

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 Edézhíe 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. Volume 1 provides an overview of current socio economic conditions in the study area. This volume, Volume 2, describes the potential social and economic effects of four development options for Edézhíe, ranging from the status quo (no permanent protection for any of the area) to full protection of the entire area.

Potential Development Opportunities

The Edézhíe area is seen as important natural area, featuring important waterfowl and wildlife habitat, characteristic landforms and populations of species at risk. The area is seen as a “food basket”, especially when there are shortages of game in the Mackenzie Valley, and residents of all six communities have a long history of using the area for subsistence hunting, fishing and gathering other food and resources. The residents of the region have long wished to have the important watersheds of the Willowlake, Horn and Rabbitskin rivers legally protected. However, Edézhíe also has some potential to support economic development. Preliminary investigations suggest that there are oil and gas deposits in the area and there may be some economically viable zinc and diamond resources. At the present time it is not known if or when resource development will ever occur in the area or the size or location of this development if it were to occur.

To assist the public and decision makers understand the potential implications of different types of development, it is necessary to make some assumptions about what this development could look like. These assumptions are summarized in Table 1. These descriptions were developed in consultation with the NWT and Nunavut Chamber of Mines, the NWT GeoScience Office, the Canadian Wildlife Service, and Indian and Northern Affairs Canada (INAC). These assumptions represent best guesses based on very limited knowledge. Better understanding of the development potential will only come after the boundaries of the protected area have been established and exploration is allowed in areas that have not been protected.

In summary, Table 1 shows that mineral development is more likely to occur in the near future than oil and gas development because of a lack infrastructure (natural gas pipeline) or small reserves (oil). While all four opportunities would initially provide low levels of employment (measured in terms of person years (PYs)) during exploration and high levels of employment during construction, zinc and diamond mining would provide much higher levels of operating employment. The potential for employment of local residents is higher for mineral and diamond development, especially during construction.

Table I: Assumptions about Resource Development Potential in the Edézhíe Area

Attribute	Oil	Gas	Minerals	Diamonds
Resource Potential	Potentially 0.5 million barrels 0.1% of current reserves in NWT Exact volumes and locations unknown	Potentially 233 billion cubic feet 0.3% of current discovered reserves in NWT Exact volumes and locations unknown	Moderate potential for lead-zinc. Could be more than one mine Use 1000 ton per day mine (Prairie Creek mine proposal) as example	Unknown potential Could be more than one mine Use an example ranging from 0.5 million carats/year (Jericho Mine) to 2.4 million carats/year (Snap Lake) Could be larger
When	Exploration: 2020 Construction: Unlikely Operation: Unlikely	Exploration: 2020 Construction: 2025 Operations: 2027	Exploration: 2010 Construction: 2020 Operations: 2022	Exploration: 2010 Construction: 2020 Operation: 2025
Duration	Exploration: 5 years Construction: 2 years Operation: 20 years	Exploration: 10 years Construction: 2 years Operations: 10 years	Exploration: 5 years Construction: 2 years Operations: 10-20 years	Exploration: 5 years Construction: 2 years Operations: 10-20 years
Cost	Exploration: \$55 million Construction: \$175 million	Exploration: \$220 million Construction: \$175 million	Exploration: \$50 million Construction: \$167 million	Exploration: \$50 million Construction: \$120 million to \$1,000 million
Gross Revenues	\$42 million (\$100/barrel)	\$350 million	\$40 million/year	\$75 to \$275 million/year
Economic Impact	Exploration: 200-320 PYs Construction: 630 PYs Operations: 1.5 PYs/year	Exploration: 790-1,280 PYs Construction: 630 PYs Operations: 10 PYs/year	Exploration: 180 to 290 PYs Construction: 600 PYs Operations: 200 PYs/year	Exploration: 180 to 290 PYs Construction: 150 to 750 PYs Operations: 65 to 300 PYs/year

It should be noted that many of the areas of greatest potential for oil, gas zinc and perhaps diamonds are in the same general locations within the Edézhíe Candidate Protected Area, notably the area around Willow Lake, and that these locations also have some of the highest cultural and traditional use values.

