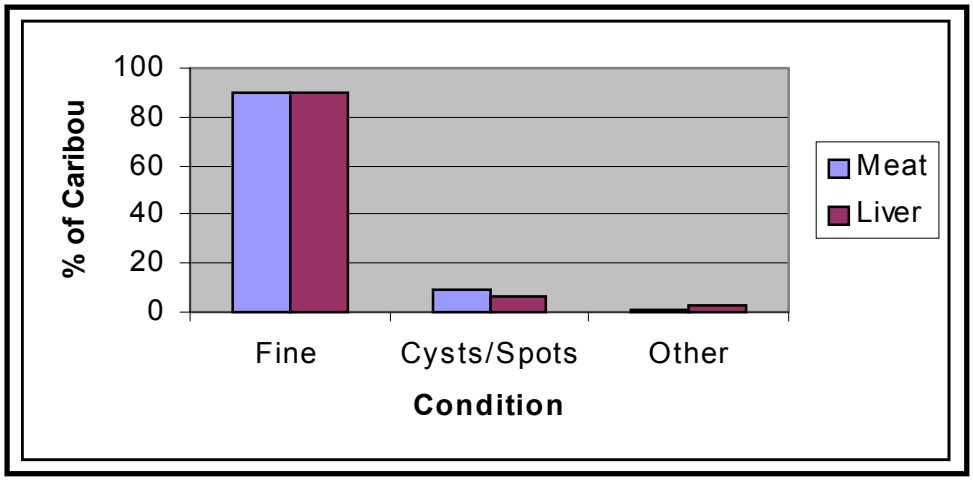

Figure 10. Meat and liver condition of harvested caribou.

Most caribou had meat and livers that were fine. In other words, the meat and organs were a healthy deep red and were not marred by parasites or blemishes. A small percentage of the caribou, approximately 10%, possessed either parasitic cysts in the meat or whitish / yellowish spots on the liver, signifying a caribou in poorer condition. A very small proportion of the caribou had other ailments in the meat and liver, typically bruises or large patches of discoloration, potentially indicating a caribou with a serious illness or disease.

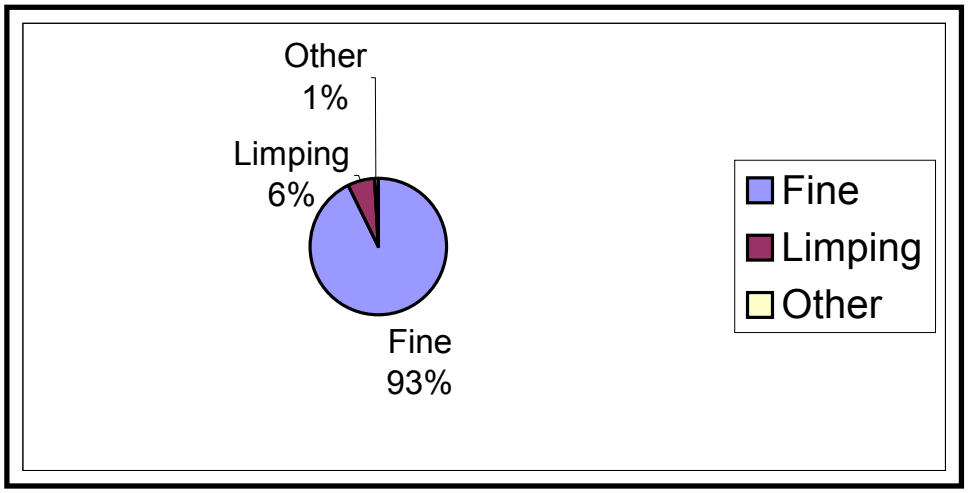

Figure 11. Movement ability of harvested caribou.

The grand majority of the harvested caribou were fine in their ability to move about (locomote). They could walk and run with ease, and appeared to be under little distress due to hampered movement ability. 6% of the harvested caribou, however, displayed clear difficulties walking and running, most often due to swelling in the knee and ankle areas, or else damage to the area of the hoof. A few (1%) caribou had broken limbs or unknown causes of locomotory dysfunction.

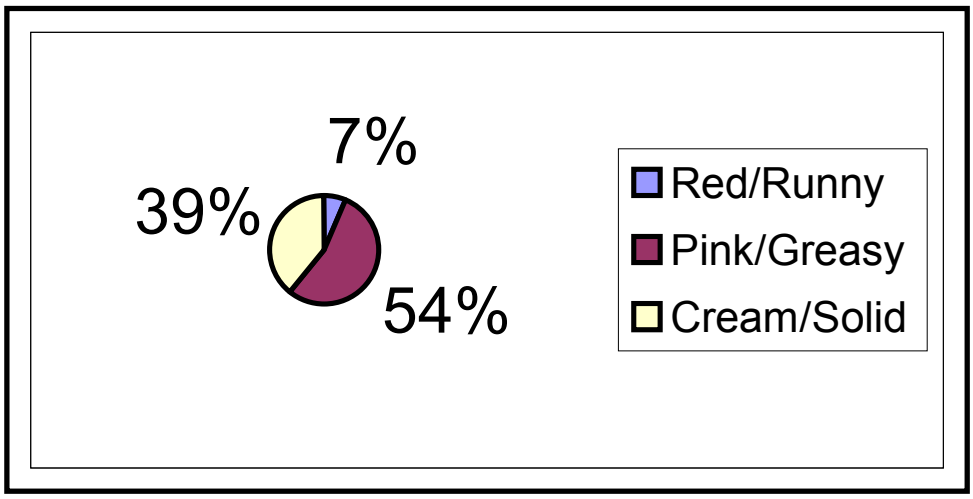

Figure 12. Bone marrow condition of harvested caribou.

Upon harvesting, most Denesǫłine land-users crack open a leg bone and assess the condition of the marrow. Marrow that is cream in color and very solid indicates a caribou in very good health, and is typically associated with a fat, robust animal. Marrow that is pink and greasy indicates a caribou that is in decent health, but may be under stress from too little to eat, predator and parasite harassment, or sometimes illness. Red and runny marrow indicates an animal that is most likely malnourished and experiencing considerable strain from predators, parasites, or illness. Of the 212 caribou monitored during the 2003 Winter Caribou Cycle, over half possessed marrow of the pink and greasy type, while approximately %40 had creamy and solid marrow. 7% possessed marrow of the red and runny variety.

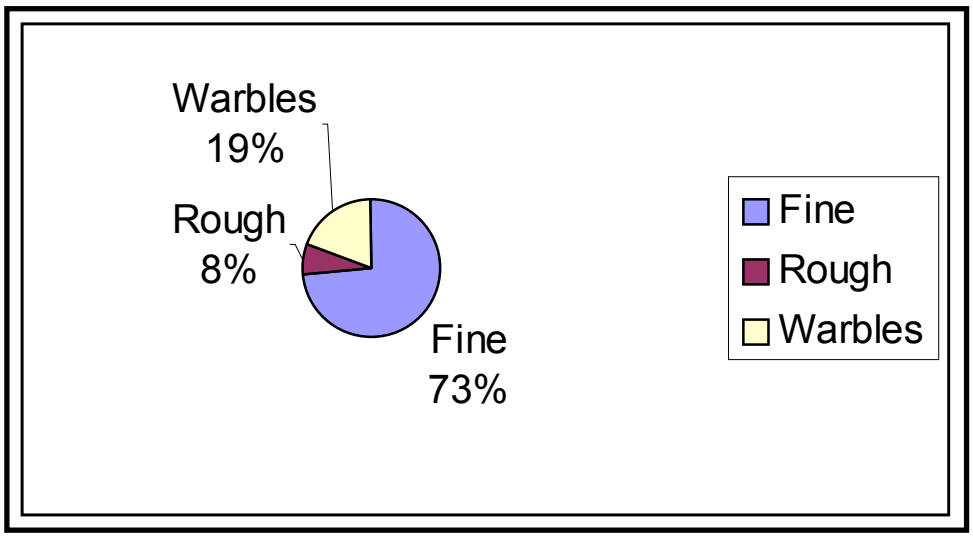

Figure 13. Hide condition of harvested caribou.

Upon examination of hides taken from harvested caribou, Denesǫłıne land-users noticed that about three-quarters of the hides were in good condition, with glossy, thick fur. 8% of the hides were deemed rough, with patchy or thin areas and dull colors. 19% of the hides had large amounts of parasitic warble fly larvae/pupae in the back region, rendering the hide less useful for Denesǫłıne clothing and craft making as well as increasing stress levels for the caribou.

In final analysis, all hunters were asked to provide their overall, general impression of the condition of the caribou they had harvested. **Figure 14** displays these results:

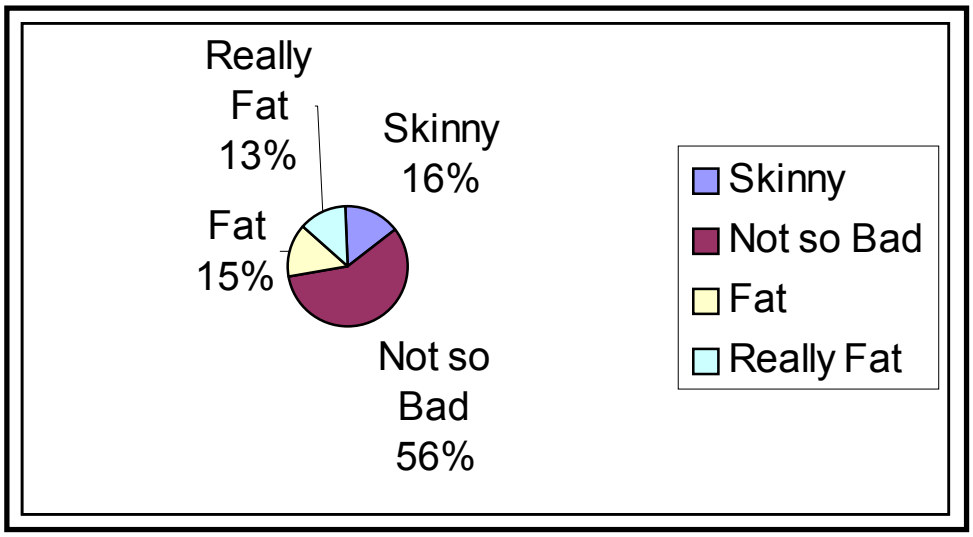

Figure 14. Overall hunter's impressions of harvested caribou condition.

Over half of the harvested caribou were deemed by Denesǫłıne land-users to be not so bad, or in decent health. 28% of the harvested caribou were considered to be in very good health, displaying large deposits of fat and otherwise in good condition. 16% of the caribou were considered to be skinny, perhaps indicating that they are undernourished, under stress from parasites and/or predators, or ill from sickness or disease.

5.1.1.2 Fish (Łu) indicator information

The indicators monitored during the fish monitoring cycles were the following:

- Type (species) and number of fish harvested by local harvesters in the waters in the region.
- Locations of harvesters' gill nets and / or angling activities.

- Fatness.
- Parasite load.

Fish indicator information was tested during two distinct cycles, the *Summer Angling Cycle* and the *Fall Fishnet Cycle* administered respectively during the summer and fall of the 2002-2003 monitoring period.

- The *Summer Angling Cycle* focuses upon fish harvesting activities using a rod and reel. Almost all Denesǫłıne harvesters angle during the summer months, and are thus able to speak around fish indicators. A representative sample of forty individual harvesters was involved with this cycle of monitoring during 2002-2003.

- With regards to the *Fall Fishnet Cycle*, harvesters from Łutsël K'e have fishnets set during all the seasons of the year, from the open water of the summer months to under-the-ice sets in the wintertime. As people's seasonal fishing locations remain relatively constant throughout the year, it was found that harvesters could talk about some of the indicators, such as gill net locations, for the whole previous year of fishing. Other indicators, such as those associated with fish condition (such as fatness and parasite load), could however only be discussed very generally or for the most recent past. Seventeen prominent harvesters participated in this monitoring cycle during 2002-2003.

Summer Angling Cycle

During the *Summer Angling Cycle*, harvesters were asked to speak about the abundance of fish in the traditional territory. Here is a representative sample of their responses:

> *Fish were pretty hard to catch this year. I'm not sure why. It goes up and down like that. (AL 17 07 02)*
>
> *It has been pretty good this year - I have been able to catch fish pretty easy, sometimes really easy, especially trout. Sometimes I have to wait a little longer (GA 19 08 02)*
>
> *Yeah, I've found it really easy to catch fish. It's always good fishing in the East Arm. Some summers are better than others, but overall fishing is always good. (JCC 19 08 02)*
>
> *Fish have really been biting. In the 1990s, it was harder to catch fish than it is now. (PS 31 07 02)*

Distribution of fish during the summer months was also discussed through stories of the best places to fish for certain species. These places are graphically displayed in **Figure 15.**

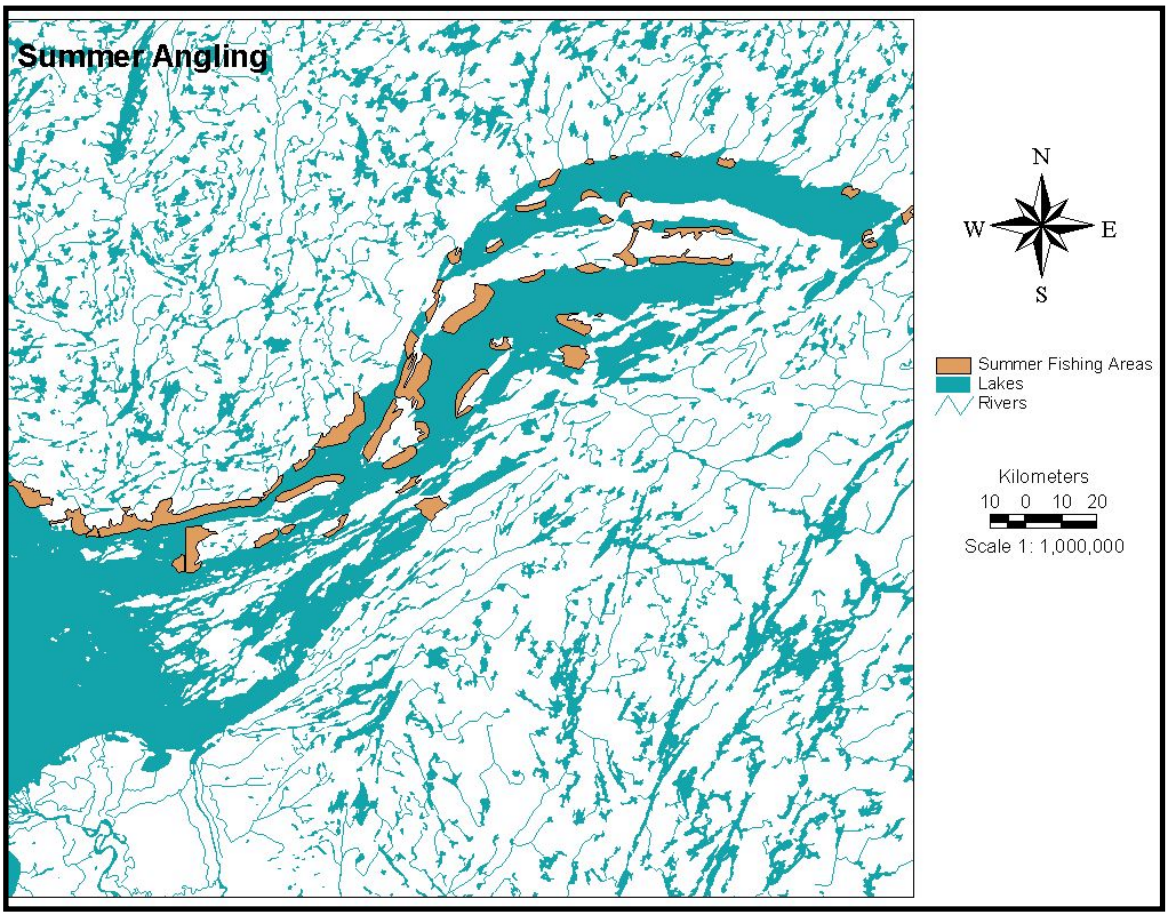

Figure 15. Distribution of angling activity in summer 2002.

Comments about the condition of angled fish were also elicited from harvesters during *the Summer Angling Cycle*:

> *I don't notice any difference between fish from this year and other years. You know, some fish are skinny, some are fat. That's just how it is. Mostly in the East Arm, fish are pretty fat and good to eat, especially those in between 5 and 10 pounds. This summer I caught one weird fish. It looked like it had a deformed backbone - the tail was much lower than the midsection. (BS 16 07 02)*

> *Fish were pretty fat this year. Better than last year - I caught a lot of skinny fish then. (GA 19 08 02)*

I've only had to throw one fish back this summer because it was skinny. Most of the fish I've seen have been nice and fat. Not like last year when lots of trout were skinny. (JCC 19 08 02)

Mostly fish I've seen have been pretty good, not so bad. I was fishing in Stark Lake and caught some trout that had pus on them and worms. They looked bad, so I just threw them back. Not even good to feed to dogs! (JD 31 07 02)

I've been around awhile, fishing lots. In my opinion, the fish are really fat these years, fatter than they were a few years back. (PS 31 07 02)

When I was fishing over by Nu Cho, I caught some fish with scars and burns on them. It looked like they were in a bad fight, or maybe got caught in a net and escaped. But most fish are pretty good and healthy. (RE 31 07 02)

Fall Fishnet Cycle

During the *Fall Fishnet Cycle*, stories gathered and recorded from harvesters about gill net locations, fish abundance and general fish condition include the following representative selection:

I always set nets around Louie's Island to the west side. It's really good for trout and whitefish there. I set net's there year after year and it's always good. (BE 18 12 02)

Trout and whitefish are always around the Nu Cho gap. That's where I put nets in the water. There's lots of fish and they're easy to catch. Most places are like that. I once caught a fish that had white pimples all over the skin. It was a trout, and I threw it into the water again. (EC 18 12 02)

It seems like it's easy to catch fish in nets nowadays. Really easy. And the fish are pretty good, healthy. The only place I know where there are bad fish is in Stark Lake. I fished there a lot in the fall and I caught lots of trout and whitefish with parasites all over. (EB 22 01 03)

Mostly I set my dad's nets. In front of the Łutsël K'e *point or over by Nu Cho,* ʔeghaı Nu*. I've seen some fish in nets with white spots on them, and sometimes I catch fish that*

have injuries from hooks, from fisherman, probably from the lodge [Frontier Fishing Lodge] because that's where they fish all the time. (JC 18 12 02)

By the lodge I caught a fish with a broken back. It was shaped like a Z. Maybe it came down the river from Stark Lake, where the fish are no good. (JPE 21 01 03)

The map in **Figure 16** shows fishnet locations used by the local fish harvesters during all four seasons of 2002.

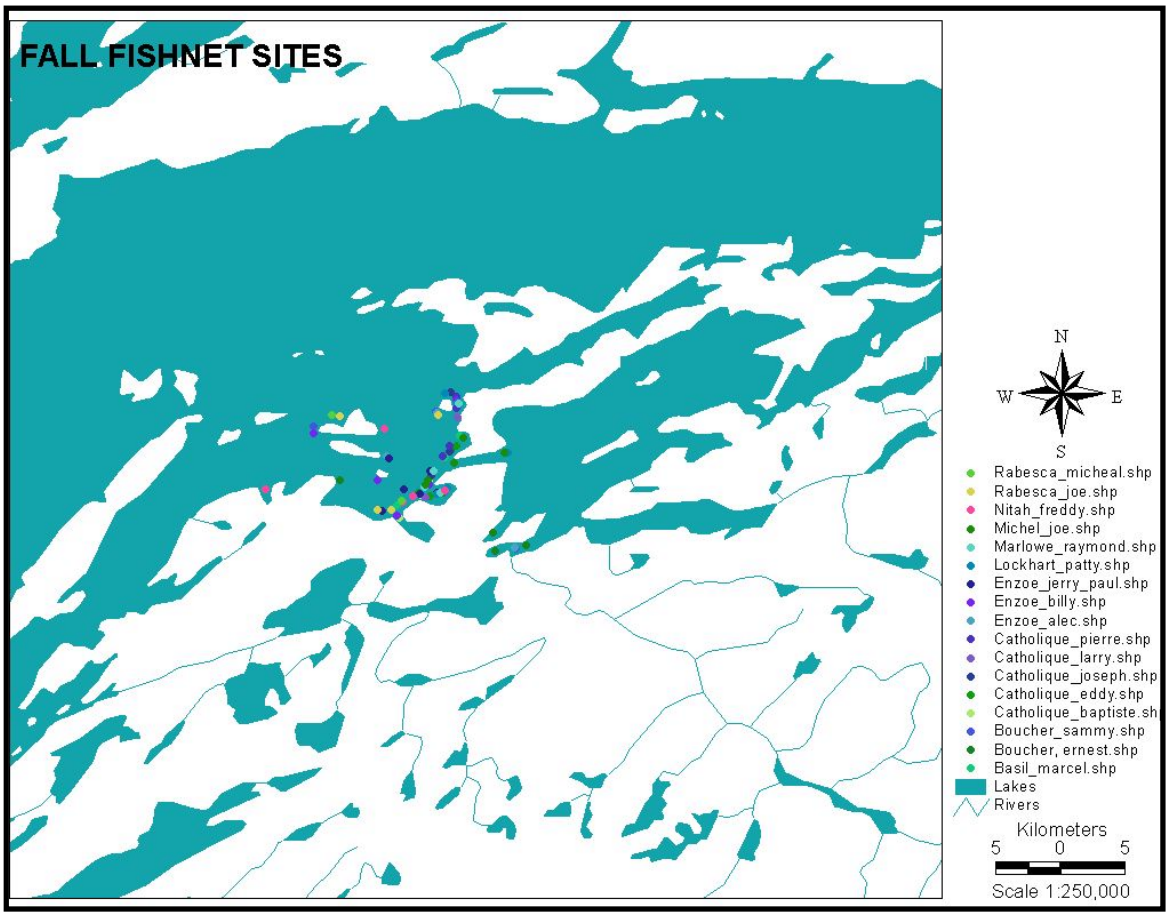

Figure 16. Location of fishnets around Łutsël K'e in 2002.

5.1.1.3 Small fur-bearing animal (Tsa Thath) indicator information

Small fur-bearing animal indicators were monitored during the *Beaver and Muskrat Cycle* in the spring, the *Rabbit Cycle* in the fall, the *Marten, Mink, Weasel, Lynx, Fox and Wolverine Cycle* in the winter of 2002-2003. The indicators monitored were the following:

- Number and type (species) of fur-bearing animals harvested during the trapping season.
- Location and extent of traplines used by the Denesǫłıne.
- The fullness and shininess of fur-bearing animal pelts.
- The thickness of fat deposits found between a fur-bearing animals pelt and body.

- The *Beaver and Muskrat Cycle* occurred during the spring 2002 trapping season. When the weather gets warmer and the lake ice begins to melt, many harvesters set traps for beaver and muskrat near the lodges and push-ups of these rodents. The trapping season only lasts as long as the ice remains relatively firm, but can provide rewards in pelts and meat. Eighteen trappers participated in this cycle of monitoring.

- The *Rabbit Cycle* was administered in November 2002, during the period when rabbits are actively snared during the first snowfalls of the winter. At this time rabbit snares can easily be set along the fresh tracks. As snaring rabbits is not a huge investment of time or money, most people in Łutsël K'e set snares at one time or another during the fall. However, as rabbits were very scarce and consequently hard to snare in the fall of 2002, very few people actively trapped these animals this season. As such, only the four individuals known to have snared rabbits participated in small fur-bearing animal questionnaires near the end of the rabbit season.

- The *Marten, Mink, Weasel, Lynx, Fox and Wolverine Cycle* of indicator information gathering was completed in late February and early March 2003, during the tail end of the trapping season that begins with the first snowfall. Trappers from Łutsël K'e typically establish traplines soon after the first snow of winter, and continue trapping during the prime fur months between November to February. While not many Łutsël K'e trappers continue to live the trapping lifestyle exclusively, many still trap to supplement their income or simply for recreation. Fourteen of these individuals participated in small fur-bearing animal questionnaires in relation to marten, mink, weasel, etc.

Beaver and Muskrat Cycle

Even though efforts to trap beavers and muskrats have been steadily declining in the community of Łutsël K'e, many trappers still harvest these animals for subsistence and recreational reasons. Trappers pursuing beavers and muskrat in the early spring months shared much information about the abundance, distribution and condition of the animals during this particular season:

I caught six beavers this spring, three from one beaver house and another three from another house. But there wasn't much beavers this year, not like other years - it was a late spring. I found that the best place to trap beavers is around Keith Island, to the west of ***Łutsël K'e****. There's always lots of beavers there, that's where everybody goes. I caught all six beavers on that island, but I didn't try for muskrat. The beaver I caught were skinny - the ice was still thick because of the late spring, and I think that the beaver were hungry from not getting enough food. (TM 07 06 02)*

I caught about three beavers around Keith Island, and seventeen muskrat around the Duhamel Lake area. There were lots of muskrat around Duhamel Lake - I just reset traps in the same hole over and over and kept on catching them. There must be lots of food underneath the ice in Duhamel, because there were lots of muskrats and they were really fat - good to eat! Their fur was also really shiny, because they were underwater all winter - that way their fur stays really clean and doesn't get rubbed off like it does on land. (SB 09 07 02)

I didn't trap any beavers or muskrats this spring, but I did shoot two beavers and two muskrats around the Snowdrift River area. There were less beavers this year compared to other years when I trapped them - I'm not sure why. Still, the ones I shot were nice and fat, because we got them right after the ice melted from the river. Once the ice melts, the beavers and muskrats start swimming around a lot, and start getting skinny. So I shot them just in time, before they got skinny. Also, it was before they spent a lot of time on land, so their fur was good. (PS 08 07 02)

Mostly the muskrats I got were fat. There always like that in the spring, when the ice starts to melt. Once mating season comes around in the summer, they get pretty skinny - that's why we harvest them in springtime. (PE 24 07 02)

I harvested a couple of beavers around Pauline Lake. They were really small there. They looked almost like baby beavers! I saw other people get beavers that were pretty fat, but these were skinny. Maybe because there were to many beavers on that lake. I counted around seven different families, all on that small little lake. I guess they were stealing food from each other. (PL 11 06 02)

I harvested four beavers and eleven muskrats from different places. Where I harvested most of the muskrats, I noticed that their fur was kind of rough. Usually this happens

when they are in a place with shallow water, and they rub up against the bottom and sticks and plants when they're swimming. That way, their fur is not so good. (JF 11 06 02)

I caught 33 muskrat this year, but this is low compared to what I usually get. Muskrat were low in the places I always go. I don't know why. Sometimes its just like that - you can catch lots of muskrat in one lake, but then in another you have a really hard time. (LA 11 06 02)

The map displayed in **Figure 17** indicates beaver and muskrat harvesting locations used by Denesǫłıne harvesters during the spring trapping season:

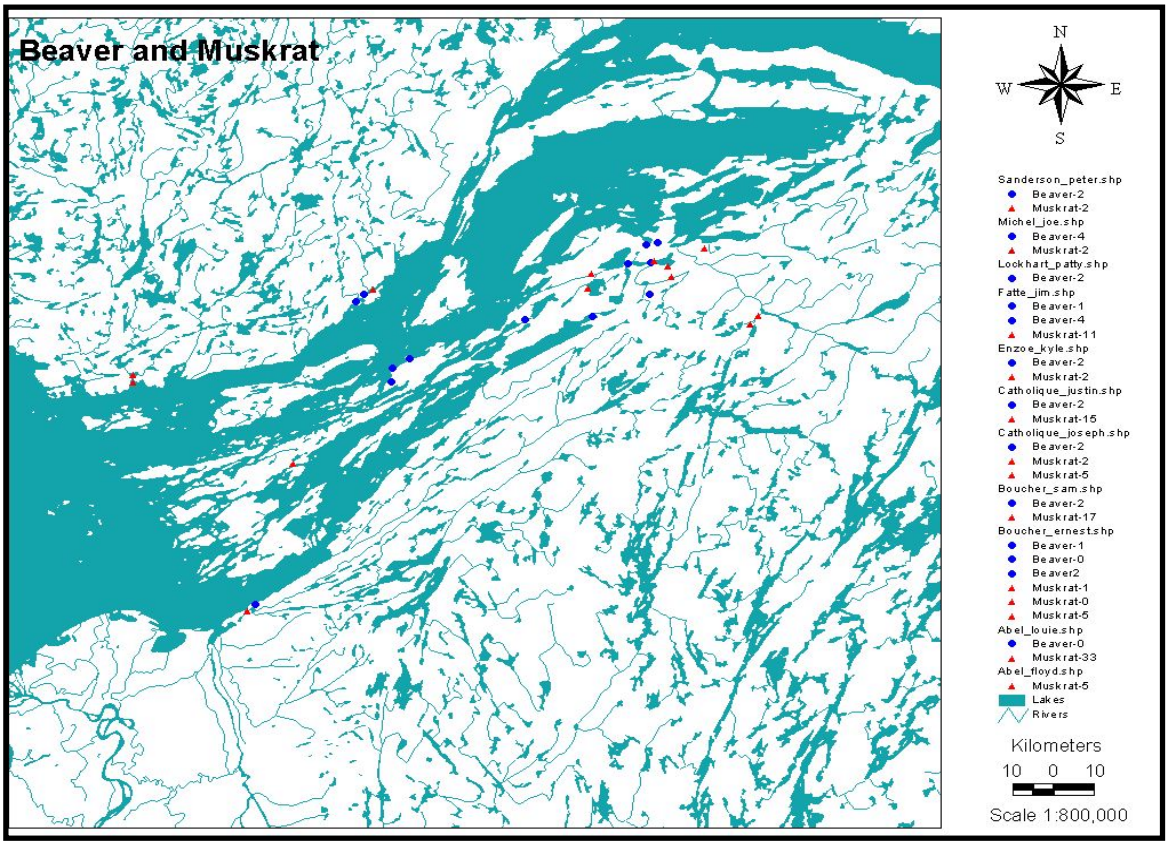

Figure 17. Locations of beaver and muskrat trapping in spring 2002.

Rabbit Cycle

In the fall of 2002, the population of rabbits was considered to be so low as to deter most people from even attempting to snare them. Simply, most potential harvesters did not see any rabbit tracks in the first

snowfalls, and thus decided to not try and snare rabbits. However, a handful of harvesters did set snares, and their representative comments concerning the location of their snares, how many rabbits they harvested in each area, as well as the overall condition of the rabbits they harvested are presented below:

> *I set a whole bunch of snares this season in all my usual places, but I eventually gave up after I only caught two rabbits. Everybody is saying that there are no rabbits this year. Sometimes it goes like that, one year lots of rabbits, another year not so many. Those two rabbits were even not very fat! I think when rabbits get to be too many, they eat up all their food and have to go away to other places. Like the past years there have been lots of rabbits. Maybe they ran out of food! Also, there are really lots of wolves around this year, so maybe this is scaring rabbits away. (AE 05 11 02)*

> *I shot one rabbit in the bay and another up the road to the Snowdrift River. The rabbits were really, really skinny. There are barely any rabbits around this year, not like last year when there was so many. It's because there are so many wolves this fall. They're eating up all the rabbits and chasing them away. (JeC 05 11 02)*

> *For me this is a bad year for rabbits. I only managed to catch one by August Enzoe's camp at the Snowdrift River. It was so skinny we couldn't even eat it. I believe there is a large pack of wolves around town [Łutsël K'e] that is making the rabbits not feed good. (NC 05 11 02)*

Marten, Mink, Weasel, Lynx, Fox and Wolverine Cycle

Trappers were asked about the numbers of different types of fur-bearing animals that they harvested on their traplines. The trappers also talked about the quality of the furs they trapped. Here are some of their stories:

> *I trapped mostly for marten this year, all around Murky Lake where my cabin is. I harvested about sixteen. That's less than usual, but I was working at the mine two weeks in, two weeks out, so I didn't spend as much time on the land. I trapped during January and February, but mostly around the holidays at Christmas. That's when Evelyn [spouse] was back from school and we spent a lot of time at the cabin. I didn't catch that much martens, but it was easy. I think if I stuck to it all season, I could have caught lots of marten. The price was pretty good this year, around $80 a marten. (FA 11 02 03)*

This year I went trapping way up on the north shore [of the East Arm] because there was lots of caribou there. I stayed in the forestry cabin. The trapping was OK by me. I caught a few marten around Francois Lake, and I tried for white fox and caught two, not so many but alright. They're too cheap anyways. I saw a wolverine on a lake by a dead caribou, and I tried to get to it by ski-doo but it went in the trees too fast. I know Pete caught two wolverine in that area around the same time, but no luck for me. (JF 23 01 03)

I mostly trap for marten around my cabin at ?eghaı Nu and towards Murky Lake. It's my traditional trapline, I've been using it since the 1970s. This was a good year for marten, and I caught about 25 easily. I fixed them all at my cabin, and they were in good shape - I even caught one with pure black fur, no brown on it. For me this was a good trapping year. (LA 12 02 03)

I went out lots this year looking for lynx and wolverine. Actually, I caught a lynx in a trap I set for a rabbit! It was on Duhamel Lake. They're hard to find, lynx, but sometimes you get lucky. I shot three wolverines this year, one on Stark Lake and then the other two out towards Reliance and the barrenlands. Winter is the best time for wolverine, because you can follow their tracks in the snow. I also set conibear traps for marten and mink, up and down the Snowdrift River and by the Stark Lake rapids. I put them in small boxes I make so they can't sneak in and steal bait. I caught quite a few marten, some mink, about 30 total. The best place was by the Stark Lake gap. (AJC 26 02 03)

Every year I set traps for marten along my trail to Gagnon Lake. Kyle comes with me most of time, he's a good helper. I set about 20-30 traps on my trapline, and this year was pretty good for marten. Lots of them, and good price. I caught some mink too, and a weasel by accident. Mostly the marten were fat, and their fur was pretty good, thick and shiny. (PE 07 03 03)

Well, me and my brothers set traps up and down the Snowdrift River this year, all the way up to Austin Lake. We do this every year, because we were raised up in that area. I usually set about 20 traps, Albert and Sammy about the same. For me, this year has been pretty good for trapping. Marten , I trapped about eighteen, one really, really big one - it looked almost like a fox! I also caught some mink, about three, but no weasel or fox. Almost nobody traps foxes anymore, because the price is so low. In the olden days you could make 10000 dollars from foxes in one season, but no there's no use trapping those kind. Marten is the best. (EB 05 03 03)

Figure 18 shows a composite map of the 2002-2003 traplines outlined by all the trappers that participated in the *Marten, Mink, Weasel, Lynx, Fox and Wolverine Cycle*. This map provides a good indication of where trappers focused their efforts, and thus where these fur-bearing animals were distributed across the landscape.

