Phase 1 Socio-Economic Assessment of the Ts'ude niline Tu'eyeta (Ramparts River and Wetlands) Candidate Protected Area

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1.0 INTRODUCTION

Fort Good Hope is located along the east bank of the Mackenzie River, 805 kilometres northwest of Yellowknife and 145 kilometres northwest of Norman Wells. It is one of five communities in the Sahtu Region of the Northwest Territories (NWT). Ts'ude niline Tu'eyeta, or the Ramparts River and Wetlands (RRW), is a sacred place and harvesting area for the Fort Good Hope Dene and Métis. Figure 1.1 is a map of the Ts'ude niline Tu'eyeta region, referred to as RRW throughout the remainder of the document, and shows the location of the nearest community, Fort Good Hope. The information provided in this report has been compiled to meet the objectives of phase 1 of the socio-economic assessment (i.e., socio-economic baseline) as a component of step 5 in the 8 step Northwest Territories Protected Area Strategy (NWT-PAS) process to achieve long-term protection of the RRW through the Canadian Wildlife Act.

Figure 1.1
Ramparts River and Wetlands Candidate Protected Area Boundary

Ts'ude niline Tu'eyeta, or Ramparts River and Wetlands, is approximately 15,000km^2 of prime northern boreal forest and a rich cultural area that lies west of the Mackenzie River and community of Fort Good Hope.
Source: NWT-PAS 2008.

Source: NWT-PAS 2008.

1.1 BACKGROUND

The NWT-PAS is a land use planning framework developed to assist Northerners in protecting representative areas of land with the purpose to preserve unique habitats and their respective wildlife from industrial development (NWT-PAS 2008). The community of Fort Good Hope has identified the RRW as sacred and needing permanent protection because of its importance to sustaining the community's heritage. In 2007, the RRW was granted interim protection until October 2011, providing four years to undertake the NWT-PAS to designate the RRW as a National Wildlife Area.

1.2 SCOPE OF STUDY

This study has been commissioned by the NWT-PAS Working Group to contribute to phase 1 of step 5 in the 8 step NWT-PAS. This report used existing data to provide a socio-economic characterization of the community of Fort Good Hope, describes the resource use patterns in the RRW and attempts to determine the economics of such patterns, describes the cultural importance of the RRW to the people of Fort Good Hope and provides a natural capital assessment framework for phase 2 of the NWT-PAS socio-economic assessment. Collectively, the description of these components comprises the socio-economic baseline and is intended to inform phase 2 of step 5.

The information provided in each section of this report is based on the scope of work outlined in the terms of reference. The focus of this report was on the socio-economic profile of Fort Good Hope since this has not been completed for the process. Information on resource use focused on the monetization of resources since a Renewable Resources Assessment was conducted for the process. A natural capital assessment framework has been developed for use in phase 2 of the socio-economic assessment along with a description of the ecosystem goods and services in the RRW. A qualitative understanding of the cultural importance (Cultural Capital) of the area is also described in the natural capital assessment framework since understanding the total value of the RRW includes an understanding of the cultural significance of the area to Fort Good Hope. It is important to note that a Cultural Evaluation was undertaken for the process in 2007.

The report in its entirety forms the socio-economic baseline which phase 2 will use to determine how the designation of the RRW would impact (positively and negatively) the above components of the socio-economic environment. The following four areas of the socio-economic environment were addressed in this study relying exclusively on secondary data sources. The document is also structured based on the following four objectives:

1. **Community Social and Economic Profile for Fort Good Hope:** Prepare a profile for Fort Good Hope using statistical indicators on population and cultural dynamics, economy and education, labour, infrastructure and services, and health and well-being. The focus of this section is to characterize and understand the people and community potentially affected by the designation of the RRW.

2. **Resource Use Patterns:** Determine traditional and commercial resource and land-use patterns in the RRW, and provide economic values of resource harvesting activities where feasible.

3. **Cultural and Natural Capital:** Develop a natural capital assessment framework to be used for phase 2 of the socio-economic assessment, and provided a qualitative description of the cultural and natural capital values in the RRW and Fort Good Hope. This section is directly linked to the socio-economic characterization of the community because it provides a plain language description of the cultural significance of the RRW to the people of Fort Good Hope.

4. **Data Gaps:** Identify socio-economic data gaps, prioritize addressing the gaps in the context of considering phase 2 NWT-PAS requirements, and develop and document strategies to address gaps.

1.3 STUDY APPROACH

The focus of this report was on gathering existing published socio-economic information and analyzing such information relevant to the study. Overall, the approach used for this study was similar to those undertaken by other NWT-PAS communities (Edehzhie Candidate Protected Area 2008). The study compiled and analyzed data which characterizes a socio-economic baseline to feed into phase 2 (not part of this report). A variety of research methods and data sources were used for the study.

The socio-economic profile is based on a suite of publicly available indicators, information made available from the Departmental Representative and other secondary data sources. Where possible, information specific to Fort Good Hope is highlighted. The approach to the socio-economic profile consisted of identifying statistical sources of information, careful selection of socio-economic indicators relevant to Fort Good Hope, analysis of data and the literature, and verifying socio-economic information through a key person interview.

The Resource Use component of the study relied largely on data provided through the Renewable Resources Assessment (2006) and the Cultural Evaluation (2007). Review of these documents provided the qualitative description of resource use activities in the RRW, and additional analysis and data verification was conducted to determine the economic value of resource use activities, where feasible.

The natural and cultural capital components of the study used the literature to assist in developing a natural capital assessment framework for phase two of the assessment. A review of the Cultural Evaluation (2007) and other relevant literature was used to provide a qualitative description of natural and cultural capital in the RRW and Fort Good Hope.

The data gaps section involved reviewing the socio-economic information gathered for this study to determine any data gaps, and develop strategies to address such gaps.

1.4 DATA AND INFORMATION SOURCES

The information used in this report was derived from published public information and NWT-PAS reports made available by the Working Group Representative. For the socio-economic profile of Fort Good Hope, indicators were carefully selected to ensure limited resources were required to update data (if desired) in order to determine trends in the socio-economic condition of the community over time. Indicators were selected based on well-established methodologies and are sources used nationally to describe the social, economic and cultural conditions of communities across Canada.

The primary sources of information used for this study included:

- GNWT Bureau of Statistics – T-stat, a computerized on-line data retrieval system available to the public by the GNWT. Statistical Data was available on economic, social and demographic indicators;

- Census Canada 2001 and 2006 – Statistics Canada Community Profiles. This data was publicly available and statistical data was provided on economic, social and demographic indicators. Wherever information was not available from GNWT Bureau of Statistics, the Statistics Canada Census data was used;

- The Mackenzie Gas Project Environmental Impact Statement (EIS) Volume 4B - Socio-Economic Baseline (Imperial Oil Resources Ventures Ltd. 2005). In many instances, the socio-economic baseline for Fort Good Hope contained Statistics Canada and GNWT Bureau of Statistics data for years no longer publicly available for download on-line. Information from this report was incorporated for relevant indicators to allow for analysis of trends over time;

- NWT-PAS study reports completed prior to this study being commissioned were relied on and used in the analysis and reporting of findings for the resource use and cultural and natural capital components of the study;

- Relevant information was also obtained from literature reviews and from government agencies available publicly on-line (e.g., GNWT Housing Corporation, SAHTU Land Use Planning Board, Sahtu Regional Health and Social Services Authority, Indian and Northern Affairs Canada, etc); and

- Personal communications were also instrumental in qualifying and confirming data presented in the report. A phone interview with the Fort Good Hope representative, Isadore Manuel, from the Yamoga Land Corporation, took place on February 24, 2009. As well, regular communications with the NWT-PAS Working Group Departmental Representative, Gina Ridgley, provided direction and information throughout this study.

1.5 UNDERSTANDING THE LIMITATIONS

Identifying the limitations to a study is important for understanding the extent information presented is confined by its limitations. By far, the most significant limitation to this study was its use exclusively of existing information sources leaving several gaps in information. To address these gaps and to inform future studies a separate section has been developed which outlines the gaps, prioritizes their need to be addressed in the context of the study and provides suggestions for addressing gaps.

In terms of limitations associated with data indicators, limitations were largely confined to the socio-economic profile of Fort Good Hope. Fort Good Hope is home to a relatively small and dynamic population which means that statistical data for the community needs to be viewed with several cautions and constraints. Having said that, the population is large enough to provide reasonable results to establish general trends in the community or the region. Caution to statistical distortions includes:

- For reasons of maintaining confidentiality, information for certain indicators are either suppressed or rounded to a multiple of 5 and in some cases 10. This means that the counts for each indicator category could be off by the extent that the number is rounded;

- Due to rounding of numbers for all statistics, totals of numbers and percents do not always equal the sum of individual cell data;

- In some instances, aggregation of indicator data is provided publicly for ease of use; however, it limits the ability to obtain details of specific indicators. Such information was used for this study; and

- Limited resources were available to confirm and cross-reference data through key person interviews. One interview was conducted with a community contact to qualify findings and community information.

2.0 SOCIO-ECONOMIC PROFILE – FORT GOOD HOPE

The following section presents the social and economic profile of Fort Good Hope as represented by indicators available from existing published information. Care was taken in selecting indicators to ensure the baseline for Fort Good Hope would act as a framework for any future data collection and assessment needs. Tables, figures and associated text are presented for each of the indicator categories to provide a description of the social, economic and cultural environment of Fort Good Hope including population demographics, community infrastructure and services, and community and family life.

2.1 POPULATION CHARACTERISTICS AND DYNAMICS

2.1.1 Population Characteristics

This section highlights the estimated population and trends for Fort Good Hope. For the sake of comparison, the population distribution for NWT is also shown. The GNWT Bureau of Statistics recognizes the potential for population counts to have coverage errors and conducts additional data collection and analysis to cross-reference and compliment Statistics Canada data on community population demographics within their region (GNWT Bureau of Statistics 2003). Furthermore, GNWT Bureau of Statistics updates their population estimates quarterly and yearly to ensure trends and estimates are current.

Table 2.1 presents population estimates for Fort Good Hope and NWT. The GNWT Bureau of Statistics is interested in accurately representing the population counts of all communities across NWT; however, population by gender breakdown was available on-line only for the 2007 enumeration. As a result, comparison data for population estimates by gender was only available for different years. The 2006 census data from Statistics Canada reported lower population numbers than those estimated by the 2007 T-Stat tables provided by GNWT Bureau of Statistics. As Table 2.1 shows, the GNWT Bureau of Statistics estimated the 2007 population of Fort Good Hope at 579 people, and the 2006 Census data from Statistic Canada estimated the population of Fort Good Hope at 557 people. It is likely that the population of Fort Good Hope falls between 557 and 579. Of particular interest is the distribution of males and females in Fort Good Hope with almost 55 per cent of the community being male and about 45 per cent being female. For NWT, the distribution among gender is closer to equal proportions, with approximately 51 per cent being male and 49 per cent being female. It is interesting to note that this is opposite of what is generally experienced across Canada with the national distribution of males being lower (49 per cent) and a higher representation of females (51 per cent) (Statistics Canada 2009).

Table 2.1
Fort Good Hope and Northwest Territories Population by Source

Source	Fort Good Hope					Northwest Territories				
	Total	Male		Female		Total	Male		Female	
		No.	(%)	No.	(%)		No.	(%)	No.	(%)
Statistics Canada 2006	557	300	53.6	255	45.5	41,460	21,225	51.2	20,240	48.8
GNWT Bureau of Statistics 2007	579	318	54.9	261	45.1	42,637	21,951	51.5	20,686	48.5

Source: Statistics Canada (2009); GNWT Bureau of Statistics (2009).

Table 2.2 shows the historic trends in population changes from 1996 to 2007 for Fort Good Hope in comparison to NWT for the same time period. Since 1996, Fort Good Hope has experienced a decline in population with an average negative growth rate of -1.7 per cent from 1996-2007. The NWT population change has inconsistently fluctuated year to year from 1996 to 2007 resulting in a very slow growth rate of 0.2 per cent. The nature of population fluctuations in the NWT is frequently attributed to the transient nature of a mobile workforce in the larger communities linked to resource development opportunities. In contrast, Fort Good Hope as an isolated Aboriginal community in the NWT has a more predictable population trend.

From 1996 to 2004, the population of Fort Good Hope decreased. Interestingly, the population increased from 2004 to 2006 with a much smaller decline in 2007 than previous declines. Prior published reports attribute the population declines in Fort Good Hope to families leaving the community for better education, services and job opportunities (Imperial Oil Resources Venture Ltd. 2005).

Table 2.2
Population Change for Fort Good Hope and Northwest Territories from 1996 to 2007

Historic Population	Fort Good Hope	North West Territories
1996	703	41,748
1997	690	41,635
1998	678	40,816
1999	640	40,654
2000	611	40,499
2001	585	40,822
2002	582	41,489
2003	554	42,231
2004	544	42,822
2005	564	42,724
2006	587	42,401
2007	579	42,637
Growth from 1996-2007 %	-1.70%	0.2%

Source: GNWT Bureau of Statistics (2009).

Based on more recent published information, people may feel they have more opportunity to remain at Fort Good Hope because some additional services have become available. Discussion with Fort Good Hope members would be necessary to verify if any of the following developments could contribute to a slowing decline or potential increase in population:

- Broadband wireless connection and improved connectivity through improvements in phone and satellite services (greater opportunities for distance education);
- Sahtu land use planning initiatives resulting in organizations involved in planning and capacity building for self-governance;
- Improvements in adult and cultural education (Aurora Community Learning Centre, Best Practices in Action Program and the Sahtu Dene Council initiatives for language and cultural retention);
- The implementation of the Sahtu Health and Social Services Authority and, therefore, changing community-based health and social services; and
- Continued developments in the oil and gas industry and Fort Good Hope's connection to Norman Wells.

Figures 2.1 and 2.2 present population pyramids that illustrate the distribution of population by age and sex for Fort Good Hope and NWT. The population pyramid for Fort Good Hope falls between a stable and somewhat declining population pyramid, while the NWT pyramid illustrates stable characteristics. The population of Fort Good Hope remains young and still experiences a relatively high birthrate which is slightly offset by the growing number of aging people. In general, just over half of the population (approximately 53 per cent) of Fort Good Hope was less than 30 years old. In contrast, less than half (approximately 48 per cent) of NWT was less than 30 years old. The labour force age, characterized as individuals between the ages of 15 to 64, made up 67.3 per cent of the population of Fort Good Hope. Interestingly, those of labour force age in Fort Good Hope are more likely to be males (35 per cent) than females (27 per cent). For NWT, 71.3 per cent of the population is of labour force age (15-64 years old) and more evenly distributed among males (37 per cent) and females (35 per cent). Approximately 8 per cent of Fort Good Hope's population are seniors (65 years and older) and 25 per cent are children ages 0 to 14. These latter two groups are generally evenly distributed among male and female. In comparison, for NWT, approximately 5 per cent are seniors (65 year and older) and 24 per cent are children (0-14 years old). Considering the small aging population, it is likely that migration patterns have contributed to the stability of the population in the NWT.

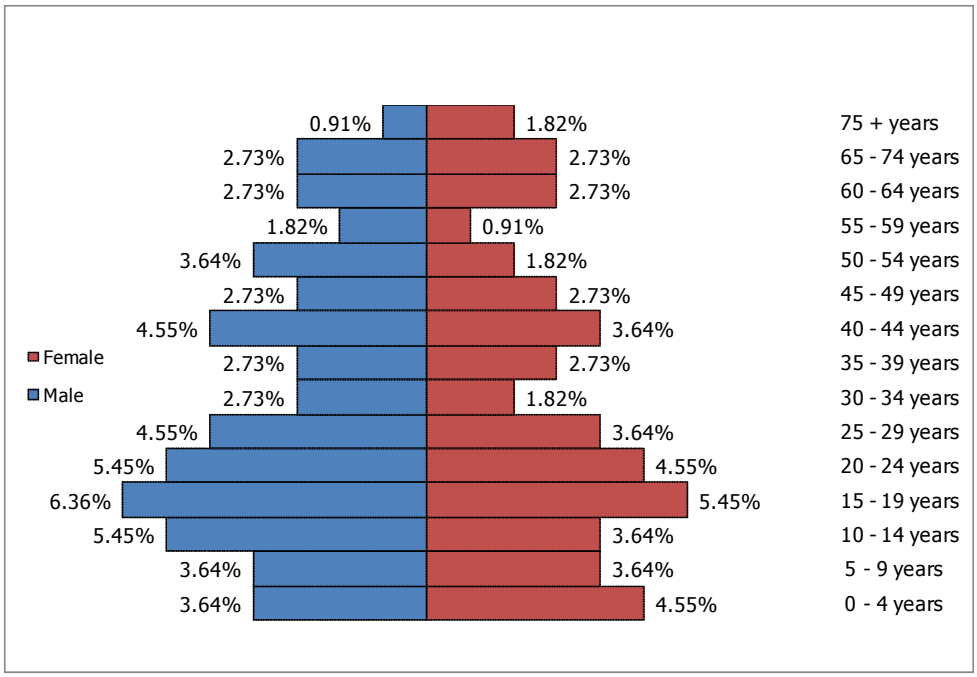
What is unique about the Fort Good Hope and NWT population pyramids is:

- Fort Good Hope is experiencing the effects of an aging population more so than NWT, which is consistent with the trend across Canada for Aboriginal communities; and

- There are fewer people in Fort Good Hope of labour force age, and even fewer of these are females (27 per cent). This confirms information provided in the Education and Economy sections of this report suggesting women are leaving the community for higher education while men are still able to gain work in nearby industries.

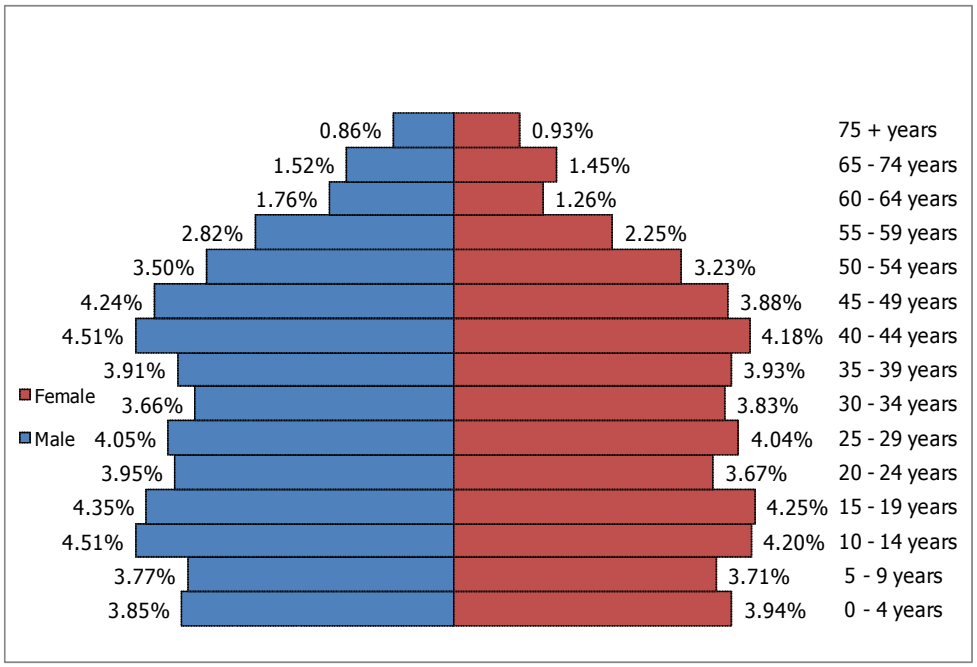
It is also interesting to note that Aboriginal communities in Canada are generally experiencing higher growth rates than the rest of Canada's communities, usually attributed to a higher birth rate and an increase in the aging population than previously experienced. It will be interesting to track changes for those of labour force age in Fort Good Hope, which would change the community's pyramid to look similar to the ones experienced by many Aboriginal communities across Canada.

Figure 2.1
Population Distribution of Fort Good Hope by Age and Sex
Per Cent of Total Population of Males and Females: 2006



Source: Statistics Canada (2009).

Figure 2.2
Population Distribution of Northwest Territories by Age and Sex
Per Cent of Total Population of Males and Females: 2006



Source: Statistics Canada (2009).

Population projections developed by the GNWT Bureau of Statistics from 2007 through to 2027 are shown in Table 2.3. Population projections take into account several demographic characteristics to project trends into the future. Assumptions regarding fertility, mortality and migration rates, as well as recent trends in the region investigated are incorporated into the analysis. Based on current population characteristics and trends, the projections for Fort Good Hope indicate a relatively slow decline in the population. In comparison, NWT is projected to continue experiencing stable, slow positive growth. These findings appear to be consistent with the age and sex distributions for 2007 in the above population pyramids.

Table 2.3
Population Projections for Fort Good Hope and Northwest Territories: 2007-2027

Year	Fort Good Hope	Northwest Territories
2007	579	42,637
2012	576	44,878
2017	575	47,038
2022	574	48,919
2027	562	50,354

Source: NWT Bureau of Statistics (2009).
1. Based on 2007 Population Estimates.

2.1.2 Population Ethnicity and Dynamics

This section provides an overview of the Aboriginal identity, language and mobility of Fort Good Hope. Both indicators provide information regarding the connection that Fort Good Hope has to its geography. Understanding the population dynamics of Fort Good Hope in terms of population turnover and Aboriginal culture helps understand the extent that Fort Good Hope has remained connected to its ancestry and lands.

Aboriginal Identity

Table 2.4 shows the Aboriginal population of Fort Good Hope compared to NWT and Canada. Data in the tables identify Aboriginal identity as those who identify themselves as North American Indian, Inuit and Métis peoples of Canada (Statistics Canada 2007).

The majority of Fort Good Hope's population is Aboriginal with 510 of the 550 residents identifying themselves as Aboriginal. This means approximately 93 per cent of Fort Good Hope identifies themselves as Aboriginal. In terms of comparison, half of the population of NWT is Aboriginal (50.3 per cent), whereas only 3.8 per cent of all Canadians identify themselves as being of Aboriginal descent. Compared to other areas of Canada, the NWT population is small and geographically scattered, with the majority of

non-Aboriginal populations living in Yellowknife, Hay River, Fort Smith and Inuvik (GNWT Bureau of Statistics 2008).

The community of Fort Good Hope is within the Sahtu Region of NWT – a predominantly Dene Nation. Fort Good Hope is the oldest established community in the lower Mackenzie River region and has had early involvement in the Fur Trade and contact with Europeans. As a result, the Aboriginal identity is comprised of Métis and First Nation status members, but nearly all (91 per cent) have identified themselves as belonging to some form of Dene ancestry (Imperial Oil Resources Venture Ltd. 2005).

