

EXECUTIVE SUMMARY

As part of the process for establishing a protected area in the Northwest Territories (NWT), an assessment of the potential socio-economic effects of designating a protected area is required. The NWT is currently assessing whether it should protect all or parts of the Edézhíé Candidate Protected Area, an area of about 26,000 square kilometres in the Dehcho Region, and has commissioned this study to assess the potential social and economic impacts on the surrounding communities of Fort Simpson, Fort Providence, Wrigley, Jean Marie River, Whatí and Behchokò. This study is presented in two volumes. This volume, Volume 1, provides an overview of current socio economic conditions in the study area. Volume 2 describes the potential social and economic effects of four development options for Edézhíé, ranging from the status quo (no permanent protection for any of the area) to full protection of the entire area.

The Region, Its People and Economy

In 2006 the six communities in the region had a combined population of about 4,500 people, with Behchokò accounting for 42% of the total, followed by Fort Simpson (25%), Fort Providence (17%), Whatí (11%), Wrigley (4%) and Jean Marie River (1%). Since 1991 the population has been growing a rate of about 1% per year; in comparison, the population of the NWT has remained largely unchanged since 1996. The population of the region is relatively young, with 44% being under the age of 25; this is much higher than the territorial average of 36%. About 53% of the population is male and this imbalance is slightly higher than for the NWT (51%). The vast majority of the regional population is Aboriginal (87%) and this is much higher than for the NWT (50%). Only about 45% of the adult population (people aged 15 or greater) has completed their high school education and this is much lower than the territorial average (67%).

In terms of the regional economy, 68% of adult residents were active in the labour force in 2006, 21% were unemployed, 25% were employed in goods producing industries and 50% were employed in government, health, social services and education. By comparison, the labour force participation rate in the NWT was 77% and only 10% were unemployed. Within the NWT only 16% were employed in goods producing industries and 42% were employed in government, health, social services and education.

In 2005 households in the four largest communities in the region had an average income of \$62,000 and this was 35% less than the territorial average (\$96,200). At the same time, the cost of food in the regional communities was at least 25% higher than in Yellowknife and, on average, was about 40% higher. In 2004, 29% of regional households were in core need, which means that their incomes were not adequate to own or rent a home without government assistance. Within the NWT only 16% of households were in core need. In general, housing in the region is newer than in the NWT, but the percentage of households in need of major repair was higher in the region (29%) than in the NWT (17%). Crime is another indicator of community well-being and the rates of violent crime in the three larger regional communities were higher than the territorial average, while only one large community had property crime rates that were higher than the NWT average.

Within the region 39% of adults participated in fishing and/or hunting, 13% participated in trapping and 34% rely on country food for 75% or more of their meat or fish consumption. In contrast 37% of adults in the NWT participated in fishing and/or hunting, 6% participated in trapping and only 17% rely on country food for 75% or more of their meat or fish consumption.

The overall picture is that regional communities are primarily Aboriginal, have limited economic development opportunities (especially goods producing industries), face a high cost of living with limited amenities, and are still heavily reliant on traditional activities for food and some income generation. Within the region, each community is unique, however, and Table 1 summarizes how each community compares to the regional average.

Resource Use Values Associated with Edézhíe

Regional residents currently use the Edézhíe area as source of food, fuel and recreation. It is estimated that regional residents annually harvest at least 100,000 kilograms (kg) of meat and 3,000 kg of fish and of this, between 22% and 32% was harvested in the Edézhíe area. The value of this food, based on the local price of purchased food and adjusting for income differentials, is estimated to be in the range of \$632,000 to \$806,000. Many households use wood as their primary or secondary heating source and between 5% and 15% of the 3,200 cords of firewood harvested each year comes from Edézhíe. The value of this firewood, measured in terms of the energy equivalent value of fuel oil, is estimated to be between \$91,000 and \$219,000. The Edézhíe area is also used for recreation and it is estimated that regional residents enjoyed between 10,900 and 27,500 days of recreation and the value of this recreation ranges between \$94,000 and \$285,000 based on what they actually paid to participate in these activities as well as what they would have been prepared to pay.

The Edézhíe also provides some regional residents with a source of income. Regional trappers harvest about \$203,000 of furs annually and, of this, the Edézhíe area accounted for 33% of the harvest. The Dehcho Region currently attracts about 4200 tourists per year and they spend about \$2.2 million during the 25,000 visitor nights in the region. Nahanni National Park reserve is a major attraction and it is expected that Edézhíe currently accounts for at most 1% of tourism visitation and expenditures. Many adult residents manufacture arts and crafts and the Edézhíe area is believed to be the source of between 18% and 23% of the raw materials used. These materials are estimated to have a value of between \$11,000 and \$14,000. While the Edézhíe area also has the potential to support commercial logging, oil and gas development, and possibly zinc and diamond mining, these activities cannot occur until the interim protection measures currently in place are removed.