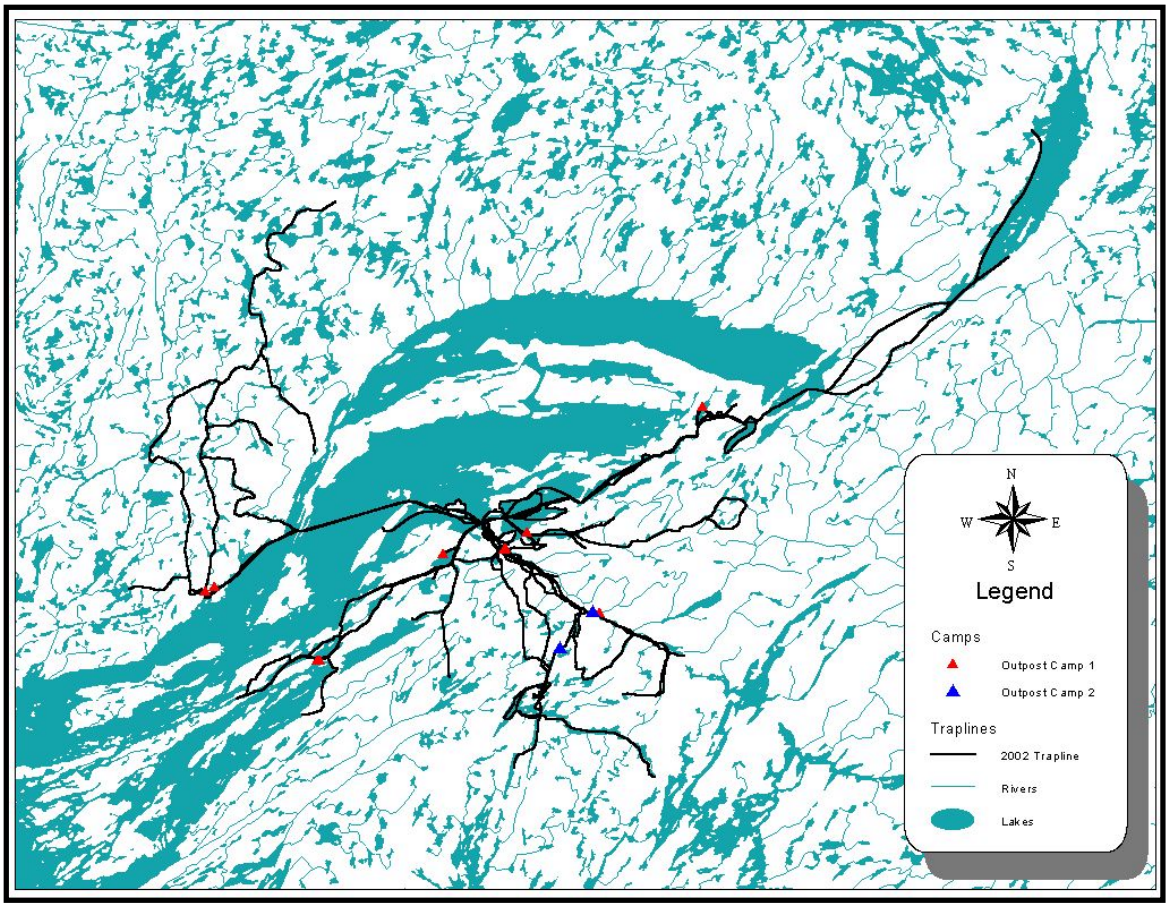

Figure 18. Small mammal traplines for winter 2002-2003.

5.1.1.4 Chicken and ptarmigan (Dı, ʔeɬk'aıth, K'asba) indicator information

Information was gathered around chicken and ptarmigan indicators during the *Chicken and Ptarmigan Cycle* in the fall months of 2002. Questionnaires were administered in early November, prior to the first permanent snowfall. At this time, these birds are active in the woods with their mating rituals, and ptarmigan are in the process of gaining their winter plumage. Harvesters actively pursue these birds at this time, stalking them through the woods with shotguns or .22 rifles. Fifteen harvesters were interviewed

about their chicken and ptarmigan hunting experiences during this cycle. The indicators monitored during the *Chicken and Ptarmigan Cycle* were the following:

- Type (species) and number of chickens and ptarmigan harvested by local land-users.
- Presence and numbers of chickens and ptarmigan at traditional harvesting areas in fall (chickens) and spring (ptarmigan).
- Extent and thickness of fat deposits in harvested chickens and ptarmigan.

The answers to questions about chickens and ptarmigans are exemplified in stories told by land-users about chicken and ptarmigan abundance, harvesting locations and condition:

> *It was a warm fall. I hunted for chickens and ptarmigans around my dad's camp at the Snowdrift River. I shot four ptarmigans and two chickens. They were in good shape, nothing wrong with them. (AE 05 11 02)*

> *Winter is really late coming this year. For me it is like Indian summer because it is so warm. I shot one ptarmigan and one chicken, not so many but I don't go out much. They were fat - I know because I ate them. (CD 07 11 02)*

> *It's been a warm fall. I harvested two chickens, but we went out to find them lots. There weren't as many chickens this year compared to other years, and we didn't see any ptarmigans. We ate the chickens on a picnic, and they tasted good and were fat. (JI 02 11 02)*

> *I go out for chickens and ptarmigans all the time. I shot eight chickens on the road to Duhamel Lake and no ptarmigans. The chickens weren't so fat to me. I think it's because there aren't as many cranberries this year for them to feed on. I remember in 1997 there were really lots of chickens around. It's not like that anymore. I even saw two chickens that were hurt or sick - they were losing all their feathers. Up by Kenny Boucher's house. I didn't shoot these ones, because they're bad to eat. (KE 01 11 02)*

> *I've harvested two chickens and one ptarmigan this fall. They were kind of skinny. I think there are lots of wolves around town, so the chickens and ptarmigan can't feed properly. It's not like two years ago, when all the chickens and ptarmigan were really fat and good to eat. (NC 05 11 02)*

> *I shot two chickens by the river when I was picking berries. They were in pretty good shape. I haven't seen any ptarmigan though. I noticed that there are less chickens this year, even though*

the berries are pretty good. Even out on the barrenlands it is like that with the ptarmigan. (TE 08 11 02)

Figure 19 shows areas where Łutsël K'e harvesters went to hunt chickens and ptarmigan in the fall of 2002:

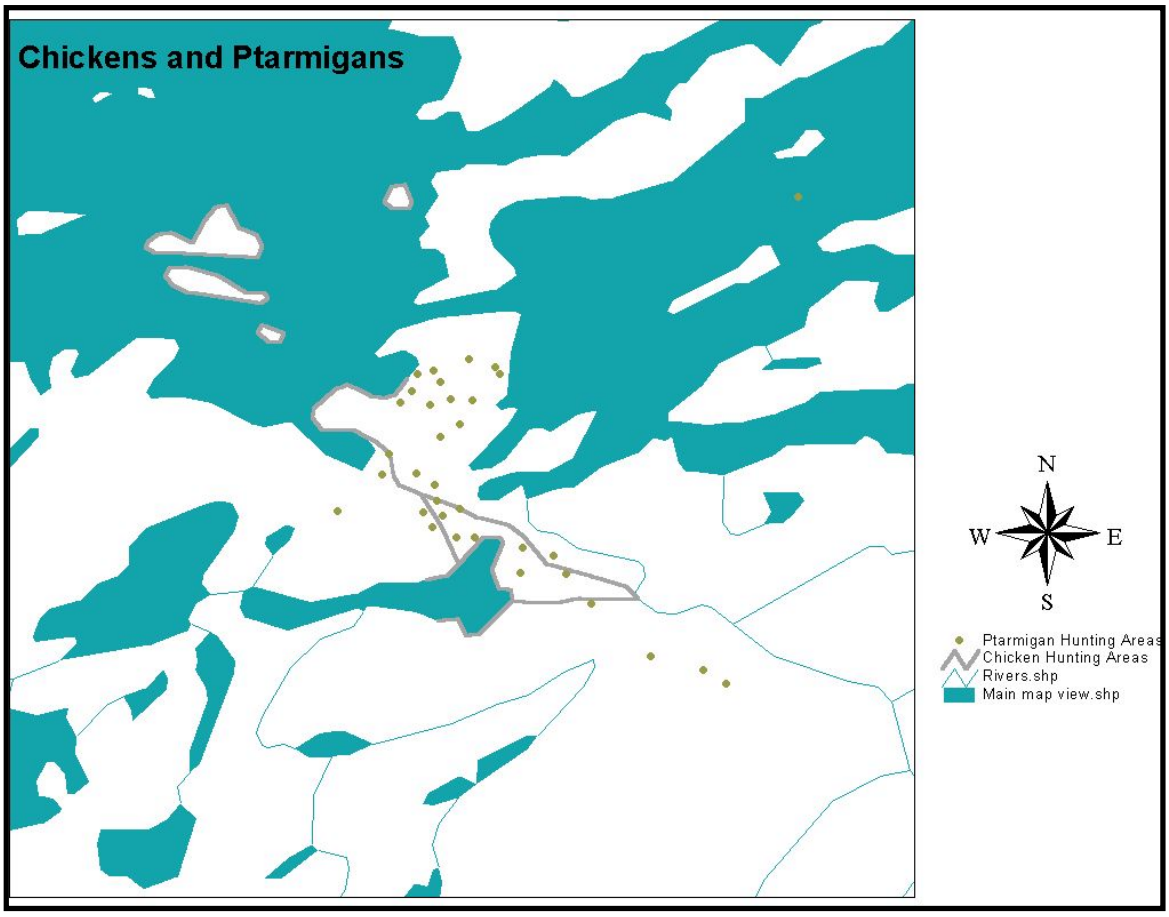

Figure 19. Chicken and ptarmigan harvesting locations in fall 2002.

5.1.1.5 Berry (Jí) indicator information

The *Berry Cycle* was completed in September and early October 2002. This is the tail end of the berry-picking season which begins in mid-summer with the raspberries and ends in early fall with the cranberries

and crowberries. During the berry-picking season, many Denesǫłıne women gather in the berry patches to harvest berries and socialize. The women gravitate towards those traditional berry patches that are known have many large, juicy berries. While picking berries, the women make many observations around berry indicators. During the 2002 *Berry Cycle*, six harvesters were interviewed about all of the berry indicators. These indicators were:

- Type (species) and abundance of berries in traditional berry patches.
- Location of berry-harvesting activities.
- Levels of rain during the spring and summer months.
- Temperature during the spring and summer months.
- Forest fire activity in the region

Responses to monitoring questionnaires are detailed in these representative transcripts:

> *I mostly pick blueberries by the road that leads to Stark Lake. The best time to collect these berries is in late August and September. Any later in the season the blueberries would start to fall. Since I can remember berries have always grown in this area. Now they have an airport in our berry patch area. The blueberries grow more at Snowdrift River, at the Lockhart River, and Pikes Portage in Fort Reliance. These are the best places for picking blueberries. The blueberries that I collected I make jam and eat the berries with sugar. The children really like to eat the berries with sugar. In the olden days people would prepare berries for the hunters, mixing the berries with pound meat and it is rolled into a ball then frozen for the hunters to take. (LE 03 09 02)*

> *I pick blueberries near the airport and by the river. This year the berries are more and bigger because of the rainy season. Last year the berries were not as much as this year because it did not rain as much. Cranberries grow in the bay of Łutsël K'e. That's where I usually go pick them, because it is the best place. For me, the blueberries this season are lots and lots, and the berries are big - makes it easier to pick. I make jam with blueberries and I collect and store it for Christmas time. When berries are ripe it is the best time to make tarts with them - it is very good to eat. (MD 14 09 02)*

> *I pick blueberries around Łutsël K'e every year. I always goes on the cut line beside the road to Stark Lake, by the river were the trees are big. This has been the best place for as long as I remember. Last year as I was picking berries and there was a black bear eating blueberries near where I was picking berries - bears really like berries. I do not eat much berries but I pick them for my grandchildren because they just love eating berries with*

sugar. In the winter I always give some blueberries to our elder Marie Casaway. The best place to pick berries is in Fort Reliance - the berries taste really good there. (CM 03 09 02)

It was kind of a cold summer, but there was lots of rain. That's why the berries are big and easy to pick this year. I enjoy going and picking berries, it takes my mind of my troubles. The blueberries were really good this year, I pick lots for jam. I haven't really looked for raspberries, but the cranberries are good out on the islands around Łutsël K'e. Barrenland Island is really good, and that other island right beside it. That's where you can get lots and lots of cranberries. (AA 18 09 02)

Everybody goes and picks berries by the airport and also down the road towards the Snowdrift river. I don't go picking as much as before myself. Those areas are good because the big trees have been cut down and the small berry bushes grow good there. It's like after a fire, at first you don't have anything, not even animals, and then you have berries, sometimes lots of them. I think that is why it is good berries around the road and the airport. Also on islands and in the barrenlands - no trees and really good berries. I guess they need lots of sun. (MF 05 09 02)

Figure 20 shows a map identifying berry-picking locations used by harvesters in 2002:

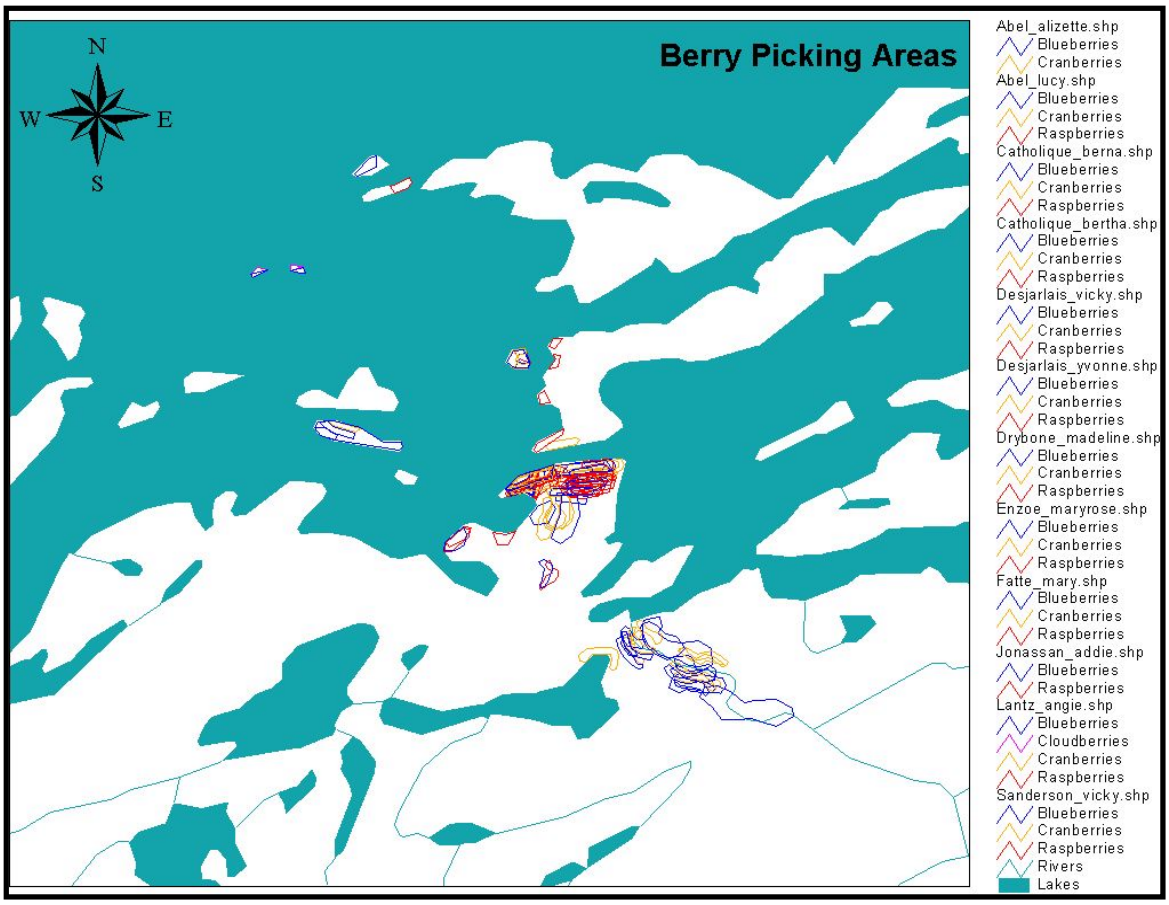

Figure 20. Berry-picking locations for fall 2002.

5.1.1.6 Moose indicator information

The *Moose Cycle* was administered during the fall of 2002, during the time when caribou have not yet reached the shores of Great Slave Lake. Many Denesǫłıne then travel the waterways of their traditional territories, searching for moose actively feeding in the shallows or preparing for the rut. Moose are prized for their large quantity of meat, but especially for their thick hide that is used to make many traditional Denesǫłıne clothes. Seven harvesters participated in this monitoring cycle in early November, and made observations around the following indicators:

- Number, sex, age and location of moose harvested or sighted by local hunters in the traditional territory.
- Amount of fat noticed while dressing moose.
- Color and consistency of marrow.

- Movement ability of moose.
- Presence of discolorations or parasites in muscle or internal organs.

A representative sample of land-user responses to the monitoring questionnaires is provided below:

> *I shot a nice cow moose over in McLean Bay. It was really windy, so we went a ways down the bay to where the moose go when it blows like that. They like shelter too, I guess. This area is really good for moose, McLean Bay. That's where everyone hunts for them. There's lots of good food around there, weeds and grass in the water by the shore. The moose was in good shape, not too skinny but not too fat. Tender meat, because it wasn't some old bull. Good to eat. It was a healthy animal. (HC 21 11 02)*

> *Me, my brother and Mod went moose hunting on the north shore [of Great Slave Lake]. We shot a 1 to 3 year old bull moose near the green house on that island. This place has moose all the time, that's why we hunt there, but all over Great Slave Lake is good. In the fall time, moose eat a lot to get fat for the winter. This is the best time to hunt moose. The moose we shot was not so bad, fat just on the thighs. The moose had a nice hide. That's makes me happy because I can give it to my mom to fix. (PE 13 11 02)*

> *Me, I've seen for moose this fall, but I only shot one bull. I got it in the bay at Stark Lake [Mclean Bay]. There's always moose there, and you can watch for them at the top of that hill there. I shot this moose pretty early on, in the summer, so it wasn't so fat yet. Still, it was good. It wasn't hurt or sick or anything. Those kinds of animals we can't eat. (PL 20 11 02)*

> *I shot one moose up on the road to the Snowdrift. A bull. I went there because someone told me they saw a moose on the road. Sure enough, it was there. I've never shot a moose there before! But this moose was real skinny. I've never seen one like that before. It didn't look sick and was fine, just real skinny. Maybe it was having problems eating, or maybe the wolves were chasing it around. Lots of wolves around town this fall. (RE 14 11 02)*

Figure 21 provides an effective summary of moose harvesting and sighting locations derived from harvester responses during the *Moose Cycle*:

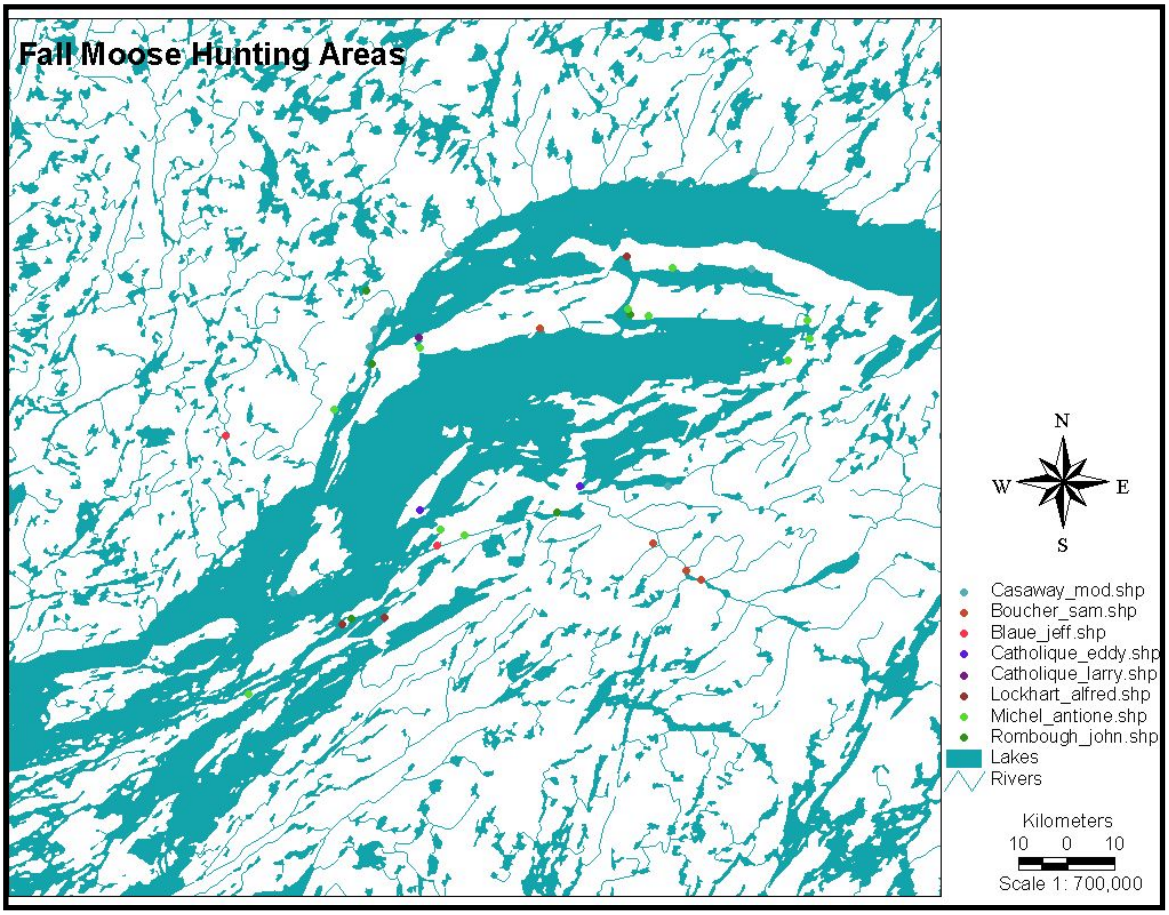

Figure 21. Moose harvesting locations in fall 2002.

5.1.1.7 Duck and goose (Chëth, ʔınghes) indicator information

In the springtime, ducks and geese migrate through the traditional territory of the Denesǫłıne in great abundance. They most often stop to feed at areas throughout Great Slave Lake that are ice-free, such as near the mouths of rivers or in areas of great current. It is to these areas that the Denesǫłıne travel with the first warm weather of spring, hoping to harvest the numerous species of ducks and geese that gather there. Some of the most sought after waterfowl include Canada Geese (Det'an), Northern Pintail (Kél cheth), Scoter (Túlzı), and Old Squaw (Hą́łk'al). During the Duck and Goose Cycle in May of 2002, seven harvesters who actively sought ducks and geese participated in monitoring activities, which revolved around the following indicators:

- Type (species) and number of waterfowl harvested by local harvesters in the region.

- Visual observations of numbers of waterfowl in the area (especially near open water areas).
- Level of noise coming from ducks and geese in open water areas and flying overhead.
- Numbers of different waterfowl at traditional harvesting areas in the spring (i.e. Thubun River, Rocher River, Basile Bay, Reliance).
- Extent and thickness of fat deposits in harvested waterfowl.

Here are some of the responses of land-users to monitoring questionnaires as they pertain to the abundance, diversity, distribution and condition of the ducks and geese:

> *We had a very late spring this year, very little water for the ducks. They pass through by the Beaulieu River year after year, but this year they were late. Maybe it's climate change affecting the weather. I noticed about five different species of ducks in the area, scoters, pintails, canvasback, mallard. I also heard lots of geese, but I didn't see them - they flew over high up, going to nest. They go way up north to nest, but some of those ducks just nest around here. I shot one mallard and one canvasback, not so many. I expected more, but like I said it was a late spring. Those two ducks were not so fat, maybe because they had trouble feeding because of all the ice. (JB 21 05 02)*
>
> *They really came late this year. Usually they start coming in early or the middle of May, but this year it wasn't until the end of the month. The weather changed for me this year. I've seen some Canada geese, some white geese, and some swans, but not as much as other years. I ain't seen to many because it was cold, but those I did see were pretty fat. They get fat on farmer's fields down south, you know. (EB 23 05 02)*
>
> *I went hunting for ducks and geese around Narrow Islands, Keith Island, and Beaulieu River. It's been real cold and freezing, so not much geese, but I have seen some ducks in the water. I've harvested some mallards, pintails, geese, oldsquaw and even one crane. I didn't see any birds that aren't around here normally. The birds were in good condition, healthy and fat, but not so many because of bad weather. (JC 22 05 02)*
>
> *This year the birds migrate late because of the cold weather, that's what elders say. They're only coming in late May this year. They follow the Thubun River towards Great Slave Lake, and hang around the shores of the big lake to feed in the bays. I've seen mallards, pintails, loons, geese, oldsquaws, cranes (sand hill), the ones that I've seen were many. This year I've seen more swans and oldsquaws. The geese were plentiful, more than last year I think. Most of the birds were fat, but I saw some skinnier ones. The only problem this year is that it was late in the season. The ice towards Thuban goes fast*

but this year we went to Gros cap, Beaulieu River, Narrow Islands, some places in bays the ice was still hard. (SD 19 05 02)

A map depicting duck and goose harvesting sites as well as their migration patterns through the area are provided in **Figure 22**:

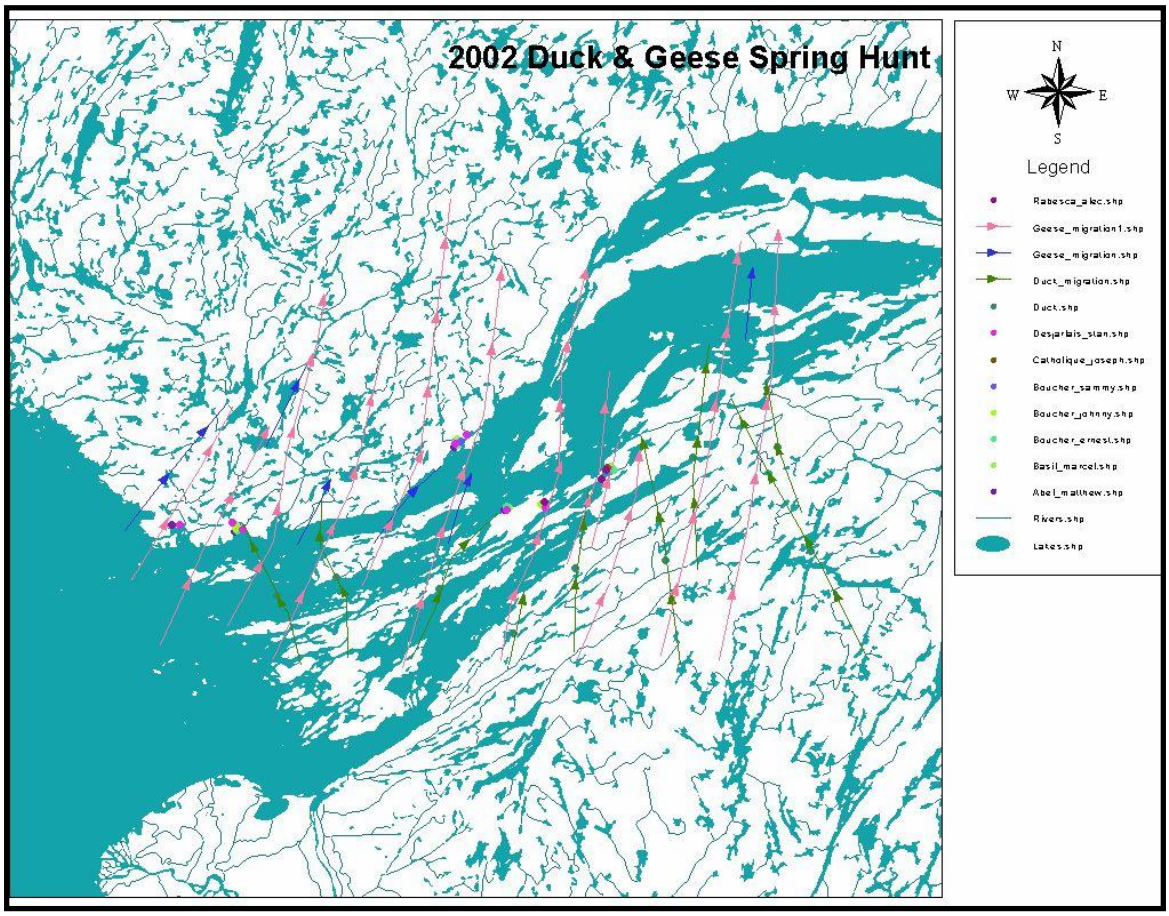

Figure 22. Duck and goose harvesting locations in spring 2002.

5.1.2 Analysis and interpretation of 2002-2003 indicator information

Interpretation workshops were scheduled to correspond with the conclusion of each specific monitoring cycle. In preparation for these workshops, researchers studied the transcripts of monitoring questionnaires to tease out overall themes and unique responses represented in participant answers. In some cases, specific monitoring cycles only revealed information and themes representing stability, or no change. Such baseline information represents that which "has always been" in the esteem of the Denesǫłine. In cases where only such information was revealed, indicator information from a monitoring cycle was simply input into the traditional knowledge database for comparison with information gathered during future cycles of monitoring. No interpretation workshop was needed for monitoring cycles that yielded only baseline, "unchanging" information.

In the instances where researchers discovered environmental information representing change, either natural or unnatural, an Interpretation Workshop was deemed necessary. Themes relating to new indicator information (i.e. potentially not baseline) were presented to Elders in order to for them to (1) assess the information in light of their current and historical environmental knowledge and (2) interpret the information using their vast traditional environmental knowledge and Denesǫłine values. Elders deemed experts by their peers in the relevant subject matter were selected by researchers for each Interpretation Workshop. In these workshops, they tried to determine whether indicator information represented natural change, *potential* unnatural change, or *definite* unnatural change.

The thematic material gleaned from collected indicator information is presented below, divided into categories indicating whether information from a particular monitoring cycle represents no change, natural change/potential unnatural change, or definite unnatural change in the esteem of Elders and land-users. In the case of information that deviated from baseline (change), representative material that informed either a natural, potential unnatural change, or definite unnatural change designation is also presented from the relevant Interpretation Workshop.

5.1.2.1 Monitoring cycles indicating no change

During the 2002-2003 monitoring season, some of the monitoring cycles revealed information that did not represent change in any form. Rather, they indicated stability within natural systems. Respondents predominantly spoke about how species and habitats in questions were similar to other years and basically

conformed to what they understood as normal. Also, monitoring cycles that fell into this category did not reveal any particularly unique or outstanding observations.

The following monitoring cycles (as exemplified by the representative responses provided in 5.1.1) did not reveal any indications of change during 2002-2003, and indicator information from these cycles was simply input into the traditional knowledge database as baseline:

Summer Angling Cycle

- The abundance of fish available for angling varied considerably from place to place, time of year, and weather. Variation was within the bounds of what monitoring participants considered normal.
- Fishing activity was focussed around areas traditionally known as good for fish. No respondents noted any changes in fish availability in these areas.
- Fish condition was variable, with most fish being healthy and a few abnormal/sick fish caught. However, the proportion of unhealthy harvested fish compared to healthy ones was considered normal.

Cycle participant responses were varied, some saying that the fishing was good, others bad, some saying the fish were fat, others skinny. No definite trend emerged when monitoring transcripts were compiled by community researchers, indicating no more than natural variation in fish sizes, distributions, harvesting success, etc. No participating harvester indicated any particularly unique environmental observations. In general, responses pointed to the status quo with regards to fish abundance, distribution and condition in the traditional territory of the Denesǫłıne.

Marten, Mink, Weasel, Lynx, Fox and Wolverine Cycle

- Most trappers noticed an abundance of small mammals throughout the traditional territory of the Denesǫłıne during the trapping season.
- Trapping activity was spread throughout the traditional territory. While most trappers operated to the south and east of Łutsël K'e during the 2002-2003 trapping season, some trapped on the north shore of Great Slave Lake and in the islands to the west of Łutsël K'e.
- The quality of small mammal pelts was generally good (normal).

Almost all cycle participants indicated that marten and mink trapping was good this year, and all noted that their pelts were in pretty good condition. Most respondents trapped along traditional lines, and noted that they were still producing well. No changes to the small mammal populations were noted.

Chicken and Ptarmigan Cycle

- Chickens were somewhat less abundant around Łutsël K'e than in years previous.
- Most chicken hunting took place along the road south of Łutsël K'e and towards the Snowdrift River.
- Chickens were generally in good condition, though a few skinny ones were noted.

While chickens and ptarmigans were noted to be in less abundance than in the few years previous, it was evident that they were not significantly so. Harvesters were still able to obtain these birds for subsistence when needed, and most of the birds were considered to be in good health. Overall, monitoring participants did not express much concern over the state of the chicken and ptarmigan populations, and stated that what they had observed was fairly normal.

Beaver and Muskrat Cycle

- Beavers and muskrats were not considered to be terribly abundant, but harvesters did not express any more concern over the lower numbers than usual.
- These animals were distributed in the typical areas, and land-users were successful in harvesting them in these areas.
- Harvested beavers and muskrats varied in condition, with no obvious trends indicating a very healthy population or a very unhealthy population.

Indicator information generally indicated a very non-descript season with regards to beaver and muskrat populations. They were neither terribly abundant nor scarce, and they were neither generally unhealthy or in very good condition. Denesǫłıne land-users generally alluded to the fact that this was simply a very average year for these aquatic mammals.

Berry Cycle

- Berries were very numerous in 2002 in the traditional berry patches around Łutsël K'e.
- The berries were numerous and large in 2002 due to a lot of rain in the summer.
- Berries were plentiful throughout the region this year. People could gather ample berries wherever they happened to be.

Other than indicating a particularly good year for berry picking due to a wet summer, *Berry Cycle* participants did not provide any environmental information suggesting change. All the traditional berry patches were abundant, and berries were in good condition.