Table 2.4
Population by Aboriginal and Non-Aboriginal Identity in Fort Good Hope, Northwest Territories and Canada for 2006

Region	Total Pop. (No.)	Aboriginal Population		Non-Aboriginal Population	
		No.	%	No.	%
Fort Good Hope	550	510	92.7	35	6.4
Northwest Territories	41,055	20,651	50.3	20,404	49.7
Canada	31,241,030	1,187,159	3.8	30,053,871	96.2

Source: GNWT Bureau of Statistics (2009).

Table 2.5 provides information about the knowledge and use of Aboriginal languages in the community of Fort Good Hope. The data show English is spoken by the majority of the population in Fort Good Hope and very few people, 8.7 per cent, speak an Aboriginal language most often at home. In addition, only 36.9 per cent of Fort Good Hope has some knowledge of an Aboriginal language. Fort Good Hope is the oldest and longest standing established community with European ties along the Mackenzie River so it is not surprising that English is the dominant language. However, the majority of the population (63 per cent) indicated they only have knowledge of the English language which speaks to the dramatic loss of Aboriginal language in the community and, therefore, potential loss of traditional knowledge being passed down to younger generations. Section 4.4 of this report speaks more to the cultural value of Fort Good Hope's traditional Aboriginal language of North Slavey and the importance knowing ones traditional language has in the preservation of their culture.

Table 2.5
Language Characteristics of the Aboriginal Identity Population for Fort Good Hope in 2006

Language Indicator	Fort Good Hope
Aboriginal Identity Population	515
Knowledge of Aboriginal Languages	190
Knowledge of English only	325
% of the Aboriginal identity population whose mother tongue is an Aboriginal language	30.1
% of the Aboriginal identity population who speak an Aboriginal language most often at home	8.7
% of the population with knowledge of Aboriginal language	36.9

Source: Statistics Canada (2009).

Population Mobility

Population mobility is just one factor that contributes to population change. Population mobility indicates the movement of residents into and out of a geographic region and classifies individuals as "non-movers" or "movers". Population mobility is measured as a comparison of the place of residence at the time of data collection and the place of residence 5 years and 1 year earlier. The result is an indication of the population turnover of a region (Statistics Canada 2007). The percentage of a population living longer than five years in the same community provides an indication to the heritage ties or "roots" of a community.

Those from Fort Good Hope tend to remain in Fort Good Hope; 85.1 per cent of Fort Good Hope lived in the community for more than five years although some had moved residences within the community. In comparison, three quarters (75.9 per cent) of NWT cited living in the same community for five years. Table 2.6 provides mobility data for Fort Good Hope, identifying the Fort Good Hope population, age one year and over, who lived in the community or had lived outside of Fort Good Hope one year and five years before the date of enumeration (Statistics Canada 2007). The main conclusion to be drawn from this population mobility data is that residents of Fort Good Hope prefer to stay close to home. As discussed in several documents related to Fort Good Hope, families, especially women and their children move for education opportunities (Imperial Oil Resources Venture Ltd. 2005). The reality of socio-economic circumstances in Fort Good Hope is that educational and economic opportunities are limited and the connection with western society means that some monetary income and formal education is more likely a necessity for those in Fort Good Hope, often resulting in the need to spend time away from the community for education and economic opportunities. Having said that, the cultural landscape of Fort Good Hope is one that is still intact and traditional knowledge plays a role in the daily lives of those in Fort Good Hope (Andrews 2000; PACTeam Canada Inc. 2007).

Table 2.6
Mobility of Fort Good Hope Population as Percentage of Place of Residence 1 Year Ago and 5 Years Ago

Mobility Characteristic	1 year ago (%)	5 years ago (%)
Lived at Fort Good Hope	92.6	85.1
Lived outside Fort Good Hope but stayed in Northwest Territories	5.6	9.9
Lived outside Northwest Territories	2.8	5.9

Source: Statistics Canada (2009).

2.2 EDUCATION AND ECONOMY

2.2.1 Education and Training

Basic education levels achieved by residents of Fort Good Hope were derived from GNWT Bureau of Statistics. Education is an important factor in assessing the extent community members can participate and take advantage of opportunities available in different labour force sectors. Table 2.7 highlights the proportion of high school graduates in Fort Good Hope for each census from 1986 to 2006. The proportion of high school graduates was largest in 2001 with nearly half of the eligible population (those age 15 years and older) having graduated from high school (49.4 per cent). In 2004 and 2006, the percentage of Fort Good Hope with high school completion had decreased. There is no published information indicating why Fort Good Hope has seen a decrease in the number of high school graduates in recent years. One possible link is those who graduated from high school are leaving the community for higher education.

Table 2.7
Per cent of Population with High School Diploma or More for Fort Good Hope and Northwest Territories: 1986-2006

Year	% of High School Graduates	
	Fort Good Hope	Northwest Territories
1986	26.1	51.6
1989	39.6	59.8
1991	38.7	59.9
1994	49.1	63.2
1996	47.6	63.5
1999	46.5	66.1
2001	49.4	64.8
2004	38.2	67.5
2006	36.1	67.0

Source: GNWT Bureau of Statistics (2009).

Table 2.8 further breaks down highest level of education attained looking only at those who have attained high school graduation or higher. All percentages reported in this section are based on the 140 people in Fort Good Hope identified as completing high school, of which 68 per cent have gone beyond and achieved some form of post-secondary schooling beyond high school completion. This leaves almost one third (32 per cent) as having a high school certificate or degree as the highest level of schooling attained. More specifically, 53.6 per cent (approximately 75 persons) have some non-university post-secondary training beyond high school. This includes apprenticeship or trades certificates or diplomas, college certificates and accreditation by non-degree granting institutions such as community colleges, private business colleges and technical institutes. As well, 14.3 per cent (approximately 20 people) have completed a university level program (i.e., includes diplomas, certificates and degrees accredited at the University level).

Table 2.8
Highest Level of Education Attained for Those with High School Graduate Degree or Higher for Fort Good Hope

Education Level	No.	Total (%)	Male (%)	Female (%)
High school graduate only	45	32.1	14.3	14.3
Some post-secondary (non-university)	75	53.6	25.0	32.1
University certificate or diploma or degree	20	14.3	7.1	7.1
Total pop. 15 year and over with high school graduation or higher	140	100	46.4	53.5

Source: Statistics Canada (2009).

Information for kindergarten to grade twelve was not available for this study. However, for adult education, a Community Learning Centre through the Aurora College has offered adult education programs, including high school upgrading and preparation for enrolling in full-time programs at one of the campuses. The adult education program provided in the community also focuses on employment-related skills training. For example, the Fort Good Hope Community Learning Centre has provided education programs on environmental monitoring, driver training, safety training, basic computer skills development, as well as accounting training (Aurora College 2007).

The data shown above indicates only a portion of the factors related to education and the people of Fort Good Hope. Based on interview results presented in the Mackenzie Gas Project EIS, it was highlighted that families are leaving the remote community so parents could obtain higher education elsewhere (Imperial Oil Resources Venture Ltd. 2005:4-15):

> *During 2002, 16 families moved from Fort Good Hope to Inuvik, Norman Wells, Fort Simpson and Yellowknife, almost all of them to pursue better education*.

Interestingly, the highest education attainment is among females, and when looking at the population pyramids in prior sections the lower number of adult females in the community appears to confirm the notion that families, especially women, are leaving the community for better education. It would be worthwhile to inquire if leaving the community is temporary and to what extent families are leaving or remaining in their new locations.

2.2.2 Labour Force and Employment

This section discusses characteristics of labour force activity, including: rates of participation, unemployment, employment and occupational categories of employment. Table 2.9 illustrates key labour force characteristics for Fort Good Hope and NWT. The active labour force is defined by Statistics Canada as the number of people age fifteen and over who were either employed or unemployed during the week prior to Census Day. Further, those unemployed persons are considered to be those who were without paid work during the week prior to the Census, but either actively looked for work in the four weeks prior to the Census, were on temporary lay-off and were expected to return to their job, or had definite arrangements to start work within four weeks after the time of the Census. Typically, those persons not considered to be part of the active labour force are neither employed nor seeking employment for various reasons (i.e., students, homemakers, retired, seasonal workers in "off-season" or persons who cannot work because of a long-term disability or illness) (Statistics Canada 2007).

The total potential labour force for Fort Good Hope, as defined as residents over the age of fifteen years, is approximately 415 people. Of these, 140 residents (33.7 per cent), were not in the labour force (were not employed and not looking for work). The labour force participation rate of Fort Good Hope was 66.3 per cent (275 residents), which is relatively low when compared to the rest of NWT which experiences a participation rate of 76.5 per cent. In 2006, the employment rate for Fort Good Hope was 51.8 per cent and the unemployment rate was 21.8 per cent.

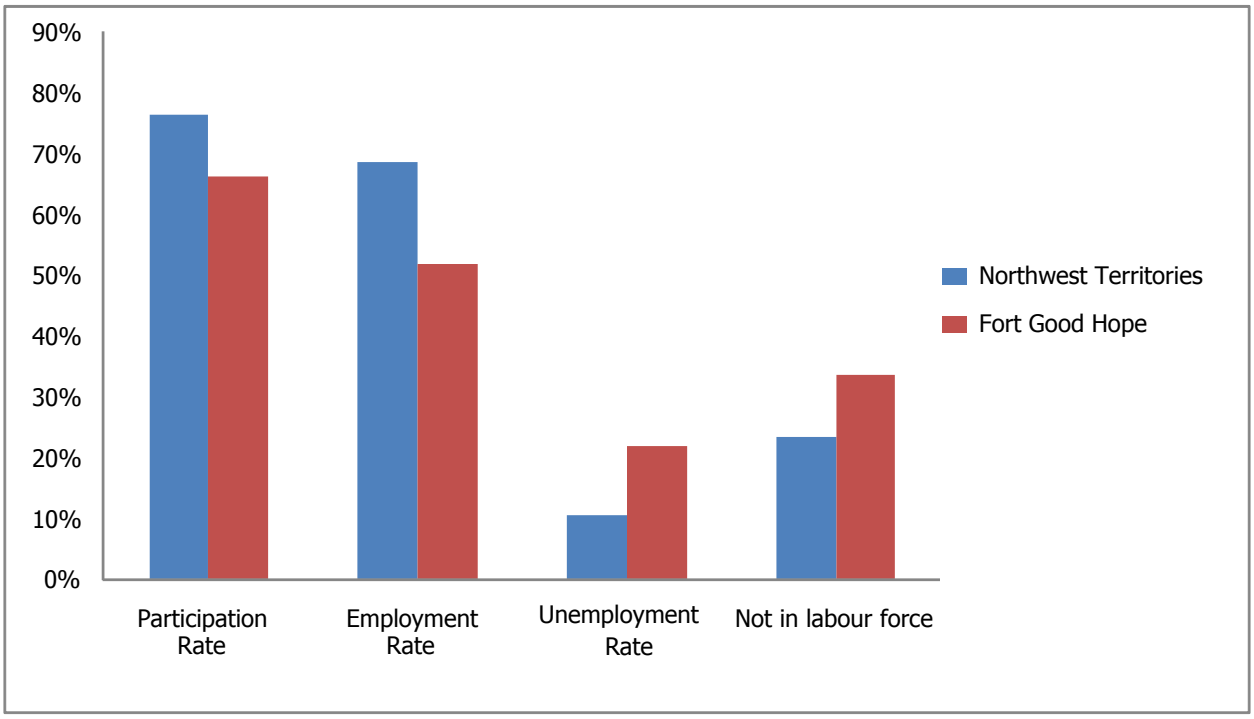
Table 2.9
Labour Force Activity for Fort Good Hope and Northwest Territories for 2006

Characteristics	Fort Good Hope	Northwest Territories
Pop. 15 and over	415	31,140
In labour force	275	23,825
Employed	215	21,350
Unemployed	60	2,475
Not in labour force	140	7,310
Participation rate (%)	66.3	76.5
Employment rate (%)	51.8	68.6
Unemployment rate (%)	21.8	10.4

Source: GNWT Bureau of Statistics (2009).

Figure 2.3 is a bar chart comparing the labour force characteristics between Fort Good Hope and NWT. Fort Good Hope has a higher unemployment rate and a larger proportion of people fifteen years and over not in the labour force (not employed and not looking for work). In contrast, NWT has a higher participation rate and employment rate than Fort Good Hope.

Figure 2.3
Differences in Labour Force Activity for Fort Good Hope and Northwest Territories: 2006



Source: GNWT Bureau of Statistics (2009).

As illustrated in Table 2.10, employment and unemployment rates for Fort Good Hope have varied from Census Year to Census Year. In general, the participation and employment rates of the community of Fort Good Hope have increased. This is especially true of female employment rates. In 1991, females experienced a 33 per cent employment rate and by 2006 the female employment rate was up to 51 per cent. This is in contrast to the male population of Fort Good Hope experiencing very little change from 1991 to 2006 with a mere one per cent increase in employment and a 2.7 per cent increase in unemployment during this time period. In 2006, the employment rate for females in the community was near par with the male employment rate of 52 per cent in 2006.

Table 2.10
Participation, Employment and Unemployment by Gender for Fort Good Hope

Characteristics	1991		2001		2006	
	Male	Female	Male	Female	Male	Female
Participation (%)	64	50	71	64	68	62
Employment (%)	51	33	63	53	52	51
Unemployment (%)	24	28	14	13	26.7	20.8
Population (No.)	195	180	205	180	220	195

Source(s): Statistics Canada (2009); Mackenzie Gas Project – Volume 4B: Fort Good Hope (Imperial Oil Resources Ventures Ltd. 2005).

The 2006 Census provides information on employment by occupational categories, indicating the type of work in which people in Fort Good Hope are employed. Occupational categories refer to the type of work persons were doing during the reference week. Each category encompasses a broad range of potential jobs. Table 2.11 illustrates the proportion of jobs within each occupational category held by those employed in Fort Good Hope. Examples of jobs held for the top two thirds (63 per cent) of Fort Good Hope's labour force, within the three primary categories, are outlined below:

- Sales and service (25%) includes all types of jobs related to retail, food delivery (restaurant, chef, cook, catering), and personal services such as cleaning, security, tour guide, child care, home support work, etc;

- Trades, transport and equipment operators (19%) which includes all trades (mechanists, electrical, pipefitting, metal works, carpentry), telecommunications, heavy construction, specialty trades in repairs (e.g. upholstery, shoe fitting) and transportation operators (bus drivers, railway conductor, boat operators); and

- Social science, education, government service and religion (19%) which includes work in law, psychology, social work, clergy, policy and program research, consultants, teachers and professors.

The remainder of Fort Good Hope's labour force falls into the following six categories:

- Business finance and administration (13%) such as human resources, business professionals and clerical support;

- Management (8%) including managers at all levels in government, services, construction, business manufacturing;

- Natural and applied sciences (6%) includes jobs in many categories such as physical sciences, life sciences, engineering, architecture and planning and regulatory support;

- Health (4%) including doctors, nurses, dentists, allied therapy specialists (audiology, physiotherapy, occupational, speech-language, chiropractic, etc.) as well as veterinaries, optometrists and medical technicians;

- Art, culture, recreation and sport (4%) includes jobs in performing, arts and cultural professionals (archivists, librarians), translators, photography, craftsperson, athletes, coaches; and

- Primary industry categories (6%) includes jobs specific to the region, for example, these could include commercial trapping and fishing or oil and gas specific jobs.

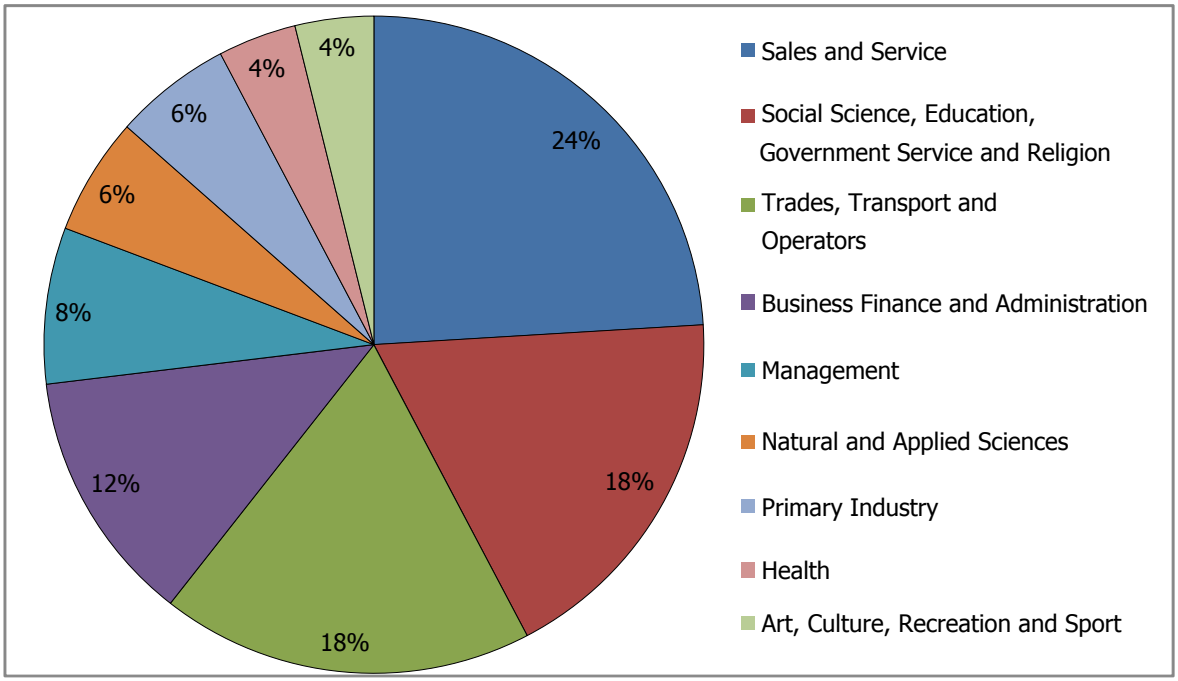
Table 2.11
Labour Force by Standard Occupational Categories in Fort Good Hope for 2006

	Fort Good Hope	
Occupational Category	**No.**	**%**
Total experienced labour force	260	100
Management	20	8
Business finance and administration	35	13
Natural and applied sciences	15	6
Health	10	4
Social science, education, government service and religion	50	19
Art, culture, recreation and sport	10	4
Sales and service	65	25
Trades, transport and equipment operators	50	19
Primary industry	15	6

Source: Statistics Canada (2009).

Figure 2.4 below shows a pie chart as a visual representation of the same information presented in table 2.11 above. Essentially, Figure 2.4 shows the largest portion of jobs held in Fort Good Hope focus on sales and service, social science, education, government service and religion and the trades, transport and equipment operator categories.

Figure 2.4
Proportion of Fort Good Hope Employment by Occupational Category: 2006



2.2.3 Income Levels

This section reviews income indicators for Fort Good Hope and NWT. Examining income levels and their sources contributes to a profile of the local economy. The GNWT Bureau of Statistics tracks the annual family, household and personal income of communities in NWT. The data provides an indication of the monetary income available to Fort Good Hope residents. Non-monetary resources are also important contributors to the local standard of living (basic needs and other goods and services to sustain a quality of life) and are discussed in other sections of this report.

Table 2.12 outlines the 2005 average annual incomes, based on different types of income categories for Fort Good Hope and NWT. Income is generally much higher for NWT than for Fort Good Hope. The GNWT Bureau of Statistics released a report on income and earnings in May 2008, which indicated that the higher average annual incomes for NWT are due to much higher incomes experienced in regional centers (i.e., Norman Wells, Yellowknife, Inuvik, Fort Simpson, Fort Smith and Hay River). The following types of income are provided in the table:

- Income per person which considers personal income from all sources (wage, social assistance, other non-labour income);

- Employment income which is based on average personal income earned from employment;

- Family income refers to the income received from all sources for the family living in a household; and

- Household income is the total income from all sources for everyone living in a household.

Table 2.12
Average Annual Income by Type of Income Received in Fort Good Hope: 2005

Type of Income	Average Annual Income ($) in 2005	
	Fort Good Hope	Northwest Territories
Income per person	27,159	44,422
Employment income	31,122	46,750
Family income	61,340	101,647
Household income	58,691	91,559

Source: GNWT Bureau of Statistics (2009).

Family Income

The table below provides information on the income of families in Fort Good Hope for 1996 to 2006. The GNWT Bureau of Statistics tracks the annual family income for communities in NWT. Table 2.13 clearly shows that monetary income levels for families have increased considerably for Fort Good Hope between the years 1996 to 2006. The percentage of families making low incomes has decreased considerably. In 2006, 23 per cent of families reported they were making less than $25,000 annually compared to ten years earlier, when 43 per cent of families reported they were making less than $25,000 annually. The 23 per cent of families that reported annual incomes of less than $25,000 were earning an income which classifies them as 'below the poverty line' (Statistics Canada 2001). Conversely, the percentage of families reported making more than $60,000 annually reached 38 per cent in 2006 where in 1996 only 21 per cent of families made more than $60,000 annually.

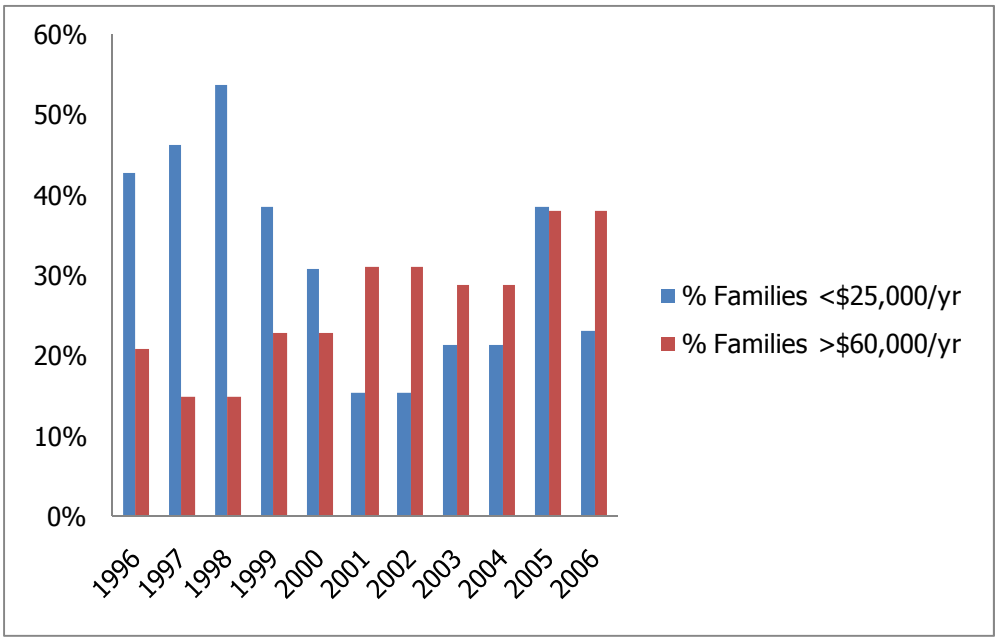
Table 2.13
Family Income per Year in Fort Good Hope: 1996-2006

Year	Average Income $	% <$25,000	% >$60,000
2006	64,538	23	38
2005	60,346	39	38
2004	54,243	21	29
2003	51,464	21	29
2002	52,231	15	31
2001	50,762	15	31
2000	46,877	31	23
1999	40,400	39	23
1998	37,815	54	15
1997	38,031	46	15
1996	37,843	43	21

Source: GNWT Bureau of Statistics (2009).