Overall, the Edézhíe area is believed to generate between \$1.0 and \$1.5 million in user benefits for regional residents, with country food accounting for more than half of this amount. These uses and associated values are considered to be sustainable in that they can continue without damaging the productive capacity of the area and it is believed that the area could support additional use of the renewable resource base.

Table I: Comparative Assessment of Socio-Economic Conditions in Study Area Communities

Attribute	Fort Providence	Fort Simpson	Jean Marie River	Wrigley	Whatí	Behchokò
Population Growth	Declining	Declining	Growing	Declining	Growing	Growing
Percentage of young people	Lower	Lower	N/A	Lower	Higher	Higher
Male/female imbalance	Imbalance	Balanced	N/A	Imbalance	Imbalance	Balanced
Percentage of Aboriginal people	Higher	Lower	Higher	Higher	Higher	Higher
Educational attainment	Lower	Higher	Average	Lower	Lower	Lower
Labour force participation	Average	Higher	Lower	Lower	Lower	Lower
Employment in primary sector	Average	Lower	Average	Lower	Higher	Higher
Average family income 2005	Lower	Higher	N/A	N/A	Average	Higher
Costs of living	Average	Higher	Higher	Higher	Higher	Lower
Housing in need of major repair	Lower	Lower	Higher	Higher	Lower	Average
Households in core need	Lower	Lower	Higher	Higher	Higher	Higher
Hospitalization for alcohol-related disease	Lower	Lower	Higher	N/A	N/A	N/A
Rate of sexually transmitted infections	Higher	Higher	Average	Average	N/A	N/A
Violent crime rates	Higher	Higher	N/A	N/A	Lower	Higher
Property crime rates	Higher	Lower	N/A	N/A	Lower	Higher
Participation in traditional land uses	Higher	Lower	Higher	Higher	Higher	Lower
Reliance on country food	Higher	Lower	Higher	Higher	Higher	Higher

Cultural Values

The Edézhíe area contains a legacy of old settlements, burial sites, camps and cabins, trails, and special sites that are part of the culture of the Dehcho and Tlicho peoples. Key features are located around Willow, Hornell, Mustard, and Bulmer lakes, the corridor between Mills Lake to Mink Lake, and along the Willowlake River, especially at its junction with the Mackenzie River. About 4% of the land area in Edézhíe is considered to have very high density of traditional land use and occupancy, 7% has high density, 37% has moderate density, and 52% has low density. There is no satisfactory method of placing an economic value on the cultural values of this area.

Non-Use Values

Ecosystems and landscapes provide a range of goods and services beyond direct human use that also contribute to social and physical well-being. A recent study of the value of ecosystem goods and services for the northern boreal ecosystem in the Mackenzie watershed (Anielski and Wilson, 2007) indicates that the most important of these goods and services consists of water regulation and supply and waste treatment by lakes and rivers; climate regulation, water supply, habitat and genetic resources for wetlands; and climate regulation for boreal forests, burnt areas and shrublands. Based on the mix of ecosystems in Edézhíe, the total value of ecological goods and services is calculated to be \$2.7 billion per year, based on the preliminary values contained in that report. However, there is a major risk in applying Mackenzie basin wide estimates to a small, specific sub-basin and when the user benefits quantified in this assessment are compared to those of the Anielski and Wilson report, it is believed that this number significantly overstates the value of ecosystem goods and services provided by Edézhíe. For purposes of this analysis it was concluded that, as a minimum, the non-use values are at least the same as the use values.

Summary

Overall, the Edézhíe area is believed to generate economic values in the range of \$1.8 to \$2.8 million per year. This includes both use and non-use values. This estimate is known to be highly conservative, however. It does not recognize any of the cultural or historical values, which are known to be important but are very difficult to quantify. This range uses the minimum values for ecological goods and services, and these could be 50 to 60 times greater. Thus, the true value of the Edézhíe Candidate Protected Area could be as high as \$80 million per year.

Based on available information it is not possible to be more definitive in quantifying the total value of the Edézhíe Candidate Protected Area. While there is some uncertainty in the values for which there is relatively abundant information (use values), there is very high uncertainty for non-use and cultural values for which there is very little information. However, for purposes of understanding the effects of allowing development in all or parts of the Edézhíe Candidate Protected Area, it is not essential that these values be known with absolute certainty. The values identified in this analysis simply provide a yardstick by which the marginal or incremental changes associated with development can be compared.