Moose Cycle

- Moose are typically hard to locate and harvest, and participant responses indicated that this year was normal in this respect.
- Monitoring participants concentrated their moose harvesting activities around known areas of abundance, and indicated that indeed moose could still be found in these areas.
- Almost all the moose harvested or sighted gave the impression of being healthy.

Moose were sought in all the traditional areas, and they were abundant in these areas as is typical. Almost all the moose harvested or sighted were deemed healthy by land-users, though one was considered skinny, though not unhealthily so. As a result, this monitoring cycle did not reveal any change occurring in the moose population in the traditional territory of the Denesǫłıne.

5.1.2.2 Monitoring cycles indicating natural change or potential unnatural change

Some of the 2002-2003 monitoring cycles revealed change that, upon consideration by elders and land-users in an Interpretation Workshop, was deemed to be within the normal variation of nature (though this could progress to unnatural change if sustained for many years). In other words, the change indicated by participant responses concurred with similar natural occurrences remembered in the past, and the changing phenomena were expected to cycle naturally. However, if such natural cycling did not take place in future seasons, this change could progress to the designation of unnatural change.

Winter Caribou Cycle

- Most caribou were harvested in March and April, 2002.
- Caribou were distributed around the north shore of the East Arm of Great Slave Lake, especially on the larger inland lakes.
- Caribou were harvested in less abundance than in previous years, primarily because of distance to the hunting grounds from Łutsël K'e. Still, adequate amounts were harvested for the needs of the Denesǫłıne.
- Caribou were generally in good condition, with a high proportion of fat animals, though some skinny animals were harvested.
- Marrow color and consistency indicated that a lot of the harvested caribou were not in perfect health, but rather were under some form of stress from lack of food, predators, parasites, or illness.
- Few caribou were observed with movement problems due to leg injuries.

- Few caribou had cysts or spots on the meat or liver.
- A large proportion of caribou hides had a high incidence of warble fly larvae/pupae.
- Most caribou were selected for harvesting because they were considered to be in better condition than others in a group, the only choice for harvesting because they were alone, or were female.

Upon consideration in an Interpretation Workshop, Elders and land-users came up with the following representative interpretations of this thematic material:

> *This year and last year the caribou didn't come down to* ***Łutsël K'e****. They have stayed on the north shore, so most of our boys have to travel far to get them for the family. It's been like that in the past, where the caribou stay up around that part of the land. It's not like two winters ago, when the caribou were right around* ***Łutsël K'e****. You could wake up in the morning and see them right in the bay, walking by town on the lake. (AB 08 05 03)*
>
> *The caribou came late in the winter this year. Before that you could hunt them, but they were in small groups and sometimes you could go on a hunting trip and not see any. Mostly it was in March that they were around McKinley Lake and the lodge [at Taltheilei Narrows]. Those caribou were the same that came late to Artillery Lake in the fall. They just are being late this year, I guess. (PC 08 05 03)*
>
> *Those caribou don't come around* ***Łutsël K'e*** *anymore. They just stay on the north shore and don't cross Great Slave Lake. It was a late fall, and the ice didn't freeze over until late December. Maybe that's why. The caribou came to the shore and the water was still open, so they just decided to stay where they were for the winter. (AE 08 05 03)*
>
> *I got a lot of good meat this winter from my boys. Thighs and backstraps for making drymeat, it goes fast because all my family loves my drymeat. It was mostly fat caribou, and the meat I saw was all good, not many with pus in them. (LE 08 05 03)*
>
> *The last winter we saw ever lots of hurt caribou on that north side. Lots of limping ones, lots of ones with broken hooves. It really had us worried. We're still worried, because lots of hunters still saw injured caribou like that, but its not as much as last year, I think. We have to keep watching year after year so we can notice these things in the caribou. (LE 08 05 03)*
>
> *I work with hides all the time. I make mocassins, gloves, and even help Pierre make snowshoes. Lots of people give me hides to work on, only the good ones with no holes*

from worms and clean fur. It takes a good hunter to fix a hide really good for me. So this year I saw a lot of hides, and there were some with warbles in them, but mostly they were good. It was a good year for hides, the caribou are OK. (MD 08 05 03)

The caribou were like most other years. Most were good and healthy, and a few were skinny and looking sick. Some even had ribs showing they were so skinny. But every year there is always some like that. You only worry when you see lots like that. (PM 08 05 03)

Hunters still noticed limping caribou, and we are really concerned about that. We've got to keep watching it. If it goes down, maybe things are all right. If it goes up, it's got to be those mines. (JM 08 05 03)

Us Dene people are worried about the migration route. Why don't those caribou come down this way anymore? Is it because the weather is too warm, and the ice doesn't get hard until late? Or is it because these mines are effecting the migration routes in a bad way? It's really hard to say. We need to listen to our Elders, because they now how things were in the past and how they work. And we need to watch the land real good. (GM 08 05 03)

Indicator information gathered during the Winter Caribou Cycle was interpreted by Elders and land-users as within the range of natural change, but also potentially indicative of unnatural change if trends were to persist over the long-term. Specifically, Elders and land-users were worried if trends in caribou leg injuries and changing migration routes were to increase in severity and frequency, they could be indicative of great unprecedented, unnatural changes in the traditional territory of the Denesǫłine. They provided the directive to keep monitoring these caribou in the wintertime, to make sure that their movement patterns and their individual health did not begin to vary even more than observed in 2003.

Rabbit Cycle

- Rabbits were extremely scarce in 2002, to the point that people didn't even bother to set snares for them.
- Many of the traditional snaring areas were devoid of rabbits, with no rabbits caught in snares and no tracks.
- Many of the rabbits harvested were considered skinny and undernourished.

These themes were brought to Elders and land-users in an Interpretation Workshop. Their comments are represented by the quotes below:

> *Rabbits, just like other small animals, are like that. One year they're all over the place, and it is really east to catch them. Other years they simply go away. I'm not sure where they go, maybe to another place, or maybe they just die. But that's how the Creator made the small animals, one year lots of them, the next year none. (PC 25 11 02)*
>
> *A year like this it is hard to find tracks in the bush, no rabbits anywhere. Maybe they run out of food. I remember a couple of years ago, there were rabbits everywhere, then last year not so many, and then this year nothing. If they eat all their food when there is lots of them, they've got to go to another place. This year too, there are lots of wolves around town - they're probably eating rabbits all the time so now there are none left. (NA 25 11 02)*
>
> *When the rabbits go away like that, they always come back in a couple of years. (MD 25 11 02)*

Elders and land-users recognized that the low number of rabbits in 2002 corresponded to their understanding of the natural cycling of rabbit populations, from tremendously abundant to low in number and back again. They had experienced this type of cycling before, and recognized that rabbit populations always rebounded. Consequently, the indicator information gathered in this cycle was deemed representative of natural change, and of little concern if populations were seen to rebound in subsequent years.

Duck and Goose Cycle

- The spring migration arrived late in 2002, around late May (as opposed to early or mid-May).
- Typical species were seen in the typical areas.
- Most harvested ducks and geese were fat and in good condition.

Elders and land-users considered these themes in an Interpretation Workshop. Here are some representative comments from that workshop:

> *It's been a really long winter, and spring came late to this country. Really late. Usually the ducks are back around here in early May, sometimes even at the end of April. But this year it was too cold, and the rivers were still all frozen up, bays too. Some places the ice is still four or five feet thick. Ducks and geese need water to eat, because they eat things*

like bugs in the water. So if it's frozen they can't eat. That's why they came late this year. (ND 13 06 02)

Some years these things just happen. It gets late, the animals come back north late. Like these water birds, they can only stand weather that is warm. If its too cold, they wait down south and come back up here when it warms up. (PM 13 06 02)

The weather its been going like that. It's been warmer than it ever was when it is supposed to be cold, and it's been cold when its supposed to be warm. Sometimes the weather goes like that, and then it goes back to normal. I think this was just a long winter, and I'm not worried yet about the weather changing. But if this keeps on like it is, maybe it [weather] will change forever - maybe we'll always have long winters or long falls. We just have to keep watching and making sure, I guess. (EB 13 06 02)

It's just a late spring, and so the birds were late this year. Last year it was OK. Me, I start to worry when it starts happening year after year. (JM 13 06 02)

Elders and land-users understood that this year was simply a late spring, and thus resulted in a change in the migration time of the ducks and geese. They recognized that late springs were not outside the realm of natural variation, and did not express too much concern over the state of the environment based upon this indicator information. However, they did caution that if this phenomenon were to persist year after year, if would indicate potential unnatural change, perhaps even as a result of human-induced climate change.

5.1.2.3 Monitoring cycles indicating definite unnatural change

Some of the monitoring cycles were considered to represent definitive unnatural change by Elders and land-users upon deliberation during Interpretation Workshops. Indicator information, in this case, represented environmental observations that had never been experienced by the Denesǫłıne during their very long history in the area. As a consequence, this environmental information falls outside of the known workings of nature, and indicates changes due to human activities such as recreation and industrialization. As such, they must be either monitored more closely, prevented, mitigated, or otherwise acted upon in the interest of environmental sustainability.

Fall Fishnet Cycle

- Abundances of fish caught in gillnets was normal.

- Harvester's focused their gill netting activities around Łutsël K'e.
- Some fish that were caught in the Stark Lake region had high parasite loads, big head / small bodies (very skinny fish), or deformities. Some fish caught in the main body of Great Slave Lake had parasites, but generally were parasite-free.
- The fatness of fish was normal.

Elders and land-users interpreted this thematic information in an Interpretation Workshop:

> *For as long as the Denesǫłine people have been around here, the fish have been good in Great Slave Lake and all the little lakes around Łutsël K'e. There's always been fish for the people, lots of fish that are easy to catch and good to eat. Some years there's more, some years there's less, it goes up and down like that depending on weather and other things. Usually you go to the places where you know there is good fishing, the places where your grandfather told you there was good fish. Then you catch more fish than you need. Sometimes fish move around, so even these really good spots can have less fish. That's how the Creator made the lakes and the fish - it's never the same, but we can always depend on it. This year is like all other years. Some places are good for fishing, some are not. Some fish are fat, others are skinny. That's just how it goes. (PC 24 01 03)*
>
> *Mostly what concerns us Elders is Stark Lake. Whenever we fish in Great Slave, or in other lakes like Duhamel, it seems like the fish are good. But when people set nets in Stark Lake, like Ernest and August, they always get some bad fish, with pus on them and deformed. Even people who fish at the river going from Stark Lake to Great Slave Lake, they sometimes catch bad fish with bugs all over or crooked backbones. (JM 24 01 03)*
>
> *Those fish in that lake have been no good for a long time, maybe 30-40 years. That's why nobody fishes there nowadays. Even the tourists at the lodge don't go there - the guides know the fish there are bad. So we go to places all over Great Slave Lake, like Three Hump Island and Pearson Point. (ED 24 01 03)*
>
> *We've talked about Stark Lake a lot. Elders and youth have been going to Stark Lake, checking things out there. I went once with Tracey [Stark Lake Project Coordinator] to see the fish and talk about the land around there. We still don't know why those fish are no good. Some people think it's the old uranium mine in Regina Bay. Some people think it's overpopulation, maybe even some kind of disease. Well, I hope that the work we do in Stark Lake can help fix those fish, cause that was the main fishing place of the Łutsël K'e people. (AM 24 01 03)*

Throughout most of the traditional territory, Elders and land-users agreed that indicator information pointed to the status quo of generally good, healthy fish populations with some local variation. However, Stark Lake proved to be anomalous to this conclusion. As had been noticed in previous years, fish in Stark Lake were notorious for their high parasite loads, deformities and malnourished semblance. Observations such as those gathered in the 2002 *Fall Fishnet Cycle* have helped launch the *Stark Lake Fish Habitat Study*. This in-depth traditional knowledge/scientific research project has the objective of identifying the causes of poor fish health in the lake, as well as proposing solutions to the problems once identified. Further information about this study can be accessed through LKDFN and Williams (2002b).

Fall Hunt Caribou Cycle

- There were not too many caribou around the eastern side of Artillery Lake (south shore) in the fall of 2002. Most caribou were seen on the north shore, with very few around the traditional caribou crossing at ʔeda cho, in the middle of Artillery Lake.
- The caribou were late in coming to the Artillery Lake region this year.
- The caribou harvested were generally fat and in good condition.
- Some caribou were seen that were sick or injured.

An Interpretation Workshop was held to discuss this thematic material:

> *The migration patterns are changing, I think. In the past, we would go to Artillery Lake in late August or early September and wait by the caribou crossing. Sure enough, the caribou would come there. Nowadays, it's different. The past two or three years, the caribou only came to Artillery Lake at the end of September. This makes the hunt hard, because its getting really cold and you have to spend a lot of time looking for wood for your stove. And they don't cross at the caribou crossing. They go west more. (JM 11 11 02)*

> *It's changing the past years, the caribou migration. On the south shore, not so much anymore. The caribou are going towards the north shore of Great Slave Lake to spend the winter, not to the south near* **Łutsël K'e** *like they did in the past. So they don't cross Artillery Lake or go on the south side. They go on the other side, west from the north shore of Artillery Lake towards Taltheilei and the lakes around there. That's where we hunt them in the winter. (EB 11 11 02)*

The past fall hunts haven't been as successful. We go there and we can't predict when the caribou are coming down or where they are going. Even this year, we camped on the south shore and hoped there were going to be caribou there like in the past. We even moved the big camp towards the north, away from Crystal Island because it was no good there the year before. It's not like in the past. It's changed. I don't know why it is like that, but I hope they go back like they used to. We survive on the caribou, and we need to be able to harvest them successfully. (ML 11 11 02)

We all think it's because of these diamond mines, they're right in the way of the caribou migration routes. They come down south, and when they pass through the mine sites they get confused, they get stressed out. So they change their migration route, maybe to avoid the mines, I think. It's hard to say, it's hard to prove that's how it is. But I know that this never happened until these mines came around. Everything else is the same on the barrenlands - just the mines are different. (NA 11 11 02)

I went to the mines this summer to check out the caribou. They don't like those mine roads. They're too high for them to get across, and they have sharp boulders on the sides where caribou can get hurt from falling or getting stuck. We even drove in a truck on the road, and saw the caribou having trouble going up and down the sides of the road. It's no good, and it's no good for us Dene people. Those mines should do something about this, or maybe soon our caribou will be all gone. (MD 11 11 02)

Those caribou that are limping or have broken legs, it's got to be because of those mine roads. Caribou don't just break their legs like that, they know exactly what they are doing. Only when they are really stressed out, like when they are chased by bugs or maybe scared by big mine trucks, they lose their mind and maybe fall and break their leg when they're running real fast. In all these years, only now do we start seeing this many caribou limping. It's sad to see them so pitiful, and us Dene will be like that if the caribou go away. (JBR 11 11 02)

Again in 2002, Denesǫłine Elders and land-users equated the changes in the fall migration routes of the caribou, as well as the higher incidences of injured animals, with the encroachment of diamond mining in the barrenlands. In the previous year, when similar indicator information was gathered, Elders and land-users were more apt to attribute these changes to natural variation. However, the corroboration of 2001 knowledge with the 2002 indicator information has only lent credence to the views of the Elders and land-users. In two successive fall hunts, caribou have strayed from their traditional migration route, and a high proportion has been observed with injuries to the legs. Reasons for the Elders' and land-users' conclusions

that these phenomena are due to mining roads stem from two main lines of reasoning. First, they recognize that diamond mining is the only new phenomenon of significance on the barrenlands over the past decade, and their development coincides with the appearance of migration changes and an increased proportion of injured caribou. Second, some Elders and land-users have experienced first-hand the interaction of migrating caribou with mine roads, and they have observed these caribou having problems crossing these roads.

5.2 SOCIO-ECONOMIC MONITORING RESULTS

This section will detail selections of results from socio-economic monitoring efforts carried out during 2002-2003. These results will be presented primarily in graph format, facilitating the comparison of 2002-2003 results with those obtained during previous socio-economic monitoring cycles. Results will be presented and discussed (in light of workshop interpretation efforts) concurrently within five separate subsections: *Community Health Survey, Mine Employee and Spouse Survey*, *Youth Survey*, *Cultural Survey* and *Leadership Review*. Following, implications of this new monitoring knowledge for the land and people of the Kakınëne will be explored in conjunction with environmental monitoring results.

Due to intellectual property concerns, copies of questionnaires used during the socio-economic monitoring cycles are not provided in this report. They can, however, be obtained upon reasonable request by contacting: Chair Charlie Catholique, Wildlife, Lands and Environment Committee, Łutsël K'e Dene First Nation, Box 28, Łutsël K'e, NT, XOE 1A0.

5.2.1 Community Health Survey

Quantitative information has been gathered around indicators of community health, as developed through the *Community-Based Monitoring* project (LKDFN et al. 2002), since 2000. Using questionnaire formats tailored to adult and youth respondents, general community health surveys were conducted in April 2000, September 2000, January 2001, January 2002, and most recently, January 2003. Questionnaires were administered to all community members over nine years of age. Because of issues related to literacy in the community and the relative unfamiliarity of community members with this kind of tool for information gathering, community researchers visited each community member and filled out the questionnaire with them.

Following the completion of the home-visits, community researchers entered the information in an Excel database. The database was developed with the guidance of Dr. John O'Neil and with technical assistance from Tamarack Computers. This database allowed the community researchers to compare community answers from year to year using graphs. These results are presented below.

5.2.1.1 Economic development

The community health questionnaires begin by asking questions concerning the employment status of the respondent *over the past year*. These are not employment rates, but rather describe what type of paid

employment, if any, respondents have had over the past year. Results from the past three years, from 2000 to 2003, are presented in **Figure 23**.

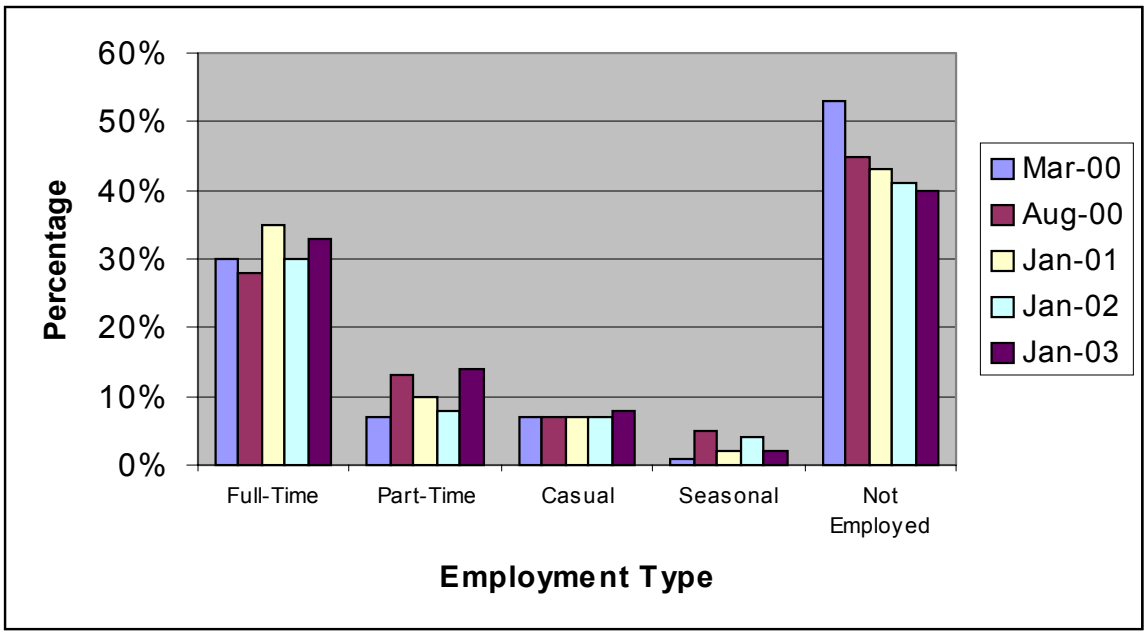

Figure 23. Employment type in the community of Łutsël K'e 2000-2003.

Numbers of those residents with full-time, part-time, casual and seasonal employment over the years have remained fairly steady, with some minor fluctuations. However, the rate of unemployment has seen a steady decrease over the past few years, declining from over 50% to the current level of approximately 40%. Interpretation Workshop participants maintain that this decrease in unemployment may be due to an increase of money in town from mining and exploration activity. This has resulted in an increase in "odd jobs", particularly of the part-time or seasonal nature. For example, many young men in town are involved with construction on a temporary basis.

The increase in mining and mineral exploration activity in the traditional territory of the Łutsël K'e people has created opportunities for employment in the mineral development sector. Some of the employed residents of Łutsël K'e have managed to secure jobs of this sort, as displayed in **Figure 24**. Employment in the mining sector seems to have peaked for the people of Łutsël K'e at 13% out of all those employed, and has declined somewhat over the past two years to the current proportion of 7% of all those employed. Interpretations offered for this trend in workshops have revolved around the high lay-off and quitting rates with regards to Łutsël K'e residents. Many have found work in the mineral development sector in the earlier years, only to have quit or been laid off due to such factors as inadequate training, poor preparation for participation in the wage economy, and frustration with the lack of promotion in their employment.

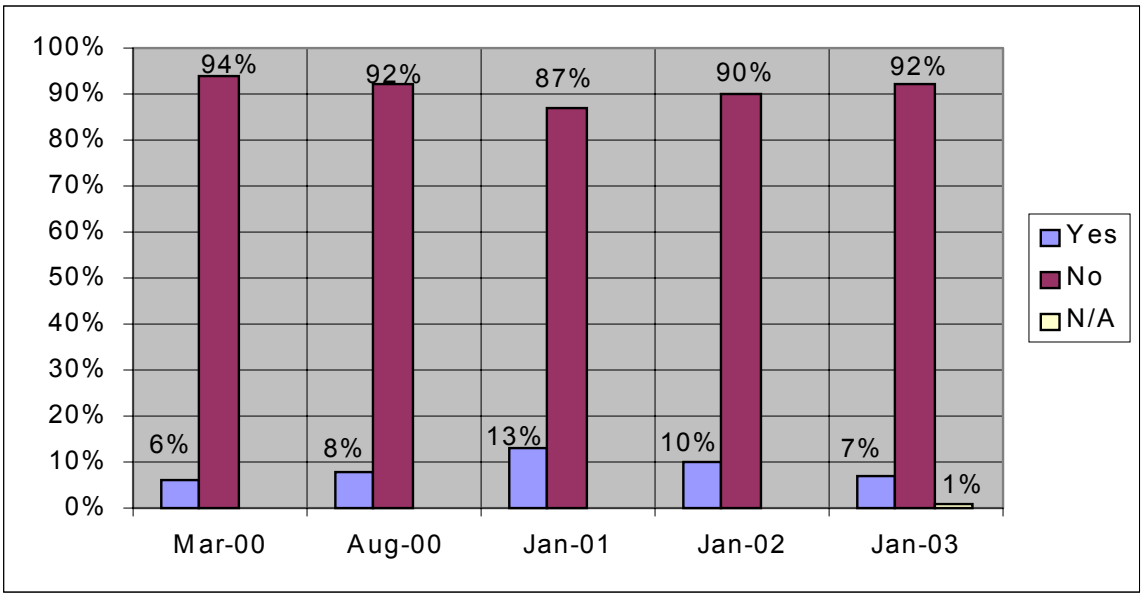

Figure 24. Employment in the mineral development sector 2000-2003.

While some residents of Łutsël K'e have found employment either in the community or in the mineral development sector out of town, there is concern among community residents that the money being made is not going towards furthering the health of the community or families. Especially, many people worry that money made in the mineral development sector is being squandered in Yellowknife on trivial items such as alcohol and gambling, and not on such items as home improvement or cultural land activities. **Figure 25** provides some data regarding this issue.

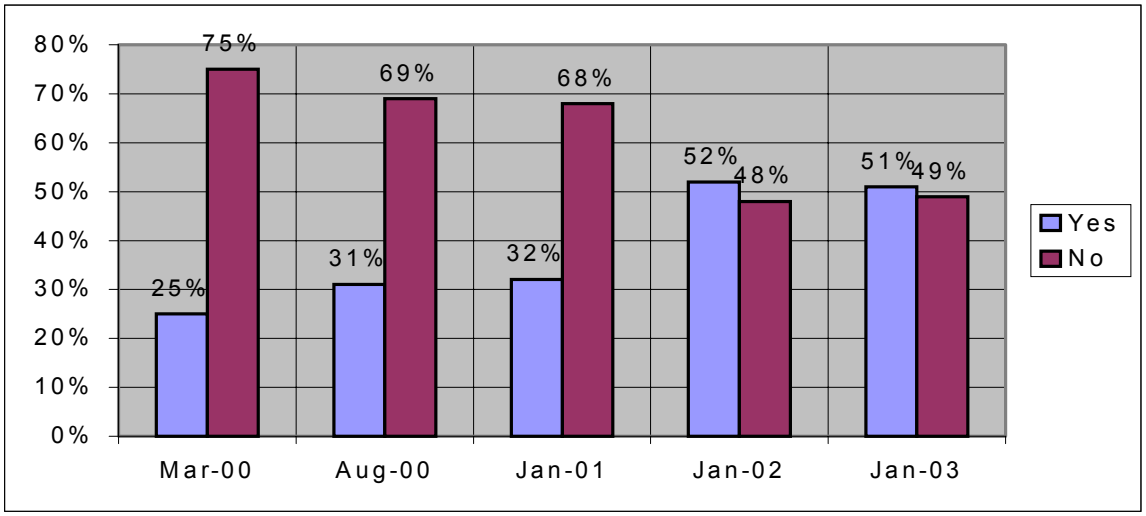

Figure 25. Proportion of Łutsël K'e residents who have purchased on-the-land equipment over $2000 over the past year.

There has been a marked increase in purchases of $2000 or over towards supporting families' on the land activities in 2002 and 2003. However, participants in an Interpretation Workshop did not attribute this increase to higher employment levels or an increase in wages. Rather, they attributed this increase to the inception of the Western Harvester's Assistance Program by the Government of the Northwest Territories, which, in Łutsël K'e, provides grants of up to $5000 in support of family on-the-land activities. Successful grant applicants, of whom there are 27 each year, have typically used these funds to buy items such as boats, motors, or snowmachines, which usually cost more than $5000. Thus, many successful applicants to this assistance program have had to spend a few thousand dollars in addition to the grant money in order to purchase their boats and snowmachines.

Similarly, questionnaire respondents were asked to specify whether they had made any home improvements over $1000 in the past year. These results are presented in **Figure 26**.

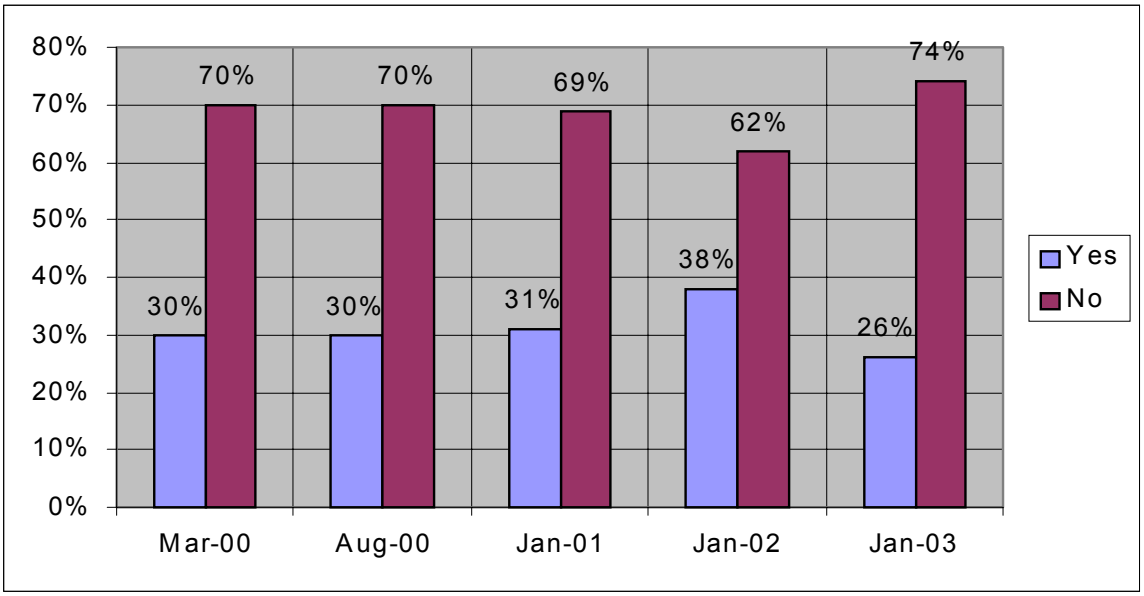

Figure 26. Proportion of Łutsël K'e residents who have made home improvements over $1000 over the past year.

Since 2000, the proportion of Łutsël K'e residents who have made significant home improvements has hovered between a quarter and a third of the population. Interpretation Workshop participants deemed this to be somewhat low, mostly because of the high amount of houses in Łutsël K'e which are either decrepit or in disrepair. Some participants even cited examples of households with one or more employed

individuals that remained in poor condition. Again, the squandering of wages on alcohol and gambling was highlighted as one of the causes of this trend.

5.2.1.2 Togetherness

Some of the questions on the *Community Health Survey* were designed to elicit responses concerning the levels of togetherness within the community of Łutsël K'e. Responses to such questions allude to the strength of interpersonal relationships within the community, as well as the identity and unity of the community as a whole. **Figure 27** presents some results regarding levels of volunteerism in the community, while **Figure 28** displays levels of participation in public meetings.

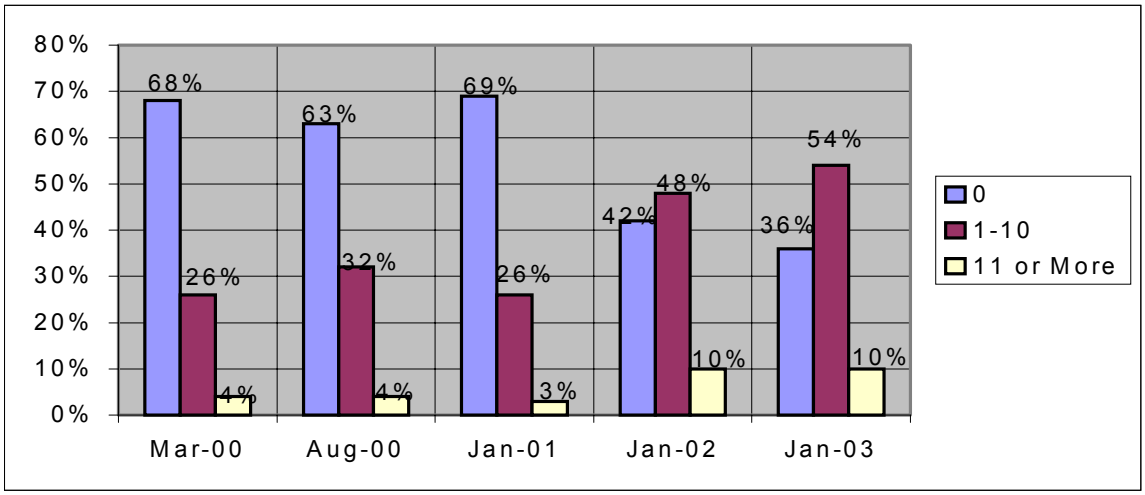

Figure 27. Proportion of Łutsël K'e residents who have volunteered for a community event a certain number of times over the past year.

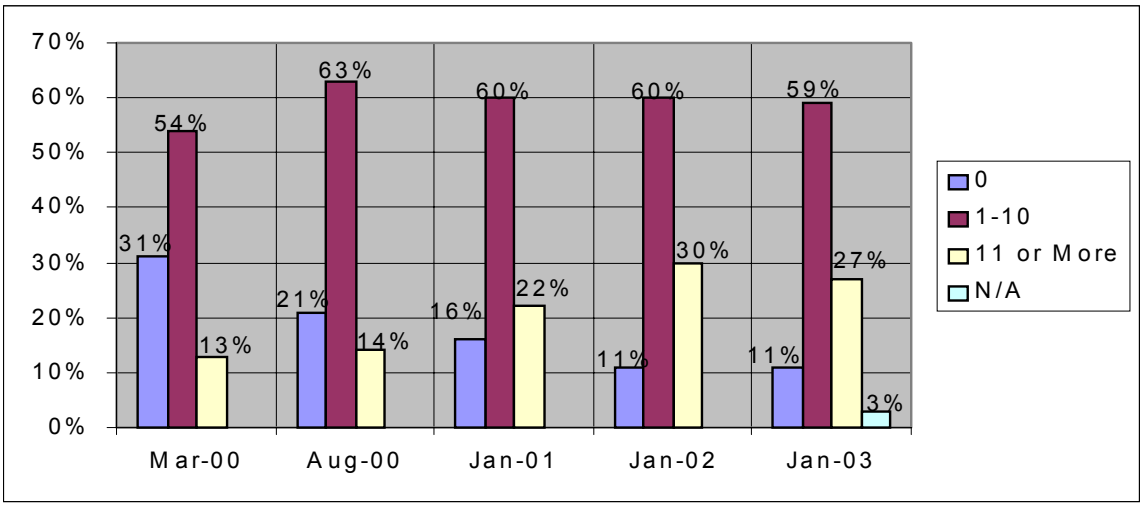

Figure 28. Proportion of Łutsël K'e residents who have attended a public meeting a certain amount of times over the past year.

Results seem to demonstrate a marked increase in levels of volunteerism in the community over the past two years. Some Interpretation Workshop participants attribute this increase to good planning efforts by First Nation departments, particularly the Recreation Department. This Department frequently holds bingos, dances and feasts over the course of a year, and requires tremendous amounts of volunteer effort to be successful. The number of such events has increased over the past few years, what with more enthusiastic Recreation staff as well as a larger amount of community events (e.g. document signings, land negotiation milestones, regional gatherings, carnivals, dances, etc.). There has also been a marked decrease in the proportion of people who have not attended a public meeting over the past three years. Workshop participants believe that this is due to the fact that the First Nation has recently been involved in a tremendous amount of initiatives that are very important to your average Łutsël K'e resident. For example, the First Nation is in the midst of treaty entitlement negotiations, has just resolved a land-use overlap dispute, is exploring the idea of establishing parks and protected areas, and is negotiating business and environmental agreements with mining and hydro companies. It is a time of tremendous change and opportunity in Łutsël K'e, and people are interested in making their voice heard for the future.

Questions were also asked of Łutsël K'e residents concerning their levels of participation in traditional community recreation events. **Figure 29** and **Figure 30** display the results of such questions.