Figure 2.5 shows from 1996 to 2006 the income categories between low income (<$25,000/yr) and above average income (>$60,000/yr) have inversed. Together these indicators suggest fewer families are experiencing nationally recognized poverty levels (income too low to meet basic needs of daily living). Family incomes have experienced greater change than personal incomes; this may be reflective of the increase in the female work force in the community resulting in a potential increase in the number of families with more than one adult contributing to monetary income. However, the indicators may also represent, to some degree, an increased dependency of families on monetary income to meet their daily needs and the tendency for subsistence living and traditional lifestyles to become less of a choice in the community. More information from community members would be needed to qualify the value of understanding such income changes in the community.

Figure 2.5
Comparison of Family Income Categories for Fort Good Hope from 1996 - 2006



Source: GNWT Bureau of Statistics (2009).

Personal Income

The table below provides information on the income of individuals and families in Fort Good Hope for the years from 1996 to 2006. Table 2.14 shows that the annual personal income has improved over the past ten years, although the degree of change has not been as dramatic as that seen in families. In 2006, 39 per cent of individuals who filed taxes reported they made less than $15,000 a year and in 1996 over half of those filing taxes reported making less than $15,000 annually. The number of individuals filing taxes who claimed an income greater than $50,000 annually increased from 12 per cent in 1996 to 19 per cent in 2006.

Table 2.14
Personal Income per Year in Fort Good Hope: 1996-2006

Year	Personal Income in $		% taxfilers <$15,000	% taxfilers >50,000
	from all sources	from Employment		
2006	29,322	27,445	38.9	19.4
2005	28,473	27,893	40.5	18.9
2004	27,603	26,655	40.5	18.9
2003	25,224	24,694	45.9	16.2
2002	25,885	25,815	44.1	14.7
2001	24,391	24,197	48.6	14.3
2000	23,250	22,229	52.9	11.8
1999	21,422	20,469	53.1	12.5
1998	19,382	17,775	61.8	8.8
1997	19,779	18,235	51.5	9.1
1996	20,082	19,419	55.9	11.8

Source: GNWT Bureau of Statistics (2009).

2.2.4 Cost of Living

Cost of living is a term that refers to the average cost of the basic necessities of life, such as food, shelter, and clothing. For Fort Good Hope the cost of living is reflected through both monetary costs and the non-monetary resources used to meet basic necessities and daily needs. Assessing the cost of living for a region is complex and few indicators adequately reflect the differences in the cost of living from region to region. This section makes use of available indicators to assess the monetary costs and non-monetary resources contributing to the overall cost of living in Fort Good Hope, including:

- Monetary Costs:
  - The Isolated Posts and Government Housing Directive developed indices known as the Environmental Allowance, the Living Cost Differential (Basket of Goods and Services) and the Fuel and Utilities Differential that are used to determine allowances above the regular salaries/wages for employees posted in the remote communities of Canada (Treasury Board of Canada 2007); and
  - The Revised Northern Food Basket for a family of four. This indicator prices the cost of purchasing a basket of basic healthy food to feed a family of four for a week in northern remote communities across Canada and compares the food basket prices to the nearest urban centre of the remote northern community (Indian and Northern Affairs Canada, 2008).

- Non-Monetary Resources:
  - Participation in hunting and fishing; and
  - Country foods consumption.

A high cost of living contributes directly and indirectly to issues such as diabetes, housing shortages and substandard conditions, household crowding, mental health and capacity for community decision making processes. The cost of living for remote communities was highlighted as a major issue in a recent letter from the Honourable Floyd K. Roland (Premier of the Northwest Territories) addressed to the leaders of Canada's political parties (September 16, 2008). The letter highlighted several factors that contribute to a high cost of living in northern remote communities including access and mobility, source and cost of electrification, fuel and transportation and governance issues with decision making authorities from southern-urban areas (i.e. Ottawa). The letter confirms the notion that cost of living in northern communities has far reaching effects on various aspects of community well being (Roland 2008).

2.2.4.1 Monetary Costs

Two sets of information currently available provide an indication of the increased cost of living in Fort Good Hope compared to urban centres in the south. The first is provided through the Isolated Posts and Government Housing Directive which are a series of indices that take into account numerous costs associated with northern remote living (fuel, transportation, groceries, housing and other goods and services needed for daily living). The second is a grocery basket of items created and costs tracked through the Food Mail Program with Indian and Northern Affairs Canada.

Isolated Posts and Government Housing Directive Cost of Living Indices

The Isolated Posts and Government Housing Directive undertake surveys and data collection to determine the allowances provided, in addition to their regular salary, for government employees living in remote places. Indices include the Environmental Allowance, the Living Cost Differential (Basket of Goods and Services) and the Fuel and Utilities Differential. The indices were created based on collecting the actual costs of purchasing and accessing community good and services that are regularly part of everyday life for those who work as government employees in remote communities. The fact that fuel, utilities, housing, transportation, groceries, clothing and other regularly purchased services are included in the price collection makes this a good indicator of cost of living, at least for those who rely solely on monetary income for all of their daily needs. The result of these indices is determining the amount of money provided in addition to regular wages for employees living in places where the prices for food and other goods and services are abnormally high relative to the location identified as the point of comparison. These allowances, available publicly, provide valuable indications of the cost of living differential for Fort Good Hope compared to its point of comparison (which is Edmonton). The information is provided only to illustrate the federally recognized cost of living differential associated with living in a remote community such as Fort Good Hope.

An overall "Cost of Living Differential" is assigned to a community based on a formula. For Fort Good Hope, the Cost of Living Differential is 160 to 165; this differential is applied to each of the categories to determine the community specific index for each eligible allowance category. Table 2.15 outlines each of the allowance category scales and the resulting index determined for Fort Good Hope. In addition, the table highlights the resulting additional monetary support provided based on the indices. The results clearly place Fort Good Hope amongst the top half of the most costly places to live in Canada. For example, if one were to be a government employee with dependents they could receive up to an

additional $30,433 dollars on top of their regular salary for living and working in Fort Good Hope. Another individual earning a salary without dependents at home could earn an additional $18,260 on top of their salary for residing in Fort Good Hope. This implies that the prices collected in Fort Good Hope while determining the Cost of Living Differential for Fort Good Hope warrants this type increase in wages indicating the cost of living is indeed higher at Fort Good Hope than Edmonton (the point of reference community in these isolated posts scales).

Table 2.15
Isolated Posts and Government Housing Directive
Allowance Indices for Fort Good Hope: 2007

ISOLATED POSTS 2007 INDEX	Fort Good Hope Index (160-165)	Salaried Employees ($ per year)		Hourly Rate Employees ($ per hour)	
		With Dependents	Without Dependents	With Dependents	Without Dependents
Environmental Allowance Scale 1 to 5	4	6,850	4,110	3.29	1.97
Living Cost Differential Scale 1 to 16	10	16,208	9,725	7.77	4.66
Fuel and Utilities Differential Scale 1 to 30	30	7,375	4,425	3.53	2.l2
Total Maximum Addition to Regular Income		30,433	18,260	14.59	6.63

Source: Treasury Board Secretariat: National Joint Council (Government of Canada).
http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/ipgh-dpill/ipgh-pile-eng.asp

The Revised Northern Food Basket

The Revised Northern Food Basket is a study undertaken by the Food Mail Program through Indian and Northern Affairs Canada to monitor the cost of purchasing a northern food basket that provides for a healthy diet. Pricing data is collected based on the Revised Nutritious Food Basket, which includes a series of 67 foods generally available in northern remote grocery stores or their service centres. The primary limitation to this study is the food items may not be representative of food consumption or expenditure (the tendency to select foods which cost less often lead to choices which have little nutritional value and therefore were not included in this study). The prices do provide a useful benchmark for comparing the cost of a healthy diet in Fort Good Hope to different communities over time. Table 2.16 below provides the latest food basket costs released by the Revised Northern Food Basket Team and Indian and Northern Affairs Canada (2008).

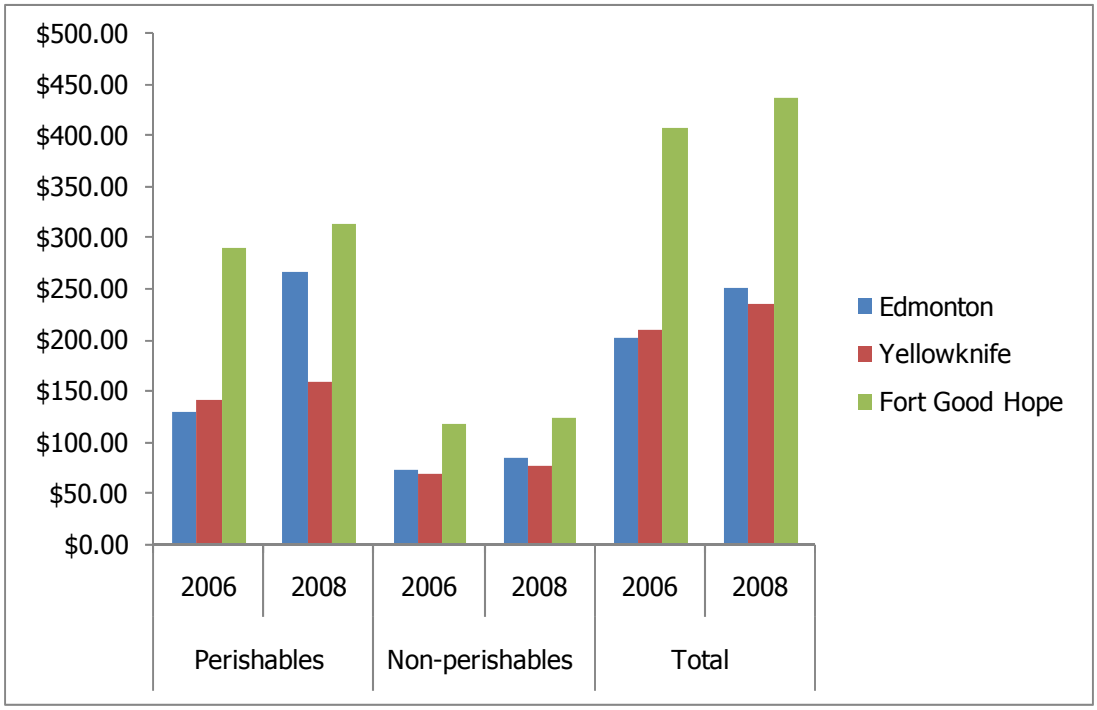
Table 2.16
Weekly Cost of the Revised Northern Food Basket for a Family of Four for One Week of Groceries: 2006 and 2008 Costs in dollars ($)

Community	Perishables		Non-Perishables		Total	
	2006	2008	2006	2008	2006	2008
Edmonton	129	266	73	85	202	251
Yellowknife	141	159	68	76	209	235
Fort Good Hope	290	313	118	124	408	437

Source: Indian and Northern Affairs Canada - Revised Northern Food Basket for a Family of Four 2008 Results.

Figure 2.6 uses a bar chart to visually illustrate the same cost information presented in the above table. The bar chart emphasizes the significant cost for those in Fort Good Hope, associated with buying a basic nutritional basket of food, which has been estimated at $437.00 in 2008, up 6.6 per cent from the 2006 total grocery basket price of $408.00. In comparison, the price of the exact same northern food basket in Yellowknife was $235.00 in 2008. Essentially, the cost of groceries in Fort Good Hope costs nearly one-half times more than the cost in Yellowknife.

Figure 2.6
The Cost of Purchasing a Northern Food Basket by Perishables, Non-Perishables and Total Grocery Basket in Fort Good Hope, Yellowknife and Edmonton for 2006 and 2008



Source: Indian and Northern Affairs Canada - Revised Northern Food Basket for a Family of Four 2008 Results.

2.2.4.2 Non-Monetary Income and Resources

The community's ability to live partly off the land can play an important role in contributing to the non-monetary income of residents in Fort Good Hope. As noted in the Cultural Evaluation (PACTeam Canada Inc. 2007):

> *Harvesting is the primary activity that brings people to Ts'ude niline Tu'eyeta. Even today, when the majority of food is purchased at the local Northern or Co-op, access to country food is essential in offsetting the high costs of store-bought food.*

Therefore, the ability for non-monetary resources to contribute to meeting day-to-day needs of residents is also a factor in understanding overall cost of living. The availability and use of natural resources could, to some extent, limit the effects of a high cost of living. Use of trap lines, hunting, fishing and consumption of related country foods and medicines are contributors to this non-monetary income. More detail is provided on the traditional harvesting and country food available to residents of Fort Good Hope in the Resource Use section of this report. The information presented here refers to the traditional in-kind economy. Data regarding hunting, fishing and country food consumption was available for the Fort Good Hope population aged 15 and over for 1993, 1998 and 2003. More recent data was not publicly available at the time this report was being prepared. Regardless, 2003 data and the trend established between 1993 to 2003 provides some indication as to the relevance traditional pursuits had in contributing to meeting the daily needs of the community and potentially offsetting the high cost of living.

Participation in Hunting and Fishing

Table 2.17 reveals that community members of Fort Good Hope continue to place a high value on hunting and fishing with 47 per cent, almost half of the population (fifteen years and older) participating in these harvesting pursuits in 2003. Details regarding the value of hunting and fishing in the community of Fort Good Hope are presented in this study under section 3.1 Traditional Resource Use.

Table 2.17
Adults who Hunted or Fished in Fort Good Hope and Northwest Territories as a Per Cent for 1993, 1998 and 2003

Community	% Adults who hunted and fished		
	1993	1998	2003
	%	%	%
Fort Good Hope	33	39	47
Northwest Territories	18	42	37

Source:
1. 1993, 1998 data taken from Volume 4B: Socio-Economic Baseline -Fort Good Hope (Imperial Oil Resources Ventures Ltd. 2005).
2. GNWT Bureau of Statistics (2009).

Country Food Consumption

Table 2.18 indicates that domestically harvested foods are a significant contributor to local diets, which reduces the reliance on Fort Good Hope community members need to purchase store bought food. Over one third of Fort Good Hope (36 per cent) age fifteen and over identified country foods as part of their diet in 2003.

Table 2.18
Country Food Consumption in Fort Good Hope and Northwest Territories for 1993, 1998 and 2003

Community	% Diets include country foods		
	1993	1998	2003
	%	%	%
Fort Good Hope	47	72	36
Northwest Territories	29	30	18

Source:
1. 1993, 1998 data taken from Volume 4B: Socio-Economic Baseline -Fort Good Hope (Imperial Oil Resources Ventures Ltd., 2005).
2. GNWT Bureau of Statistics (2009).

Living off the land, through commercial and domestic resource harvesting; however, has declined. The Mackenzie Gas Project EIS noted that changes over time traced back to Euro-Canadian contact means that some monetary income is now a necessity. However, traditional resource based activities still contribute to the income in-kind for many residents. The use of country foods continues to be important for economic, social and cultural reasons.

2.3 INFRASTRUCTURE AND SERVICES

2.3.1 Transportation Infrastructure

Fort Good Hope relies on the community of Norman Wells for transportation in and out of the community. Year round travel is provided via air service. Otherwise, winter roads connecting to other communities eventually accessing the Mackenzie Highway and southern centres are depended upon in the winter. In the summer, a river-based barge supplies the community with much of its goods and materials needed for community infrastructure and service delivery. The following points can be made about transportation infrastructure at Fort Good Hope.

Air Service

- Year round airport service is provided by Northwright Air from Fort Good Hope to Norman Wells where further connections can be made; Fort Good Hope has an air terminal building with one gravel surfaced runway owned by the Government of Northwest Territories; and

- The largest aircraft able to use the runway is a Twin Otter.

Winter Road Systems

- The winter road system is open, on average, from January 6 to March 16 (Imperial Oil Resources Venture Ltd. 2005); and

- Winter roads connect Fort Good Hope to Colville Lake, Norman Wells, Tulita, Deline and to Wrigley, which connect to the territorial all-weather road system and to Mackenzie Highway (Northwest Territories Transportation).

Summer Transportation

- Marine re-supply deliveries are made approximately four times each summer; and

- Beach landing is provided for small boats.

2.3.2 Utilities, Energy and Communications

This section outlines the status of utilities, energy and communications made available to the residents of Fort Good Hope. In general, these services and utilities are often in flux with changes and upgrades continually being made to keep up with the needs of maintaining community life. Therefore, the best available information has been used with the understanding that changes are likely to occur and information can become dated quickly.

The most recent information available regarding water, sewage, waste and other sanitation services was derived from the Infrastructure Profile available through the Government of Northwest Territories Bureau of Statistics and the 2005 Mackenzie Gas Project EIS (Imperial Oil Resources Venture Ltd. 2005). In general, the following points can be made about municipal services:

- Water is pumped from the Mackenzie River into a reservoir. The water is then treated and trucked to community members;

- A Pump out system is used for liquid waste;

- There is a 240m X 300m waste management area for sewage disposal;

- Solid waste is collected via cell disposal method. The cells are excavated in soil where waste is compacted and covered until cell is full;

- The community of Fort Good Hope relies on diesel generators for electricity which is supplied and operated through the NWT Power Corporation (NTPC). The cost of electricity for residential users is subsidized through the Territorial Power Subsidy Rate for the first 700kWh/month costing $18.19 cents/kWh. Additional electricity used residentially becomes considerably more expensive at $63.98 cents/kWh (NTPC 2003); and

- Communication infrastructure has increased its technology considerably over the past three years. Postal service, telephone and satellite television are all available at Fort Good Hope. In 2007/2008, the Government of Canada contributed funding to a communications group which enabled broadband services for internet connection to almost all NWT communities, including Fort Good Hope (AirWare 2009). The nearest cell phone service is available at Norman Wells (Latitude Wireless 2008).

2.3.3 Housing and Public Services (Recreation, Health, Government Facilities)

Housing

Information provided through the GNWT Bureau of Statistics indicates that although housing shortage is not as critical as in the past, the housing conditions have worsened since 2001. Highlighted in the Mackenzie Gas Project EIS was that in 2001 there were 110 people aged 18 to 26 actively looking for housing in the community (Imperial Oil Resources Venture Ltd. 2005). In 2001, there were 155 houses available in the community. This number increased in 2006 with approximately 175 households in the community of Fort Good Hope. The need for major and minor repairs of houses has also changed between 2001 and 2006. Nearly half of the housing in Fort Good Hope was identified as needing major repair (48.6 per cent). Major repair refers to corroded pipes, damaged electrical wiring and major structural issues such as sagging floors, bulging walls, damp walls and ceilings, crumbling foundation, rotting porches and steps, etc (CMHC 1991).

In contrast, in 2001, the data showed 35.5 per cent of homes needed major repairs. Homes requiring minor repair remained relatively constant with 22.6 per cent in 2006 and 22.9 per cent in 2001 needing minor repairs. Minor repairs are those that are more aesthetic in nature, but household function remains intact (i.e., small cracks in interior walls and ceilings, broken light fixtures and switches, leaking sinks, cracked or broken window panes, some missing shingles or siding, peeling paint) (CMHC 1991).

Table 2.19
Housing and Need of Repair for Fort Good Home (2001 and 2006)

Year	No. of houses	No. needing minor repair	No. needing major repair	% needing major repair
2001	155	35	55	35.5
2006	175	40	85	48.6

Source: GNWT Bureau of Statistics (2009).

Recreation

The community of Fort Good Hope has a range of recreation facilities available in the community. The information provided on-line lists the infrastructure available for recreation but provides limited data on the functionality of the infrastructure (if in usable condition without major repair needed) or on programs, use and activities occurring at the facilities. The facilities in Fort Good Hope include: community hall, arena (with curling rink accommodation), gymnasium, playground, picnic area, outdoor baseball diamond, soccer field and basketball court. Based on personal communication with a member of Fort Good Hope, hockey is the biggest recreation activity and social gatherings in the picnic area near the baseball diamond during summer months continues to be an important part of community life. Personal communication with a member of Fort Good Hope indicated that programming in the community remains a high priority (Manuel 2009).

Health

Health and Social Services are provided through the Sahtu Health and Social Services Authority, under the auspice of the Government of the Northwest Territories Health and Social Services Department. The Sahtu region encompasses the five communities of the Sahtu Land Claim Region in the central Mackenzie Valley: Colville, Deline, Fort Good Hope, Norman Wells and Tulita. Norman Wells is the administrative headquarters and regional centre for the authority. The Sahtu Health and Social Services Authority came into effect on April 1, 2005. The Fort Good Hope Health Centre and the Fort Good Hope Social Services Office provide basic health care and social services in the community (Sahtu Health and Social Services 2009). The nearest hospital is in Inuvik.

Health and Social Services

Fort Good Hope has a Health Centre and Social Services Office where programs related to prenatal nutrition, healthy children, daycare, brighter futures, other community Mental Health programming and health promotion events are undertaken (GNWT Health and Social Services 2006). In 2002, a compilation of the Sahtu Region Community Programs and Services run by the K'asho Go'tine Community Council was made available on-line. Based on available information, the following health and social programs were highlighted, each having some degree of staffing within the community:

- Kahsho Got'ine Alcohol and Drug Program with referrals to treatment centers, counseling, support groups, AA group, evening activities for adults and home visits as well as educational awareness activities;

- Family Violence Prevention Program includes counseling, awareness education activities, response to crisis, advocacy and support for community members to access regional shelters;

- Fort Good Hope Daycare Society with a total 25 total spaces available (21 pre-schoolers and 4 infants) focuses on young children activities – games, outings, fine motor development, etc;
- Mental Health Program provides basic services in counseling, support and response to mental health issues and crisis;

- Pre-Natal Program provides for support and education in nutrition, cooking, shopping, budgeting, parenting information and resources;

- Recreation Program includes maintenance staff person and coach for hockey, basketball, volleyball, Dene games and athlete support to attend events and trails;

- School Breakfast/Snack Program provides healthy breakfast for school children in school every morning;

- School on the Land Program is an in-school program for traditional knowledge development and intergenerational connection;

- Renewable Resource Officer Program (no further information provided);

- Fort Good Hope Youth Committee to organize recreation activities related to being out on the land programs;

- House maintenance program provides home maintenance for elders;

- Employment/Training Program includes basic assistance for job finding, resume writing, referral to retraining programs, etc;

- Community Justice Committee organized in support of alternate justice measures; and

- Community Constable Program for local community policing and by-law enforcement.