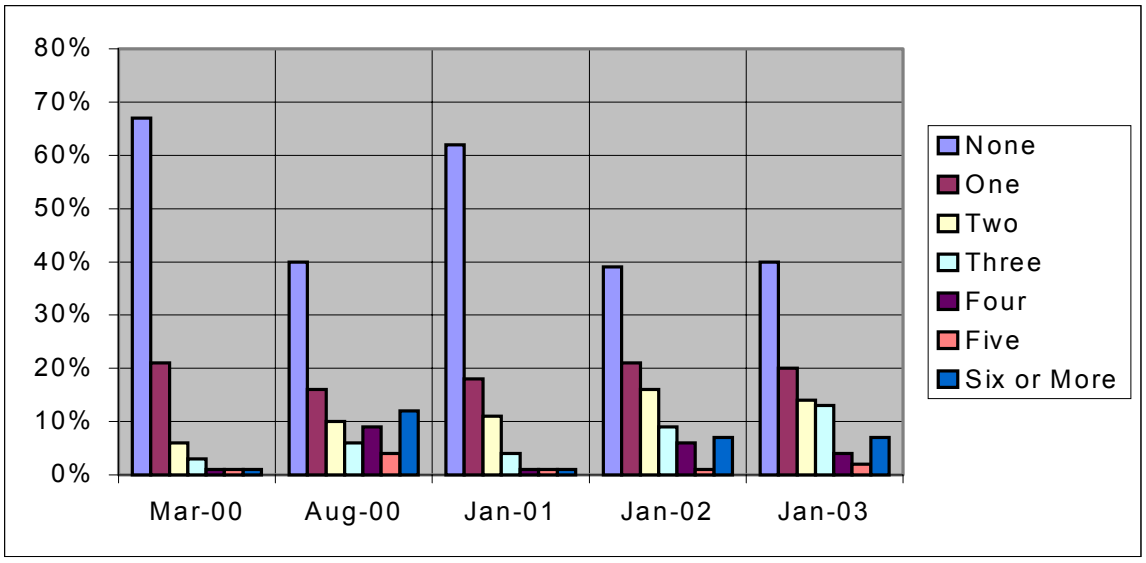

Figure 29. Levels of participation in drum dances over the past six months in Łutsël K'e.

Overall, most people seem to not attend drum dances. Some Łutsël K'e residents just do not enjoy these dances, or else feel self-conscious dancing. However, Interpretation Workshop participants maintain that the lack of a traditional drumming group in Łutsël K'e contributes greatly to these results. Simply, there are very few drum dances in Łutsël K'e, as drummers must be flown in from other NWT communities.

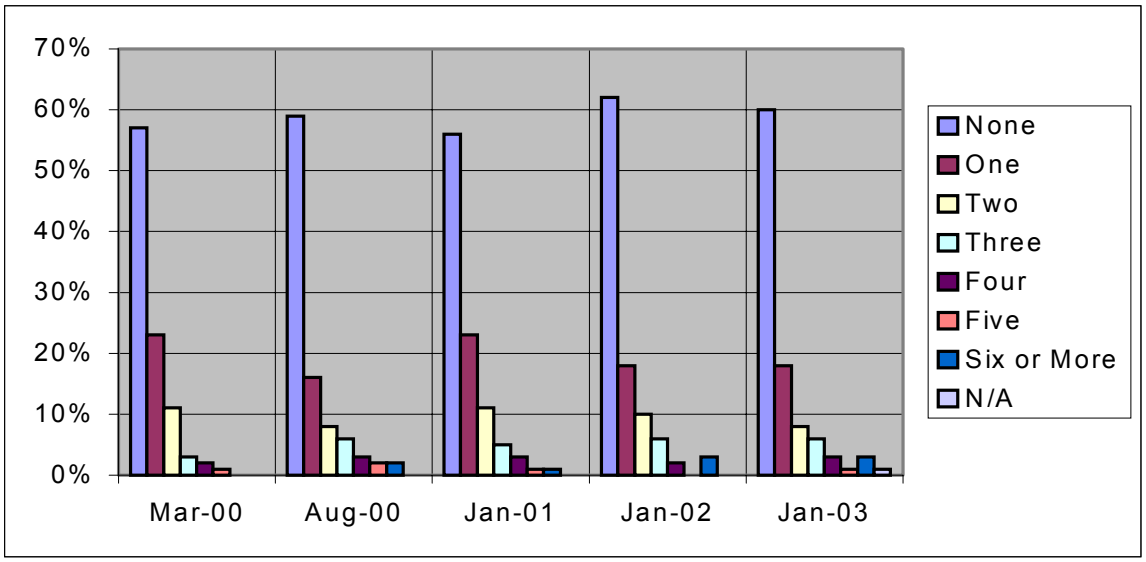

Figure 30. Levels of participation in Dene hand-games over the past six months in Łutsël K'e.

Again, low participation levels in Dene hand-games are attributed not so much to a lack of interest in these games, but rather the low frequency with which these games are held. Few Łutsël K'e residents are confident or competent enough to lead such events, and therefore they are not often held. Interpretation Workshop participants stressed that in the case of hand-games and drum dances, participation levels would definitely increase if they were held more often.

Another indicator of togetherness is the level of inter-generational interaction, particularly while on the land engaged in cultural activities. **Figure 31** shows results around this indicator.

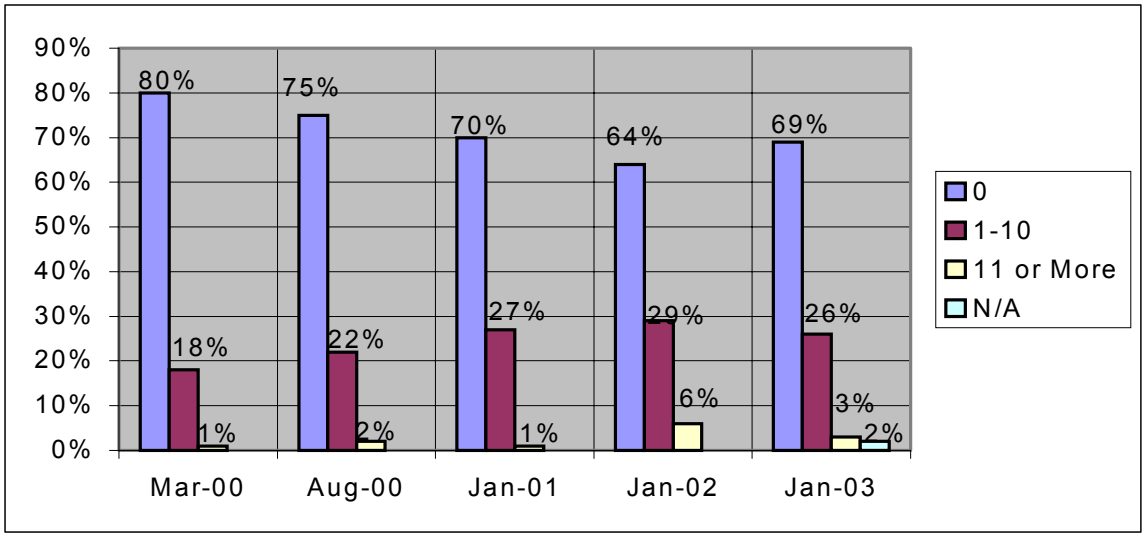

Figure 31. Proportion of adults who have taken a youth out caribou hunting a certain number of times over the past year.

The slight increase in the proportion of adults who have taken a youth caribou hunting at least once over the past year was attributed to a corresponding increase in the amount of families with either snowmachines or boats. These vehicles are essential to accessing the land, and programs like the Western Harvester's Assistance Program has greatly aided families in purchasing such equipment. Families that only a few years ago had no modern means of travelling on the land were, in the most recent years, able to go out on the land with their families. Still, a high proportion of Łutsël K'e residents have not gone caribou hunting with youth over the past year. Interpretation Workshop participants speculated that this may have to do with waning interest among the youth for traditional activities.

5.2.1.3 Traditional activities

Of great importance to the people of Łutsël K'e is the practice of traditional activities such as hunting, fishing, trapping, and camping. The health of the culture is largely gauged by the frequency and quality of cultural on-the-land events, events that nourish the people of Łutsël K'e materially, emotionally and spiritually. Many questions in the *Community Health Survey* were designed to help measure the integrity and health of traditional practices. **Figure 32** shows the amount that community members have stayed out on the land over the past three years.

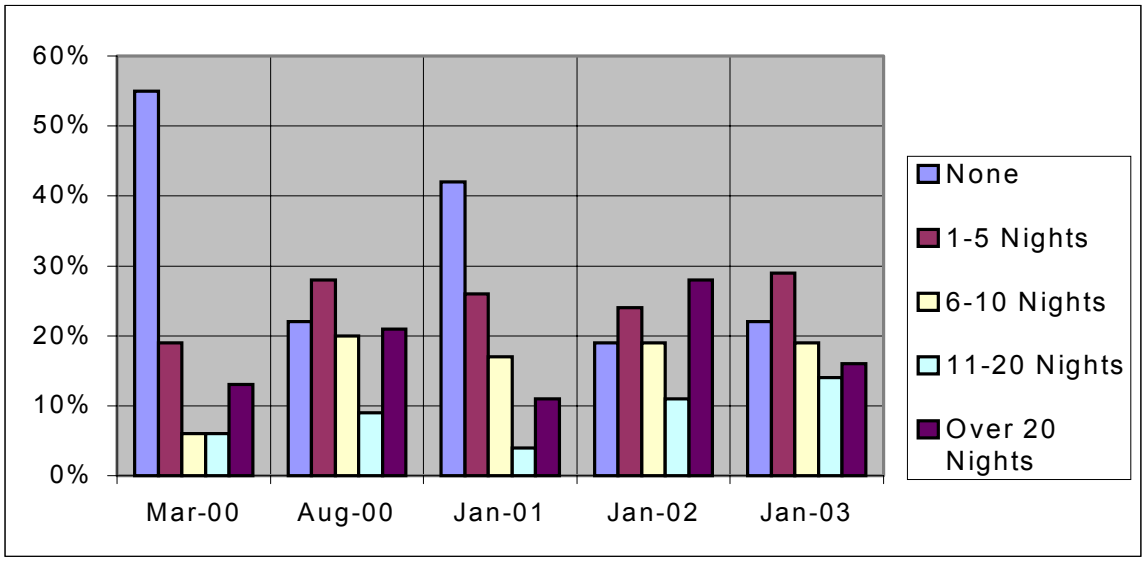

Figure 32. Proportion of Łutsël K'e resident s who have stayed a certain amount of nights on the land over the past year.

Notice that respondents in January 2002 and 2003 were much more likely to have spent at least a few nights on the land compared to respondents during the winters of 2000 and 2001. This is mostly explained away by the fact that surveys were conducted every six months up until January 2001, from which point on surveys were conducted every year. Consequently, those interviewed in mid-winter were much more likely to say they had not been on the land in the past six months. However, those interviewed in the summer were much more likely to have spent nights on the land. Results from August 2000 are thus anomalous with both March 2000 and January 2001. Surveys conducted in 2002 and 2003 elicited responses from the whole year, and thus captured both summer and winter activity. Interpretation Workshop participants also maintained that more people spent nights on-the-land in 2002 and 2003 due to the increase in boats and snowmachines in the community, such as snowmobiles and boats. As well, the First Nation made a conscious effort to promote on-the-land activities in the last couple of years, organizing and holding many community on-the-land events such as caribou hunts, youth-Elder camps and spiritual gatherings.

Figures 33, **34**, **35** and **36** all demonstrate a noticeable increase in various traditional activities over the past two years. Again, this is attributed to a corresponding increase in the amount of families with

snowmachines and boats, as well as efforts made by the First Nation to sponsor and coordinate on-the-land events. In the case of trapping, many land-users made a more conscious effort to set traps and travel their traplines during the winters of 2002 and 2003 due to increasing fur prices, especially those of the marten.

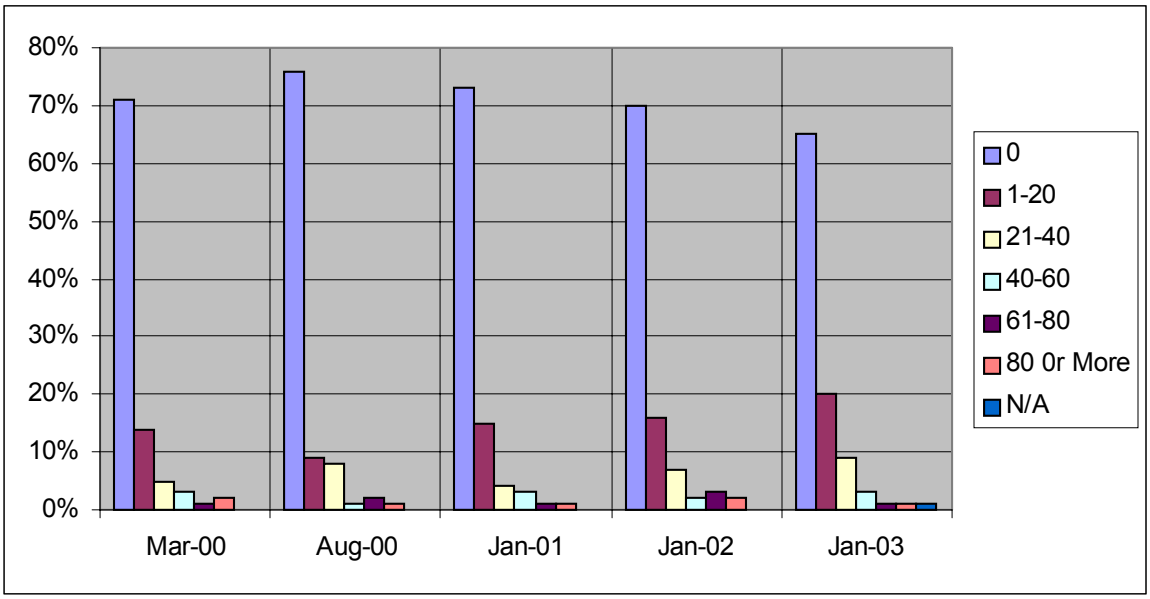

Figure 33. Proportion of Łutsël K'e residents who set a certain amount traps over the past year.

Of course, most respondents have not set any traps because they are either too young or traditionally have engaged in other roles (i.e. women). Trapping remains very much the domain of older men and a few younger ones.

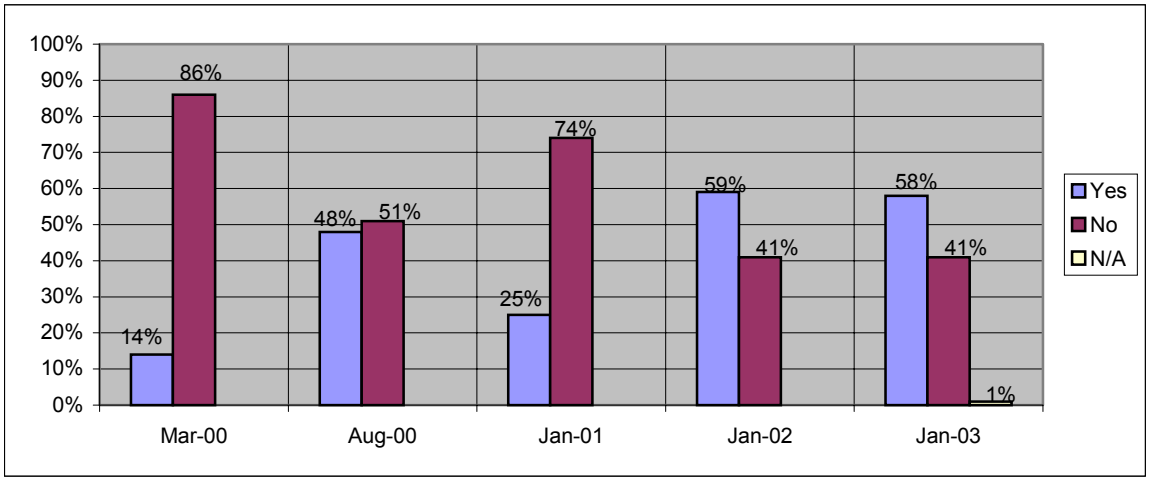

Figure 34. Proportion of Łutsël K'e residents who have gone duck or goose hunting in the past year.

Waterfowl hunting activities have increased dramatically in 2002 and 2003, in part due to organized duck and goose hunting events put on by the First Nation. As well, many Interpretive Workshop participants maintained that the past couple of years have actually been better for waterfowl, with more being seen around the community than in the late 90s and very early 2000s.

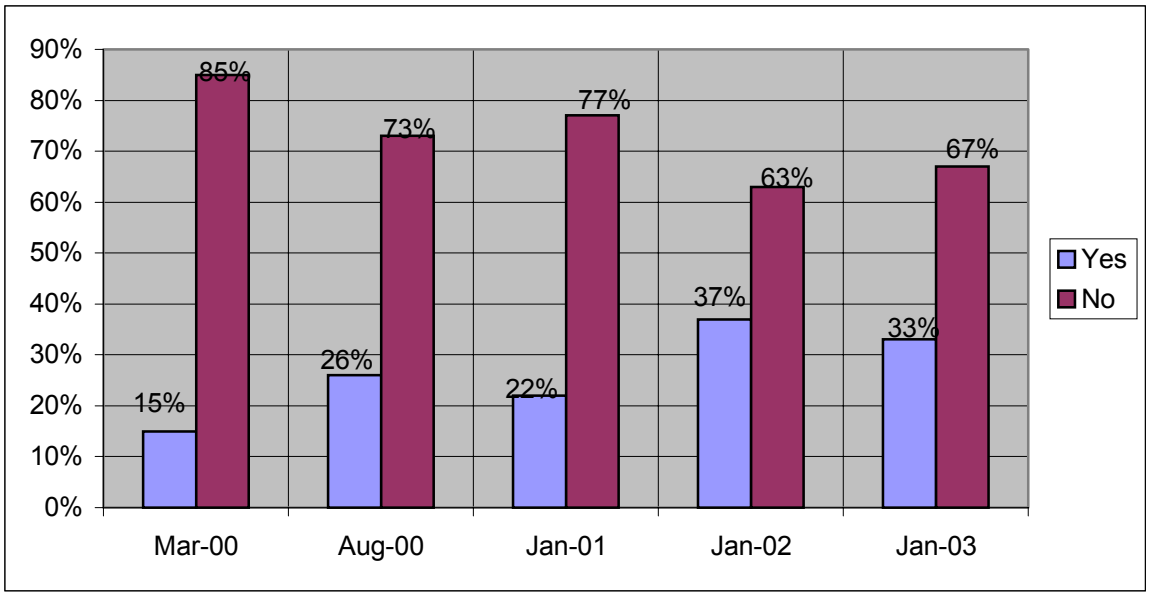

Figure 35. Proportion of Łutsël K'e residents who have made dry-fish over the past year.

As well, those who have made dry-fish in the past year has also increased in 2002 and 2003. Many workshop participants linked this increase with the inception of Elder-youth fish camps in the summer, where dry-fish making is taught and practiced.

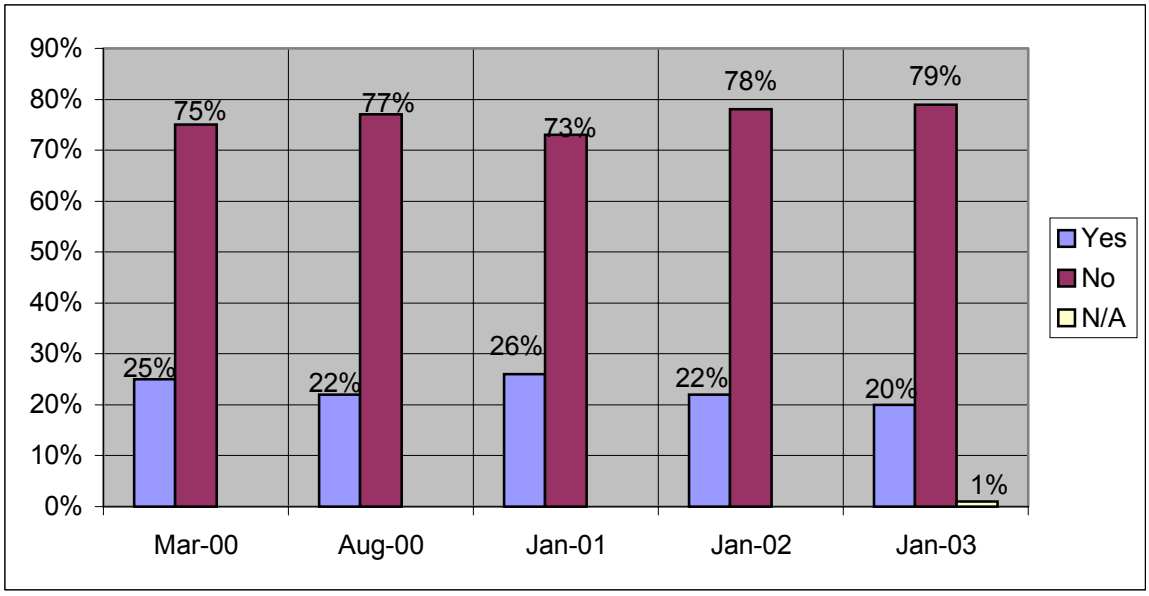

Figure 36. Proportion of Łutsël K'e residents who participate in the annual fall caribou hunt at Artillery Lake.

The fall caribou hunt is a community tradition, where families get chartered by airplane to a camp on Artillery Lake in order to hunt caribou for the long fall months. Typically, participation in this event is quite high and consistent, with approximately a quarter of the community participating. Very late southerly caribou migrations over the past two years have resulted in somewhat less people going on the fall caribou hunt, primarily because of the onset of very cold weather in the barrenlands. Other limiting factors provided by Interpretation Workshops participants were the expense and effort required to move and sustain a family in the barrenlands for a week to ten days.

Perhaps the most important traditional activity for the people of Łutsël K'e is caribou hunting, which provide sustenance, cultural expression and a connection with the land. **Figure 37** demonstrates results of a question tailored around caribou harvesting.

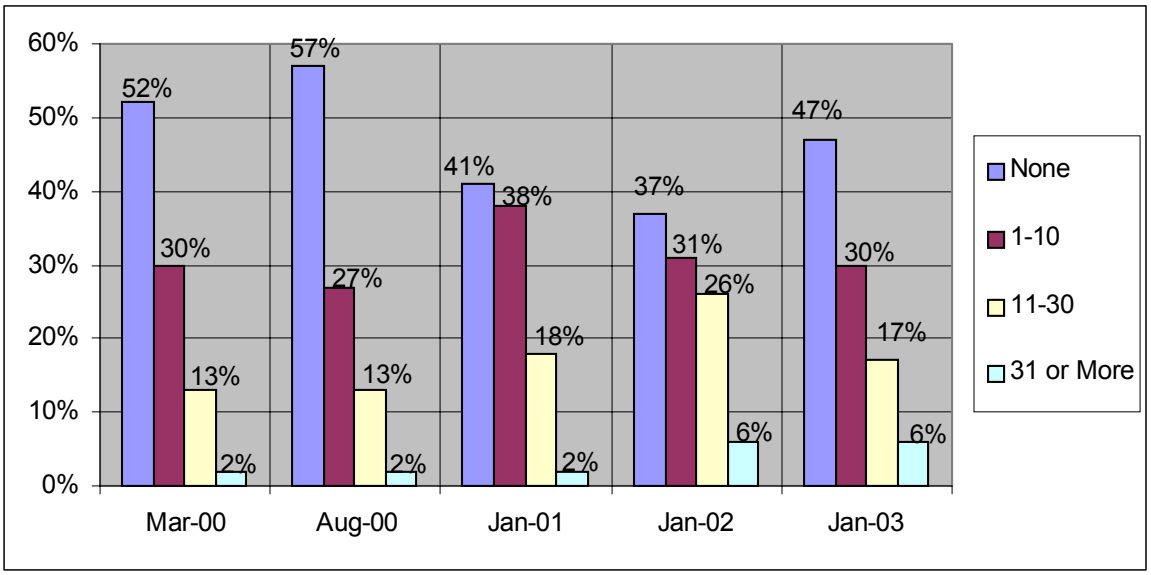

Figure 37. Amount of caribou harvested by different proportions of the Łutsël K'e population.

According to Elders and other land-users in Interpretation Workshops, fluctuations in amounts of caribou harvested by Łutsël K'e residents is largely a function of the availability of caribou in the traditional territory. During the winter of 2000-2001, both the Bathurst and the Beverly caribou herds over-wintered in the vicinity of Łutsël K'e. Consequently, many people, even inexperienced hunters, harvested at least one caribou. During the winter of 2001-2002, caribou were a little further from the community, requiring hunters to travel further for harvesting purposes. Due to the long distances sometimes traveled, often only seasoned, full-time hunters were able to harvest caribou. These hunters were also more likely to harvest larger numbers of caribou in order to save themselves many return trips.

Another very important aspect of traditional activity for the residents of Łutsël K'e is spiritual ceremony and ritual. Most significant of these is spending time praying and paying respects to the ancestors at the ancient spiritual site on the Lockhart River, the "Old Lady of the Falls" (Parry Falls). Typically, people journey to the falls in the late winter or early spring by snowmachine, or by boat and airplane in the summer during the Annual Desnedhe Che Spiritual Gathering. Some survey questions revolved around these events (**Figure 38** and **Figure 39**).

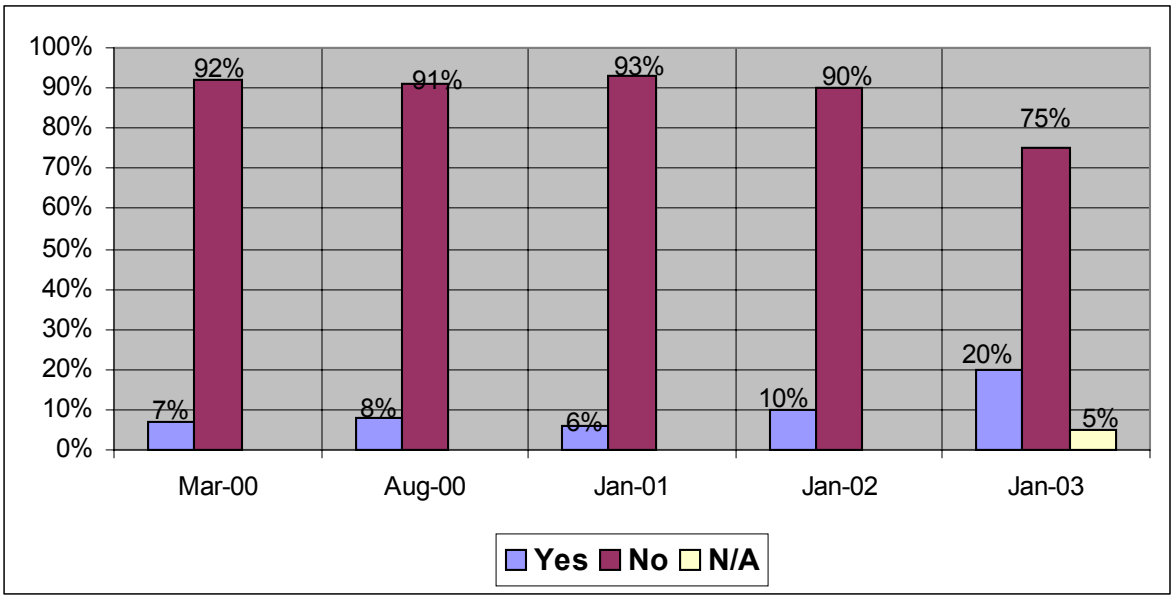

Figure 38. Proportion of Łutsël K'e residents who visited Parry Falls in the early spring.

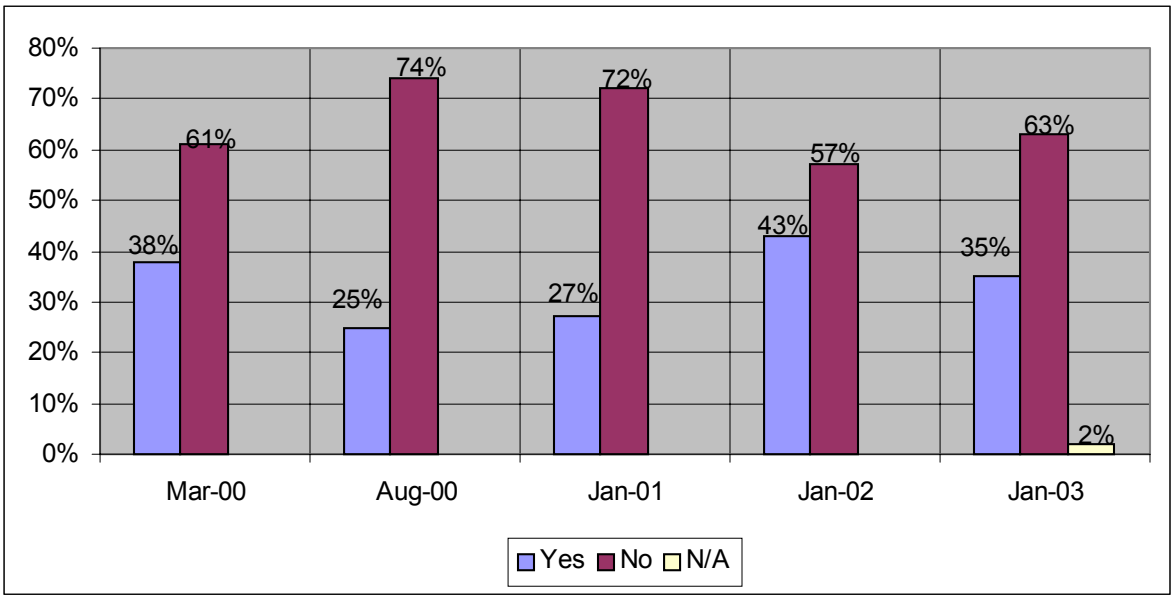

Figure 39. Proportion of Łutsël K'e residents who visited Parry Falls in the summer.

Clearly, far more people visit the falls in the summer, when boats and airplanes allow travel for the very young and the older. Warmer weather also encourages people to visit the area at this time, as does the annual and traditional aspects of this gathering. As well, the First Nation, as the largest employer in Łutsël

K'e, allows its staff to take "cultural leave" during this gathering if they so wish, further encouraging those with jobs to visit the falls. An encouraging sign to Interpretation Workshop participants is the seemingly increasing numbers of residents who are visiting the falls.

Beyond visiting the "Old Lady of the Falls", Łutsël K'e residents maintain a strong attachment to sacred sites throughout their land. Knowledge of these is used to gauge the land-based spiritual awareness of the people. **Figure 40** shows information about the awareness of Łutsël K'e residents concerning one of the most renowned sacred sites, Betsi Ghie in the East Arm of Great Slave Lake.

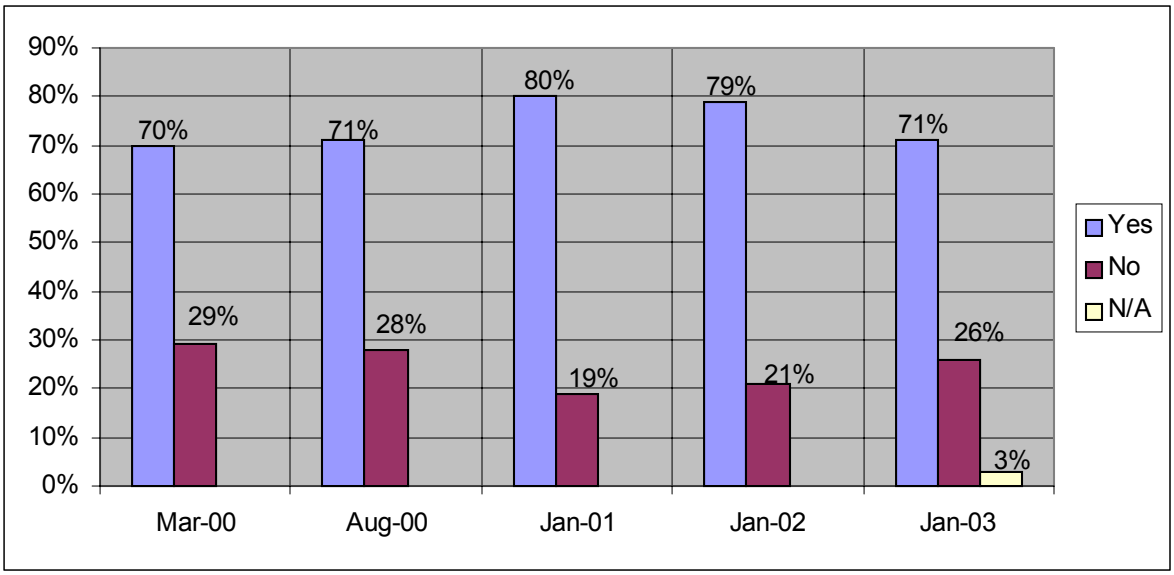

Figure 40. Proportion of people in Łutsël K'e who are aware of the spiritual site called Betsi Ghie.

Interpretation Workshop participants were pleased that the great majority of Łutsël K'e residents, from the old to the young, are at least aware of Betsi Ghie as a site of great import. The presence of this site along one of the primary travel routes in Great Slave Lake perhaps facilitates the recognition of this sacred site.

Fundamental to the continuing practice of traditional activities is the health and integrity of the land and its animals, plants and water. Consequently, a question was asked of Łutsël K'e residents about their concerns about industrial impacts to the environment. Results of this question are contained in **Figure 41**.

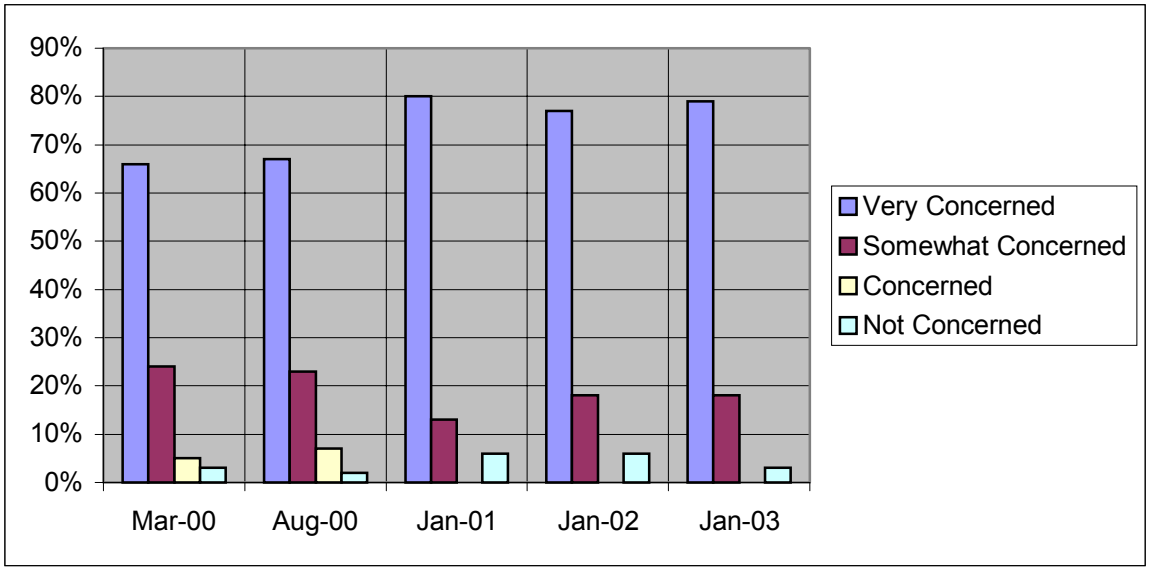

Figure 41. Proportion of Łutsël K'e concerned about the long-term impacts of development on the environment.

A large proportion of the population of Łutsël K'e is very concerned about the potential impacts of industrial development on the land and their way of life. Łutsël K'e remains a community rooted in traditional ways, practices, and values, and ensuring that these ways can continue is a high priority for the people.

Perhaps the most important aspect of traditional culture and activity is the language of the people, Denesǫłıne Yati. Fluency in this language is key to understanding the people's oral history, to relate with Elders and other older land-users, and generally to maintain and foster the culture and identity of the people of Łutsël K'e.

Figure 42 demonstrates that while a high proportion of Łutsël K'e residents speak Chipewyan exclusively in their homes, similarly high proportions only speak the traditional language on occasion. Interpretation Workshop participants discussed this issue at length. Generally, those who spoke Chipewyan exclusively at home were the older generations of Elders and middle-aged people who had been born on the land. Those who only spoke Chipewyan occasionally or not very much at all were the younger generation of youth under 30 who hade been born and largely raised in a town setting. A large generation gap existed, separated in understanding by a language barrier. Workshop participants stressed that unless drastic actions were taken to educate the younger generations in the traditional language in a traditional manner (i.e. on the

land), the proportion of those who spoke Chipewyan only infrequently or not all would necessarily increase dramatically in coming years.

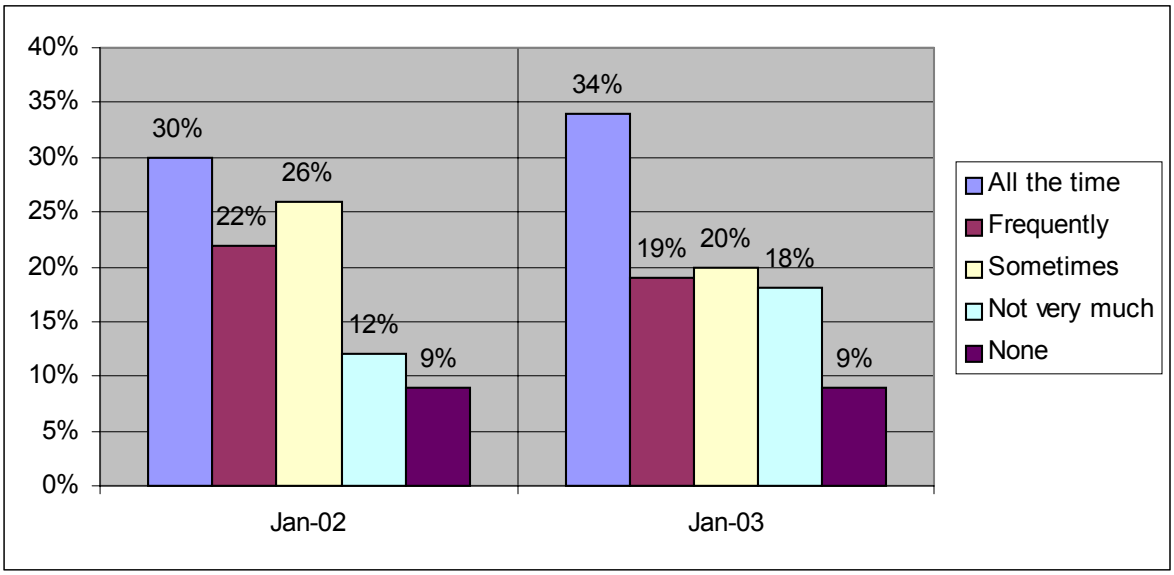

Figure 42. Proportion of Łutsël K'e residents who speak Chipewyan at home in varying degrees.

5.2.1.4 Community infrastructure and services

A portion of the *Community Health Survey* is devoted to eliciting comments concerning the level of satisfaction amongst Łutsël K'e residents regarding the delivery of community programs, services and infrastructure projects. Housing is one very important item that, being under the jurisdiction of a local Housing Authority with funds received from the territorial government, falls under the category of community infrastructure development. Houses are built and allocated to community residents. However, sometimes housing can be inadequate for a particular family's needs. **Figures 43** and **44** present information in this regard.

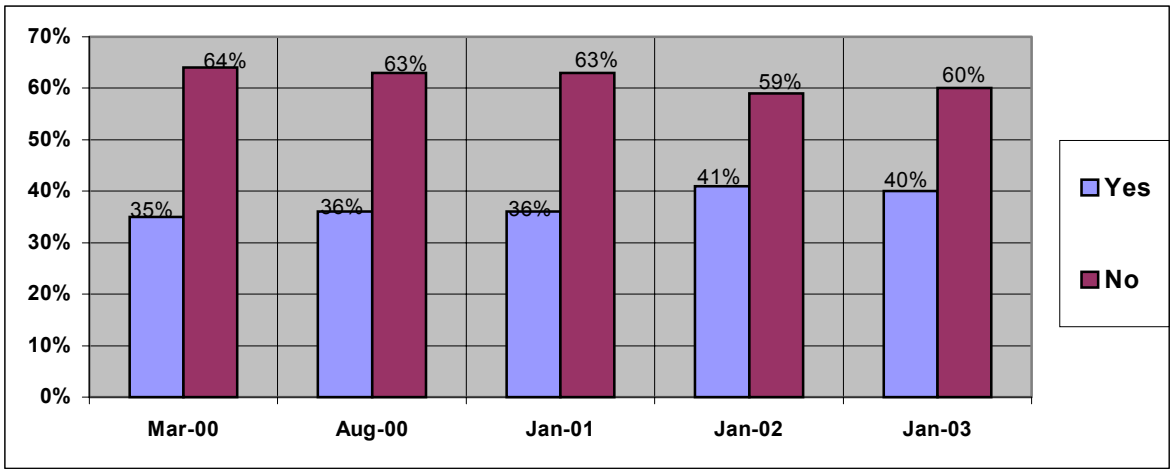

Figure 43. Proportion of Łutsël K'e residents who believe their house is overcrowded.

Overcrowding in households in Łutsël K'e is a chronic problem. With a high birth rate, families are rapidly expanding, while the Housing Authority simply cannot build enough residences to keep up with the demand (due to tremendous expense and space limitations). As a consequence, many homes are overcrowded as the grandparents down to the great-grandchildren are all cramped in one small space. This overcrowding, as well as the limited ability of those unemployed or dispossessed to repair their homes, has led to a large amount of houses in disrepair throughout the community. It is rare to find homes in Łutsël K'e that could not use some new dry-wall or windows, at the very least, or at the very most may require to be totally redone from the bottom up as they are either poorly insulated or wired. Indeed, overcrowding is such an issue that many families or people do not even have houses, but either bounce around from relative to relative or live in old shacks with no modern facilities.

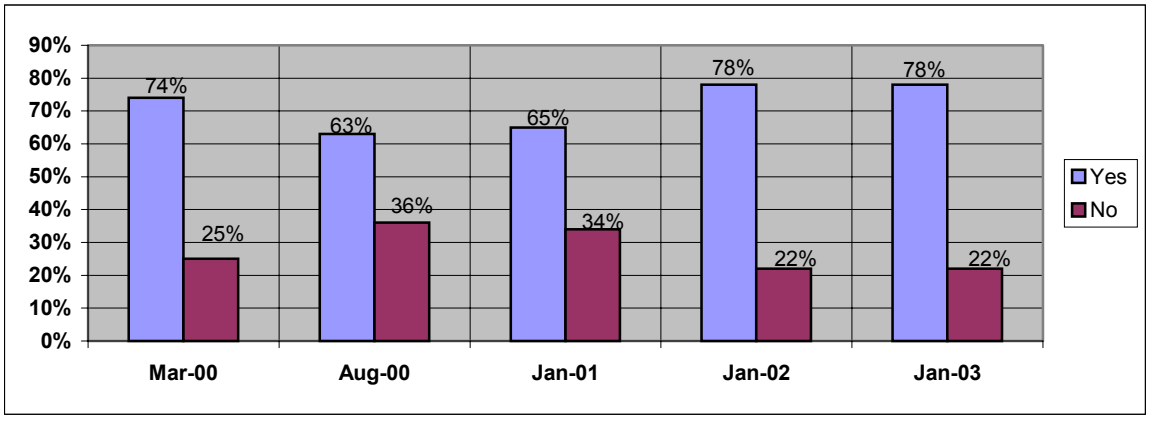

Figure 44. Proportion of Łutsël K'e residents who believe that their house is in need of repair.

First Nation or territorial government departments typically deliver community services. The *Community Health Survey* asks people to rate the effectiveness of these services and their responsible departments. Some of the more pertinent of these results are presented in **Figures 45**, **46**, **47**, and **48**.

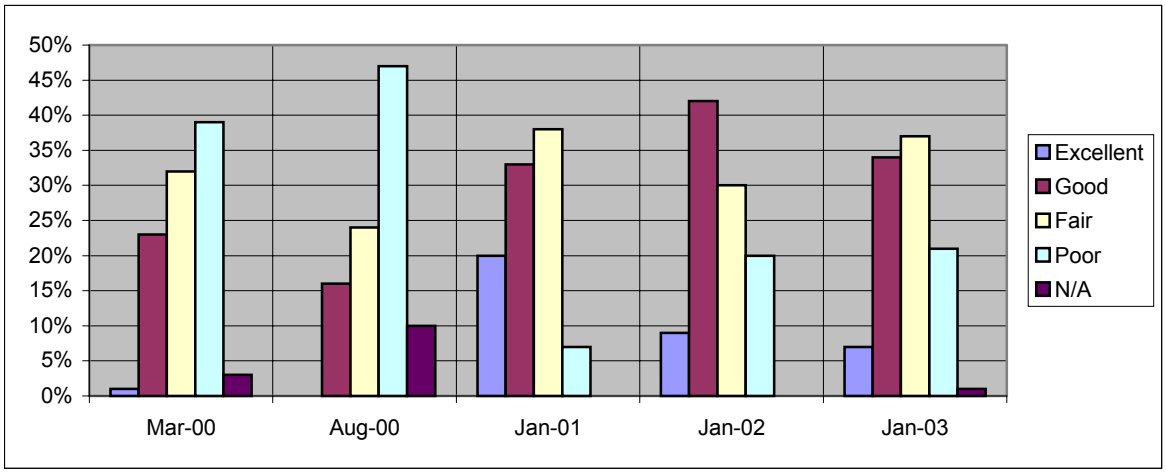

Figure 45. Community ratings of the services provided by the Health Center.

Community satisfaction with the Health Center changed markedly between the year 2000 and latter years. Interpretation Workshop participants attributed this almost wholly to a changeover in nursing staff, claiming that the more recent nurses are much more competent and compassionate than those that came before.

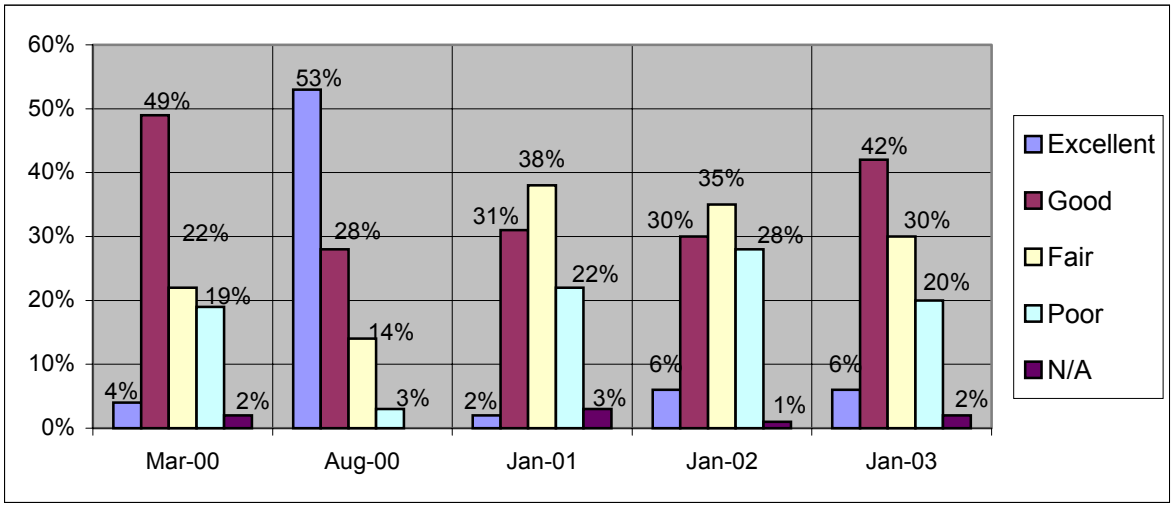

Figure 46. Community ratings of the services and education provided by the Łutsël K'e Dene School.

Figure 46 shows some highly fluctuating trends. Community satisfaction with the school clearly dropped fairly considerably after 2000. Interpretations offered for this trend has revolved around the quality of the staff, much as with the Health Center. For example, in 2002-2003, a much more pro-active principle who was interested in community involvement in the school may have been responsible for the raised profile of the school services and its level of education. However, results from 2000 were mysterious. Community residents often expressed their dislike of the school staff that were employed at this time, especially the principle. No one could come up with an explanation for why the school received such high ratings at this time. It is possible that data were improperly entered into the analysis database at this time – Łutsël K'e staff are currently searching through the raw data to see if they can find any discrepancies.

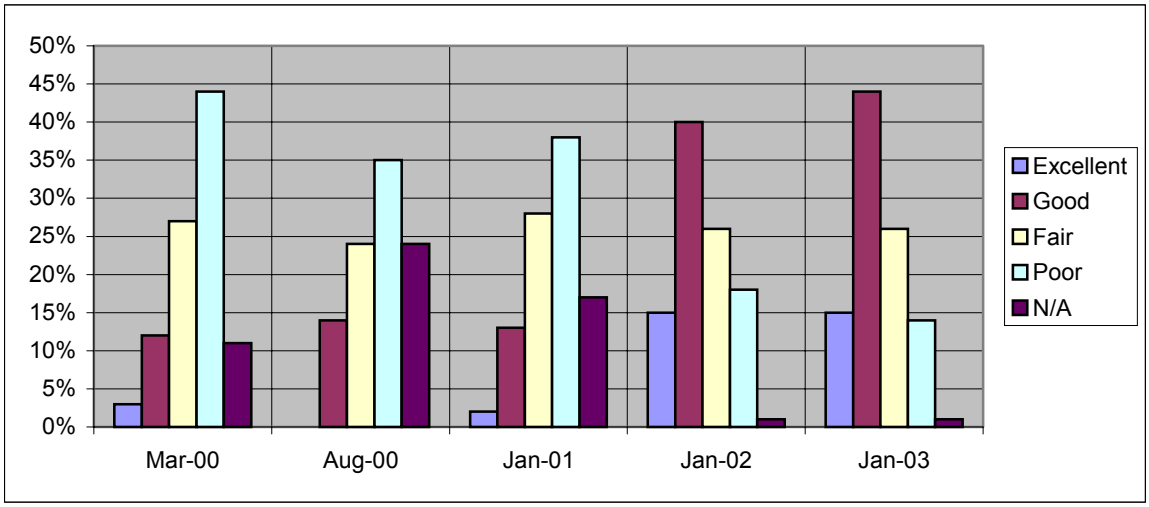

Figure 47. Community ratings of the effectiveness of the Wildlife, Lands and Environment Committee and Department.

The Wildlife, Lands and Environment Committee and Department is responsible for all matters relating to land-use and the environment within the traditional territory. Interpretation Workshop participants attributed the sharp jump in approval ratings for the Committee and Department to the increased number of training programs, on-the-land activities, and projects implemented by the organization during this period. Perhaps most of all, approval ratings were high due to the involvement of youth in the Department, where they learned both the traditional knowledge of their people and the technological skills of western culture.

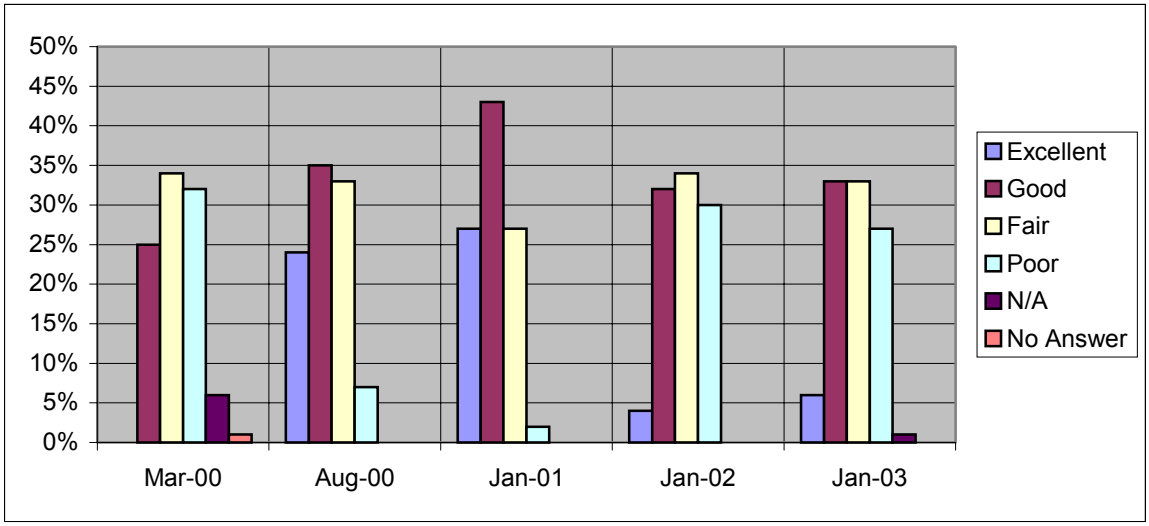

Figure 48. Community ratings of the services provided by the Co-op store.

The Co-op store is the one-stop-shop in Łutsël K'e. There is no other store. People depend upon this store for most of their groceries, as well as items such as cookware, toys, and tools. Community satisfaction with the store is usually fairly good, following on the information presented in **Figure 48**, though ratings have slipped somewhat in the past two years.

5.2.1.5 Personal health and healing

The physical, emotional and spiritual health and well-being of individual Łutsël K'e residents was another focus of the *Community Health Survey*. Questions focused on nutrition (from both traditional and store-bought sources), as well as the accessibility and quality of healing programs for grieving and drug and alcohol abuse. **Figures 49** and **50** provide information concerning nutrition, as indicated by levels of traditional food consumption (considered to be healthier than store-bought food).

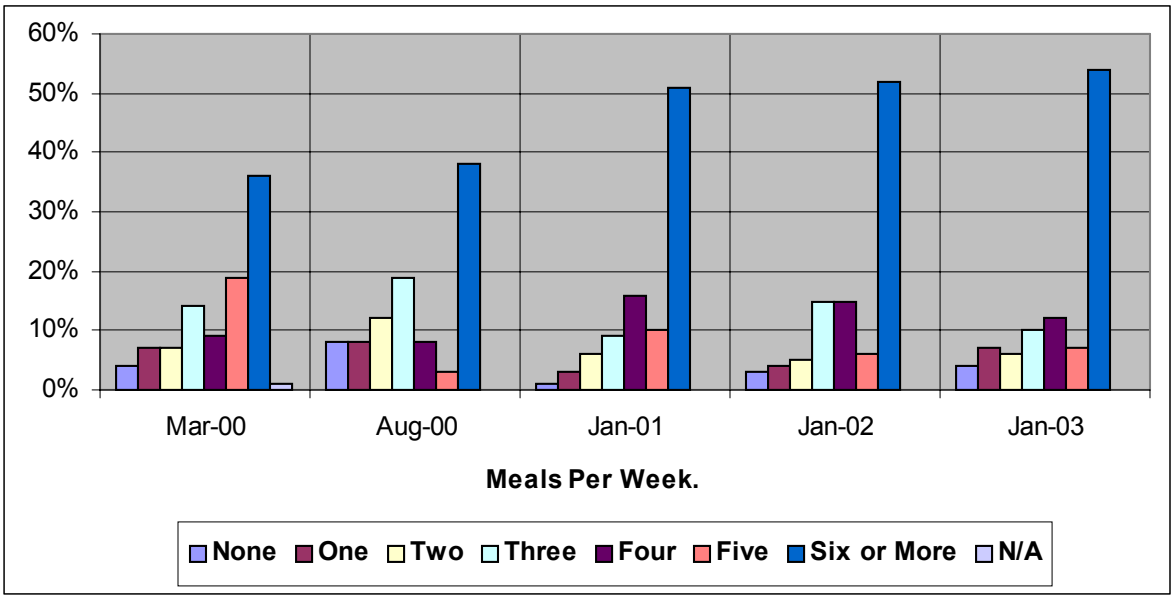

Figure 49. Proportion of Łutsël K'e residents who eat a certain amount of caribou meat each week.

Almost all Łutsël K'e residents depend highly on caribou meat as a healthy, traditional, and preferred source of food. Indeed, a significant amount of Łutsël K'e residents consume caribou meat at least six times or more every week. These levels even saw a bit of a jump in 2001-2003, once again potentially due to the increase in on-the-land transportation in the settlement, which has allowed previously static hunters to conduct more harvesting activities. It follows that more caribou meat is available more often to more families in Łutsël K'e. As well, caribou "goodies" such as the internal organs and head are more available, which are all considered delicacies as well as very healthy.

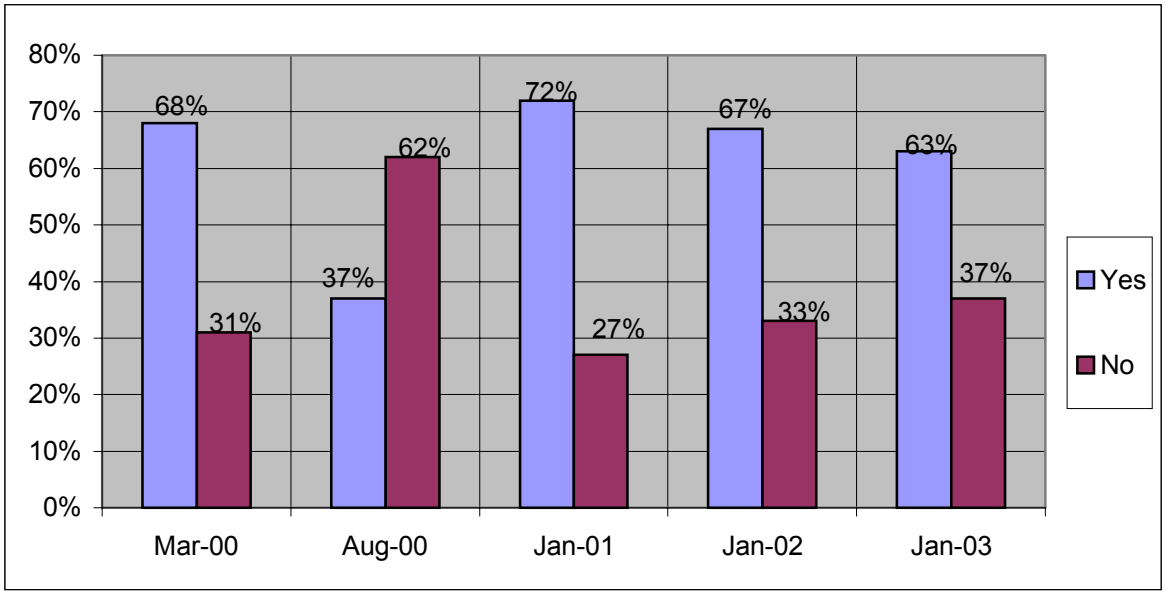

Figure 50. Proportion of Łutsël K'e residents who eat caribou liver, kidney, heart or heart at least once a week.

A large proportion of the population of Łutsël K'e consumes caribou internal organs and heads quite frequently. These items are typically shared amongst families and such as delicacies, ensuring that even those who have no capacity to hunt for themselves can enjoy the healthful and flavorful benefits of these items. Interpretation Workshop participants explain that even in times of scarcity, these parts of the caribou are cherished and are often shared amongst the people.

Another aspect of personal health consists of progress down the healing road, be it to address drug and alcohol problems, residential school experiences, or simply to contend with the rapid social changes happening in the community. Questions in the *Community Health Survey* were tailored to assess the adequacy of community programs designed to help people deal with such issues.

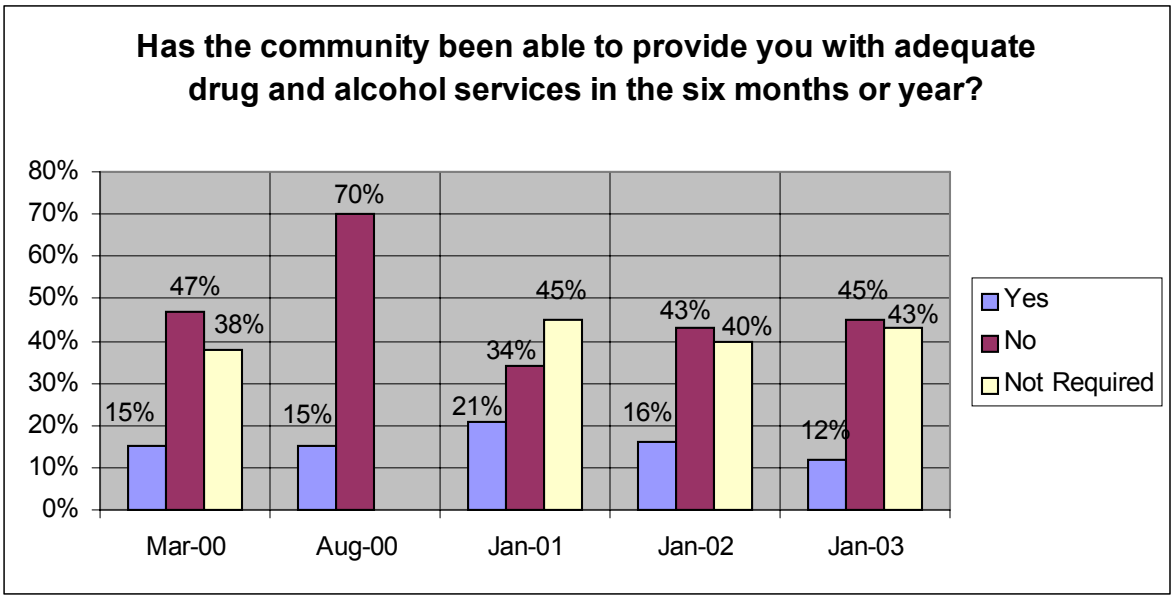

Figure 51. Proportional responses to the question "Has the community been able to provide you with adequate drug and alcohol services in the past year?".

Figure 51 indicates that a significant proportion of people in Łutsël K'e believe that the drug and alcohol services they have sought have been inadequate. Interpretation Workshop participants attributed this to a number of factors. Most notably, they maintained that the Drug and Alcohol Workers in the community were often traveling, and as such were often unavailable for counseling. As well, participants complained that they were often uncomfortable sharing their thoughts and concerns with the Drug and Alcohol Workers, as they were community members who knew them well. There was a fear of non-confidentiality, and indeed some people in town had experienced exactly this. Other concerns with the Drug and Alcohol Workers included lack of adequate training, as well as the D & A workers treating their position as "just another job".

5.2.2 Mine Employee and Spouse Survey

While the *Community Health Survey* explored the overall well-being of the community in a general fashion, the *Mining Employee and Spouse Survey* had the purpose of examining the impacts of wage labour in the mineral development sector. The mineral development sector has the single largest influence upon the socio-economics of the community of Łutsël K'e. Specifically, this survey tried to elicit information about the impacts of mining wage employment upon family relationships. Questionnaires were tailored to both mining employees and their spouses (if they had a spouse), and began being administered in

November of 2001. Since then, the survey has been conducted one other time (as it is on a yearly cycle) during November 2002. Questionnaires were administered to all community members who did or had worked in the mineral development sector over the past year. Spouses of these individuals were also interviewed. Because of issues related to literacy in the community and the relative unfamiliarity of community members with this kind of tool for information gathering, community researchers visited each community member and filled out the questionnaire with them.

Following the completion of the home-visits, community researchers entered the information in an Excel database. The database was modeled upon the one used for organization and analysis of *Community Health Survey* data, allowing community researchers to compare community answers from year to year using graphs. These results are presented below.

5.2.2.1 Characterization of mining employment

Initially, some graphs meant to flesh out the type of wage labour that mining employees secured in the mineral development sector will be presented. This will lend context to further analyses. **Figure 52** shows the type of work that respondents held, while **Figure 53** shows which mineral development company employees worked for. **Figure 54** displays a breakdown of the various job titles that were held by mining employees.

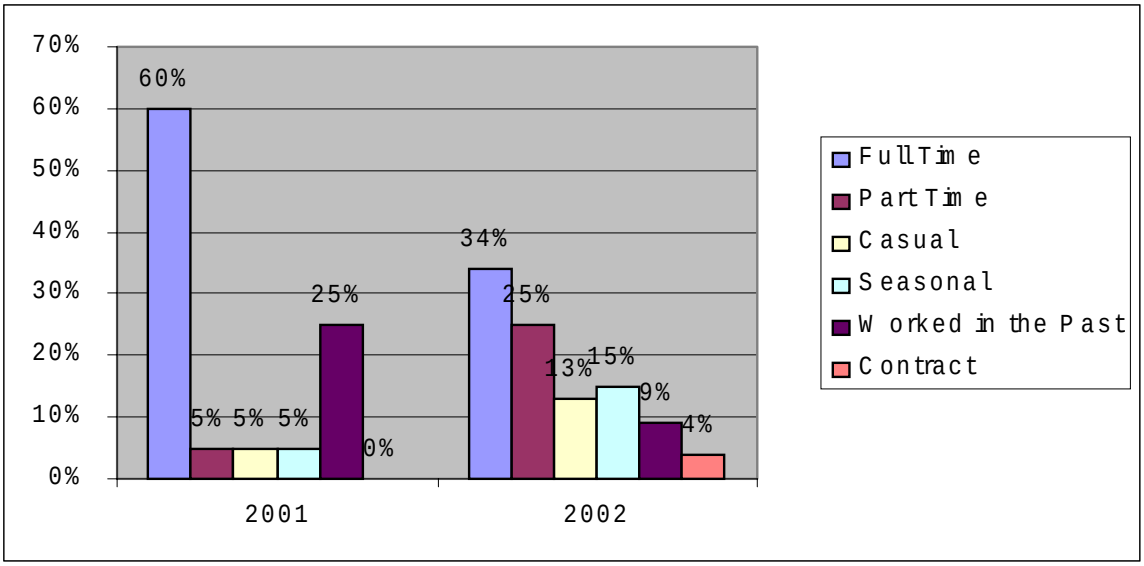

Figure 52. Type of employment held by employees in the mining sector.

In 2001, the majority of mining sector employees held full-time jobs, while 2002 saw a sharp decrease in the amount of full-time positions and an increase in part-time, casual and seasonal employment. At the very least, this indicates that mining employment positions are relatively unstable for Łutsël K'e residents, with a fair amount of flux in job type as well as people who hold the jobs.

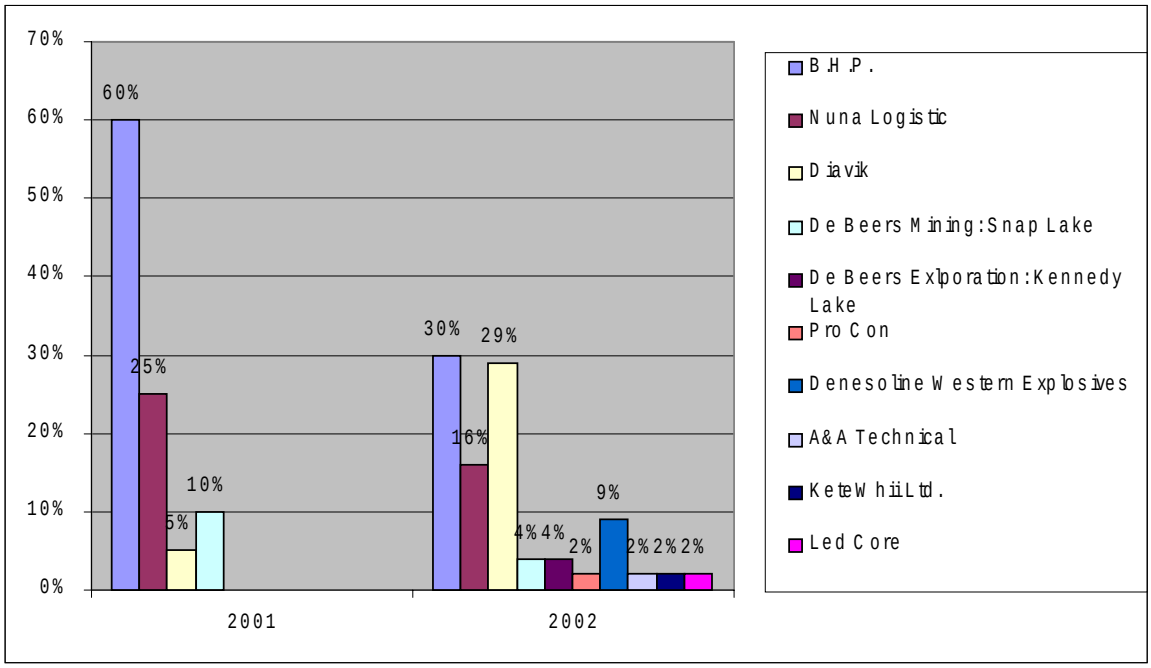

Figure 53. Company worked for by mining employees.