Noted in the Mackenzie EIS and confirmed in an interview with a local community resident is the under-utilization of programs that attempt to address the community's health issues (Manuel 2009). Also identified was the shortage of professional staff housing which again limits the ability to retain staff for those programs that are stretched to their limits.

Government Offices

The K'asho Go'tine Community Council is the principle governing body and is housed in the Fort Good Hope Municipal Office and Community Hall. The offices and community hall are relatively central in the community and is home to many of the planning and decision-making organizations in this Chartered Community. Governance has changed and continues to change within Fort Good Hope since the 1994 Sahtu Dene and Métis Land Claim Settlement Act (Sahtu Secretariat Inc. 2004). Much of the governing organizations are Sahtu Land Claims based and follow under the auspice of the Sahtu Dene Council.

- Yamoga Land Corporation;
- Fort Good Hope Métis Land Corporation;
- Sahtu Renewable Resource Board;
- Sahtu Land Use Planning Board;
- Sahtu Land and Water Board;
- Sahtu Secretariat; and
- Sahtu Dene Métis Council.

The first two, Yamoga Land Corporation and the Fort Good Hope Métis Land Corporation are specific to representing the interests of Fort Good Hope within the larger Sahtu Region.

2.3.4 Businesses

Published information on the standing of businesses in Fort Good Hope is outdated. The dynamic nature of business means that economic opportunities are opening and closing doors as the demand for such businesses change. At one time there was a hotel, a restaurant and additional outfitters which have since closed their doors to business. Personal communications with a community member has helped to confirm which businesses are currently operating in Fort Good Hope. It was suggested that there are few businesses that operate in the community. A list of businesses is provided below:

- 1 outfitter;
- 3 Bed and Breakfasts (The Jay Bed and Breakfast, Fah Sene Bed and Breakfast, Little Dipper Bed and Breakfast);
- 2 Grocers (The Northern Store and the Community Co-Op); and
- Arctic Circle Enterprises Limited.

2.4 COMMUNITY LIFE AND WELL BEING

This section provides a limited description on community wellness in Fort Good Hope. Generally, community wellness refers to the physical, emotional, and social well-being of all components of community life including those experienced by individuals and families. Limited secondary source data was publicly available. As a result, a number of indicators and a description of health conditions based on prior released information (GNWT Bureau of Statistics 2007 and Imperial Oil Resources Ventures Ltd. 2005) are summarized in this section. Specifically, the indicators look at:

- Indicators of crowded housing and shortage (NWT Housing Corporation, GNWT Bureau of Statistics, Mackenzie Gas Project EIS);
- Crime rates (GNWT Bureau of Statistics);
- General well-being index (Indian and Northern Affairs Canada); and
- Review of health reports (2007 NWT Social Indicators and 2005 EIS Mackenzie Gas Project).

2.4.1 Household Composition

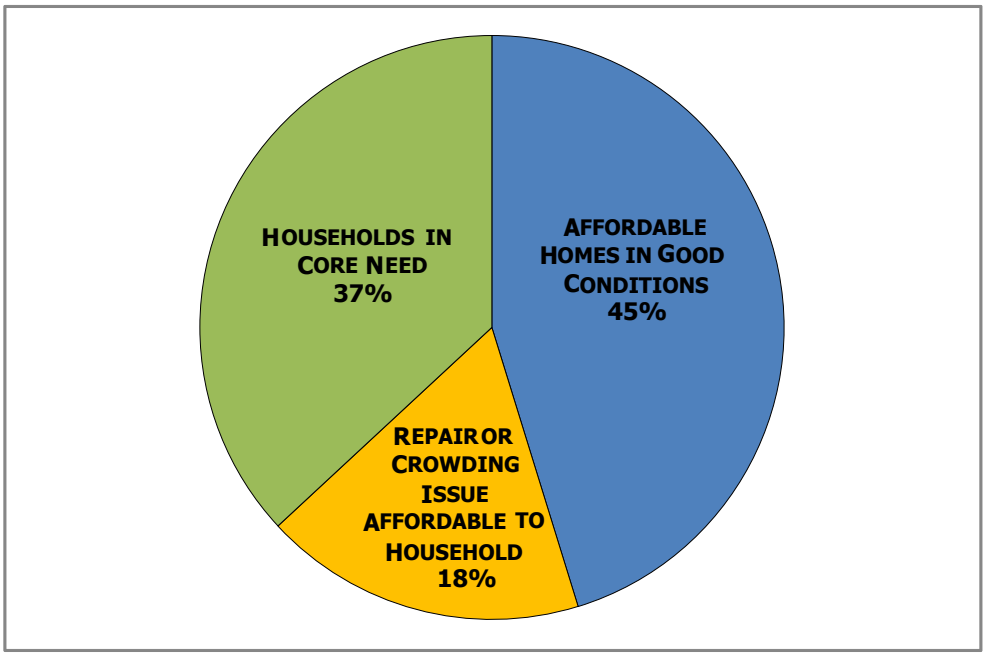
The number of persons in an average household gives an indication to affordable housing shortages and crowding issues. In Fort Good Hope, the average number of persons in a household is 3.1, which is quite low compared to many northern First Nations and is not much higher than the average 2.9 of NWT (GNWT Bureau of Statistics; Statistics Canada 2009). Another indication of crowding is identifying the per cent of total households in a community with more than six people. The data provided from GNWT Bureau of Statistics shows that in 2006 Fort Good Hope had 11.4 per cent of households with more than six people which is a lot higher than the 6.2 per cent of households with more than six people in NWT.

The Mackenzie Gas Project EIS indicated that there were considerable housing shortages in 2002, with 110 persons actively waiting for housing (Imperial Oil Resources Venture Ltd. 2005). At this time, there were 155 houses in the community which had increased to 175 houses identified in 2006. The above data suggests that crowding is decreasing somewhat, but as described in infrastructure the need for major repairs to homes has increased.

The NWT Housing Corporation conducted a Housing Needs Survey in 2004. Figure 1.7 outlines the key findings for Fort Good Hope in terms of housing conditions and core need. Core need was defined as households with at least one housing problem and a total household income below the Core Need Income Threshold (CNIT). The CNIT was tabulated by the NWT Housing Corporation to determine if a household had the economic means, without government assistance, to repair housing problems and still meet the costs for basic day to day needs. Those in core need were households with income below the CNIT and, therefore, could not afford their day to day needs and repairs needed on their house. Based on the NWT Housing Corporation's analysis, 37 per cent (62 out of 168 houses) of the households fell into the core need category having problems with adequacy (repairs needed), suitability (crowding) and affordability (incomes too low to repair or afford adequate housing).

into the core need category having problems with adequacy (repairs needed), suitability (crowding) and affordability (incomes too low to repair or afford adequate housing).

Figure 2.7
Fort Good Hope Housing Conditions by Per Cent of Adequacy, Affordability and Core Need: 2004



Source: NWT Housing Corporation: 2004 Housing Needs Survey and Assessment.

Personal communication with a local Fort Good Hope resident confirmed that more houses are being built each year, with 8 built in 2007 and 8 more built in 2008 (Manuel 2009). This; however, is offset by the number of houses needing major repairs and a lack of affordable homes for families on social assistance. Therefore, core need housing remains an issue in the community, adding to the crowding and poor housing conditions in the community.

2.4.2 Crime

For the five years of data shown in Table 2.20, Fort Good Hopes number of violent crimes and property crimes, reported as a rate per 1,000 persons, remained more than double the rates recorded for NWT. The data is imprecise in that incidents reported by the Fort Good Hope detachment includes incidents from Colville Lake and may include incidents from other surrounding communities. It is still likely that the crime rate is higher in Fort Good Hope than for NWT. The crime rates in Fort Good Hope for all categories do not indicate a consistent trend in a decrease or increase in crime over time (GNWT Bureau of Statistics 2009).

The rate of violent crimes (such as assaults, robberies and homicides) have fluctuated since 1996, but have increased each year since 2005. In 2007, the crimes of violence rate (231 reported crimes per 1,000 persons) in Fort Good Hope was over three times as high as the crimes of violence rate for NWT (71 reported crimes per 1,000 persons). Property crimes (e.g., break-ins and auto thefts) remain high in Fort Good Hope. In 2006, the property crime rate was 145 (property crimes per 1,000 people), and in 2006 the rate was 135 which was down from previous years but remains over two times the property crimes reported for NWT. In general, all forms of reported crimes in Fort Good hope have been higher than those for the NWT every year for which data has been published.

Table 2.20
Number of Violent Crimes and Property Crimes per 1,000 Persons for Fort Good Hope and Northwest Territories for Five Years from 2003-2007

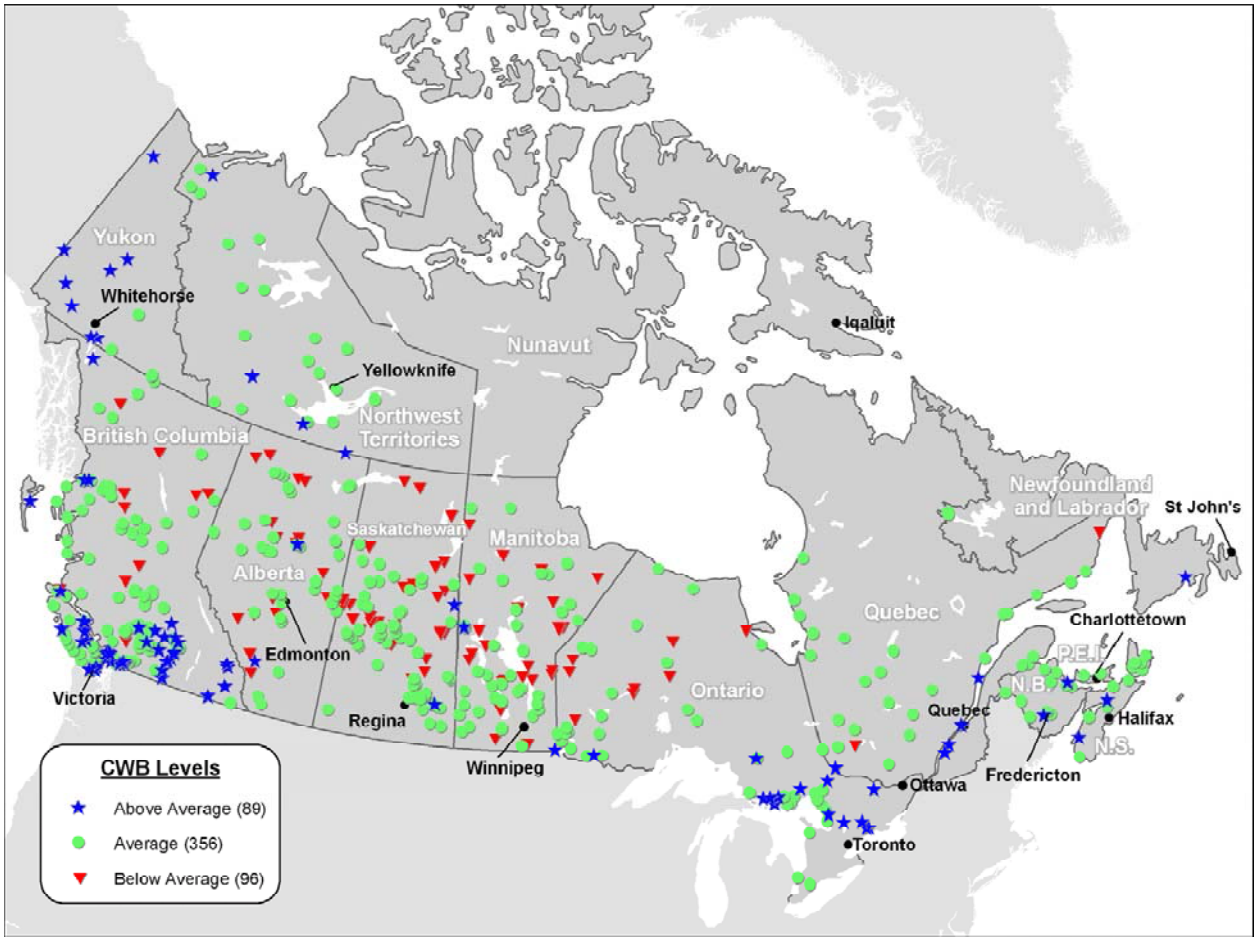
Community	Crime Type	Rates Per 1,000 Persons				
		2007	2006	2005	2004	2003
Fort Good Hope	Crimes of Violence	231	155	149	186	177
	Property Crimes	145	135	181	221	188
Northwest Territories	Crimes of Violence	71	64	64	69	67
	Property Crimes	58	63	68	74	72

Source: GNWT Bureau of Statistics (2009).

2.4.3 Well Being Index

In 2001, Indian and Northern Affairs Canada produced a Community Well-Being Index database. The well being index utilizes census data for education, labour force income and housing to determine an overall well-being index score. The well-being score is from 0 through 1 (with 1 being the highest level of well-being). Limitations exist; however, especially when taking such mainstream and modern socio-economic indicators to assess the well-being of Aboriginal communities where traditional economic pursuits and other cultural characteristics contribute to the community's well-being. An over reliance on monetary income, paid employment and other material acquisitions only provides a component of well-being which could be interpreted as having "assimilatory undertones" (Strategic Research and Analysis Directorate 2004). Having said that, many of the goals and objectives of governance, health and social services focus on improving socio-economic conditions to reach similar national averages. This community well being index provides an indication of where Fort Good Hope stands regarding basic socio-economic well-being in relation to Aboriginal communities across Canada. The map below shows Fort Good Hope and the other Sahtu communities have average well-being scores. The Fort Good Hope well-being index score in 2001 was .69. The highest portion of the score was in labour force activity and the lowest portion of the score was in housing conditions and composition (Indian and Northern Affairs Canada 2001).

Figure 2.8
First Nations Community Well-being in Canada, 2001



Source: Statistics Canada, Population Census, 2001, Mapping © 2000. Government of Canada with permission from Natural Resources.

2.4.4 General Health

The Sahtu Health and Social Services Authority assumed responsibility for delivering health and social services to Fort Good Hope in April 2005. In general, Fort Good Hope struggles with many of the health issues associated with small, remote Aboriginal communities across Canada. A complete review and description of health indicators is beyond the scope of this report; previous studies including the Mackenzie gas project (2005) and the GNWT Bureau of Statistics Social Indicators Report (2007) on Fort Good Hope have highlighted some of the health issues faced by Fort Good Hope. It is important to note that statistical data is collected only for health problems and, therefore, much of what is reported in this section is negative and does not speak to positive attributes of health in the community. When discussed in a key person interview it was suggested that in general the overall health for Fort Good Hope is relatively good. A brief summary of the most important health concerns in Fort Good Hope is provided in this section.

Alcohol Abuse

For the NWT, alcohol related problems are thought to be a major problem. The GNWT Bureau of Statistics reported that in 2006, over one third of the NWT population over 12 years of age indicated they drank five or more drinks per occasion more than once a month (incidence of heavy alcohol use). Although indicators on alcohol use are not publicly available for Fort Good Hope, several effects of alcohol abuse have been noted as health related issues in the community. These are all based on qualitative reports but include accounts of children being born with Foetal Alcohol Syndrome (FAS) or Foetal Alcohol Effects (FAE), and sexual and physical abuse. In addition, high crime rates and a high death rate from accidents, suicides and homicides (over double those experienced by NWT) speak to a potential relationship with alcohol or substance abuse (GNWT Bureau of Statistics 2007; Imperial Oil Resources Venture Ltd. 2005). Furthermore, data from 1999 to 2001 shows that the rates of hospitalizations for alcohol-related illnesses was 268 per 100,000 whereas for the NWT the hospitalizations for alcohol-related illnesses was 443 per 100,000.

Sexually Transmitted Infections

The GNWT Bureau of Statistics calculated three year averages of reported sexually transmitted infections for the years from 1996 to 2004, as a percentage of the population of Fort Good Hope and NWT. The reported cases of sexually transmitted disease (Chlamydia and gonorrhoea per 100 population) for the three year average between 2004 to 2006 was more than two and a half times greater in Fort Good Hope (approximately 5.5 per cent of the population of all ages) than NWT (approximate 2 per cent of the population of all ages). In Fort Good Hope the rate of STIs has been increasing since 1996-1998 averages.

Respiratory Disease

Reports state that there is a high incidence of smokers in Fort Good Hope. The cases per 1,000 people having a respiratory disease treated by a physician is quite high in Fort Good Hope. From 2000-2002, the three year average per 1,000 population of cases of respiratory diseases treated by a physician in Fort Good Hope was 143. This rate; however, is much lower than the 481 per 1,000 persons cited in NWT (Imperial Oil Resources Venture Ltd. 2005).

Mental Disorders

As noted in the Mackenzie Gas Project EIS, the number of mental disorders treated by physicians in Fort Good Hope were the highest in the Sahtu Region (Imperial Oil Resources Venture Ltd. 2005). The three-year average rate per 1,000 population for cases of mental disorders treated by physician in Fort Good Hope was 204 and for NWT on who was 337 (per 1,000). More recent data is not publicly available; however, from 1994 to 2002 the rate has remained high for mental disorders treated in Fort Good Hope.

2.5 SOCIO-ECONOMIC BASELINE SECTION SUMMARY

In summary, the following points highlight the socio-economic conditions faced by the community of Fort Good Hope:

- The relatively young population is in decline with a negative growth rate of -1.7%;
- The population is almost entirely Aboriginal of Dene ancestry, with a small portion of Métis in the community;
- The community is English speaking and losing the ability to speak their Aboriginal language of North Slavey;
- Those who live in Fort Good Hope stay in Fort Good Hope shown through relatively low mobility in the community;
- The community experiences low educational attainment levels;
- More than half of those of working age (15 years and older) are not working in wage employment;
- Family income levels are increasing, but one quarter of the families are still below the poverty line (as defined by Statistics Canada);
- Fort Good Hope is among the most expensive places to live in Canada;
- Almost half of the adults in Fort Good Hope hunt or fish;
- Over one-third of the population consumes country foods as part of their diet;
- Housing shortage, crowding and affordability is recognized as major issues in the community;
- Crime rates in the community are double the NWT average; and
- The community has seen increases in alcohol related social and health issues.

3.0 RESOURCE USE

The Ramparts River and Wetlands (RRW) has historically been an important harvesting area for the Fort Good Hope Dene and Métis, as well as other Sahtu communities. For generations it has been used for trapping, hunting and fishing by Sahtu communities. In more recent years; however, Fort Good Hope community members have predominantly used the RRW for resource use activities (Manuel 2009). In addition to the above, participation in resource use activities also has cultural importance. Participation in such activities ensures people are connected to the land, fosters community connectivity and cohesiveness, and reaffirms their cultural identity and connection with their ancestors (PACTeam Canada Inc. 2007). The cultural significance of the RRW to Fort Good Hope can be found in section 4.4 of this report. From an economic perspective, access to resources in the RRW is also important since country food assists in offsetting the high-costs associated with store-bought food.

A Renewable Resources Assessment was conducted in August 2006 for the RRW (see EBA Engineering Consultants Ltd. 2006 for a detailed discussion on resource use). The following section provides a high-level overview of traditional resource harvesting activities (i.e., fishing and hunting) and non-traditional resource harvesting activities (i.e., commercial and industrial development – trapping, oil and gas) that were discussed in the Renewable Resources Assessment. The focus of this section is on determining the economic value of resource harvesting activities in the study area. All data used to determine the economic value of resource harvesting activities were derived from the Renewable Resources Assessment, which obtained the raw data from the Sahtu Settlement Harvest Study from 1998 to 2003. For this report it is important to note that the study area is defined as the RRW and adjacent Sahtu properties to the north and south of the RRW (approximately 18, 379km^2) (Appendix 1). These adjacent areas were identified as important resource harvesting areas in the Renewable Resources Assessment.

3.1 TRADITIONAL RESOURCE USE

3.1.1 Subsistence Fishing

Historically, Sahtu Dene, Métis and Mountain Dene harvested fish from the study area for subsistence purposes (EBA Engineering Consultants Ltd. 2006). In recent years, the area was fished almost exclusively by residents of Fort Good Hope (Manuel 2009). The areas frequented mostly for fishing include the Ramparts Wetlands and along the Mackenzie River (EBA Engineering Consultants Ltd. 2006; Appendix 2). During the winter months, net fishing takes place through the ice and in the spring and summer months fishing occurs along rivers and streams. "Eighteen fish species are known to exist within the study area" (EBA Engineering Consultants Ltd. 2006). The most common fish species harvested by residents of Fort Good Hope from 1998 to 2003 were broad whitefish, inconnu, lake whitefish, cisco, northern pike and burbot (EBA Engineering Consultants Ltd. 2006). In recent years, there has been a decline in the number of fish harvested, especially in 2003 with almost 6000 fewer fish harvested than in the previous year; however, the number of fishers has increased from 1998 to 2003 as illustrated in the table below.

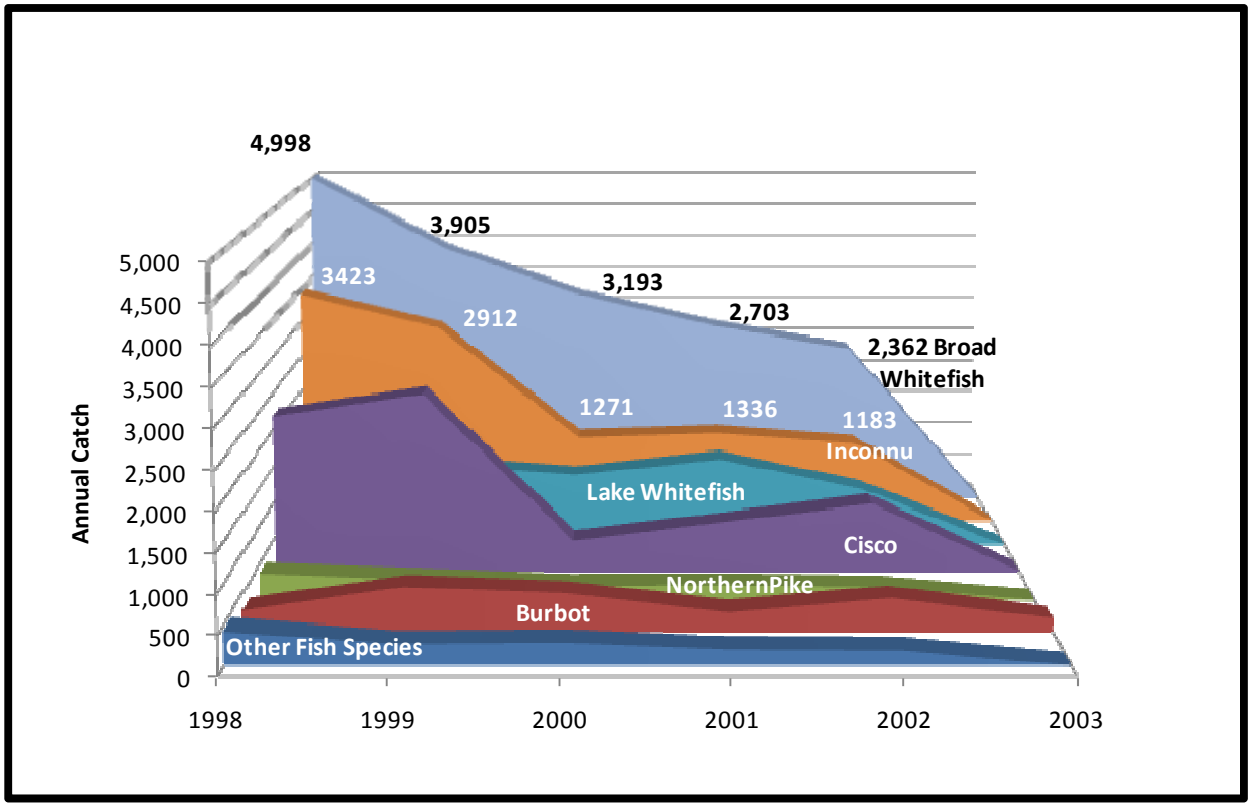
Table 3.1
Number of Fish Harvested by Eligible Harvesters in Fort Good Hope from 1998-2003

	1998	1999	2000	2001	2002	2003	Average
Number of Eligible Harvesters	812	839	844	850	870	885	850
Number of Fish Harvested	12762	11632	6939	6674	6149	170	7387

Source: EBA Engineering Consultants Ltd. 2006.
1. The number of fish harvested by resident of Fort Good Hope may or may not have been from the study area.

Figure 3.1 reveals the fish species harvested by residents of Fort Good Hope from 1998 to 2003. The data shows that there has been a steady decline in the number of fish harvested by Fort Good Hope residents, with broad whitefish and inconnu being the predominant species harvested over the six years.

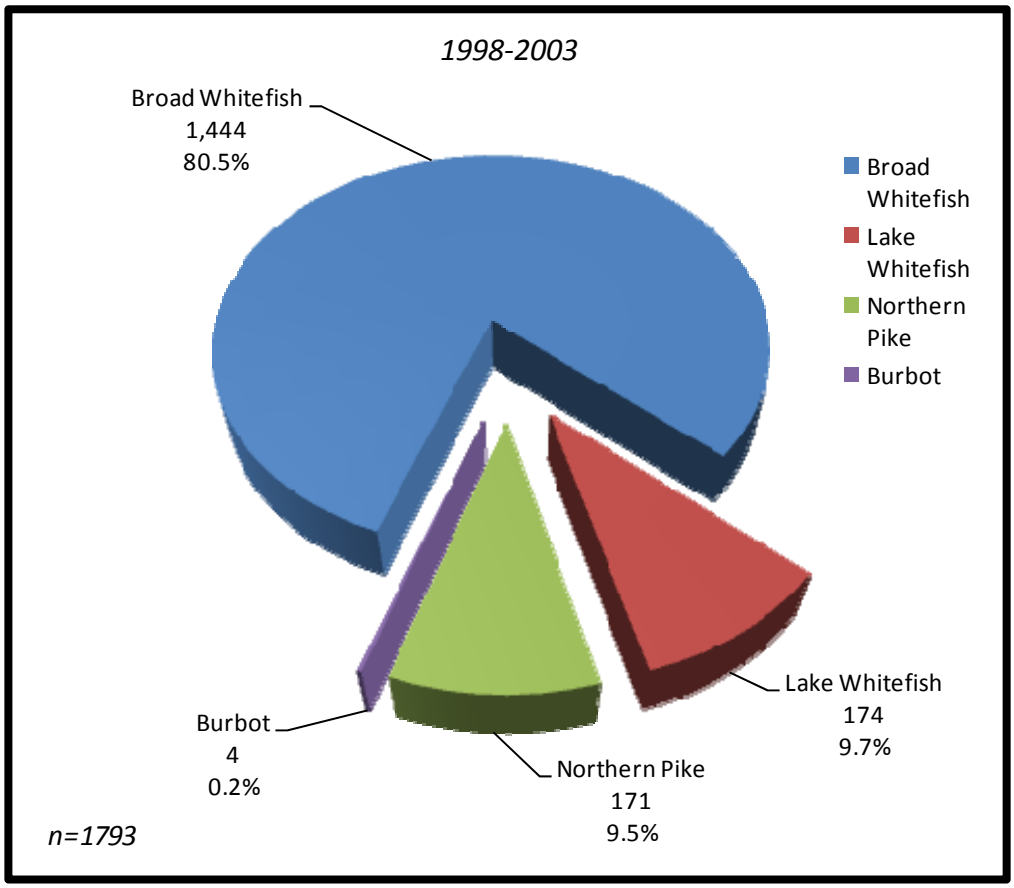
Figure 3.1
Fish Harvested by Species by Fort Good Hope Residents – 1998-2003



Source: EBA Engineering Consultants Ltd. 2006.

For the study area specifically, approximately 1,444 broad whitefish, 174 lake whitefish, 171 northern pike and 4 burbot were harvested (see Figure 3.2). Approximately 80 per cent of the total harvest was derived from broad whitefish in the study area, and the remaining 20 per cent of the harvest was derived from northern pike and lake whitefish.

Figure 3.2
Fish Harvested by Species in the Study Area – 1998-2003



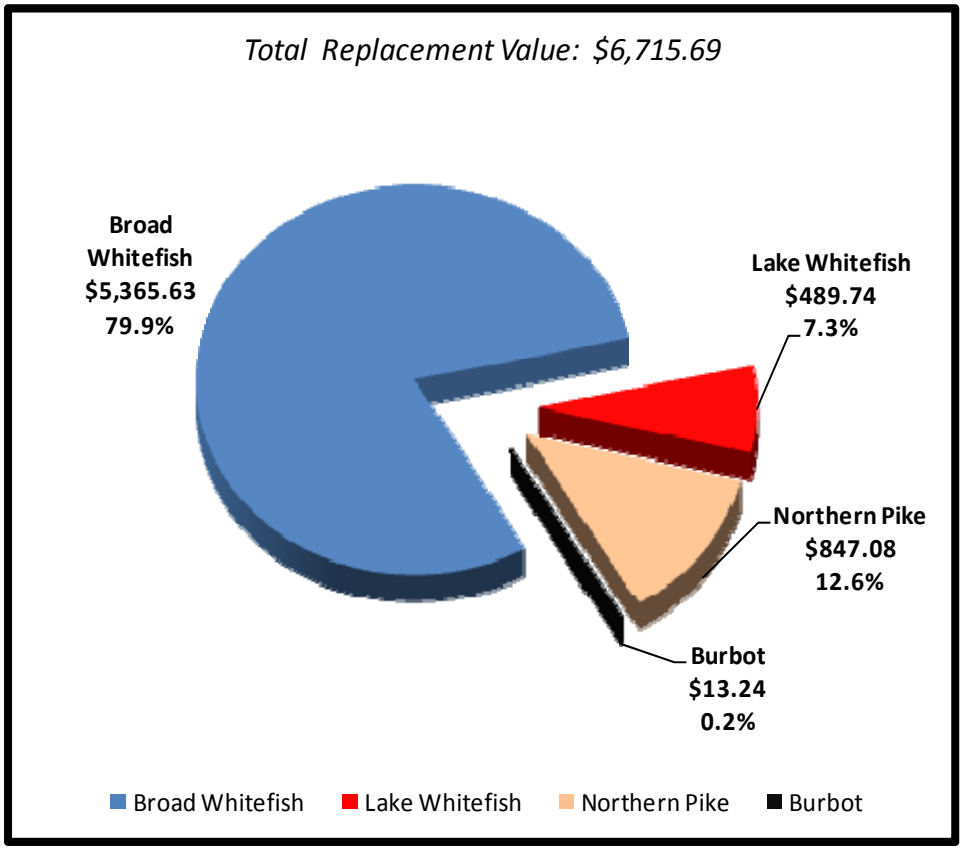
Source: EBA Engineering Consultants Ltd. 2006.

3.1.2 Estimated Economic Value of Fish Harvested in the Study Area

To estimate the economic value of fish harvested in the study area, a replacement/substitute value approach was employed since fish consumed for subsistence purposes are not sold in a market. This was achieved by creating a cash equivalent value for the harvest of fish. Frozen salmon that could be purchased at a local grocery store in Fort Good Hope was the substitute food product used for the analysis. This value was derived from the Renewable Resources Assessment (2006), and the price of the substitute good was adjusted to account for inflation. The variables used to derive the economic value of fish harvested were: number of fish harvested from 1998-2003, average number fish harvested each year, edible weight per individual fish, total edible weight harvested each year, and the price of the replacement/substitute good (EBA Engineering Consultants Ltd. 2006).

Figure 3.3 presents the gross average annual economic value of fish harvested for subsistence purposes. Production costs associated with the harvest were not factored into the analysis. The economic value of fish harvested from the study area is estimated at $6,715.69 annually. The Figure also identifies the economic value contributed by each species of fish. Approximately 80 per cent of the economic value was derived from broad whitefish and 12 per cent from northern pike. The remaining 8 per cent of the total economic value was derived from lake whitefish and burbot.

Figure 3.3
Economic Value of Fish Harvested in the Study Area



Source: EBA Engineering Consultants Ltd. 2006.

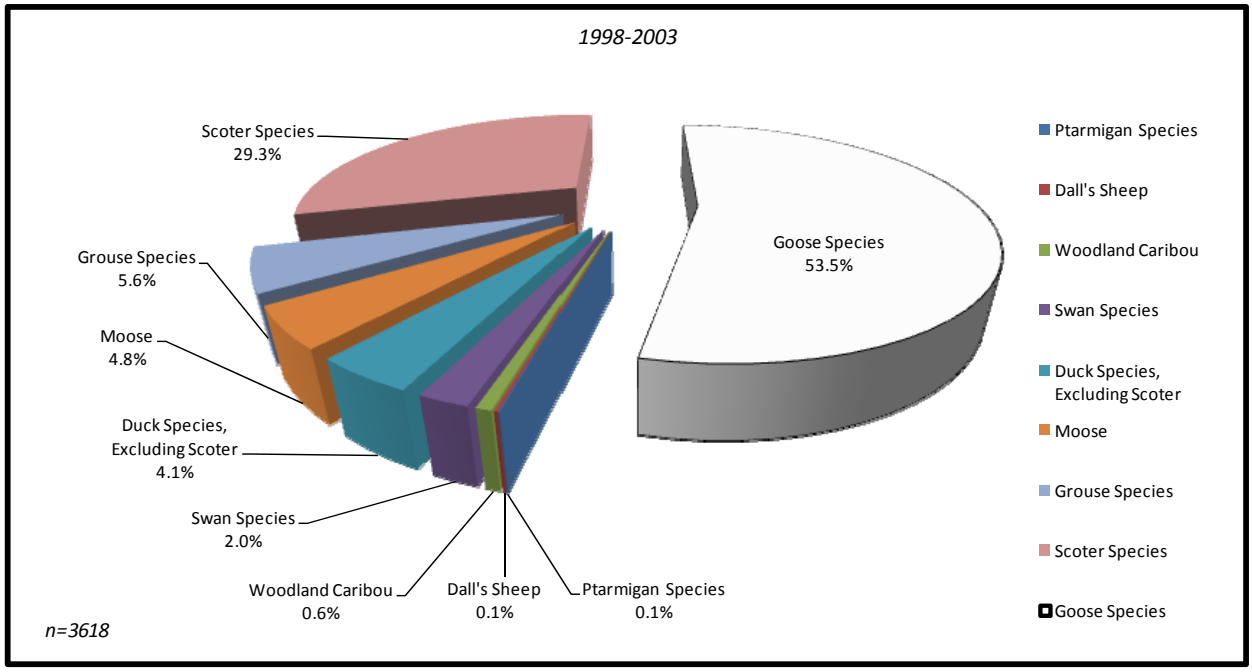
3.1.3 Subsistence Hunting

The RRW is important habitat for moose, woodland caribou, dall sheep, fur-bearers (e.g., beaver and muskrat) and waterfowl although limited data exists on species populations and specific species distributions within the study area (Manuel 2009; EBA Engineering Consultants Ltd. 2006). Due to the abundance of animals, the Ramparts, Hume and Mountain rivers were important travel routes for Sahtu communities to wildlife sites, and harvest camps could be found along these important routes, especially during the winter months (Appendix 3; EBA Engineering Consultants Ltd. 2006). Spring hunting camps were also erected along the Ramparts River to hunt woodland caribou, moose, fish, waterfowl, beaver and muskrat (EBA Engineering Consultants Ltd. 2006). Today, subsistence harvesting in the RRW is still important to the residents of Fort Good Hope from both a subsistence and cultural perspective. "It is

assumed that the number of big game harvested by non-Aboriginal residents within the study area is low" (EBA Engineering Consultants Ltd. 2006).

Data was collected by the Sahtu Renewable Resource Board regarding the number of big and small game harvested in the study area between 1998-2003. Approximately 83 per cent of the total number of big and small game harvested between 1998-2003 were goose (N=1934) and scoter species (N=1061), as indicated in Figure 3.4.

Figure 3.4
Big and Small Game Harvested in the Study Area – 1998-2003



Source: EBA Engineering Consultants Ltd. 2006.

3.1.4 Estimated Economic Value of Big and Small Game Harvested in the Study Area

Similar to the subsistence harvest of fish, a replacement/substitute value approach was used to estimate the economic value of harvested big and small game, since meat consumed for subsistence purposes is not sold in a market. This was achieved by creating a cash equivalent value for the harvest of animals for subsistence purposes. Frozen beef and chicken purchased at a grocery store in Fort Good Hope were used as the substitute goods. These values were derived from the Renewable Resources Assessment, and the prices of the substitute goods (i.e., chicken and beef) were adjusted to account for inflation.

Table 3.2 reveals that the gross annual replacement cost of wildlife harvested in the study area at $78,583.32. The majority of the value was derived from moose (i.e., 84% of the total annual value). In 2003, it was estimated that 35.7 houses in Fort Good Hope reported consuming country food (EBA Engineering Consultants Ltd. 2006). If the 35.7 households obtained food exclusively from the study area, each household would save an average of $2201 each year.

Table 3.2
Edible Weights and Replacement Cost of Big and Small Game Harvested from Study Area

Wildlife Species	Number harvested from 1998-2003	Average number harvested each year	Edible weight per individual (kg)	Total edible weight harvested each year (kg)	Estimated meat replacement cost per animal	Total average meat replacement value of wildlife harvested each year
Woodland Caribou	22	3.67	50	183.5	$12.62	$2,315.77
Moose	175	29.17	180	5250.6	$12.62	$66,262.57
Dall Sheep	5	0.83	32	26.56	$12.62	$335.19
Goose Species	1934	322.23	1.6	515.57	$13.51	$6,965.35
Duck species, excluding scoter	147	24.5	0.77	18.87	$13.51	$254.93
Scoter species	1061	176.83	0.65	114.94	$13.51	$1,552.84
Swan species	71	11.83	4.75	56.19	$13.51	$759.13
Grouse species	201	33.5	0.3	10.05	$13.51	$135.78
Ptarmigan Species	2	0.33	0.4	0.13	$13.51	$1.76
Total annual replacement cost of wildlife harvested from the study area						**$78,583.32**

Source: EBA Engineering Consultants Ltd. 2006.

3.1.5 Plant Harvesting and Berry Collection

The Cultural Evaluation determined that medicinal plant collection took place throughout the entire RRW, although specific sites were not known. According to the Cultural Evaluation and confirmed by an interview carried out for this study, the most common plants collected in the area were rat root, cedars, special rocks, willows, birch and spruce (Manuel 2009). The interview with a community member revealed how various plants are used. This information paralleled what was revealed in the Cultural Evaluation. Due to uncertainty regarding the quantities of plants harvested an estimate of the economic value of the resource could not be made; however, an excerpt from the Cultural Evaluation is provided below to describe how various plants are used (PACTeam Canada Inc. 2007):

- Willow is used for diarrhoea and stomach aches;
- Spruce branches and spruce bark are boiled and the juice used for coughing and breathing problems;

- Spruce gum is used for cuts. The spruce gum is packed into a cut and left there for a number of days until it begins to fall off – approximately 5 days. At the end of this period, the cut will be completely healed;

- Birch bark, the inside brown bark, is boiled and is good for people who are coughing and spitting blood. It is also good for the stomach and for heartburn; and

- The inside brown parts of birch bark and willows can be eaten. This was especially valuable in times of famine or when one was lost in the bush.

Regarding berry picking, historically it took place along watercourses and near wetlands, summer camps and cabins (EBA Engineering Consultants Ltd. 2006). Today; however, most berry picking takes place near the community of Fort Good Hope and not in the study area (EBA Engineering Consultants Ltd. 2006). Due to information regarding volumes of berry harvested not being available, a monetary value for this resource could not be determined.

3.1.6 Tree Harvesting - Construction Materials

Timber harvesting occurs near the community of Fort Good Hope that supplies the community sawmill. The sawmill cuts random length lumber that is used for the construction of sheds, garages, warehouses, and to repair houses in the community and cabins in the RRW (Manuel 2009). Due to the volume of timber harvested not known, the economic value of timber harvested for construction purposes could not be determined.

3.1.7 Tree Harvesting - Fuel Wood

Trees are harvested by Fort Good Hope community members for firewood (Manuel 2009). Known firewood sites are immediately outside of the community; however, an assumption can be made that anyone who camps or travels in the RRW harvests firewood also. The Renewable Resource Assessment (2006) concluded that the estimated replacement value of firewood harvested from the study area was approximately $1,400. In 2008 dollars, that would be an estimated $1,519.00.

3.1.8 Travel Routes and Trails/Cabins/Camps

Travel routes, camps and cabins are indicators of land use and occupancy of an area and connection to an area. Within the RRW, there has historically been an extensive trail network throughout the area used by the Dene and Métis (Manuel 2009). Mapping undertaken for the Cultural Evaluation showed that the wetlands were a well-travelled area (PACTeam Canada Inc. 2007). Trails from the wetlands historically led to trails that would take people to the Arctic Red River and through to the Yukon (PACTeam Canada Inc., 2007). In the past, Dene and Métis originally travelled by foot, dog team and canoe. Following contact with non-Aboriginals, motor boats, snow machines and planes became the primary modes of travel (PACTeam Canada Inc. 2007).

Cabins and camps were often found close to travels routes, trapping areas and close to water and food sources and some are still used today in the RRW (PACTeam Canada Inc. 2007). Many families would

travel together in small groups and the cabins acted as centres for families (PACTeam Canada Inc. 2007). Men would "venture from their cabins on short hunting trips travelling on foot, by dog team, canoe and in more recent years by skidoo and even plane" (PACTeam Canada Inc. 2007). In addition to cabins, the Cultural Evaluation also provided some perspective on the use of camps in the RRW. "In earlier times (in some cases no more than 20 years) when people lived permanently on the land, they moved frequently; cabins were not always worth building. Instead people would erect temporary camps and live in tents" (PACTeam Canada Inc. 2007). Through the mapping exercise for the Cultural Evaluation interviewees reiterated that "the entire [RRW] map should be marked [with overnight sights] because at one point in time the Dene and Métis have slept over the entire land" (PACTeam Canada Inc. 2007).

3.2 COMMERCIAL RESOURCE USE

3.2.1 Commercial Forestry

Commercial forestry has not taken place historically in the RRW (Manuel 2009), and commercial forestry is considered to have limited economic value in the area if developed. Due to a lack of infrastructure (mill facility and roads to transport wood products), limited wood volumes and slow growing tree species, it has been determined that commercial forestry in the area would not likely be profitable (EBA Engineering Consultants Ltd. 2006).

3.2.2 Potable Water

No communities draw potable water from the study area (EBA Engineering Consultants Ltd. 2006). Fort Good Hope draws its water from the Mackenzie River to fill water reservoirs. The community of Fort Good Hope withdraws approximately 18,000 cubic meters of water from the Mackenzie River each year (EBA Engineering Consultants Ltd. 2006).

3.2.3 Trapping

Trapping has historically been an important activity for the Sahtu Dene and Métis and Mountain Dene (EBA Engineering Consultants Ltd. 2006). A variety of wildlife species have been trapped in the area such as hare, beaver and muskrat for both subsistence purposes as well as to be traded and sold (Appendix 4). From 2000 to 2005, an average of 37.5 Fort Good Hope community members were involved in trapping (EBA Engineering Consultants Ltd. 2006). According to the Sahtu Renewable Resource Board (2002), for the furbearers harvested by residents of Fort Good Hope, hare species (N=7126) was the most commonly harvested fur-bearer species, followed by marten (N=4029) and muskrat (N=1411) (see Table 3.3).

For the study area exclusively, approximately 43.3% of the total fur bearers harvested were marten (N=944); beaver accounted for 42.8% (N=933) of the total harvest. Black bear and snowshoe hare were also harvested from the study area for the remaining 13.9% of the harvest (See Table 3.3 below).

Table 3.3
Number of Fur-Bearer Species Harvested by Residents of
Fort Good Hope Between 1998-2003

Common Name	Number of fur-bearers harvested from the study area (1998-2003)	Number of fur-bearers harvested by residents of Fort Good Hope - 1998-2003
Marten	944	4029
Beaver	933	1241
Muskrat	None Known	1411
Mink	None Known	35
Weasel	None Known	4
Hare Species	285	7126
Wolverine	None Known	24
Fox Species	None Known	65
Wolf	None Known	21
Lynx	None Known	6
Black Bear	19	36
Grizzly Bear	None Known	1

Source: EBA Engineering Consultants Ltd. 2006.

3.2.4 Economic Value of Trapping in the Study Area

The following section discusses the economic value of animals harvested for trapping purposes in the study area. Due to the known prices for pelts sold by Fort Good Hope community members and the quantity of animals trapped in the study area, the economic value of trapping could be determined. Estimated price pelts were derived from the Renewable Resources Assessment (2006) and were adjusted to take inflation into account. Table 3.4 presents the gross economic value of trapped fur bearers within the study area from 1998-2003. It was estimated that the value of the trapping harvest was $91,896.36 in 2008 dollars from 1998 to 2003. Annually, the harvest is estimated at $15,316.06. The majority of the value was derived from marten (73%) due to the large number marten harvested in comparison to other animals trapped and the value of pelts relative to the other animals.