Figure 53 further corroborates conclusions from **Figure 52**. The graph shows that there is little consistency or stability in the mining companies that employed Łutsël K'e residents. It is interesting to note that in 2001, 60% of mining employees worked for BHP Billiton Diamonds Inc, the only operating diamond mine at the time. These employees were primarily full-time employees. 2002 saw a dramatic drop in individuals who worked at BHPB, corresponding with a drop in full-time employment. Łutsël K'e residents in this year worked primarily with mining companies that were constructing a mine, such as Diavik, or with contractors to these mining companies.

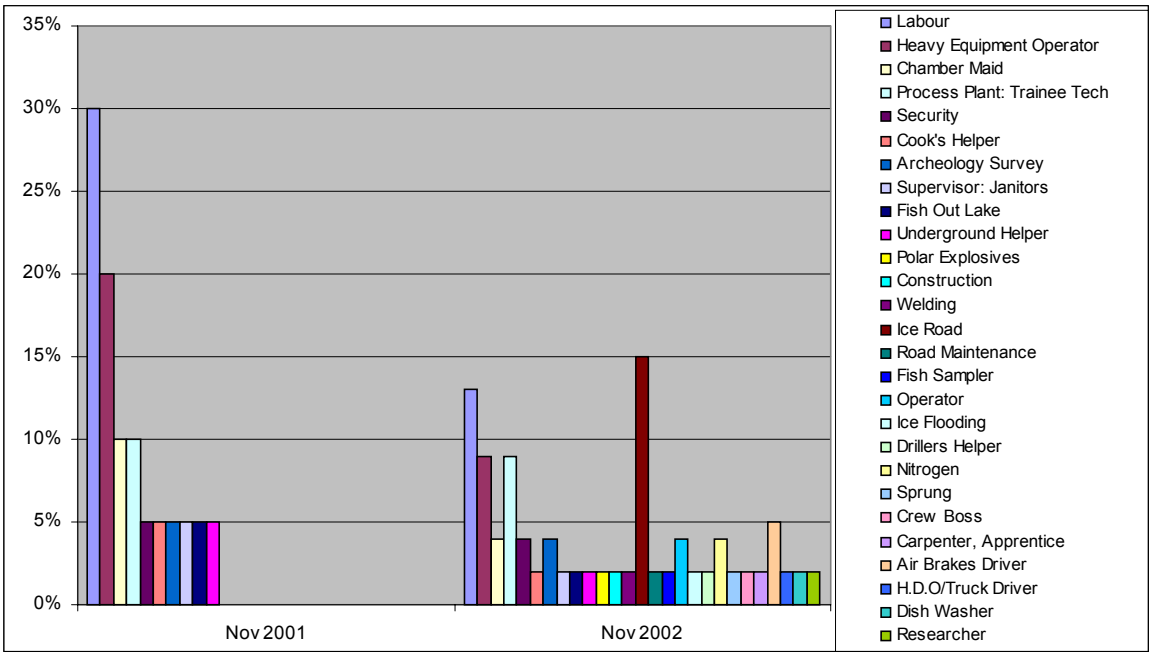

Figure 54. Job titles of Łutsël K'e mining sector employees.

Figure 54 shows the job titles held by Łutsël K'e employees in the mining sector. In 2001, most jobs were of the labour or heavy equipment operator type. 2002 saw a drop in labour and HEO type positions, and an increase in such casual labour such as ice road construction during the hauling season. It is key to note that most positions held by Łutsël K'e residents are of the labour-type, with very few in management, supervisory, or research roles.

Overall, data from **Figures 52**, **53**, and **54** demonstrate that employment in the mining sector is highly unstable, with a great deal of uncertainty about such things as job security or loyalty to a specific company. Mining employees move from company to company and job to job quite frequently, and thus their likelihood of getting better jobs is reduced.

Figure 55 displays the types of work schedules that mining employees had in 2001 and 2002.

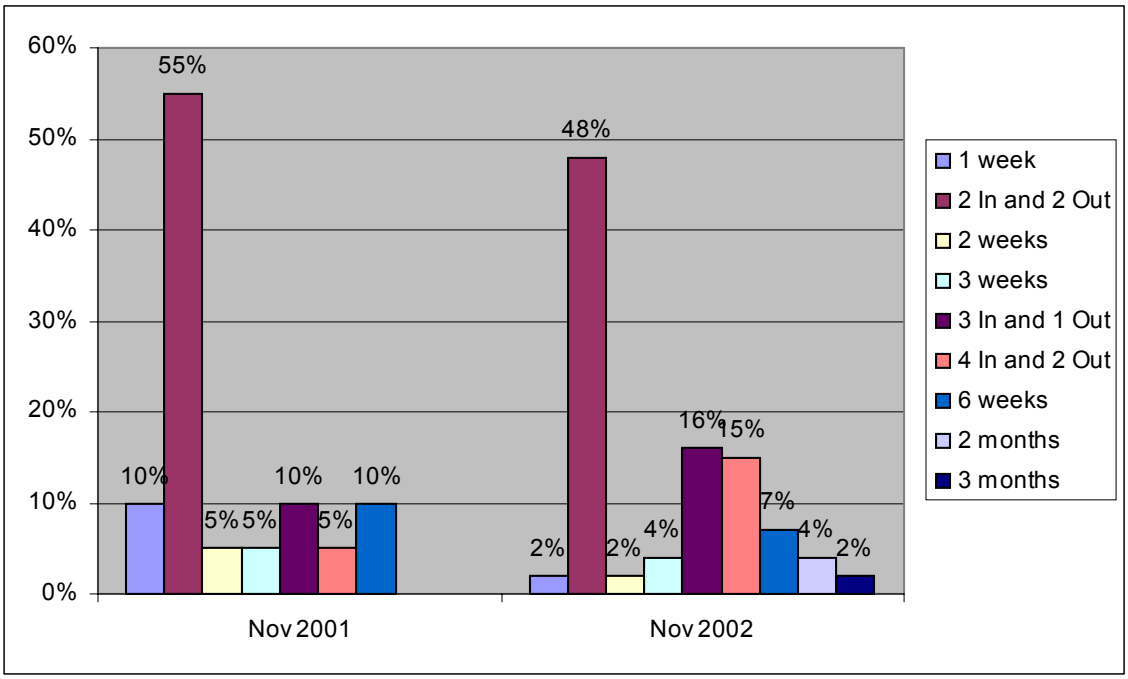

Figure 55. Type of work schedules held by Łutsël K'e employees.

Most mining employees held jobs in the mining sector that required a work schedule of alternating two weeks at the mine site and two weeks at home. Others had variations on the in and out schedule, either three and one or four and one. Others simply stayed at the mine site for a period of time (anywhere from one week to three months) until their seasonal or casual employment was over.

5.2.2.2 Effects of mining employment upon families

A focus of the *Mining Employee and Spouse Survey* was to elicit comments about the effects of employment in the mining sector on the domestic front. Mining jobs take people away from their community and their families for periods of time, but also provide money for family support. The following figures display results of questions tailored to garner responses concerning the effects of mining employment upon family life.

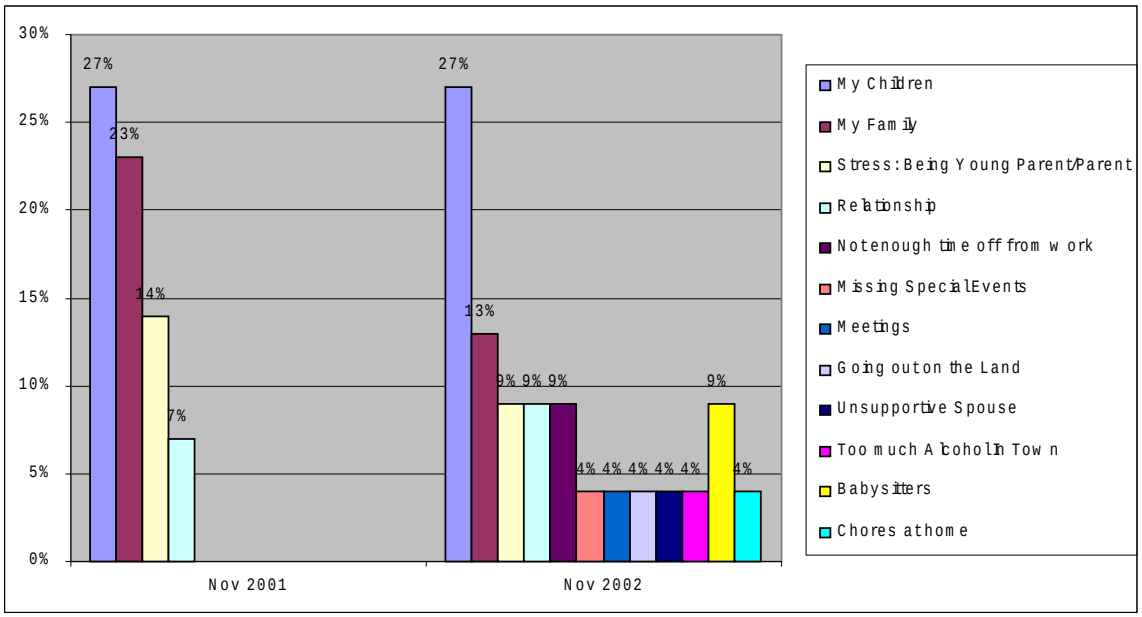

Figure 56. Responses (from mining employees) to the question "How has mining employment affected you at home?"

Most mining employee respondents identified that their children (or their immediate family in general) were being impacted by the fact that they were away from the community for long-periods of time. Many qualified their answers by saying that their children were less disciplined and were getting into more trouble because one of their parents was away all the time. They said they had trouble maintaining and fostering the relationship with their spouses, simply as they spent so much time apart that they had begun to grow apart. Many spouses echoed these concerns.

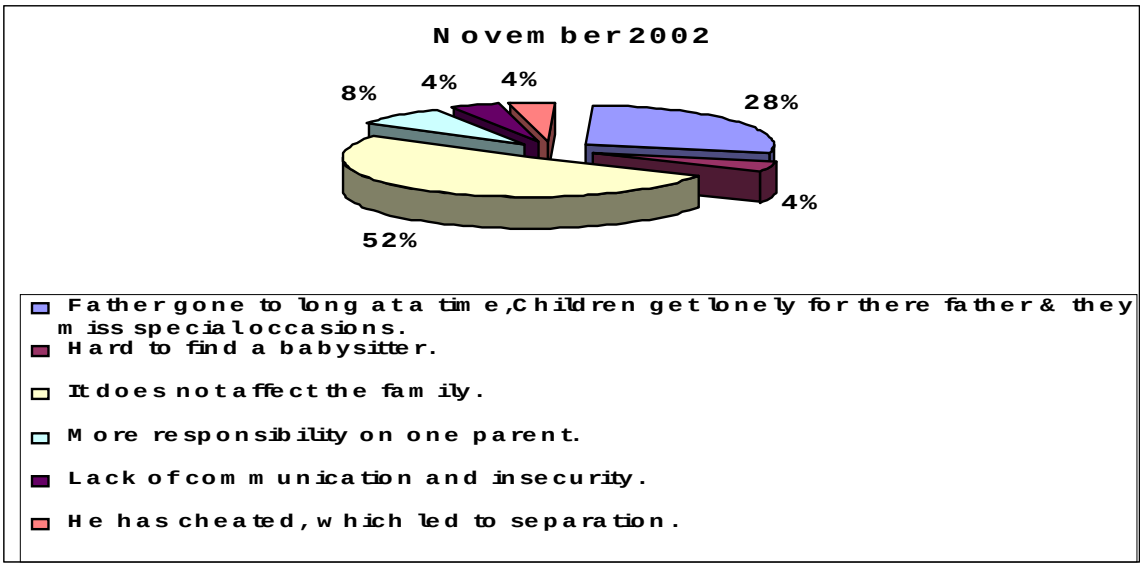

Figure 57. Mining employee spouse concerns with mining employment in the family (2002).

When asked if they would prefer if their spouses worked in the settlement of Łutsël K'e, mining employee spouses overwhelmingly concurred. Approximately 60% of respondents stated that they would prefer if their spouse worked in town, where they would be much closer to home and could participate in day-to-day family chores and activities.

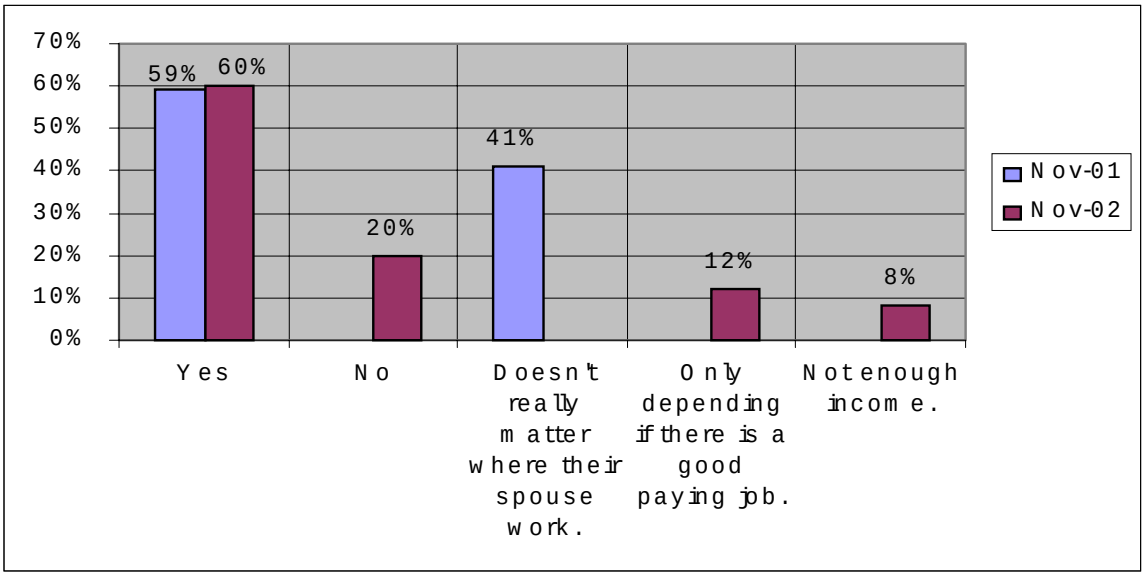

Figure 58. Mining employee spouse responses to the question "Would you prefer your spouse to work in town?"

Mining employees had much the same attitude, and overwhelmingly maintained that if they could make the same amount of money as they did working at a mine, they would work in town.

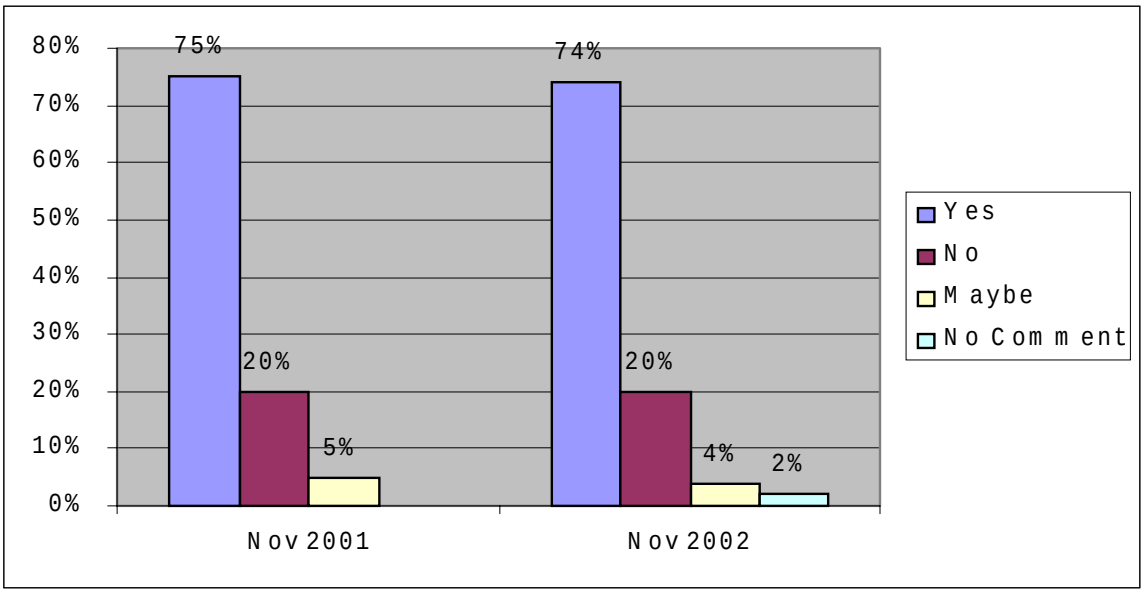

Figure 59. Response of mining employees to the question "If you could make the same money, would you prefer to work in town?"

Indeed, the primary reason that most mining employees chose to work at the mines at all was because of better wage opportunities. Simply, due to the lack of jobs in the settlement of Lutsel K;e, they had to seek employment at the mines in order to support their family, pay for living expenses and generally to make a go of it at all.

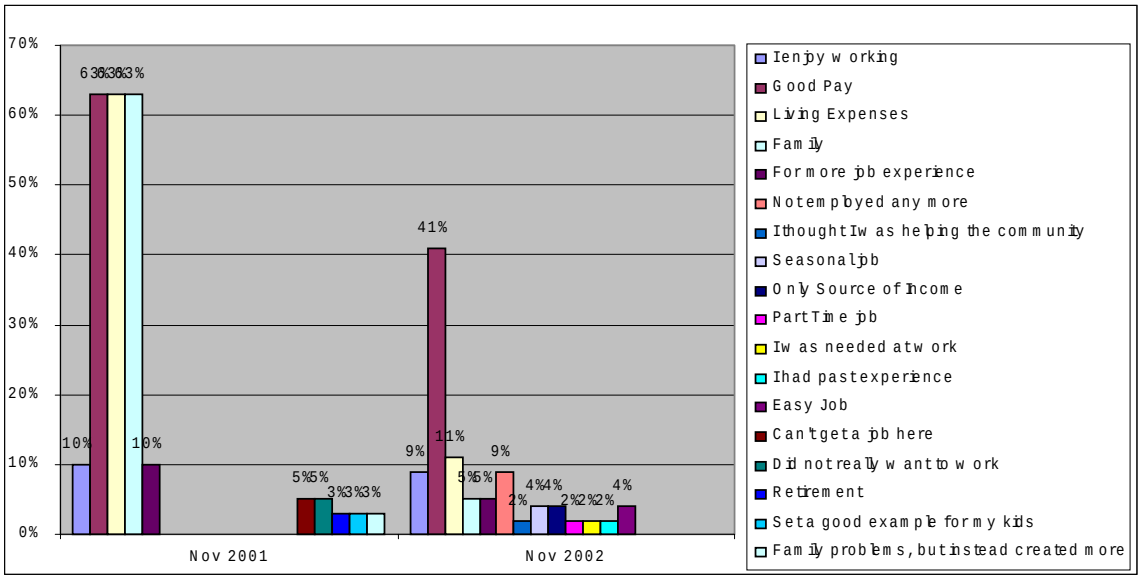

Figure 60. Reasons given by mining employees for why they worked in the mining sector.

Spouses of mining employees also maintain that it is primarily in the financial sense that they have benefited from their spouse's employment.

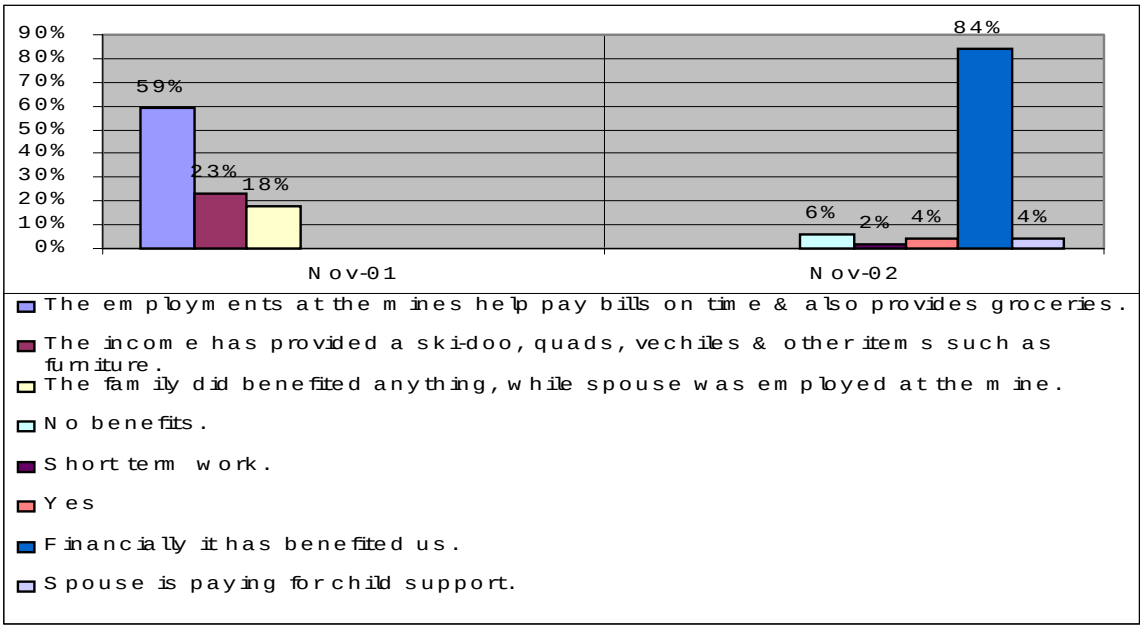

Figure 61. Mining employee spouse responses to the question "How has mining employment benefited your family?"

In sum, both mining employees and their spouses are very aware of the trade-offs involved in employment in the mining sector. On the one hand, mining employment is providing families with increased income, monies that can be used to take of basic living expenses as well as buy other items such as ski-doos and boats. However, there is recognition that mining employment is having a definite impact upon family life, with families drifting apart due to prolonged separation. Many mining employees express that perhaps the trade-offs for good pay are perhaps too great, especially in the realm of family separation, as exhibited in **Figure 62**.

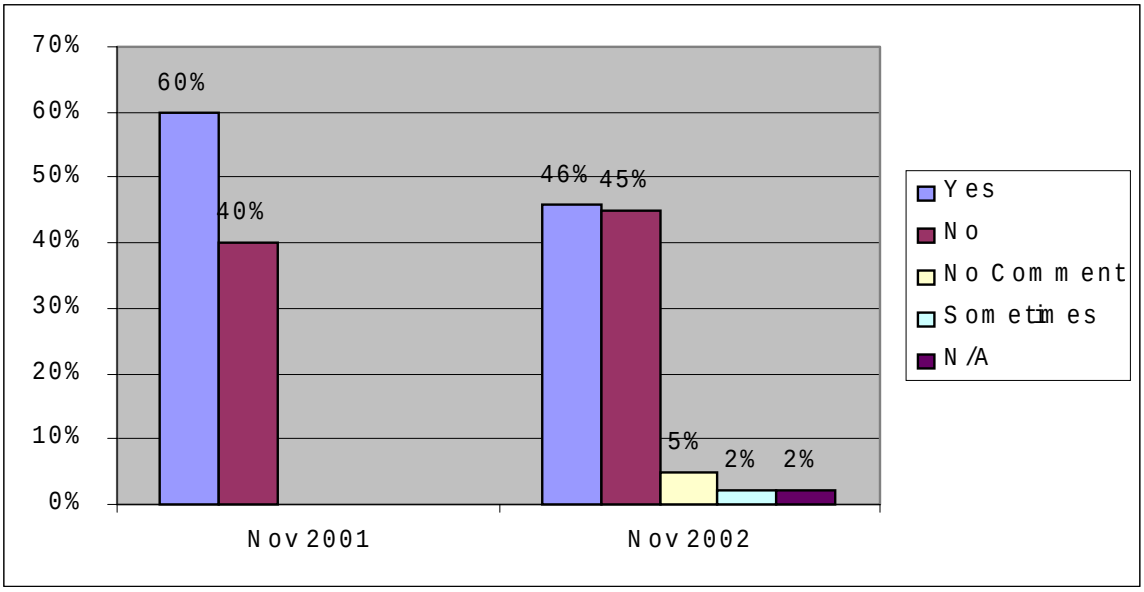

Figure 62. Mining employee response to the question "Have their been more family break-ups over the past few years due to mining employment?"

5.2.2.3 Mining employment and the traditional way of life

Beyond impacts on interpersonal relationships within families, employment in the mining sector was also found to have impacts upon family participation levels in traditional activities and cultural events. Most noticeably, the absence of the (most typically) male father figure from home during mine employment hampers the ability of family members to access many land-based activities, simply as father figures tend to be responsible for a good proportion of traveling and camping duties. When asked how they thought mining employment affected their and their people's traditional way of life, mining employees provided a host of responses, displayed in **Figure 63**.

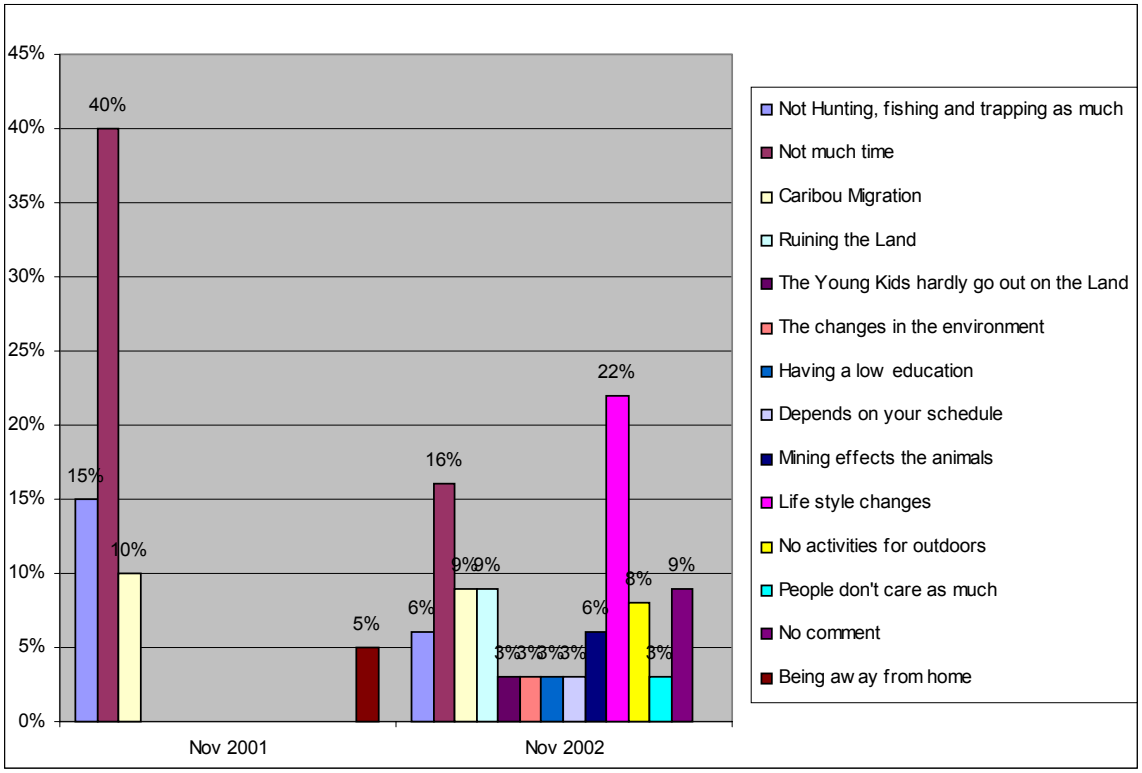

Figure 63. Ways that mining employment is affecting participation in traditional activities, as offered by mining employees.

Responses from **Figure 63** indicate that many mining employees believe that their and their families' on-the-land activities have been reduced due to a lack of time. Also, many state that their lifestyles have shifted from a more subsistence-type existence of hunting and trapping to a wage economy-based existence due to employment in the mining sector. Simply, families with a parent employed in the mining sector are not participating in traditional activities to the same extent that they once did. They simply do not have the time anymore. Mining employee spouses echo this conclusion. Results presented in **Figure 64** demonstrate that many mining employee spouses attribute reduced family participation in on-the-land activities with a lack of time and lifestyle changes. At the same time, a proportion of the mining employee spouses interviewed maintained that their family's degree of participation in traditional activities has not changed much. In Interpretation Workshops, participants believed that most these families may never have participated in traditional activities very much in the first place. Participants did, however, cite examples of some families who have maintained high levels of participation in traditional activities while holding down employment in the mining sector. These, however, were few.

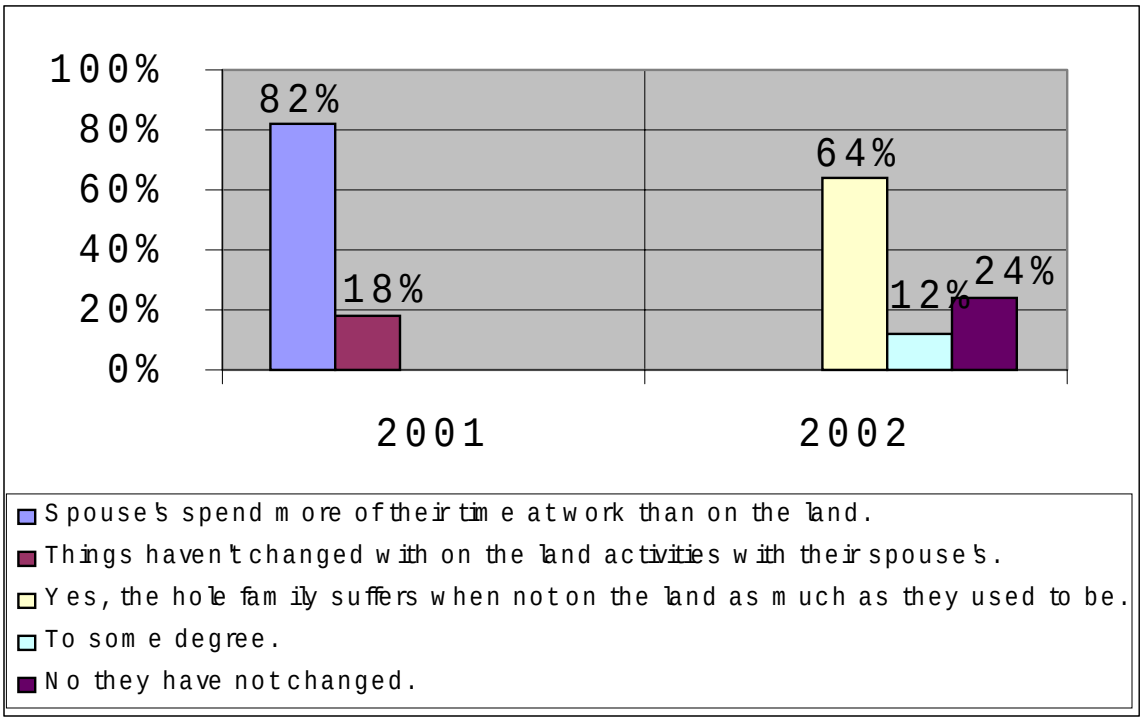

Figure 64. Ways that mining employment is affecting participation in traditional activities, as offered by mining employee spouses.

5.2.2.4 Improving mining employment for the people of Łutsël K'e

When asked about the aspects of their jobs in the mining sector that could be improved, mining employees had a variety of answers. Predominantly, mining employees stated that they would like work schedules that better accommodated traditional activities and cultural events, as well as the provision of child care in Łutsël K'e. Many stated that they would appreciate an increase in pay (raise), while others maintained that everything was fine with their jobs. Many respondents said that they would like to receive more training in their jobs, specifically to advance in their chosen field as well as increase their pay scale. In addition, some respondents felt that their jobs could be improved if there was a better spirit of cooperation and teamwork in the work environment. They said that they often felt isolated or left to their own devices on the job. A few mine employees even said that they were subject to racist attitudes while on the job, which consequently affected their self-esteem and ability to perform their jobs effectively. **Figure 64** provides a graphical representation of the various responses provided by mining employees when asked how their jobs could be improved.

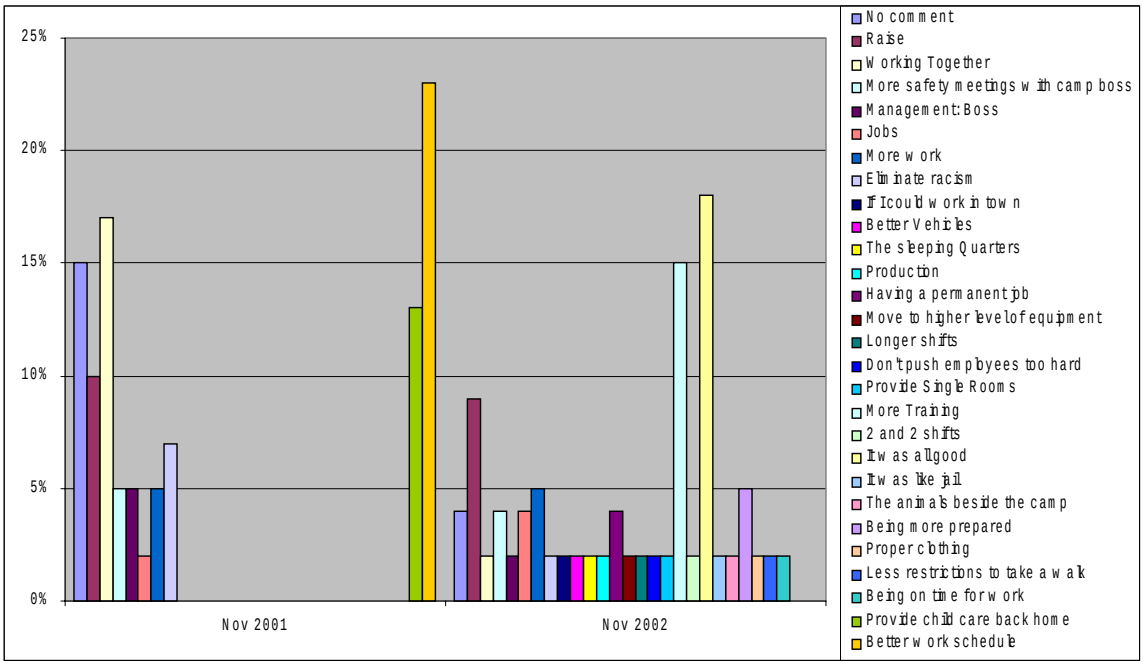

Figure 65. Mining employee responses when asked how their jobs could be improved.

Mining employee spouses also provided comments on how they thought mining employment could be tailored to better suit the needs of Łutsël K'e residents (**Figure 65**).