Table 3.4
Economic Value of Trapped Fur-bearers in the Study Area from 1998-2003

Species	Number of fur-bearers harvested from study area	Average selling price from 2000-2005 for a single pelt	Estimated economic value of trapped fur-bearers within study area
Marten	944	71.33	$67,335.52
Beaver	933	23.14	$21,589.62
Snowshoe hare	285	n/a	
Black Bear	19	156.38	$2,971.22
Total	2181		$91,896.36

Source: EBA Engineering Consultants Ltd. 2006.

3.2.5 Commercial Fishing and Sport Fishing

No commercial or sport fishing has taken place in RRW historically (Manuel 2009). The Renewable Resources Assessment (2006) determined that adequate fishing lakes in the study area are rare with low fish abundance and slow fish growth and, therefore, are not suitable as a commercial fishery or suitable for outfitted sport-fishing operations. Furthermore, the world-class fishing destination at Great Bear Lake, known for its trophy sized lake trout and grayling (Canadian Fishing Online.net 2007) is in close proximity to the study area and already meets the demands of the sport-fishing industry therefore limiting the ability to establish a fishing destination in the study area in the future.

3.2.6 Outfitting and Recreational Hunting

Two outfitting zones are located in the study area (Arctic Red River (G/OT/01) and Gayna River (S/OT/01). All non-resident hunters within the Mackenzie Mountains, which includes the two zones in the study area, must use an outfitter and must be accompanied by a guide at all times (EBA Engineering Consultants Ltd. 2006). Big game species harvested by non-resident hunters includes: dall sheep (males), woodland caribou (both sexes), moose (both sexes), wolf (both sexes), wolverine (both sexes), and black bear (only adults not accompanied by a cub) (EBA Engineering Consultants Ltd. 2006). Woodland caribou, dall sheep and wolf are the three big game species most sought after by non-residents hunters (EBA Engineering Consultants Ltd. 2006).

The number of animals harvested from the outfitting zones in the study area is unknown, so a determination of the economic value of the outfitted harvest could not be determined. However, some general comments regarding the contribution of outfitting to local economies in Canada can be provided. For example, as cited in the Renewable Resources Assessment (2006), Larter and Allaire (2005) determined that the outfitted hunt in the Mackenzie Mountains was estimated at $1.8 million annually. The study determined that the outfitted hunting industry in NWT provided employment for approximately 100-120 individuals in various occupations, and meat from the harvested animals was often provide to communities members which offsets the high cost of store-bought food. Larter and Allaire (2005) noted

that in 2004, approximately 4,575 kg of wild meat was distributed to local communities, which was expected to cost approximately $91,500 to purchase from retail outlets.

Ashley (2000) conducted a study of the barren-ground caribou outfitting industry in the North and South Slave regions of NWT to estimate the benefits of the industry to the NWT. The study determined that the contribution to NWT gross domestic product of barren-ground caribou outfitting was estimated at $3.13 million in 1999. He estimated that approximately 100 – 179 seasonal jobs were created by the industry and 880 person-weeks of employment was created. In total, the NWT economic impact of each non-resident barren ground caribou hunter was estimated to be $5,300, and each caribou allocated to outfitting was estimated to have an NWT economic impact of $3,400.

InterGroup Consultants (2008) conducted a study of the economic value of the estimated harvest of the Beverly and Qamanirjuaq caribou herds, which included determining the value of harvesting caribou from the two herds for the outfitting industry. The study concluded that for 1090 animals harvested for outfitting, the economic value was estimated at $4.1 million dollars.

Overall, all studies conducted on the economic value of outfitted hunts determined that spin-off effects created by the industry provides substantial economic benefits to the regions that outfitters operate in and the surrounding area. Outfitting opportunities for Fort Good Hope community members might be one area to consider if the protected area becomes designated and allows such activities.

3.2.7 Eco-Tourism

To date, there has been very little tourism in the study area (EBA Engineering Consultants Ltd. 2006; Manuel 2009). However, tourism in general is very important to the NWT economy. For example, in 2002/2003, tourism was the third largest export behind mining and petroleum (GNWT Industry, Tourism and Investment 2007). Adventure tourism has been a growing tourist market in NWT and is the fastest growing tourism market today. Adventure tourism is characterized as outdoor leisure activity in exotic locations (e.g., white water rafting, sightseeing, wildlife viewing, experiencing aboriginal cultures, and wildlife photography). There may be some eco-tourism (adventure tourism) opportunities to explore if the RRW was designated a protected area. The cultural importance of the area, abundant wildlife and its proximity to Fort Good Hope could be marketed as an eco-tourism destination. However, limited access to the community and study area as a result of no road access during the summer months and high transportation costs could prove to be very challenging.

3.2.8 Non-Renewable Resource Assessment – Minerals

A non-renewable resource assessment was conducted for the RRW in 2008 (Mills 2008). According to Mills (2008), the majority of the RRW "lies within the Interior Platform geological province, an area of undeformed Phanerozoic aged sedimentary rock, comprising Cambrian to Cretaceous sandstone, shale, limestone and dolostone" (Mills 2008:1). The bedrock directly underlying the RRW is dominantly Cretaceous shale and sandstone, while the Mackenzie Mountains consist of Cretaceous folds and faults that have resulted in rocks as old as Neoproterozoic to the surface (Mills 2008).

The study concluded that there has been very limited mineral exploration activity in the area, and that the majority of the exploration work was conducted at the headwaters of the Gayna and Arctic Red Rivers by exploration companies just outside of the RRW (Mills 2008). No government geochemical surveys have been completed in the study area (Mills 2008). It is felt that "the remoteness of the area and a lack of favorable geology in existing regional-scale maps have dissuaded exploration of the area" (Mills 2008:1).

Mills (2008) reviewed the mineral potential for each mineral deposit in the RRW. The study concluded that the deposit type considered to have the highest potential in the RRW was Mississippi Valley-Type Zn-Pb deposits (MVT Zn-Pb), with moderate potential in the southernmost part of the RRW in the Mackenzie Mountains (Mills 2008). Unfortunately, insufficient information was available to determine the monetary values of these mineral resources.

3.2.9 Non-Renewable Resource Assessment – Petroleum

A non-renewable resource assessment was conducted for the RRW in 2007 (Gal 2007). As alluded to in the previous section, the majority of the RRW lies within the Interior Platform geological province (Mills, 2008:1).

Gal (2007) assessment of oil and gas potential in the RRW considered 20 oil exploration wells within the RRW boundaries (drilled between 1944 and 1991) and 44 other wells outside of the RRW boundary (i.e., study area – area that includes the RRW and surrounding area – see Gal 2008). Historically, "Aboriginal peoples made use of oil seeps in the Mackenzie Valley well before the first commercial discovery of oil in 1920 at Norman Wells" (Gal 2007). "The busiest period in exploration across the study was in the 1960s and 1970s when about 70 per cent of the 44 wells drilled in the study area were completed" (Gal 2007:9). The most recent exploration of the area has been by Chevron Canada Resources Ltd. in the early 1990s, with five wells drilled between the Ramparts and Mountain rivers (Gal 2007).

Currently, there is one active Exploration Licence (EL) within the study area – EL 415 (in the west-northwest, issued in 2001 and expires in 2009) held by Hunt Oil Co. of Canada (Gal 2007). Gal (2007) concluded that the study area is favourable for petroleum potential. Peel Plain and Plateau, Central Grandview Hills, west-central part of study area and the lowlands between Chick Lake and Mackenzie River were identified as high petroleum potential areas (Gal 2007). Northeast margin of Peel Plain and western Grandview Hills, area south of Fort Good Hope and the Lower Mountain River area were identified as having moderate to high petroleum potential (Gal 2007). Northeast of the Mackenzie River, north of Fort Good Hope, east side of Beavertail, east Mountain, imperial anticline structures, Carcajou anticline, imperial syncline and the front margin of Mackenzie Mountains were identified as having moderate petroleum potential (Gal 2007). Other areas in the study area were also identified as having low to moderate petroleum potential.

No quantitative estimates of petroleum were available for the study area, so a monetary estimate of petroleum potential could not be determined.

3.2.10 Hydroelectric Power

Hydroelectric potential in the RRW has not been explored to date. We can assume that the remoteness of the area and low market demand are key factors in why this resource has not been examined (EBA Consulting Engineers Ltd. 2006). However, small micro-hydro facilities can be cost-effective sources of energy to remote communities. Ah-You and Leng (1999) note that in the Yukon small hydro accounts for a large portion of the electric capacity and produce electricity more cheaply than diesel generators. It is estimated that communities in the NWT that use hydroelectricity have 300-500% lower electrical costs than communities using fuel generation. As noted in the NWT Energy Strategy, the NWT has more than 11,500 megawatts of hydroelectric potential, of which less than 0.5% is being used – efforts are being made to capitalize on such opportunities (GNWT Industry, Tourism and Investment 2009).

For the RRW, flow data was not available for the Ontaratue and Hume Rivers. The data of the hydropower potential of the Mountain River was available. It was estimated that the Mountain River could supply a yearly average of 966kW of power, which could potentially power 96 homes (yearly average) (EBA Engineering Consultants Ltd. 2006). It was estimated that the Ramparts River could provide power to an estimated 32 homes (yearly average) (EBA Engineering Consultants Ltd. 2006).

While the demand for power is currently low in the RRW, the community of Fort Good Hope could capitalize on micro-hydro opportunities in the RRW to reduce their demand on diesel generation. It is estimated that the cost of diesel generation is between $0.30 per kW - $2.00 kW, while electricity costs for communities served by hydropower ranges between $0.10 per kW - $0.20 per kW. This could result in a substantial savings for the community of Fort Good Hope in the long-term if it could reduce its dependence on diesel. Furthermore, if industrial developments in the area increased that resulted in work camps, such developments could also capitalize on the hydroelectric power potential located in the RRW.

3.3 RESOURCE USE SECTION SUMMARY

In summary, the following highlights key points from the resource use section:

- The RRW has historically been an important harvesting area for the Fort Good Hope Dene and Métis;
- While the number of eligible fishers has remained consistent, the total number of fish harvested from 1998-2003 has decreased;
- Approximately 80 per cent of all fish harvested in the RRW from 1998-2003 were broad whitefish;
- The economic value of fish harvested from the study area is estimated at $6,715 annually;
- Approximately 83 per cent of the total number of big and small game harvested in the study area between 1998-2003 were goose and scoter species;

- The replacement cost of wildlife harvested in the study area is valued at $78,583.32 annually;
- Hare species were the most commonly trapped fur-bearers, followed by marten and muskrat from 1998-2003;
- The estimated value of the trapping harvest from 1998-2003 was $91,896; and
- More information is needed on the economics of mineral and petroleum potential in the RRW.

4.0 NATURAL AND CULTURAL CAPITAL – NATURAL CAPITAL ASSESSMENT

The following section discusses natural and cultural capital as it relates to the RRW. A high-level overview of a Natural Capital Assessment (NCA) framework is provided to understand the concepts of natural and cultural capital, as well as to provide insight into implementing such a framework for phase 2 of the socio-economic assessment to determine the total value of cultural and natural capital and associated ecosystem goods and services in the RRW. The framework was adopted from Mark Anielski and Sara Wilson, who authored "Counting Canada's Natural Capital: Assessing the Real Value of Canada's Boreal Ecosystems (2005)" and "The Real Wealth of the Mackenzie Region: Assessing the Natural Capital Values of a Northern Boreal Ecosystem (2007)", as well as borrows from the "Millennium Ecosystem Assessment (2003)" by the United Nations. In addition to the above, a qualitative description of natural capital (i.e., regulating and supporting services) and cultural capital in the RRW are provided. The cultural importance of the RRW to the community of Fort Good Hope is described in the cultural capital section.

4.1 WHAT IS NATURAL CAPITAL?

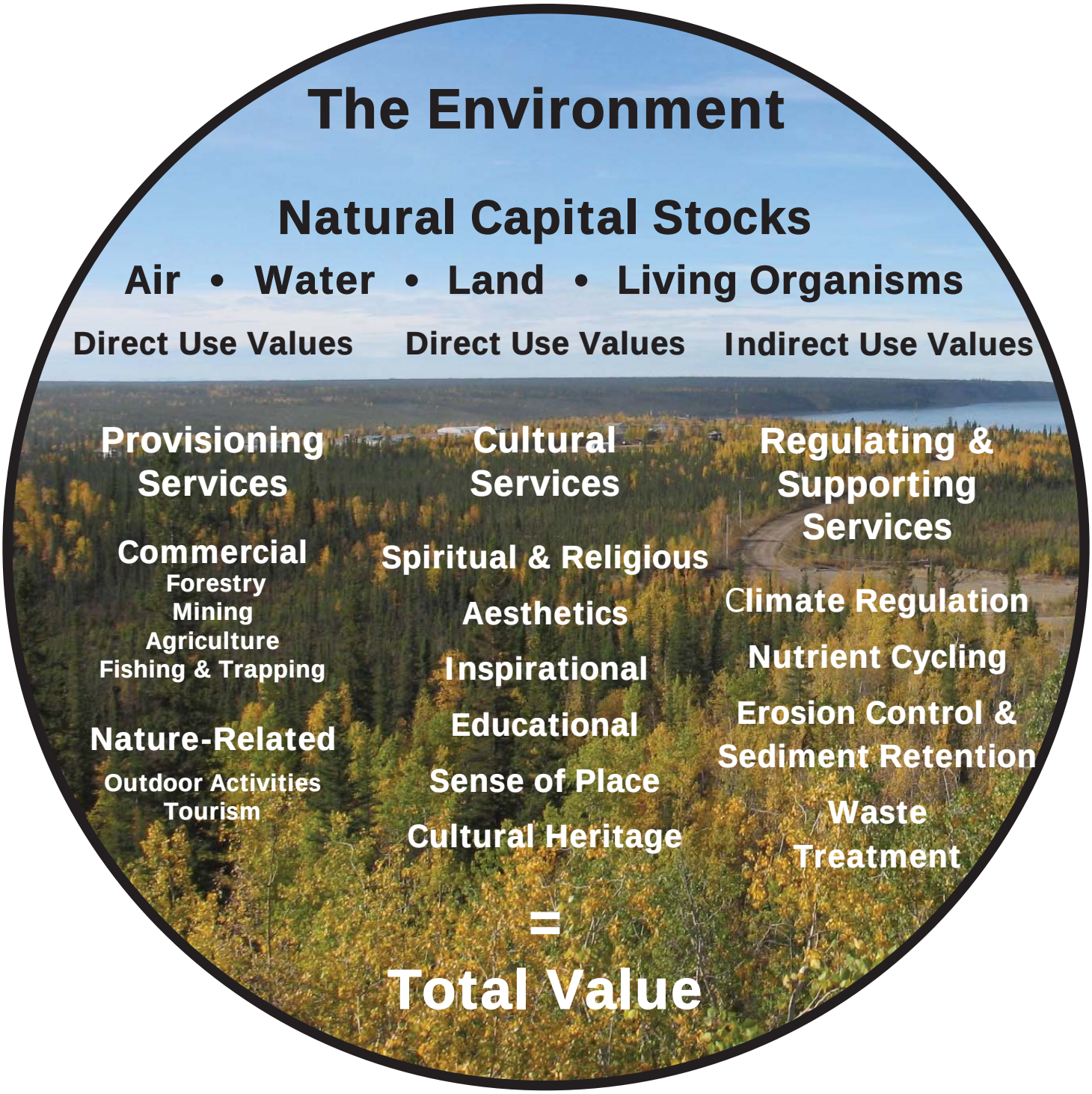
Natural capital is the natural environment from which emanates the goods and services that sustain life (Voora and Venema 2008). For example, forests not only provide products for the forestry sector once harvested, forests provide valuable ecosystem goods and services (e.g., regulating and supporting services) such as preventing erosion, providing flood control and providing habitat for a diversity of plant and animal species. Since these services from ecosystems require that they function as whole systems, the structure and diversity of the ecosystems are important components of natural capital.

To date; however, economic growth measures have not traditionally captured the health of our natural environments from which natural resources are extracted. This is because the measure of economic well-being (i.e., GDP) counts natural resource depletion as a contribution to economic prosperity (Coleman 2000). It is only when attempting to determine the total economic value of the many goods and services provided by the environment that we realize the importance of the services and values derived from intact ecosystems other than solely for market purposes.

4.2 NATURAL CAPITAL ASSESSMENT

The NCA framework is a means to identify, quantify and value the total economic value of the environment and its natural resources, leading to more informed decision-making (Voora and Venema 2008). The concept was popularized in the 1990s with the ultimate objective being to ensure that natural capital was considered within economic systems when measuring the growth of economies. Below is a schematic that provides a framework to determine the total value of natural capital in the RRW for phase 2 of the socio-economic assessment. The schematic broadens the focus from total economic value to total value. This is to allow for the consideration of values that cannot be monetized such as cultural values, but are imperative to understanding the total value of an environment and its resources.

Figure 4.1
Natural Capital Assessment Framework



Source: Adapted from Anielski and Wilson 2005 and 2007; Millennium Ecosystem Assessment 2003.

There are two types of values that need to be considered in order to determine the total value of an area. First, direct use values need to be considered. "Direct use values/benefits are derived from the use of natural resources/environment as materials, energy or space for input into human activities" (Anielski and Wilson 2005). For example, harvesting trees for the forestry industry is an example of a direct use value. Some direct use values are also non-economic in that they provide benefits for which there is no associated transaction in the marketplace such as the aesthetic appreciation of the environment and the importance of the environment as it relates to culture and spirituality (Smith 2006).

In order to understand total value one also has to consider indirect use benefits. These are benefits associated with the human use of services provided by ecosystems (i.e., regulating and supporting services). They are not derived from the use of the ecosystems themselves, but rather from the passive use of services that ecosystems render free of charge (e.g., clean air and water). A description of natural capital (i.e., regulatory and supporting services) for the RRW is provided in Table 4.4.

Looking at direct and indirect use values, we can further breakdown ecosystem services by grouping them into three categories: provisioning services/goods (products obtained from ecosystems), regulating/supporting services (benefits obtained from the regulation of ecosystem processes and services necessary for the production of all other ecosystem services) and cultural services (non-material benefits obtained from ecosystems) (Millennium Ecosystem Assessment 2003). The table below provides examples of various products and services derived from ecosystems.

Table 4.1
Products and Services from Ecosystems

Direct Use Values **Provisioning Services (Products obtained from ecosystems)**	**Indirect Use Values** **Regulating/Supporting Services (Benefits obtained from regulation of ecosystems processes and services necessary for the production of all other ecosystem services)**	**Direct Use Values** **Cultural Services (Nonmaterial benefits obtained from ecosystems)**
• Commercial forestry • Domestic resource use • Sport fishing and hunting	• Habitat • Climate regulation • Disease regulation • Water regulation • Water purification • Pollination	• Spiritual and religious • Aesthetic • Inspirational • Educational • Sense of place • Cultural heritage

Source: Adapted from Anielski and Wilson 2005.

It is important to recognize that the above ecosystem services flow for the existence of natural capital stocks (i.e., no natural capital stocks, no services/goods can be provided). It is also necessary to realize that some of the services in the above table can be monetized using the NAC framework since they are exchanged in a market (i.e., harvesting trees for the forestry industry), while other services are not exchanged in a market and other means are necessary to try to determine their economic value (i.e., regulating and supporting services). Monetizing regulating and supporting ecosystem services is very difficult and is still in its infancy (Anielski and Wilson 2005). Cultural services obtained from ecosystems are difficult to monetize since you cannot put a dollar amount on, for example, someone's cultural and spiritual relationship with an area. A description of cultural capital (i.e., cultural services) and natural capital (i.e., regulating and supporting services) is provided later in this section to develop a better understanding of the importance of these two services provided by ecosystems.

4.2.1 Accounting Framework

Using the NCA, an accounting framework needs to be established in order to undertake the assessment. For industrial and commercial activities, Anielski and Wilson (2007) estimated the GDP per hectare of land allocated to forestry, oil and gas, mining and agriculture sectors (Table 4.2). "This yielded estimates of GDP values per hectare of land under various commercial natural capital uses" (Anielski and Wilson 2007). Once the resource potential of the area is known (see Non-renewable Resource Assessments), the values in table 4.2 could be used to estimate the economic value of the area for various resource activities. Information from the resource use section could also be used to determine the economic value of trapping, fishing and hunting.

Table 4.2
GDP Values for Various Sectors in the Mackenzie Watershed

Resource Activities	GDP market value, $/ha, 2005
Forestry	$200
Mining, Oil and Gas	$821
Agriculture (crops and animal production)	$255

Source: Anielski and Wilson 2007.

To determine the economic value of ecosystem goods and services (non-market values), Anielski and Wilson (2007) evaluated 17 ecosystem functions for various lands types (some of which are relevant to the RRW) (Table 4.3). Information from the Ecological Assessment (2007) undertaken for the RRW would be the primary source of information to determine the economic value of ecosystem goods and services because it provides information on different land types in the RRW. Once land types have been identified in the Ecological Assessment (2007) for the RRW, Table 4.3 could be used to estimate the economic value of the ecosystem goods and services associated with each land type.

Table 4.3
Ecosystem Service Product Value Estimates

Source of analysis	Barren Land (Tundra/ Permafrost)	Burns	Cropland	Deciduous Broadleaf, temperate forest	Evergreen Needleleaf, temperate forest	Grass / rangelands	Mixedwood	Mosaic Land (cropland + native)	Snow & Ice	Transition Treed Shrubland (Closed and	Urban & Built-up	Wetlands & Peatlands	bodies (lakes and rivers)
Ecosystem Service Functions													
1. Atmospheric regulation	$ -	$ -		$ -	$ -	$10.55	$ -	5.28		$ -	$ -	$ -	$ -
2. Climate regulation	$3,946.15	$308.05		$616.11	$616.11	$ -	$616.11	-		$308.05	$277.25	$3,946.15	$ -
3. Disturbance avoidance	$ -	$ -		$ -	$ -	$ -	$ -	-		$ -	$ -	$ -	$ -
4. Water stabilization and regulation	$ -	$ -		$ -	$ -	$4.52	$ -	2.26		$ -	$738.85	$ -	$8,209.43
5. Water supply		$0.06		$0.11	$0.11	$ -	$0.11	-		$0.06	$287.31	$555.00	$3,191.80
6. Erosion control and sediment retention		$ -		$ -	$ -	$43.72	$ -	21.86		$ -	$ -	$ -	$ -
7. Soil formation	$ -	$ -		$ -	$ -	$1.51	$ -	0.75		$ -	$ -	$ -	$ -
8. Nutrient cycling	$ -	$ -		$ -	$ -	$ -	$ -	-		$ -	$ -	$ -	$ -
9. Waste treatment	$ -	$ -		$ -	$ -	$131.17	$ -	65.59		$ -	$90.24	$ -	$1,002.62
10. Pollination	$ -	$ -	$31.82	$ -	$ -	$37.69	$ -	34.76		$ -	$11.46	$ -	$ -
11. Biological control	$ -	$12.98	$54.56	$25.97	$25.97	$34.68	$25.97	44.62		$12.98	$31.33	$ -	$ -
12. Habitat/Refugia		$0.32		$0.63	$0.63	$ -	$0.63	-		$0.32	$0.28	$335.03	$ -
13. Food production		$1.27		$2.55	$2.55	$101.02	$2.55	50.51		$1.27	$6.71	$75.01	$61.82
14. Raw materials		$ -		$ -	$ -	$ -	$ -	-		$ -	$ -	$23.34	$ -
15. Genetic resources		$ -		$ -	$ -	$ -	$ -	-		$ -	$ -	$356.70	$ -
Total per ha $/ha/yr	**$3,946.15**	**$322.68**	**$86.38**	**$645.37**	**$645.37**	**$364.86**	**$645.37**	**225.63**	$ -	**$322.68**	**$1,443.43**	**$5,291.23**	**$12,465.67**

Source: Anielski and Wilson 2007.