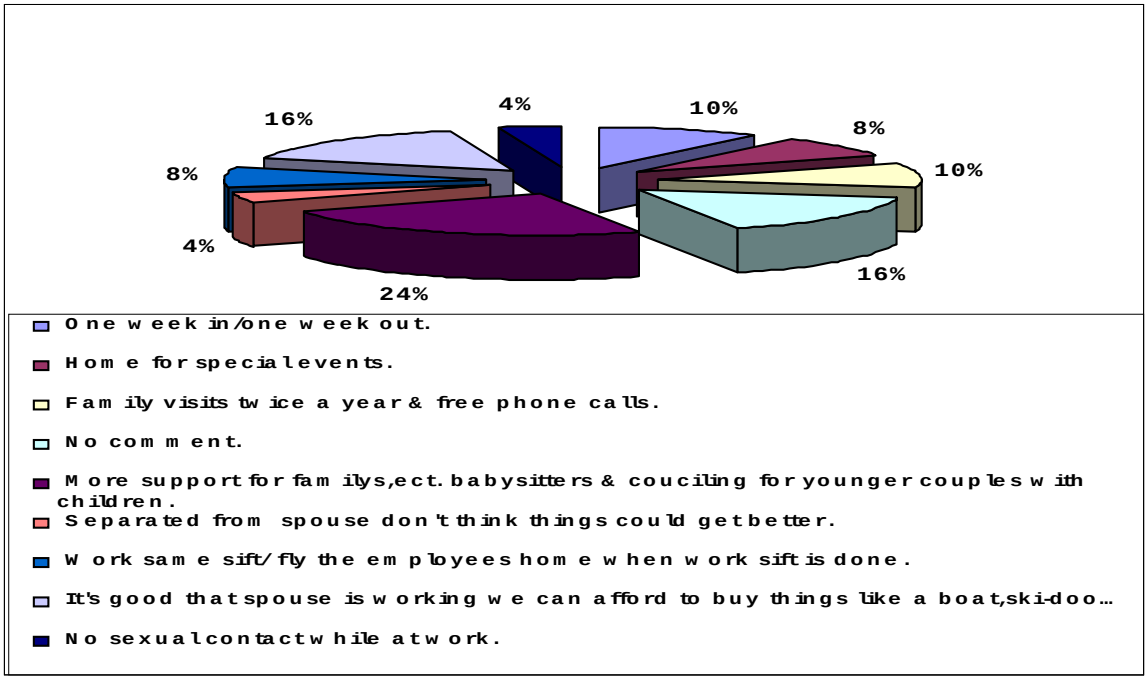

Figure 66. Mining employee spouse's suggestions for improving mine employment.

In general, suggestions for improving mining employment revolve around a few key issues. First, there is a desire among Łutsël K'e mining employees and their spouses to have work schedules that are more accommodating of traditional activities and family/cultural events. Second, there is a desire to have mining companies support child care and day care facilities in the community, simply as employment at their mines is taking a parent away from the family environment. Third, mining employees stress that their levels of training must be increased in order for them to attain employment positions with more responsibility and higher wages.

5.2.3 Cultural Survey

An area of deep concern for the people of Łutsël K'e is the rapid erosion of Denesǫłıne culture with the continuing encroachment of Euro-Canadian culture into the community. The *Cultural Survey* was designed to elicit information in much the same manner as the *Community Health Survey* and the *Mining Employee and Spouse Survey*, but with specific focus upon cultural issues. Questions were designed to encourage comment on a variety of subjects, including the ways in which people express their culture, in the level of knowledge about their history, and in the ways that traditional culture can be promoted in the youth. The focus of the questionnaires was upon youth, however, and the ways in which cultural practice can be encouraged and instilled in them.

Questionnaires were specifically tailored for adults and youth, and were first administered during the summer of 2002. Questionnaires were administered to a random sample of community youth (18 and under) and adults, approximately 40 in total for each age category. Questions posed to the youth were of more depth than those posed to adults, primarily to maintain the youth-oriented focus of this survey. Basically, adults were only asked for their general input, whereas youth were asked for more specific responses. This was primarily a function of time and resources.

Again, because of issues related to literacy in the community and the relative unfamiliarity of community members questionnaires for information gathering, community researchers visited each community member and filled out the questionnaire with them. Following the completion of the home-visits, community researchers entered the information in an Excel database. The database was modeled upon the one used for organization and analysis of *Community Health Survey* data, allowing community researchers to compare community answers from year to year using graphs. These results are presented below.

5.2.3.1 Characterization of cultural expression in Łutsël K'e

The people of Łutsël K'e most typically express their culture through a variety of land-based activities, oral history sharing, recreational games and spiritual practices. Adult respondents to the *Cultural Survey* stressed that they expressed their culture primarily through on-the-land or land-based practices, such as hunting, trapping, fishing, camping and working with country materials (hides, plants, etc.). Some adults also said that they participated in traditional healing ceremonies, such as sweat lodges. A very small proportion of the respondents stated that they participated in many traditional social activities, such as hand games or drum dances. They said that they spent more time engaged in other social activities like card playing or watching television.

When asked, 33% of the adults interviewed stated that they engaged in less cultural activities then they did in the past, whereas 29% said they participated in cultural activities more than before. The remainder said their level of participation remained the same as ever.

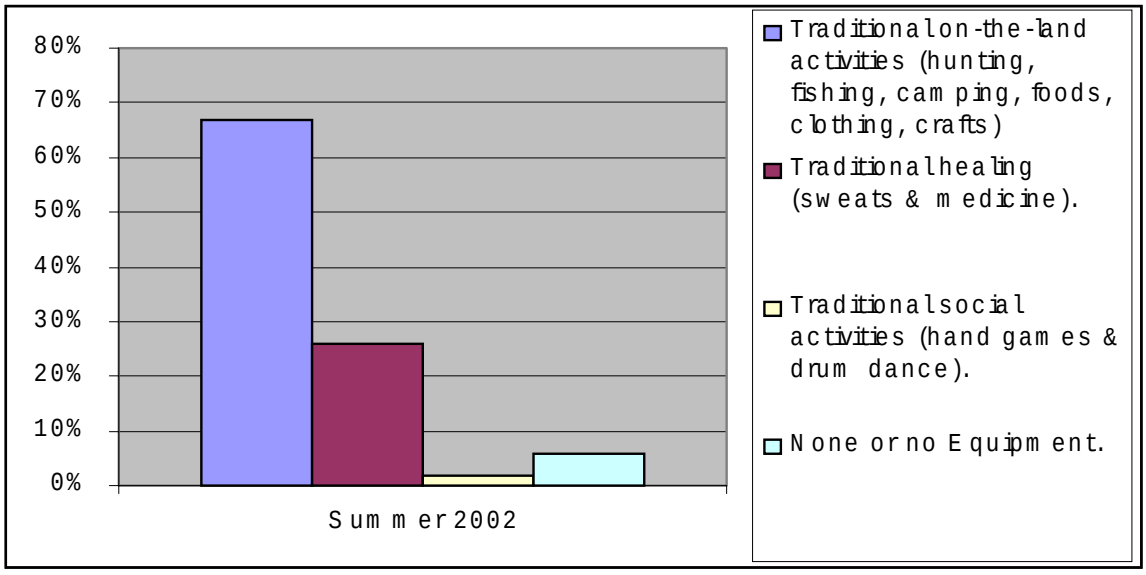

Figure 67. Adult cultural expression.

When asked about the ways in which they express their culture, youth tended to provide very specific responses, as opposed to the more general responses of adults and elders (**Figure 67**). Almost a quarter of the youth interviewed stated that they practiced their culture by fishing. This was the form of cultural expression identified by youth as the most common on-the-land activity in which they participated. Hunting was the second most common form of cultural expression, though this response was certainly more common in boy respondents. Other common forms of cultural expression included simply "going out on the land", or traveling and camping, as well as making drymeat. Primarily girl respondents identified the making of drymeat as a form of cultural expression.

Most of the responses revolved around either traveling or camping on the land, usually for the purposes of harvesting animals or plants. Quite simply, cultural expression is most often activities that bring people in touch with the land, and foster a respectful relationship with the land.

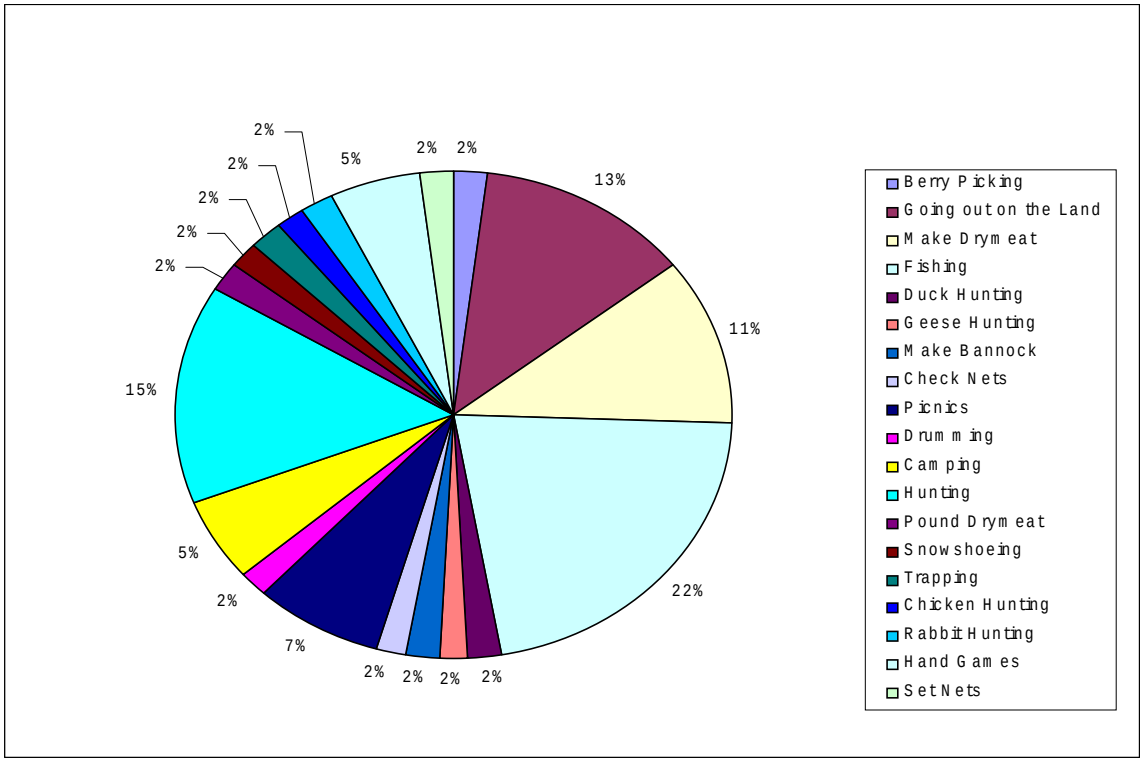

Figure 68. Youth cultural expression.

35% of youth respondents stated that they participated less in cultural activities then they did in the past, while 21% said they participated more. 44% said they didn't notice any increase or decrease in their level of participation in cultural activities. During Interpretation Workshops at the school, many youth participants blamed a lack of interest in traditional activities, as well as the higher propensity for adults to spend more time in the settlement, for the decrease in participation in traditional practices.

Most youth stated that they most commonly engaged in cultural activities, and more specifically land-based activities, with their family members. Some also engaged in such activities with their friends. The school was not seen as much of a factor in encouraging youth to practice cultural activities.

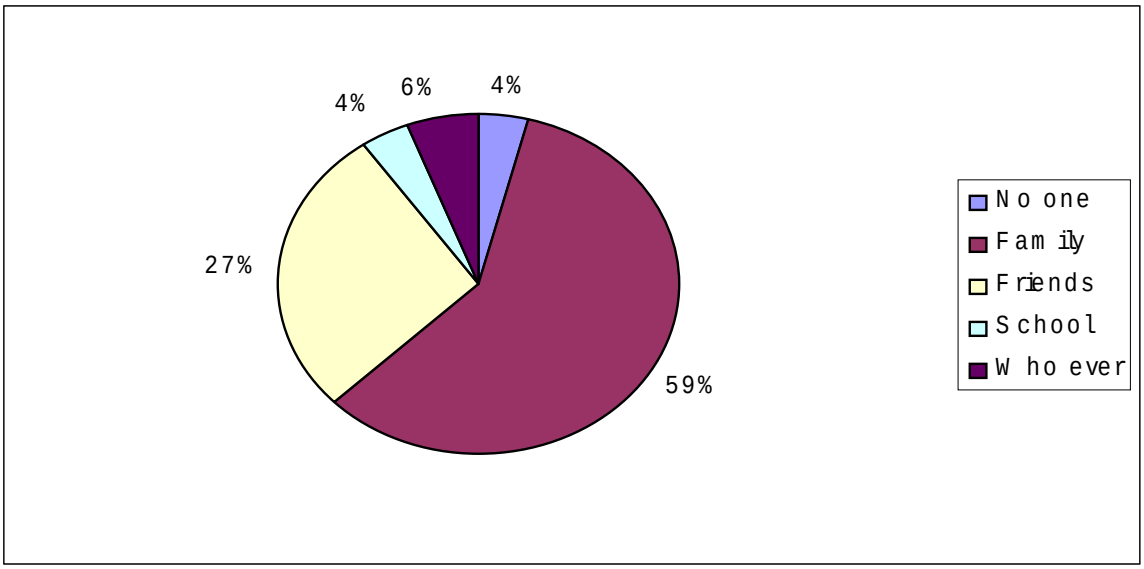

Figure 69. People or agencies with whom youth engage in cultural activities.

5.2.3.2 Understanding of language, oral history and legends

An important component of cultural practice is the sharing of stories and legends from the collective memories of the Łutsël K'e people. This is the transmission of the oral history of the people, the repository of cultural mores, lessons, ethics and morals. Generally, in response to questionnaire prompting, most adults demonstrated that they understood very well that their people lived and survived off the land, and that traditional knowledge has to be passed down from generation to generation for the culture to survive. A few stated that respect for the land and all it contains was the most important lesson for the people. Adults were also proficient in recounting some of the more prominent legends in the history of the Łutsël K'e people, such as the "Old Lady of the Falls", the giant beaver stories from Artillery Lake, and the stories of a beast in the water at Betsi Ghie in the East Arm of Great Slave Lake. Even still, a good quarter of the adult respondents were unable to recount any legends.

Over half the youth respondents, however, were unable to recount or even state that they knew any of the legends or stories from the oral history. They did not know any stories about their ancestors. Those other youth respondents who did know something of their oral history mostly talked about the ways in which their ancestors survived off the land, and how they moved around all the time and were tough.

Almost half of the youth respondents knew Parry Falls, the "Old Lady of the Falls", to be of particular spiritual significance for the people of Łutsël K'e. Others knew of Reliance and the mouth of the Lockhart

River, and a scattered few respondents spoke of some other sites such as the graveyard at the Snowdrift River and Betsi Ghie.

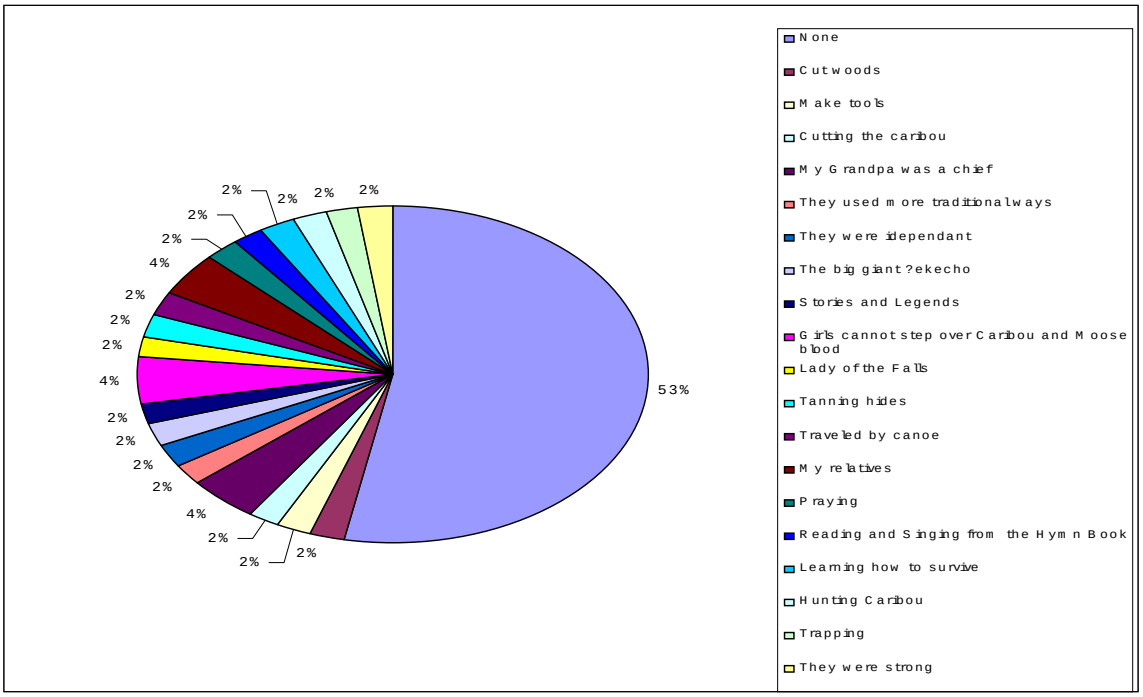

Figure 70. Youth knowledge of their history and ancestors

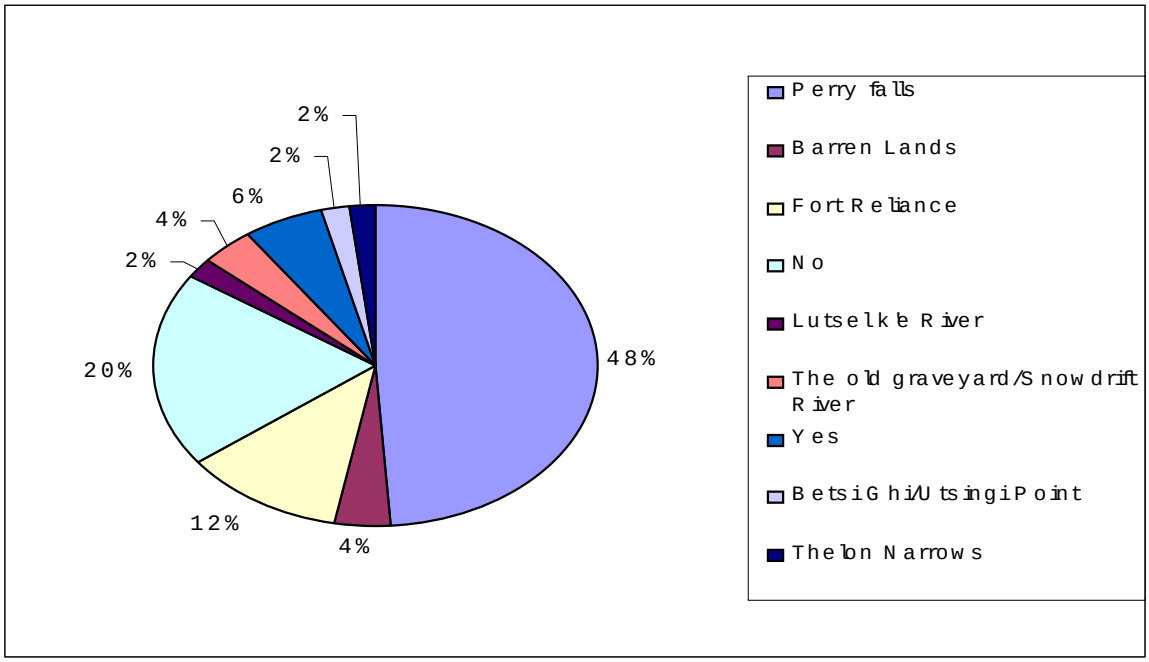

Figure 71. Youth knowledge of sacred sites.

Adults and elders, in an Interpretation Workshop, commented on the lack of knowledge among many youth of their cultural history. Simply, they said that in current times, elders and adults spend far less time interacting and speaking with the youth. They identified chronic gambling among adults and elders, as well as alcoholism and drug-use, as some primary reasons that are reducing the amount of quality time spent teaching and passing on traditions to the youth. Also, elders and adults maintained that in the past, parents were much stricter with their children, especially on the land where they had to work with the family in order to learn the traditional ways of the people in order to live a good life.

Perhaps the greatest expression of traditional culture is the use of the Chipewyan language. While all elders and adults can speak Chipewyan to a greater or lesser degree, many of the youth have only a rudimentary understanding of the language. While 62% of youth respondents stated that they spoke Chipewyan on occasion, 26% maintained that they never spoke their native language. 12% said they spoke Chipewyan often. Of those who sometimes spoke Chipewyan, 39% said that they primarily spoke the language when interacting with elders, whereas another 18% said they used the language with their parents. About a quarter of the respondents said they used the language outside the immediate family, whereas all others used Chipewyan primarily for some sort of family interaction.

Youth had some suggestions about how to foster the use of Chipewyan. These results are displayed in **Figure 72**.

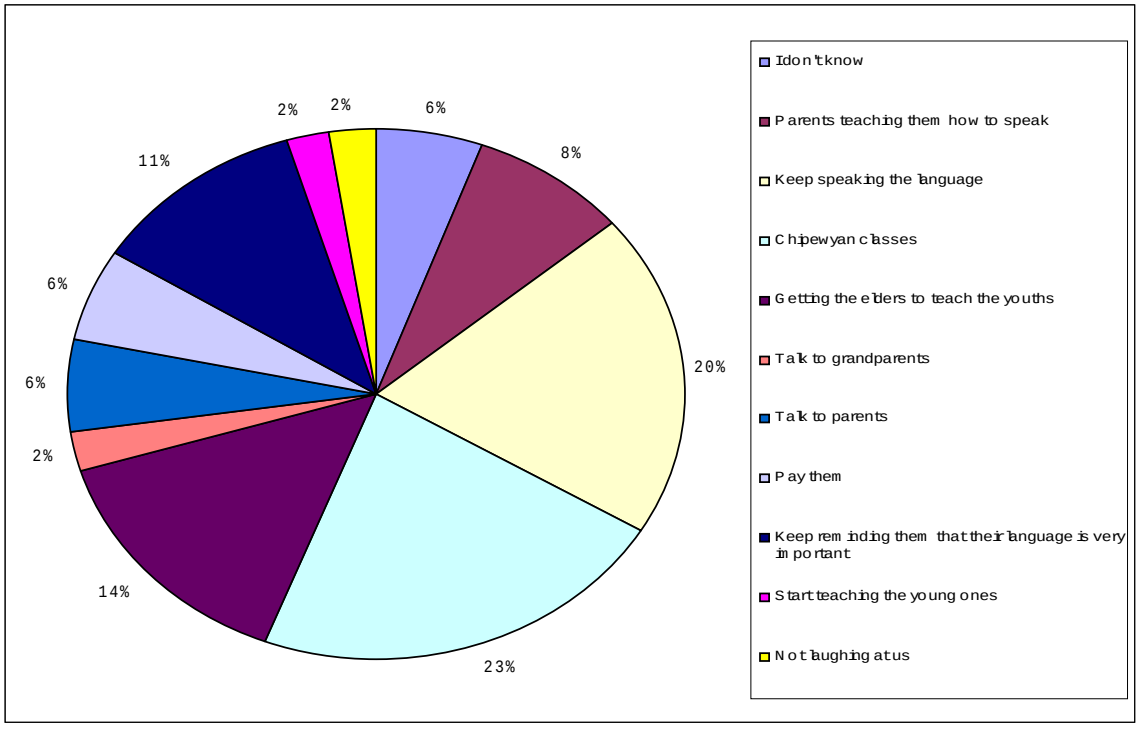

Figure 72. Youth suggestions on how to encourage the use of the Chipewyan language.

5.2.3.3 Promoting the culture of the Łutsël K'e people

A good part of the *Cultural Survey* was devoted to eliciting comments and suggestions concerning ways that traditional culture can be fostered and promoted in the community of Łutsël K'e. Adults, when questioned about this topic, overwhelmingly (68%) stated that the only way to instill traditional values, knowledge and practices in the youth is to take them out on the land and have them experience the ways of knowing and doing of the Łutsël K'e people. Others (15%) highlighted the need to teach the youth the Chipewyan language, without which oral histories cannot effectively be transmitted. 17% of the respondents also identified the fact that many elders require payment of some sort to spend time teaching youth traditional ways. They maintained that for the culture to continue, it must be transmitted on a voluntary basis. Simply, it should not be treated like a job.

Youth, when asked the same questions as the adults, echoed many of the same principles, but with a little more specificity as displayed in **Figure 73**.

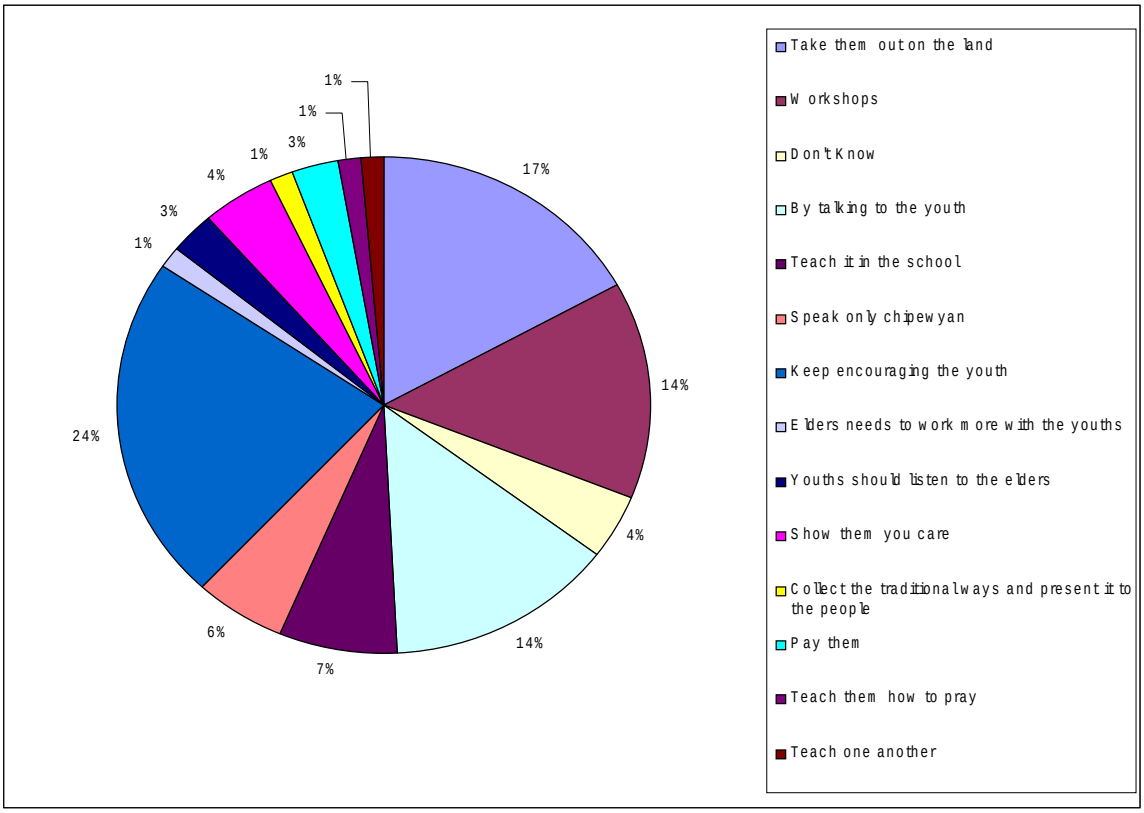

Figure 73. Youth respondent suggestions for promoting traditional culture in the youth.

Many respondents identified the need to be out on the land to learn traditional culture, while some others maintain that elder-youth workshops could help instill some of the old ways in the youth. Still others stressed the need for positive reinforcement and encouragement, as well as the need to have traditional ways of knowing and doing as part of the school curriculum.

Respondents were also asked to identify some of the main challenges and barriers hampering the promotion of the traditional culture (**Figure 74**). Just under half of all youth respondents identified the lack of Chipewyan language skills as the primary challenge faced by those who seek to learn or teach the traditional culture. 13% of the respondents identified alcohol and drugs as a prime inhibitor of the transmission of traditional ways. Others maintained that there was a general lack of interest and motivation in the older generation when it came to teaching aboriginal ways, while the youth are distracted by television and other expressions of modern Euro-Canadian culture.

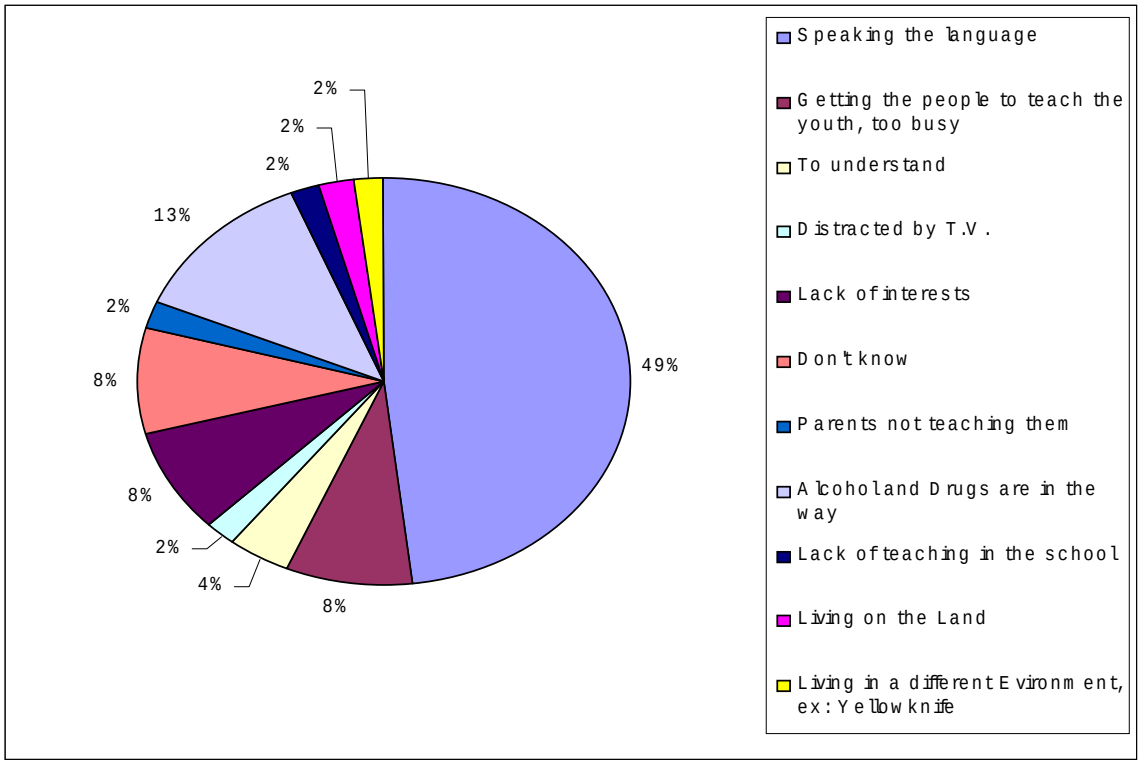

Figure 74. Barriers faced by youth when seeking to learn and practice their culture.

It is interesting, however, to note that when youth respondents were asked if they would like to learn more from their elders, 100% of them stated that they would. The will is there to learn – challenges must somehow be addressed. These challenges are large, but respondents maintain that the whether the culture is lost or not is very much dependent upon the community, its leadership, and the actions it takes to address the fact that the traditional culture is quickly being lost in the younger generations. 34% of adult respondents were confident that the traditional culture would persist in the future, while 14% were less than

optimistic. Most adult respondents (52%) stated that the survival of the culture was largely dependent upon the community and its actions. Youth, interestingly, were more positive about the fate of their culture, even though they are the ones who are less and less able to express it. 47% of youth respondents were confident about their survival of their culture, while 23% thought that the traditional culture may not survive much longer. The remainder of the respondents thought that the loss or maintenance of the culture was contingent upon the actions of the people of Łutsël K'e. Overall, respondents seemed to echo the same message: the fate of the traditional culture is not yet sealed. Actions taken by community members over the next few years will determine the outcome.

5.2.4 Youth Survey

While the *Cultural Survey* was oriented towards youth and the traditional culture of the Dene people, the summer of 2002 also saw the inception of a survey tailored towards more general youth issues. This was the *Youth Survey*. Only youth (18 and under) were asked to participate in this survey. Approximately 30 girls and 35 boys participated in the survey, and they were asked to respond to questions around youth goals, visions of the future, schooling, support systems and challenges.

Community researchers visited each youth respondent and filled out the questionnaire with them. Following the completion of the home-visits, community researchers entered the information in an Excel database. The database was modeled upon the one used for organization and analysis of *Community Health Survey* data, allowing community researchers to compare community answers from year to year using graphs and statistical analyses. These results are presented below, in a textual format.

When asked to comment very generally on youth issues, 22% of the respondents said that youth are irresponsible these days, while 16% identified drugs and alcohol as a major challenge in the lives of young people. Many identified the need for discipline and education in the lives of young people, and stated that these were not being provided very well either in the home or the school environment. When asked about how these issues could begin to be resolved, 28% of the respondents said that a youth support program is direly needed in the community, while another 25% said that a youth center is important. The youth support program was seen to be necessary as many youth did not feel they were getting the support or attention they needed in the home or at school, and thus their self-confidence was often low. Others said that many youth are attracted to drugs and alcohol because they are bored and there is nothing to do in Łutsël K'e. They believed that having a youth center where young people could socialize in a safe and healthy environment would help stem drug and alcohol abuse.

Youth respondents were queried whether they had someone they could confide in about their feelings, problems and so on, people who could help them through tough times. 77% of the youth said that they did have someone they could talk to, usually a parent or a good friend. A few mentioned that if they had a serious problem and had nowhere to turn, they would not hesitate to approach a social worker or school councilor for help. However, when asked if they believed that the community and its institutions provided much program support for the youth, 67% mentioned that they felt that the community and its leadership were largely ignoring the needs and desires of young people. They felt that most of the community dollars were primarily helping support adult-oriented programs, whereas youth priorities were often ignored. Many youth respondents cited the lack of action on the development of a youth center in Łutsël K'e as an example.