Using the economic values from the above two tables allows one to complete a NCA for the RRW. The NCA will be a useful tool for the PAS Working Group to consider the economic values associated with the ecosystem goods and services of the RRW as opposed to the commercial/industrial development potential of the area. However, when determining the total value of the area, one must also consider those values that cannot be monetized such as cultural values associated with the area. These values are equally important in the NCA as those that can be monetized. The ensuing paragraphs discuss natural capital in the RRW and the cultural importance of the area to Fort Good Hope (i.e., cultural capital).

4.2.2 Natural Capital – Regulating and supporting services

Table 4.4 provides information on regulating and supporting ecosystem services exclusively. The regulating and supporting services were adapted from Anielski and Wilson (2007) who have determined the regulating and supporting services from the boreal forest. Since the RRW is in a northern boreal environment, the ecosystem goods and services derived from Anielski and Wilson (2007) are appropriate. Overall, the expansive wetlands in the area and the northern boreal forest ecosystem provides extensive caribon storage and water filteration capacity, as well as provides habitat for big and small game and is critical migratory bird habitat. According to the Ecological Assessment (2007), "the RRW supports over 1% of the national populations of a number of migratory bird populations including scaup, scoter, and pacific loons". The NCA undertaken as part of phase 2 will be able to monetize some of the regulating and supporting ecosystem services of the RRW.

Table 4.4
Ecosystem Services and Functions

Ecosystem Goods and Services	Description
Atmospheric Regulation	Regulation of atmospheric chemical composition
Climate Regulation	Regulation of global temperature, precipitation, and other biologically mediated climatic processes at global or local levels
Disturbance Regulation	Integrity of ecosystem responses to environmental fluctuations
Water Regulation	Regulation of hydrological flows
Water Supply	Storage and retention of water
Erosion Control and Sediment Retention	Retention of soil within an ecosystem
Soil Formation	Soil formation processes
Nutrient Cycling	Storage, internal cycling processing and acquisition of nutrients
Waste Treatment	Recovery of mobile nutrients and removal or breakdown of excess nutrients and compounds
Pollination	Movement of floral pollinators
Biological Control	Trophic dynamic regulation of populations
Habitat/Refugia	Habitat for residents and transient populations
Food Production	The portion of gross primary production extractable as food
Raw Materials	That portion of gross primary production extractable as raw materials
Genetic Resources	Sources of unique biological materials and products

Source: Adapted from Anielski and Wilson 2007.

4.2.3 Cultural Capital

As indicated previously, it is not feasible to monetize cultural values, but it is critical to understand these values to determine the total value of the RRW. Therefore, a qualitative description of the cultural importance of the RRW is provided as it relates to Fort Good Hope.

Describing the status of culture for a region requires understanding several factors, which ultimately results in the way people of that region do things and the way they think. Culture entails understanding the values, beliefs, perceptions, principles, traditions and world views held by a group of people. Indicators of culture include:

- Language;
- Traditional knowledge;

- Cultural practices;
- Health and wellness;
- World view;
- Kinship;
- Leisure;
- Law and order; and
- Cultural products.

This section summarizes each of these indicators by first providing a brief description of the indicator and then providing a summary on the indicator specific to the RRW and Fort Good Hope. The information used for the description of cultural values was derived from previous studies and publications made available through the NWT- Protected Area Strategy Working Group representatives. As such, often information is available for the Sahtu region, but not always specific to Fort Good Hope and the RRW. Wherever possible, RRW specific information is provided.

Language is the ability to speak the language of one's people and plays an important role in preserving the cultural identity of future generations (Sahtu Dene Council 2008). This is especially true for regions, such as Ramparts, where cultural heritage and knowledge are passed on through oral traditions. "Unlike southern societies where knowledge is archived in books and libraries, and taught in classrooms and lecture halls, Sahtu Dene and Métis traditional knowledge is passed from generation to generation through an oral tradition, and through an individual's own experience in a socio-environmental setting" (Andrews 2000). The telling of stories contains the knowledge necessary for living as a Sahtu Dene or Métis in the Ramparts Region.

In Fort Good Hope and the Sahtu Region as a whole, the traditional Dene language is known as North Slavey, a member of the Athapaskan language family. An ethnographic account on world languages provides the following information about the Mackenzie River language (Gordon 2005):

- The North Slavey language has also been referred to as Slavi, Dene, Mackenzian, "Slave", Hare, Bearlake, Mountain and is distinct from South Slavey;
- There are several dialects of the Slavey language and Fort Good Hope appears to have been linked with the "Hare" dialect of North Slavey;
- Across the Mackenzie region there are about 1,600 people still part of this ethnic language category and are located in the Sahtu communities (Deline, Fort Good Hope, Tulita, Colville Lake, Norman Wells), Yellowknife, the Mackenzie Mountains, Great Bear Lake and along the Middle Mackenzie River at Fort Norman; and

- It was felt that only about four or five communities maintained vigorous use of the North Slavey language.

An important note about the value of the North Slavey language is in the use of slavey names for places or geographic markers identified in the Cultural Evaluation (PACTeam Canada Inc. 2007). Many of the Slavey place names in the Ramparts Region are very descriptive to their heritage, cultural and historic connection to the people. The use of North Slavey in identifying these cultural landscape markers speaks to the importance of oral history and how the environment is interconnected with the cultural fabric of the region:

> *Place names are vessels that hold within them significant cultural and historic information related to that place and are part of the cultural fabric of the Dene and Métis whose ancestors originally named these places (page 71).*

As is the case across the globe, the loss of first language continues to be a growing reality for the Dene people of Fort Good Hope (and throughout the Sahtu region). As shown in the socio-economic baseline of this report in Table 2.5, the majority of the population in Fort Good Hope do not speak an Aboriginal language regularly. Approximately 30 per cent of Fort Good Hope identified their first language as Aboriginal. Conversely, 63 per cent of the Aboriginal population in Fort Good Hope identified English as their only language and less than 9 per cent identified an Aboriginal language as the one spoken most often at home.

Across the Sahtu region communities there has been concern about loss of their Aboriginal language, especially since the history of their Dene nation in the region exists as oral tradition (Sahtu Dene Council 2007-2008). Therefore, the *Sahtu Dene Council Aboriginal Language Initiative* has undertaken efforts to preserve and educate children in the Dene language of their ancestors. Activities in Fort Good Hope have included intergenerational gatherings, production of language resource materials and development of drumming, hand games and bush camp activities to promote the Dene language.

Traditional Knowledge is the observations, experiences and events passed down through generations to form the foundation for a way of understanding of the land, its resources and relationships between people and the environment. Traditional knowledge provides the basis for living from and surviving off the land. Considerable information is provided in publications leading up to and developed as part of the NWT-PAS process relaying traditional knowledge within the RRW (PACTeam Canada Inc. 2007; Andrews 2000). The evidence presented in these reports indicate the Ramparts region of the NWT has remained relatively untouched by western and commercial resource developments throughout history, and the people of Fort Good Hope place great value on knowing this land is available to them for their sustenance. The Cultural Evaluation provides several personal accounts of Fort Good Hope residents discussing various attributes of the region in terms of traditional knowledge:

> *Respect must be given to something that keeps your history, ancestors and essential resources safe and readily available...to an area and its resources that have provided food, clothing and shelter for the people that has sustained life for generations (page 67).*

In site descriptions for places recommended for protection in the 2000 Joint Working Group Study, the RRW is identified as a critical part of Fort Good Hopes ability to pass traditional knowledge down to future generations:

> *The Ramparts River...meandering through critical wetlands has been an important hunting, trapping, and fishing area for Fort Good Hope families for generations. Particularly important for hunting moose, beaver, and muskrats, the area is also known locally as a critical waterfowl-breeding site. It is also known as an excellent place to begin teaching young hunters the rules and behaviours necessary for a successful hunt... Though good fish lakes are rare in the wetlands, those that exist are important as subsistence fisheries (page 68).*

Traditional knowledge, especially for those connected to the RRW, remains a component of community life in Fort Good Hope due to the very nature of the land remaining relatively intact. There are families in Fort Good Hope continuing to occupy the land as a key part of their livelihood. In addition, the Cultural Evaluation refers to the magnitude of trails and knowledge documented through the mapping programs (PACTeam Canada Inc. 2007).

The RRW therefore has maintained itself as a cultural landscape with the resources and ecological components needed to pass traditional knowledge onto Fort Good Hope members. It is important that the RRW remains intact to provide comfort to the community as specifically stated in the Cultural Evaluation:

> *This area has the power to sustain the people through difficult winters and times of famine. It provides food, clothing, shelter, medicine and furs (page 65).*

This is evidence of relatively strong traditional knowledge resources available through the ecological landscape which could contribute to community life and quality of life in Fort Good Hope.

Cultural Practices are customary conventions that reinforce ones cultural identity. Cultural practices include traditions, ceremonies, ancient legends and special cultural sites of significance to a specific cultural group. Much of Fort Good Hope's cultural practices remain undocumented, existing only as an oral tradition. In general, the RRW is identified as home to historical cultural practices too vast to identify all of them (PACTeam Canada Inc. 2007). This component of the report provides a glimpse of cultural practices which connect Fort Good Hope to the RRW and includes examples of legends, trails, customs and gatherings of importance.

The names of places themselves indicate the legends, traditions, and places of special significance or cultural practices. The Ramparts is home to some of Fort Good Hope and Sahtu Regions' most sacred sites learned about through legends and oral traditions:

> *The mystical nature of stories from long ago, with their giants and talking animals, combined with the land's life-giving qualities and fond memories of happy times imbue it with a sense of power and sacredness (page 67).*

The Giant Legend and the Thunderbird Legend are examples of oral traditions passed down through generations with significant geographic markers in the Ramparts:

- The Giant Legend involves the adventures, trials and tribulations of a giant, giant beaver and a brave Dene man. The Dene man eventually drove the giant away through tricks and tactics, but not before the Giant had left his imprints on the land. Several sites of significance in the Ramparts remain from the Giant Legend including:
  - An island recognized as the giants boat turned over for safe keeping until his return;
  - The giant stones thrown at the giant beaver which are now known as the "Beaver Dam" with many rapids;
  - The place where the Giant took the bear (a den with rotted wood and twigs up on the west side of the Rampart cliffs);
  - The imprints in the Ramparts cliffs where the Giant rested from hunger leaving marks from his head on the East side and marks from his feet on the left side; and
  - The waterfall along the Mackenzie River which is known as The Giant's Pee.

- The Thunderbird Place is the legend of a thunderbird monster and a Dene Elder with powerful medicine who destroyed the thunderbird. It has been told that the thunderbird monster killed many who entered into the area located on a sharp bend in the Ramparts River. The elder destroyed the monster by using powerful medicine and throwing a rock into the water which rid the area of the dangerous creature. The whirlpools in the area are the place where the thunderbird monster lived. This is a place that will always be considered dangerous, and as is the case across the Sahtu region, locations where monsters once existed require special care when travelling and rituals and practices are observed when passing these locations (Andrews 2000:74).

Cultural practices are those things that tie a community to their ancient roots and traditions. The Ramparts travel routes, termed Dene Roads connected the Dene of Fort Good Hope to many different Aboriginal communities. The main route through to the Yukon remains culturally significant because many in Fort Good Hope are descendants of people from the Yukon. Although not used to the same extent today, this Dene Road to the Yukon was historically travelled to visit the extended families. Also, stories told by elders of elders before them indicate large gatherings once took place in the Mountains of the Ramparts where many different groups (including people from Gwitch'in, Mayo, Watson Lake, Dehcho, Fort Norman, Wrigley, Simpson and Fort Liard) met together in such large gatherings that many moose would be needed to feed the whole group. This speaks to the importance of customary practices of gathering together in times of harvest.

Still today, community members gather back at a central picnic area in the community of Fort Good Hope to celebrate and share in the harvest from The Ramparts. Current community cohesion exists through picnics where everyone gathers to share in harvests, drumming, cook-out, tea drinking, family games and socializing while the harvested meat is prepared and distributed (Manuel 2009).

Fort Good Hope has programs focused on the retention of cultural practices organized by The Sahtu Dene Council's Aboriginal Language Initiative. Traditional cultural practice programs include elders getting

together with the youth, drumming, hand games and bush camp activities as well as the Fort Good Hope Drummers still play traditional drumming at various gatherings (PACTeam Canada Inc. 2007).

Health and Wellness, as part of the cultural values of a community means physical, mental, spiritual and emotional aspects of health are taken into consideration. In Fort Good Hope, contemporary and traditional methods of addressing the health of a culture are practiced (through programming, activities, and medicine). Although little qualitative information is available regarding perspectives on the health and wellness of Fort Good Hope, some quantitative data is provided in the socio-economic baseline of this report (see Section 2.4.3). The statistical data available suggest some negative trends in health and wellness which are relatively consistent with trends felt across the nation in Aboriginal communities. To some extent, Fort Good Hope has experienced many of the same historical events that have been linked to deleterious effects on the well being of Aboriginals across the nation. Influences from the church, governments, residential schools, the European fur trade, technology (snow machines/motor boats) resulting in a more external locus of control, changes in diet and sedentary lifestyle are often reasons suggested linked to poor health (Imperial Oil Resources Venture Ltd. 2005; National Aboriginal Health Organization 2009).

When looking into methods of addressing health and wellness issues both traditional and contemporary methods are being used to heal people in Fort Good Hope. In communications regarding the overall health and wellbeing of the community with a Fort Good Hope resident the response was felt that in general, the health is good "but there are more problems than before" (Manuel 2009). It was felt the health problems occur because people are not taking advantage of the available healthy and traditional activities of their heritage and developing bad habits. Highlighted by this community member was the fact everything needed to attain good health was intact in the land surrounding Fort Good Hope. Also noted was the traditionally harvested meats, fish, berries and medicines historically attributed to good health in the region are still abundant and easy to access.

The abundance of medicinal plants is apparent in the Cultural Evaluation as those interviewed indicated the availability is at every lake, shoreline and camp and cannot be isolated on a map at one specific location. These traditional medicines have been identified as readily available and used by families in the communities as ways of healing ailments.

World View refers to the framework of ideas and beliefs through which an individual interprets the world and interacts with it. It is teachings, values, beliefs and perceptions of how all things are connected and influence the accepted way of life and decisions made within a community. Fort Good Hope sees the Ramparts area as a place to connect their people to the history of their ancestors, where resources for sustenance are safe and available and where sacred sites are respected. Because of this interconnection with the land the community sees the area as having a great power and is worthy of much respect which encompasses part of the Dene and Métis world view (PACTeam Canada Inc. 2007). Relationship to the land and respect for what the land and all living creatures provide is fundamental to the values of the people of Fort Good Hope. Repeatedly noted in the Cultural Evaluation documents is the notion that the ecological diversity of the RRW is of key value to the cultural fabric of Fort Good Hope.

Specifically outlined in the Cultural Evaluation for the management of the Ts'ude niline Tu'eyeta (page 106) are the following considerations regarding their world view:

- *It recognizes that people are a part of the landscape, in as much as parents and children are part of the same family;*
- *There is a relationship between all living things, thus the area and its resources should be managed as a whole system that includes Dene and Métis use and occupancy;*
- *The cultural values on the maps in this document are inter-linked and cannot be properly understood in isolation; and*
- *The landscape is dynamic, living and changing as it shapes and gives life to Dene and Métis culture.*

Another side to Fort Good Hope world view is connected to European contact since Fort Good Hope is the oldest permanent community in the lower Mackenzie River Valley. The Roman Catholic Mission played a major role in the community during these early years. Our Lady of Good Hope church was built in the late 1800's and declared a National Historic Site in 1977. The extent that the Catholic values and beliefs fit with the Dene world view held in Fort Good Hope is not discussed in published documents, however, the church stands as a monument to an interconnection between the mission and the Métis and Dene of the community.

Kinship is the social constructed relationships of a biological family and how such extended and nuclear families are connected. Kinship patterns relate to determining who should live together, who is head of household, who may marry whom, how mates are selected and by whom, which relatives are most important. Little information was available regarding kinship patterns for Fort Good Hope. However, the Ts'ude neline Tu'eyeta Candidate Protected Area Cultural Evaluation notes (page 86):

> *Cooperation between families and friends is necessary in obtaining resources. These actions build social ties and obligations that are important in maintaining community connectivity and cohesions (page 86).*

Historically, the Dene of Fort Good Hope originates as part of the northern Athapaskan tribal groups which camped and moved in extended family groupings throughout the Northwest Territories and across the Ramparts to the Yukon. Extended families have historically been very important and continue to be important to varying degrees in the community.

The Dene Roads, which are the numerous trails in the Ramparts region used by the community members of Fort Good Hope and their extended kin across the Sahtu Region, Northwest Territories and the Yukon tells a tale of kinship ties. Many of the residents of Fort Good Hope are descendants of and still have extended family residing in the Yukon. Evidence of the kinship ties is in one of the most well known trails across the Ramparts known as the Dene Road to the Yukon, still used to travel for visits to family.

Fort Good Hope is the oldest established permanent community along the Mackenzie River Basin, and as such has a tie to European contact as well, with a number of Métis originating from the community. The presence of the Fort Good Hope Métis Council and their involvement in the Sahtu Land Claims settlement speaks to the long standing Métis kinship connections held within the region.

Leisure relates to the activities that people do in their spare time. In early years, living off the land was a full-time experience of activities. Historically, in the summer and fall large gatherings took place to participate in harvesting activities (fishing, hunting, gathering berries) and often time was made for drumming and other ceremonies. Today, the picnic area in centre of town by the baseball field still acts as a gathering spot for community wide picnics (Manuel 2009). In recent years, leisure activities have changed with the times and include technology such as satellite TV and internet use. Other organized activities take place in the arena and baseball fields. Hockey and baseball are important among the youth of Fort Good Hope.

Law and Order refers to the customary law and protocols adhered to by community members to maintain community peace and to undertake conflict resolution. Very little information is available regarding traditional customary law and governance protocols. Currently, the community is organized as a Charter Community governed by a Chief/Mayor and Councillors through the K'asho Got'ine Charter Community Council. The Chief, under the Charter Communities Act, is appointment to head the municipal corporate body (Sahtu Health and Social Services Agency 2006). The Chief/Mayor role is supported by several councillors. Indian and Northern Affairs lists Fort Good Hope as having a custom electoral system (4 year terms) with one Chief, seven councillors and one sub-chief (INAC community profiles 2009).

Fort Good Hope is a member of the Sahtu Dene Council, a governing body established after the 1994 signing of the Sahtu Dene and Métis Land Claim Settlement Act. On whole, the Sahtu region is in negotiations with Canada for attaining self-governance rights. The Fort Good Hope Métis Council and Yamoga Land Corporation also play important governance and administration roles within the community.

Cultural Products are artifacts and practices that express the culture of a community. Many of these are functional products (e.g. basket weaving, snare/net making etc.). Other cultural practices are more activity based (e.g. dances, drumming, singing). Although limited information on cultural products as material items was available, an interesting perspective on cultural products as being the land itself was provided in Cultural Evaluation documents (PACTeam Canada Inc. 2007). This perspective identifies the whole region as an associative cultural landscape.

> *It is an expression of their identity as a people and is, in part, a narrative of the culture. Unlike other cultural landscapes that are designed and created intentionally by humans with an abundance of material culture, Ts'ude niline Tu'eyeta is a cultural landscape because of the cultural associations with the natural elements (page 41).*

Some of the stories included in the Ts'ude neline Tu'eyeta Candidate Protected Area Cultural Evaluation highlight cultural products that may be part of the Fort Good Hope culture. One such story is from the mountains that describes cultural products from the grizzly bear hunter including grizzly bear claws, nails etc – all used as decorations. This same story and others include the use of spears, ladders, construction

of stages, plates for helping in a hunt. A story about trails and travel routes talks of a man being buried with "all of his traditional tool" (p. 83). Photographs of Beaver Pelts and Drumming in the Cultural Evaluation also show that these cultural practices are still taking place within the area. Together this information indicates cultural products are directly linked to the Ramparts region and as part of traditional knowledge.

A brief discussion with a local community member (Manuel 2009) shows that cultural products, especially those providing functional purposes within the Ts'ude niline Tu'eyeta are still part of the culture for those who use the land in traditional ways. Specifically, those who go to their cabins in the winter can still repair or make snowshoes, snares, traps and those who bring their game back into the community still are able to prepare and use pelts and hides for important cultural products such as boots, mitts, vests, other garments and decorative purposes.

Again, it is evident that cultural products and practices are still available to be part of the lives of individuals in Fort Good Hope:

> *Fort Good Hope people identify themselves with living on the land, as their families have done for many generations. The ecological richness and close location of Ts'ude niline Tu'eyeta provides a buffer against the rapid social changes and consequent challenges imposed on the community in recent history. The maintenance of this area and its associated traditional practices is a tool for cultural survival both in the sense of resistance to, and resilience from, external social pressures (page 85).*

4.3 NATURAL CAPITAL AND CULTURAL CAPITAL SECTION SUMMARY

In summary, the following highlights key points from the natural capital and cultural capital section:

- A natural capital assessment framework was provided for phase 2 of the NWT-PAS;
- The traditional Dene language of North Slavey is not used as frequently as in the past in the community of Fort Good Hope;
- The RRW and the community of Fort Good Hope is rich with traditional knowledge that is important for sustaining their culture;
- Fort Good Hope sees the Ramparts area as a place to connect their people to the history of their ancestors, where resources for sustenance are safe and available and where sacred sites are respected; and
- Historically, the Dene of Fort Good Hope travelled in extended family groups throughout the RRW and Northwest Territories.

5.0 GAPS

This section identifies the data gaps in this report and highlights suggestions for additional information gathering, by topic, in Table 5.1. The table prioritizes each of the suggested additional components by a check mark in one of three columns labelled and defined as follows:

- **Low:** Not necessary for future studies related to NWT-PAS process;
- **Medium:** Would be helpful for the NWT-PAS process but not necessary; and
- **High:** Information was not available and is required in order to proceed with phase 2.

Table 5.1
Identifying Socio-Economic Gaps and Assessing Priority in Need for Primary Data Gathering

Socio-Economic Gaps	Priority for Future Research		
	Low	Medium	High
Verification of population trends especially regarding the negative growth rate:			
Identify other population counts available for Fort Good Hope (local government organizations, First Nations and Inuit Health Branch, Indian and Northern Affairs Canada)	√		
Gain community perspectives on population trends	√		
Details regarding characterization of Aboriginal identity and language:			
Work with Sahtu Secretariat to collect information on Slavey language education and use in community	√		
Gain community perspectives on Dene ethnicity and Slavey language use	√		
Community-based characterization data regarding the mobility of Fort Good Hope:			
Gain community perspectives on reasons for moving and returning to the community	√		
Contact local community social and education services for data related to change of address	√		
Community-based data regarding educational attainment and qualifications of individuals in Fort Good Hope:			
Obtain details regarding high school graduates from Chief T'selehye School	√		
Access Aurora College data regarding further quantifying skills and abilities of individuals in community and related employment opportunities being pursued	√		
Community-based economic data on labour force participation, income suitability and non-monetary cost of living data:			
Gain community perspectives on the labour force characteristics especially low labour force participation rate	√		
Obtain community-based employment data beyond standard occupational groups provided in statistics data (i.e. Human Resources office and social organizations data)	√		
Update information on income levels (currently only detailed for 2005).	√		
Gain community perspectives on cost of living	√		

Socio-Economic Gaps	Priority for Future Research		
	Low	Medium	High
Gain community perspectives on reliability and adequacy of the infrastructure and services available to the community	√		
Identify plans in community development plans for infrastructure	√		
Community-based information on community governance, health and wellbeing:			
Identify plans in Sahtu Self-Governance process as it relates to Fort Good Hope	√		
Update housing conditions for Fort Good Hope (last assessed in 2004)	√		
Community-data or perspectives from RCMP office regarding crime rates and proportion of crime rates associated with Fort Good Hope members only	√		
Update Well-Being Index (last published in 2001)	√		
Community-Based Resource Use Data:			
Determine the potential economic value of non-renewable resources in RRW (i.e. petroleum, minerals)			√
Update animal population and distribution data in RRW		√	
Update resource harvesting information and country foods usage. Study relied on data from Sahtu Settlement Harvest Study - 1998-2003		√	
Cultural Values Data:			
Gain community perspectives regarding the extent the community on whole participates, takes advantage of and benefits from attaining traditional knowledge available through the RRW.	√		
Community-Based Planning goals and objectives for phase 2 of this NWT-PAS strategy:			
Gain community perspectives on the social, economic and cultural conditions of the community and linkages to RRW (i.e. workshops, interviews or a community opinion survey)			√
Understand and document the community vision, goals and objectives and linkages to RRW to ensure the PAS process is consistent with the goals and objectives of the community.			√

The following provides suggestions to adequately address the information gaps identified as high priority in order to proceed with phase 2 of the NWT-PAS process. Three topics have been identified as gaps with high priority. The first involves placing an economic value on the non-renewable resources in the RRW. The second two are connected to understanding the linkages between the RRW and Fort Good Hope's social and economic conditions, as well as their goals and objectives in the future. In order to address the last two gaps the recommendation is to facilitate a community-based socio-economic and visioning workshop.

Determining the Potential Economic Value of Non-Renewable Resources in the RRW

Conduct an economic valuation and monetize the resources highlighted in the Ts'ude niline Tu'eyeta (Ramparts River and Wetlands) Candidate Protected Area Phase 1 Non-renewable Resource Assessments for minerals and for petroleum (Mills 2008 and Gal 2007). Alternatively, for rough estimates use the natural capital assessment framework from section 4.2.1 in this report.

Community-Based Socio-Economic and Visioning Workshop in Fort Good Hope

This workshop would entail gaining insight and perspectives from key community members and stakeholders in Fort Good Hope and the RRW regarding linkages to the RRW with the socio-economic conditions, future goals and plans of the community. A community facilitated visioning workshop is the recommended approach to address these gaps and would include:

1. Present community socio-economic profile and facilitate a workshop to gain community perspectives on:
    a. Social, economic and cultural conditions
    b. Linkage of socio-economic importance of the RRW

2. Identify community goals and objectives;

3. Determine how community goals and objectives mesh with the goals of designating the RRW as a National Wildlife Area; and

4. Determine how to capitalize on the opportunities associated with the designation.

6.0 CONCLUSIONS

This report provides the socio-economic baseline (phase one) upon which to assess the effects of designating the RRW as a protected area on the community Fort Good Hope (phase two). The information presented in the socio-economic characterization of Fort Good Hope painted a picture of the community and its people. The resource use patterns of the RRW were discussed in terms of their economic value and the natural and cultural capital of the RRW were discussed, especially in terms of the region's cultural value to the community of Fort Good Hope. A natural capital assessment framework was proposed for phase 2 to determine the economic value of ecosystems goods and services of the RRW in comparison to using the same area for commercial and industrial development. In summary, the following are key highlights from the report:

- The community of Fort Good Hope shares many of the same issues faced by First Nations across Canada. In most cases, indicators describing the levels of education, employment, income, health and social issues are below the national and territorial average;
- Housing conditions are poor, the building of new houses and major repairs of existing homes is constrained by the high cost and remote location;
- Economic opportunities and health and social services are limited;
- Fort Good Hope is one of the most expensive and remote places to live in Canada;
- The people of Fort Good Hope value the RRW because it provides an abundance of resources important to the Dene and Métis survival;
- The natural environment and resources available within the RRW have remained largely untouched by industrial development;
- The RRW provides a diversity of habitats for animals that facilitates hunting, fishing and trapping in the area.
- The replacement cost of wildlife harvested in the study area is valued at $78,583.32 annually; and
- The community sees their natural environment and undeveloped resources as valuable to maintaining their culture and traditional ways of life.

Finally, the gaps section of this report provided information needs as it relates to completing phase 2 of the socio-economic assessment.

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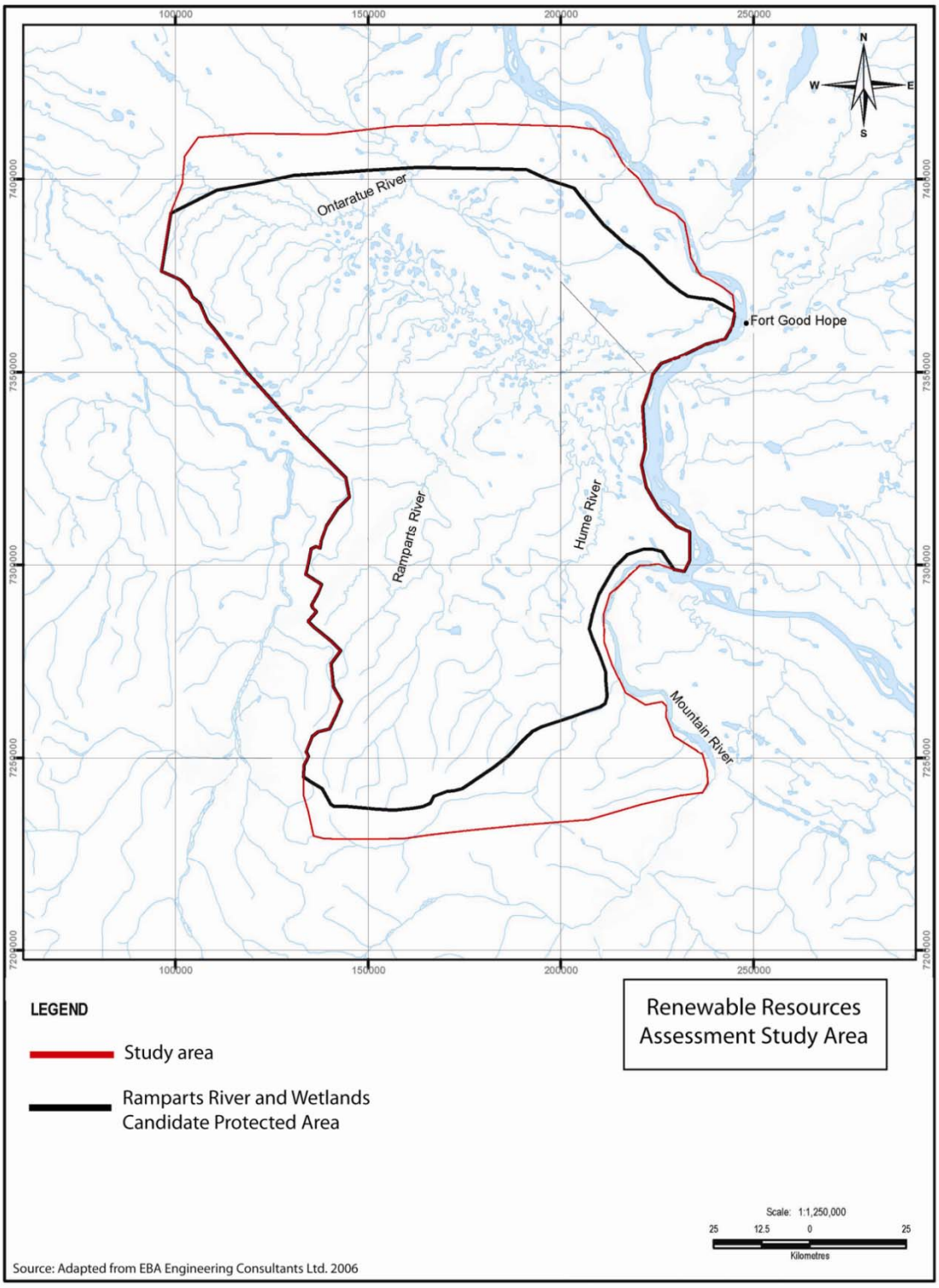
APPENDICES

APPENDIX 1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Mountain River
LEGEND
Study area
Ramparts River and Wetlands
Candidate Protected Area
Renewable Resources
Assessment Study Area
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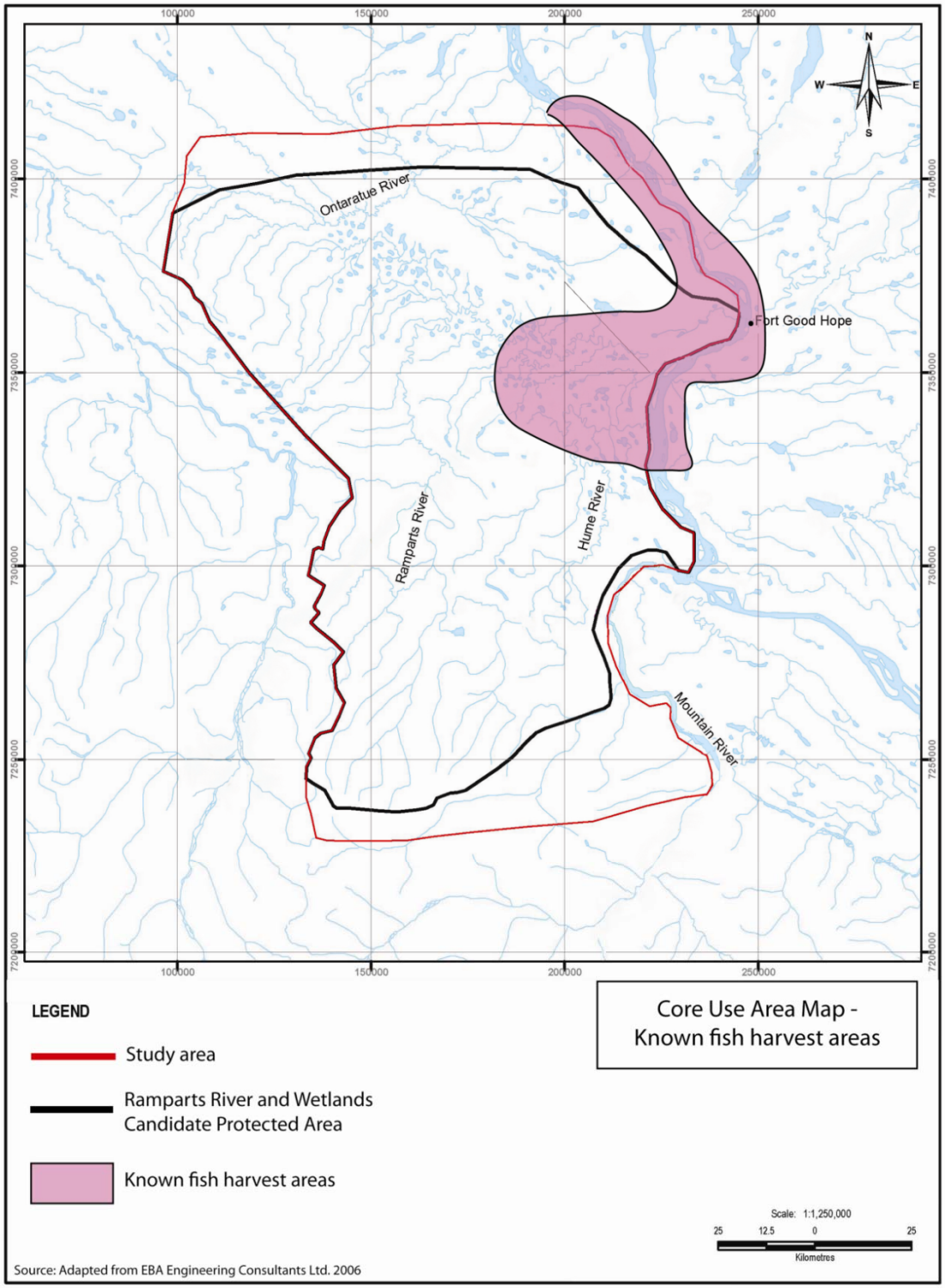
Kilometres
Source: Adapted from EBA Engineering Consultants Ltd. 2006

APPENDIX 2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Ontaratue River
Fort Good Hope
Ramparts River
Hume River
Mountain River
LEGEND
Study area
Ramparts River and Wetlands Candidate Protected Area
Known fish harvest areas
Core Use Area Map - Known fish harvest areas
Scale: 1:1,250,000
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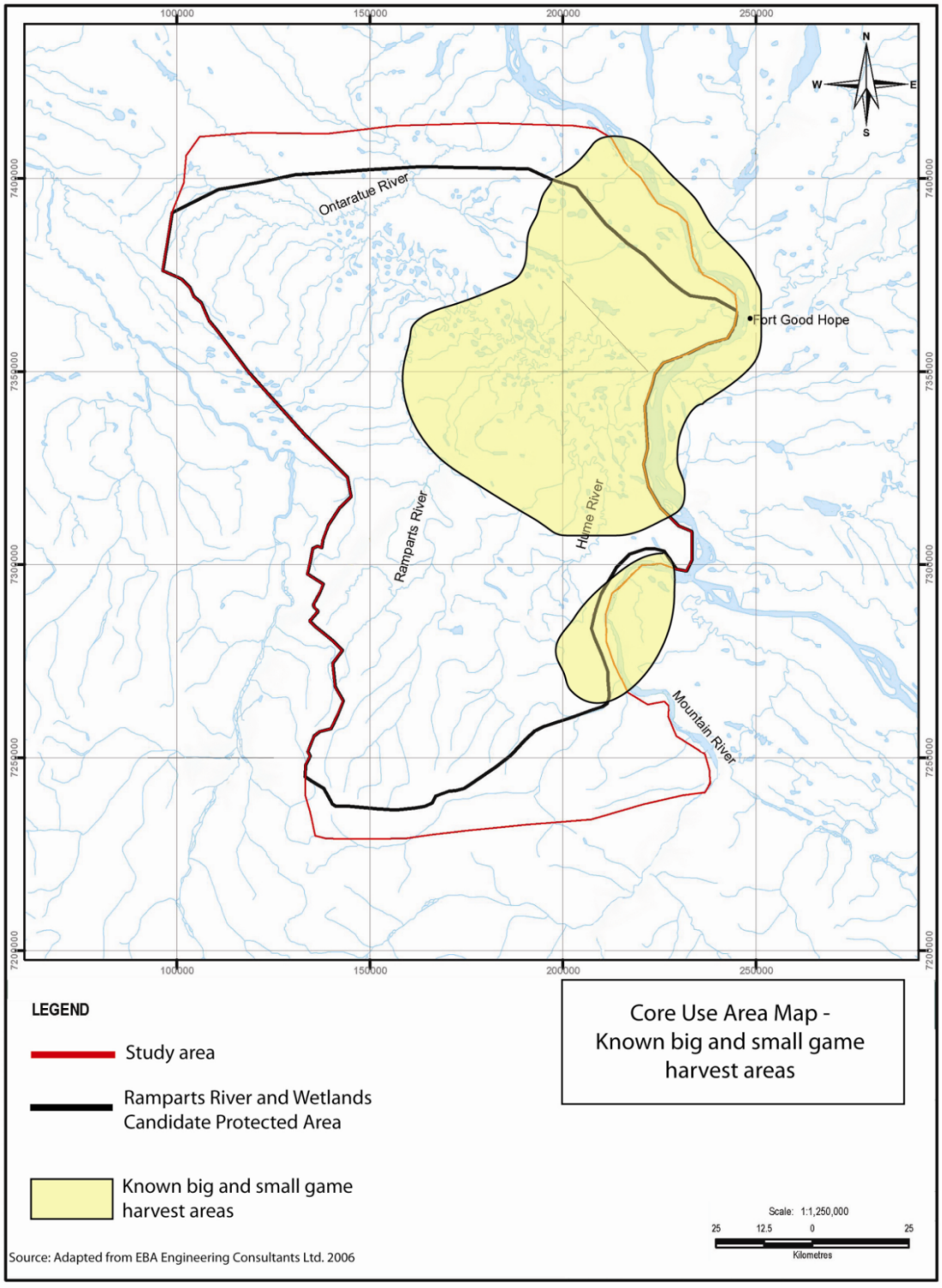
Kilometres
Source: Adapted from EBA Engineering Consultants Ltd. 2006

APPENDIX 3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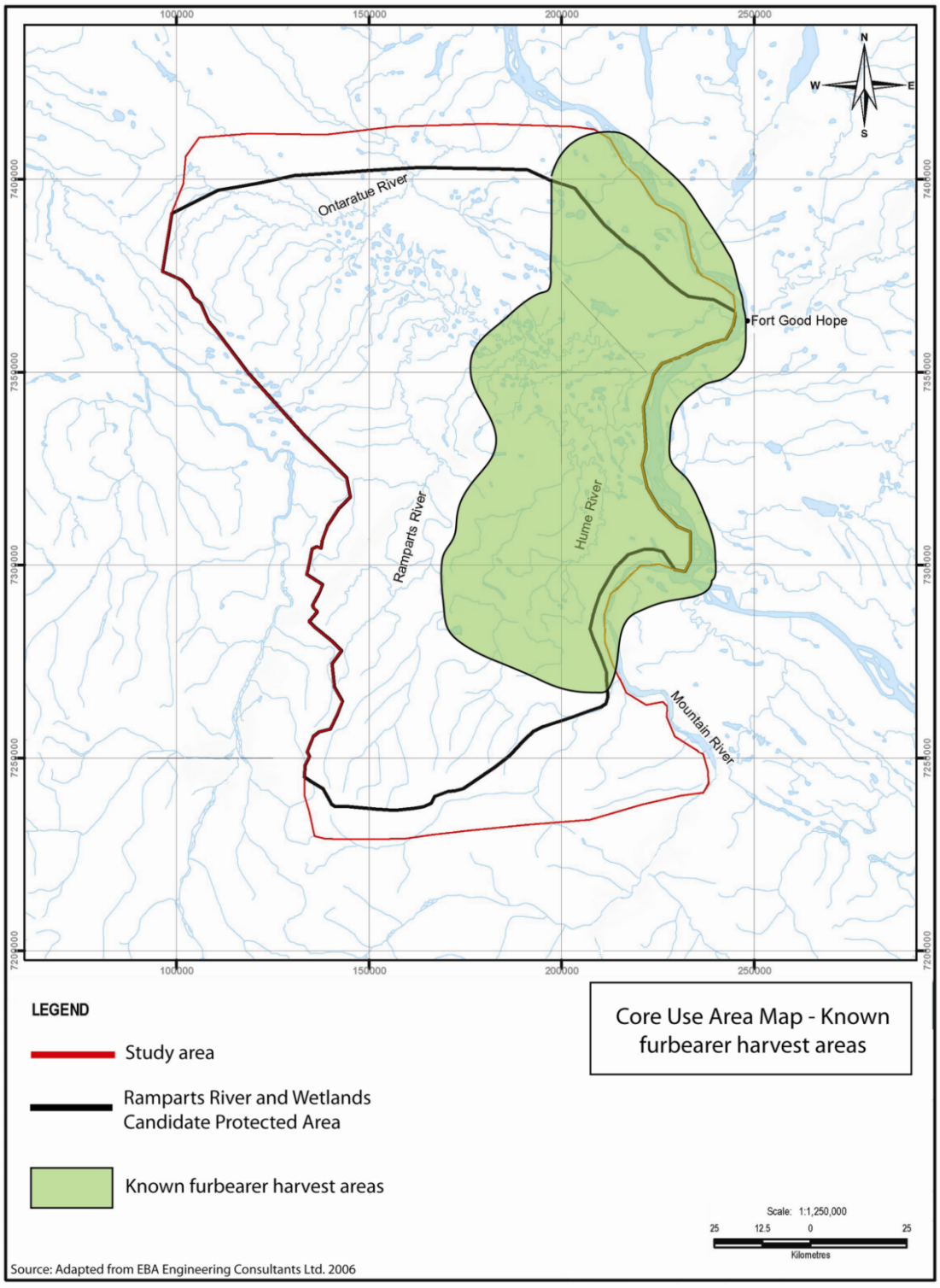
7200000
Ontaratue River
Fort Good Hope
Ramparts River
Hume River
Mountain River
LEGEND
Study area
Ramparts River and Wetlands Candidate Protected Area
Known big and small game harvest areas
Core Use Area Map - Known big and small game harvest areas
Scale: 1:1,250,000
25 12.5 0 25
Kilometres
Source: Adapted from EBA Engineering Consultants Ltd. 2006

APPENDIX 4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Ontaratue River
Fort Good Hope
Ramparts River
Hume River
Mountain River
LEGEND
Study area
Ramparts River and Wetlands Candidate Protected Area
Known furbearer harvest areas
Core Use Area Map - Known furbearer harvest areas
Scale: 1:1,250,000
25 12.5 0 25
Kilometres
Source: Adapted from EBA Engineering Consultants Ltd. 2006