When asked about their goals in life, 47% of the youth respondents stated that their main goal was to finish high school. Drop-out rates from high school are quite high, particularly as students have to complete grades 11 and 12 in another community (the Łutsël K'e Dene School has no grade 11 or 12). It is thus a major accomplishment to finish high school, one deserving of respect and praise. 17% of the respondents said they would like to get and hold a good job, a job that paid well and was interesting.

Youth respondents stated that the main challenges faced by youth trying to achieve their goals are drugs and alcohol. 28% of the youth respondents said that drugs were the main barrier to the youth, while 26% maintained that alcohol was the main challenge. Youth respondents noted that young people are starting to get involved with drugs and alcohol at earlier ages, and that levels of abuse seem to be rising. Again, youth stressed the need for a youth center where people could hang out in a healthy environment. They also mentioned the need for healing programs tailored towards the youth, especially those involving traditional elements such as sweat lodges and ceremonies.

5.2.5 Leadership Review

A final component of the socio-economic monitoring program during 2002-2003 was the *Leadership Review*. In this cycle of monitoring, youth, adults and elders (10 randomly-selected individuals in each category) were asked to provide direction to their elected leaders (e.g. Chief and Council) on a few select subjects.

Community researchers visited each survey participant and filled out a quick four question form with them. Following the completion of these interviews, community researchers entered the information in an Excel database. The database was modeled upon the one used for organization and analysis of *Community Health*

Survey data, allowing community researchers to compare community answers from year to year using graphs and statistical analyses. These results are presented below.

During the *Leadership Review*, many community members stated concern over the frequent travel engaged upon by the Chief. Many complain that too much time is spent at meetings, conferences and workshops out of town to the detriment of action on domestic issues. **Figures 75** and **76** demonstrate this trend.

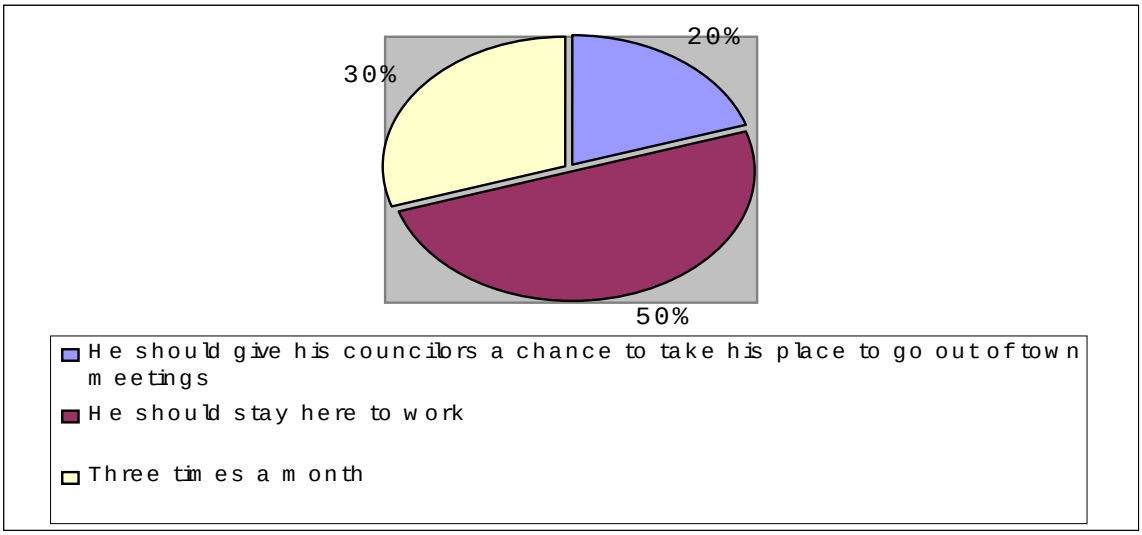

Figure 75. Elder responses to the question "How often should be Chief go out of town for business?"

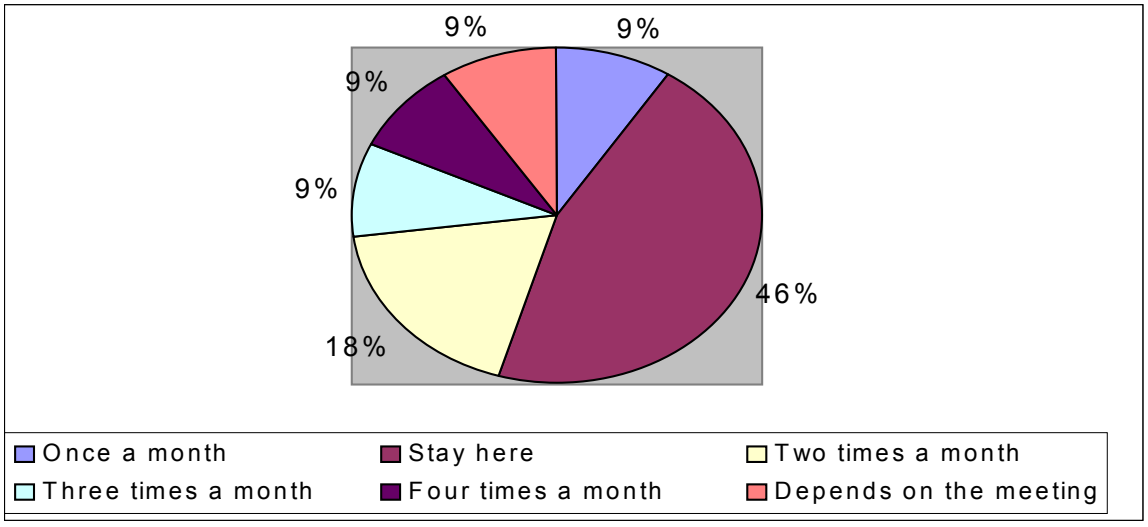

Figure 76. Adult responses to the question "How often should the Chief go out of town for business?"

Community residents were also asked how they would like the Chief and Council to communicate their affairs with the wider community of Łutsël K'e. Many espoused the use of public meetings at the

community hall, while another sizable sample of the population stated they would like to see the community radio station put to use in this regard. Others, especially those with less familiarity with English and formalized meetings, preferred that the Chief and Council conduct house visits every so often to inform the populace of the goings-on of the leadership. **Figures 77** and **78** demonstrate these trends.

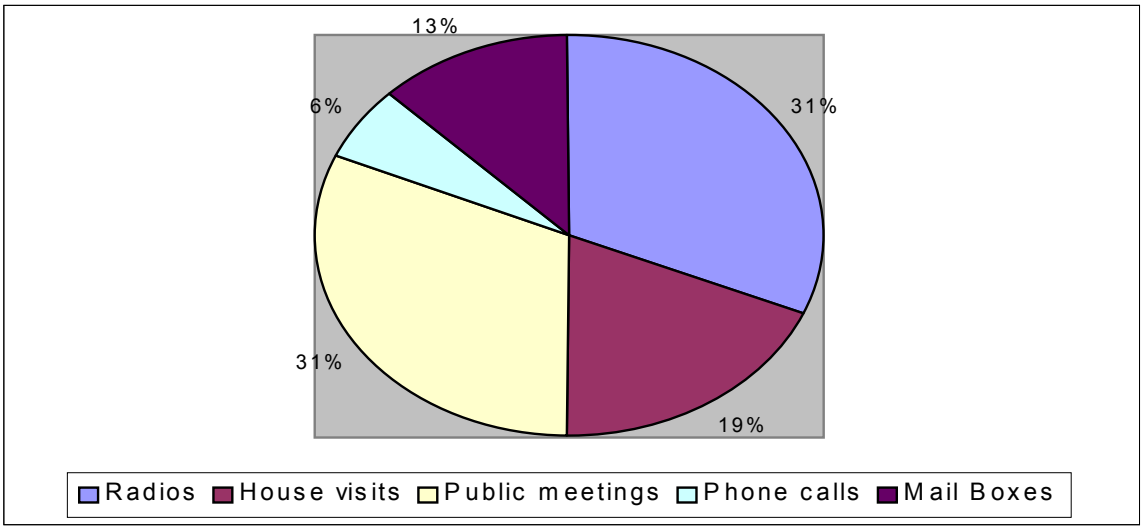

Figure 77. Youth response to the question "How should the Chief and Council inform and consult with the community?"

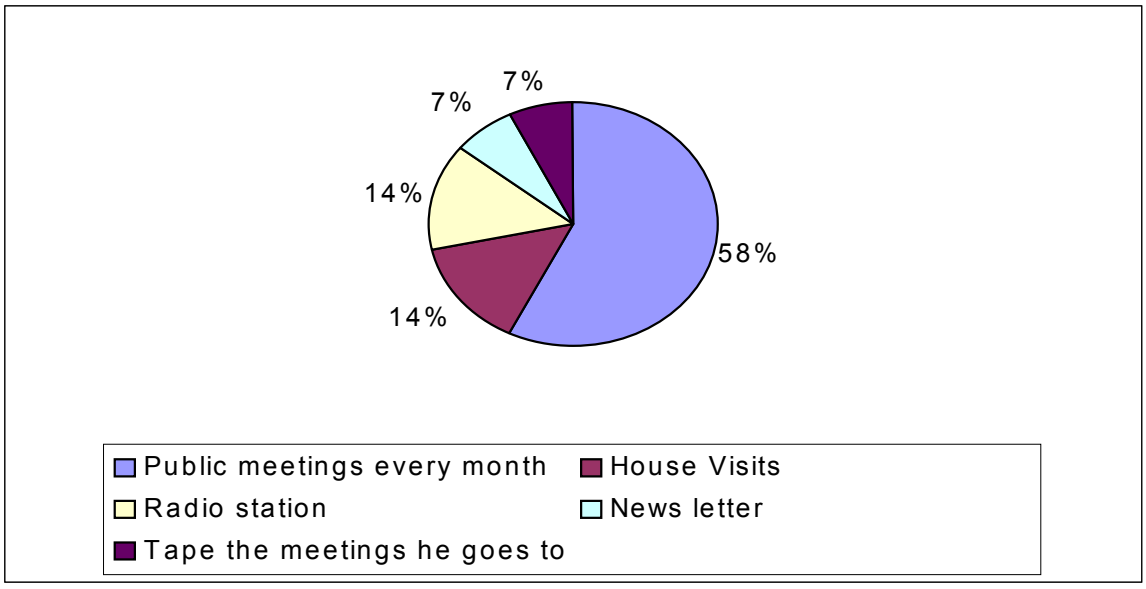

Figure 78. Elder response to the question "How should the Chief and Council inform and consult with the community?"

Community residents who participated in the *Leadership Review* were also asked to provide direction to the Chief and Council regarding areas where they should focus their attention and efforts. The issue of land claims was echoed by adults, elders and youth as the item of greatest import to the settlement of Łutsël K'e, and therefore the topic on which leadership should focus most of its efforts. Helping the youth of the community was also of a high priority, second only to the land claims issue. Other important focal areas had to do with local business development, the construction of a community arena, and housing. **Figures 79** and **80** demonstrate these results.

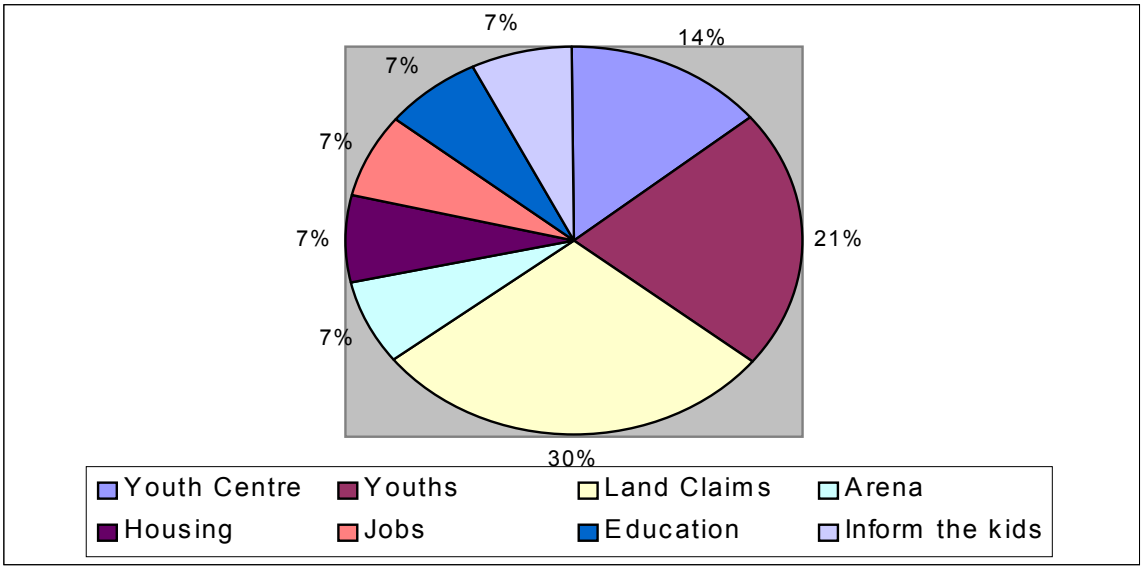

Figure 79. Youth answers to the question "What should the Chief and Council spend their time on?"

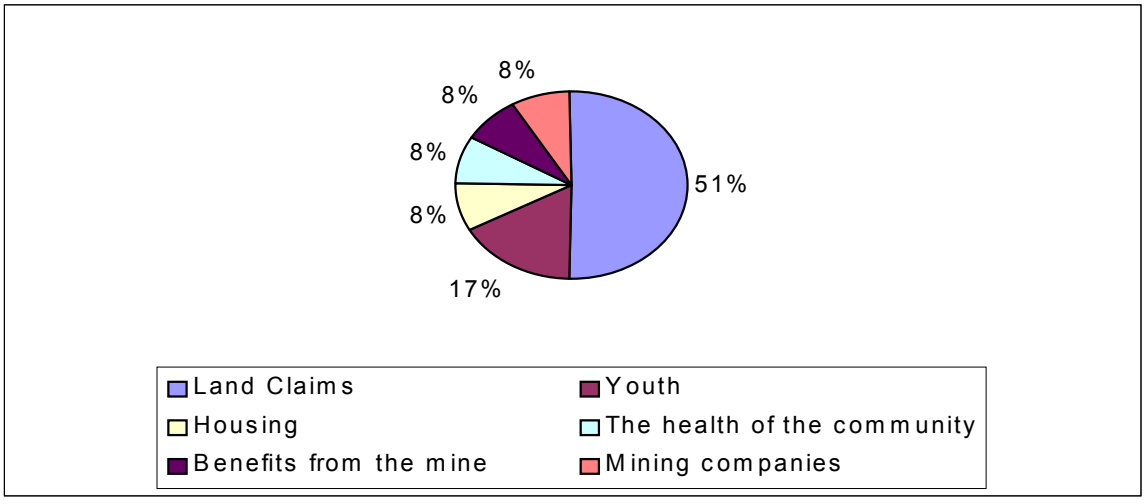

Figure 80. Adult answers to the question "What should the Chief and Council spend their time on?"

A final question in the *Leadership Review* simply asked for general comments from survey participants, messages that they wanted communicated to the Chief and Council. Many individuals had very specific and unique messages for the leadership. Among the more notable, many respondents complained that the leadership dwelt too much in affairs of the past, to the detriment of discussion and action for the future of the settlement of Łutsël K'e. Others spoke of the youth, saying that the leadership must take immediate and tangible action with regards to youth education, self-confidence and drug and alcohol issues. A few mentioned that they wished that the Chief and Council would make a more conscious effort to consult with the broader community when making decisions.

Elders expressed some unique ideas. Some felt that the current Chief was not doing a very good job, and should step down. However, the majority of their comments had to do with communication and the youth. Initially, elders felt that the Chief and Council needed to make a far more conscious effort in communicating with them. Language barriers and meeting settings made such communication challenging, and many elders suggested the use of personal house-visits to rectify the situation. With regards to the youth, the elders called for immediate action on developing a youth centre, an arena, and better programs for helping kids with drug and alcohol problems.

The youth respondents echoed these comments. They wished that the leadership would work more with youth issues and with the youth themselves. They stated quite overwhelmingly that the leadership should work quickly to develop and improve youth recreation programs as well as facilities such as an arena and a youth centre. They also stressed that more attention had to be paid to the education of the youth, as well as training for employment.

Overall, respondents to the *Leadership Review* seemed generally content with the levels of discussion and action being taken by the Chief and Council regarding land claims issues. However, they seemed to be quite concerned about the lack of attention to youth issues, and generally called for more action in this area.

6.0 DISCUSSION / CONCLUSIONS

One of the main objectives of the 2002-2003 *Ni hat'ni - Watching the Land* program was to begin to integrate the analysis and interpretation of socio-economic and environmental indicator information. **Section 5.0** has laid out the results of the environmental and the socio-economic monitoring cycles that comprise the program, as well as the information interpretations as generated by elders, land-users, and other community members during Interpretation Workshops. This section, building upon the fundamental principle that Dene culture *is* nature, that both the socio-economic and environmental realities of the Dene are intimately tied, will present integrated analyses as generated during Integrative Interpretation Workshops held twice a year - once in November and once in March. Through such integrative interpretations, as well as with analyses from the socio-economic and environmental monitoring cycles, implications and conclusions for the traditional territory of the Denesǫłıne and the community of Łutsël K'e, as well as the greater Slave Geological Province, will be drawn.

In preparation for Integrative Interpretation Workshops, community researchers were faced with a challenge. The *Ni hat'ni - Watching the Land* program had generated a wealth of information during 2002-2003 monitoring activities. Attempting to cross-analyze all possible angles and facets of the socio-economic and environmental monitoring cycles was simply not possible given finite funds, time constraints, and training limitations. Thus, community researchers decided to present indicator information that was of the most relevance to the community and its people for integrative interpretation. Designating which indicator information was "of most relevance" was accomplished by informally asking elders, leadership, and other community researchers about which issues were of the most importance to the community. Taking this information, as well as the contents of monitoring respondent interviews themselves, community researchers identified a number of broad issues to be cross-analyzed using both environmental and socio-economic monitoring information. In general, these broad issues were related in some way to impacts of the wage economy and the traditional economy upon each other.

6.1 IMPACTS OF THE WAGE ECONOMY AND THE TRADITIONAL ECONOMY UPON EACH OTHER

With more and more Łutsël K'e residents seeking and holding employment in the wage economy, particularly in the mineral development sector or in First Nation governance and administration, impacts upon community resident participation in the traditional, land-based economy are becoming more and more evident. Exploring these impacts was the goal of the Integrative Interpretation Workshops held in 2002-2003.

As a starting point for the workshops, participants (elders, land-users, Wildlife, Lands, and Environment Committee members, youth) were asked to outline the various ways in which they perceived participation in the wage economy was affecting participation in the traditional economy. The following impacts were described:

- People holding down full-time jobs are less likely to engage in on-the-land activities. Their families are also less likely to participate in the traditional economy.
- Those with employment in the wage economy, when they do participate in on-the-land activities, only do so for brief periods of time (i.e. an afternoon, overnight), and do not tend to travel very far from the community of Łutsël K'e.
- Families in which a parent was employed in the wage economy tended to be more dependent upon store-bought foods and community infrastructure (i.e. oil heating as opposed to wood) than those families without steady wage employment.
- Families where an individual was employed in the wage economy were more likely to own good quality mechanical transportation (snowmobiles, boats and motors, four-wheelers) needed for accessing the land.
- People holding down employment in the wage economy were less likely to use their traditional knowledge and Chipewyan language skills, as well as transmit these skills to their children.
- Those with steady employment in the wage economy were often more able to afford expensive fly-in harvesting trips with the families. The greatest example of this is the annual fall hunt at Artillery Lake.
- Some families with a parent employed steadily in the mining sector were moving to Yellowknife in order to be closer to their place work and to place their children in better schools. However, in doing so, they also placed themselves in an urban environment where engaging in the traditional economy takes much more effort.

Many of these impacts described by participants in the workshop are corroborated by results generated through the 2002-2003 iterations of *Ni hat'ni - Watching the Land* socio-economic monitoring cycles. Much has already been described in **Section 5.2**. However, some of these impacts beg cross-analysis using both environmental and socio-economic results in tandem.

To begin, harvesting pattern maps generated from the environmental monitoring cycles can be used to explore the contention that increasing wage employment is decreasing the spatial range of land-use activities conducted by Łutsël K'e residents. Since March 2000, the beginning of regular iterations of the *Community Health Survey*, full-time employment among Łutsël K'e residents has hovered at around 30%, whereas unemployment levels have dropped from approximately 40% to 30% (**Figure 23**). So, wage labour has increased somewhat over the past three years, particularly in the part-time and seasonal departments. At the same time, Dene land-use patterns in the traditional territory have displayed a marked trend. That is,

they are concentrated more and more in the vicinity of the settlement of Łutsël K'e. Those harvesting activities that are not concentrated around the settlement are typically those that are organized and subsidized by the First Nation, and usually involve the provision of fuel/supplies or air transportation to participants.

Figure 19 demonstrates the distribution of Łutsël K'e resident chicken and ptarmigan hunting activities during 2002-2003. These activities were overwhelmingly distributed up and down the roads around Łutsël K'e, indicating that most harvesters use vehicles such as trucks or four-wheelers to hunt these birds. The fact that most of this harvesting was conducted by road-bound vehicle indicates that most people ventured out for only an afternoon or a weekend of harvesting - otherwise they may have sought to travel further and for a longer time. Similar trends are portrayed in **Figures 17** and **18**, which display beaver and muskrat trapping locations and winter fur-bearer traplines, respectively. Again, these activities are concentrated in a radius around town where a return trip from and to Łutsël K'e can be effectively made in one day by snowmachine.

Whereas this information does not conclusively prove that participation in the wage economy definitely affects the length and range of Łutsël K'e resident land-use activities, workshop participants believed that it certainly provides corroborative evidence.

Another area where socio-economic and environmental information could be cross-analyzed was in qualifying community participation in fly-in harvesting activities. These activities usually involve the transportation of large amounts of gear and people to a remote harvesting site, best exemplified by the fall caribou hunt at Artillery Lake (**Figure 3**). Participants in such activities are required to pay for their airfare on a chartered aircraft, as well as for all their own supplies while they are on the land. Integrative Interpretation Workshop participants maintained that only those with steady employment were able to afford to participate in such on-the-land activities. While family incomes were not tabulated as part of the socio-economic monitoring component of the *Ni hat'ni - Watching the Land* program, the names of those who participated in remote, fly-in harvesting activities were available. Sure enough, virtually all of the people who attended the 2002 fall caribou hunt were either employed in the mining sector or by government, First Nation or otherwise. Those without steady employment were largely absent from this hunt.

Whereas wage employment had some noticeable impacts upon Łutsël K'e resident participation in the traditional economy, people's desire to participate in the traditional economy also had impacts upon levels of participation in wage employment. The traditional economy offers a degree of freedom and independence that is relished by Łutsël K'e residents and cannot be reproduced in the fairly regimented lifestyle of the wage economy. This is particularly true of mining sector employment, which often involves

weeks of confinement at a high-security mine site. **Figure 24** shows a marked decrease of almost 50% in the amount of Łutsël K'e residents involved in mining sector employment, after a peak in early 2001. Integrative Interpretation Workshop participants attributed this phenomenon to a degree of "backlash" against mining sector employment. That is, in the late 90s and early 2000s, many of those Łutsël K'e residents who were qualified to work at a mine site (typically healthy males) were hired and gave mining sector employment a shot. Many of these worked for a year or two before deciding that such work was not for them, that trade-offs with regards to family life and traditional activities were too much. Indeed, in the 2002 and 2003 iterations of environmental and socio-economic monitoring, we see a marked increase in on-the-land activities (**Figures 32 and 33**). Workshop participants attribute this jump to healthy males, often one of the primary care-givers in a family, returning to the settlement and engaging in more on-the-land activities, both individually and with their family.

Overall, Integrative Interpretation Workshop participants noticed a distinct tension between the wage economy and the traditional economy. Often, evidence pointed to the conclusion that to successfully operate in both economies was very difficult if not impossible. That is, those who wished to effectively participate in the traditional economy could not effectively participate in the wage economy, and vice versa. Participants pointed to time constraints as a primary limiting factor, as well as the inability of most people to effectively learn and be competent in both the skills necessary for success in the wage economy and the skills necessary for success in the traditional economy. This pointed to a fundamental problem. Many aboriginal peoples, as well as institutions of governance, promote a future for aboriginal peoples where the wage economy plays a major role *without great detriment* to traditional culture, knowledge, and practices. Evidence gathered during the *Ni hat'ni - Watching the Land* program indicate that accomplishing this future may be an enormous if not impossible task. Current measures are not working, such as the two week in, two week out schedule endorsed by most mining companies. New and innovative measures must be sought to strike a better balance between the needs of the wage economy and the needs of the traditional economy.

6.2 IMPLICATIONS FOR ŁUTSËL K'E AND THE SLAVE GEOLOGICAL PROVINCE

Results generated during the 2002-2003 iterations of environmental and socio-economic monitoring cycles of the *Ni hat'ni - Watching the Land* program reveal a few key implications for the Slave Geological Province and its residents. Let us begin with environmental implications.

6.2.1 Summary and implications of environmental monitoring results

During the 2002-2003 *Ni hat'ni - Watching the Land* cycle of monitoring, much knowledge was generated about the state of the environment in Denesǫłıne Nëne . From this knowledge we can learn many lessons about the cycles of change in Denesǫłıne Nëne.

For many of the animals and plants that were monitored, nature seems to be stable and taking its normal course. These species were readily abundant throughout the traditional territory, and they were found by harvesters in their typical habitats. These plant and animal populations also seemed to demonstrate overall good condition, with most specimens being relatively healthy. These animals and plants include:

- Fish in Great Slave Lake and most of the smaller surrounding lakes.
- Small mammals such as marten, mink, weasel, fox, lynx and wolverine.
- Moose.
- Berries.
- Chicken and ptarmigan.
- Beaver and muskrat.

Some other monitored species were in periods of change, where their populations were experiencing fluctuations in abundance, distribution or overall health. However, these populations were varying within the bounds of naturally occurring change, change that has precedent in the oral histories of the Denesǫłıne people. It is critical to continue monitoring these populations, as if they do not cycle naturally towards stability in successive seasons they could be experiencing potentially damaging unnatural change. These animals and plants include:

- Rabbits.
- Ducks and Geese.

All in all, the 2002-2003 monitoring cycle seemed to demonstrate a status of health and integrity for many animals and plants in Denesǫłıne Nëne. However, two animal populations seemed to be undergoing significant change due to unnatural circumstances, circumstances to which these populations are not well adapted. These are:

- The Bathurst caribou herd.
- The fish of Stark Lake.

Of utmost concern to the Denesǫłıne is the state of the Bathurst caribou herd. While the *Winter Caribou Cycle* indicated that caribou abundance, distribution and condition was varying within natural bounds, the *Fall Hunt Caribou Cycle* further corroborated observations of potential unnatural change made by land-

users in 2001. These observations suggest that the migration patterns of the Bathurst herd are shifting from their traditional routes, and that a higher proportion of caribou are in poor condition due to injury and malnourishment. It is important to note that Denesǫłıne Elders and land-users maintain that the people in all their history have never experienced these phenomena to such a degree. So far, two successive years of observations have supported this contention.

These monitoring results hold serious implications for the Denesǫłıne as well as natural systems in the traditional territory. The caribou are not only the backbone of Denesǫłıne culture and subsistence, but they are an overall indicator of the general health of the ecosystems in the region. If the caribou populations become significantly reduced in numbers and/or health, many other aspects of the environment in the region will be effected. For example, the predators (i.e. wolves and foxes) that depend upon the caribou as their primary source of food will suffer as their prey diminish. Only further efforts to monitor these caribou and investigate the observed changes will result in the necessary wise decision-making to insure this herd remains a healthy component of the vast Denesǫłıne Nëne. As well, further action must be taken to determine the cause of these changes, as well as develop mitigative measures.

The fish in Stark Lake have been observed to be of poor quality for many years now, and 2002-2003 monitoring information only serves to support the contention that something is seriously amiss with fish in this lake, something outside the range of experience of the Denesǫłıne. The health of this fishery is of importance to the Denesǫłıne, particularly due to the proximity of Stark Lake to Łutsël K'e and the history of this lake as a heavily used fishery. Fortunately, the trends experienced in Stark Lake fish do not seem to have been observed in other waters of Denesǫłıne Nëne. Hopefully, the *Stark Lake Fish Habitat Study* will provide some answers as to the reasons why these fish are so unhealthy, and suggest mechanisms whereby the fish can be restored to their historic level of health.

6.2.2 Summary and implications of socio-economic monitoring results

In general, socio-economic monitoring results reveal some trends that may have serious implications for the people of Łutsël K'e and the Slave Geological Province. Some of the most significant results and trends revealed are:

- Whereas unemployment levels are dropping, full-time employment levels remain relatively unchanged. Most new employment is coming in the form of casual, seasonal, or part-time jobs. These are by nature unstable and often cannot support a family. As well, employment in the mining sector is decreasing in Łutsël K'e, largely because the pool of qualified people in Łutsël K'e has largely been exhausted. This shows that the training of aboriginal people for full-time jobs and mining employment is critical.

- An increasing amount of Łutsël K'e residents are purchasing on-the-land vehicles such as snowmachines and boats. This has resulted in a definitive increase in the amount of people participating in on-the-land harvesting activities, hopefully providing families with more country foods and a better connection with their land-based culture.
- Few Łutsël K'e residents participate in community events such as public meetings and volunteer efforts such as running bingos (though these have increased over the past year). The introduction of the wage economy has taught people that everything has a price, and thus people are expecting to get paid for everything they participate in.
- Levels of participation in traditional games and activities such as drum dances and hand-games are tremendously low in Łutsël K'e. These traditions may be lost if they are not promoted and taught to the youth in some way.
- Łutsël K'e is in the midst of a mild housing crisis, with many houses in disrepair. As well, many community residents simply do not have housing, and are forced to live with their relatives in cramped quarters. With the high birth rate in the settlement, this problem will only get worse of not addressed.
- Proficiency with the Chipewyan language is strong among older people, but extremely weak amongst the younger generations. Without tremendous efforts to promote and teach the language, it may be lost.
- While a significant number of Łutsël K'e residents seek the aid of drug and alcohol workers over the course of a year, most are dissatisfied with the services provided. With drugs and alcohol being one of the most serious problems facing the people of Łutsël K'e, efforts will have to be made to improve the services provided by drug and alcohol workers.
- Many people have left jobs at the Ekati mine for jobs with other companies. This may indicate that other companies are providing more competitive employment packages.
- Most Łutsël K'e resident employment in the mining sector is either labour or lower-level technician positions. For mining employment jobs to be more sustainable for aboriginal people, more efforts will have to go into training and promotion.
- Mining sector employment seems to be having a significant negative impact upon the family relations of Łutsël K'e people. Strain is being placed upon spousal relationships, and a significant workload is being placed squarely on the shoulders of the spouse when a mine employee is gone on a shift. This issue is of critical importance.
- Mining employees are finding that they are having less opportunity to go out on the land due to time constraints. At the same time, they are finding they have more money for the purchase of all-terrain vehicles.
- Many Łutsël K'e residents suggest that mining employment could be improved for families by the provision of child care and the implementation of more flexible work schedules.
- Youth are fast losing their culture. They have less proficiency and/or interest in traditional skills, and their Chipewyan language skills are diminishing rapidly. Youth knowledge of the oral history is poor. Educational programs will have to be designed to address this problem.

- The community believes that the leadership is doing an adequate job with regards to dealing with land claims. However, they believe they must focus more attention upon youth issues, more upon domestic issues than regional issues. The implications of focussing entirely upon outside issues will be the settlement of a governance agreement with the federal government with no people at home trained and able to implement and administrate it.

6.2.3 Monitoring considerations

The *Ni hat'ni - Watching the Land* program provides an effective example of a cumulative effects monitoring program appropriate for use in the context of the Slave Geological Province. This is a region where industrial development is progressing at an unprecedented rate, what with the advent of diamond mining and exploration, increased traffic on winter roads, a potential all-weather road and ever-increasing tourism. This is also a homeland of many aboriginal peoples, who demand a meaningful role for themselves and their ways of knowing and doing in decision-making processes pertaining to their territories. Together, aboriginal peoples, industry and government must act wisely to insure that the pristine natural environment, fundamental to the identity and culture of aboriginal people, remains as it has always been. Establishing monitoring programs such as the *Ni hat'ni - Watching the Land* to assess and inform management is a critical step in realizing this goal.

The *Ni hat'ni - Watching the Land* program provides a solution to the question: *How do we incorporate traditional knowledge into cumulative effects monitoring*? This program outlines an effective and tested model for how the skills and knowledge of aboriginal people can be employed to monitor environmental and socio-economic change. It is hoped that this model can serve to inform the design of similar monitoring initiatives in other areas of the Slave Geological Province.

However, monitoring in and of itself is not very useful. It only becomes useful when it informs decision making and action. This is the next critical step in ensuring the health and well-being of ecosystems and people in the Slave Geological Province. Information generated through the *Ni hat'ni - Watching the Land* program, as well as other monitoring programs, must have a voice in governance forums. This step is beginning in Łutsël K'e, what with the direct involvement of the Wildlife, Lands and Environment Committee in the implementation of the project and the interpretation of results. Already, they have used the results of this program in their decision-making discussions pertaining to caribou, fish, and youth-elder interactions. It is hoped that other decision-making institutions and agencies can do the same.

7.0 LINKS WITH PARALLEL STUDIES

The current study is linked to the following projects being undertaken or already completed by the Wildlife, Lands and Environment Department of the Łutsël K'e Dene First Nation:

- Community-Based Monitoring Pilot Project (1997)
- Community-Based Monitoring (1999-2002)
- Traditional Knowledge Study on Community Health (1998)
- Traditional Ecological Knowledge Project in the Kache Kue Study Region (2001-2002)
- Stark Lake Fish Habitat Study (2001-2002)
- Traditional Fishing Knowledge of the East Arm of Great Slave Lake (2001)
- GIS Database Project (2000-2002)
- Denesǫłıne Land-Use in the ʔedacho and Desnedhé Che region (2001-2002)
- Traditional Knowledge in the Nạ Yaghe Kué region (2001-2002)
- Nı hat'nı – Watching the Land: Cumulative Effects Assessment and Management in Łutsël K'e (2001)
- Caribou Condition (in partnership with the University of Manitoba and Dr. Phil Lyver) (2000-2001)
- Caribou Movements (in partnership with the University of Manitoba and Anne Kendrick) (2000-2002)

8.0 TRAINING ACTIVITIES AND RESULTS

For a complete description of training activities and their results, please refer to **Section 3.0**.

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