Potential Development Scenarios

The Edézhíe Working Group has identified three possible boundary options for the Edézhíe area in addition to the status quo. These scenarios are described in Table 2.

Table II: Summary of Development Scenarios

Scenario	Description	Protected Area		Conservation Features Included	Non-Renewable Resources Potential
		Area (km ²)	% of Current Area		
1	Status Quo	0	0%	0%	100%
2	Minimum Bounded Area	10,565	42%	74%	88%
3	Conservation/ Economic Compromise	16,588	66%	92%	71%
4	Full Land Withdrawal	25,230	100%	100%	0%

Each of these scenarios would allow a slightly different mix of resource developments to occur. The nature of this development, and the potential environmental and territorial and regional effects associated with each scenario is summarized in Table 3.

Table III: Summary of Potential Employment Effects in the NWT Associated with Non-Renewable Development in the Edézhzié Area

Resource	Indicator	Scenario			
		Status Quo	Minimum Bounded Area	Conservation/ Economic Compromise	Full Land Withdrawal
Non-Renewable Resources					
Oil	Production	\$0	\$0	\$0	\$0
Natural Gas	Total Production (20 yrs)	\$350 million	\$260 million	\$350 million	\$0
Zinc-Lead Mine	Annual Production	\$40 million	\$40 million	\$12 million	\$0
Diamonds	Annual Production	\$175 million	\$140 million	\$190 million	\$0
Renewable Resources					
Caribou	Critical habitat protected	0%	90%	100%	100%
	Habitat Blocks Protected	0	29	32	47
Moose	Habitat Blocks Protected	0	4	11	20
Watersheds	Reaches at Risk	All at risk	Upper Horn Lower Willowlake Rabbitskin	Upper Horn Lower Willowlake Lower Rabbitskin	None
Traditional Use Areas at Risk	Very High Density	100%	4%	2%	0%
	High Density	100%	13%	8%	0%
	Moderate Density	100%	30%	13%	0%
Tourism	Destination Visitation	None	Low	Moderate	Low
	Features at Risk	All	Upper and lower Willowlake River Rabbitskin River	Upper and lower Willowlake River Lower Rabbitskin River	None
Research	Conservation Features Protected	0%	74%	92%	100%
Territorial Socio-Economic Effects					
Employment (person-years)	Peak	780	685	475	1
	Long-term	400	360	170	1
Income	Increased Annual Earnings (millions)	\$28	\$25	\$12	\$0
Regional Socio-Economic Effects					
Employment (person-years)	Peak	200	165	115	1
	Long-term	140	125	60	1
Income	Increased Annual Earnings (millions)	\$9.8	\$8.7	\$4.3	\$0
Population	Potential In-migration	100 workers	90 workers	45 workers	0

Although the status quo scenario provides the greatest potential for economic development in the region, many of the renewable resources that are used by regional residents for traditional or other purposes may be at risk. While measures to minimize these risks will be included as part of the terms and conditions in approvals issued for mineral or petroleum development, some of the key areas of development interest coincide with areas of great cultural importance and traditional use. The other scenarios adopt increasing levels of protection that limit economic development potential, resulting in less employment and income for regional residents, but enhance protection of environmental and renewable resources. However, prohibiting development in the entire Edézhíe area may prove economically regressive because, without some other forms of additional economic development in the region, social and economic conditions could deteriorate.

The scenarios with the greatest potential to create new employment and income also have the highest potential for both positive and negative socio-economic effects. As people earn more money and thereby have the means to improve their quality of life, they can also afford to indulge in behaviours that can cause social and economic problems for themselves and others, and may also reduce their participation in traditional land uses. The potential for such problems is highest for the status quo scenario, but precluding all non-renewable resource development has some disadvantages because without the creation of some additional employment and income in the region, many of the existing social and economic problems in the region, such as low educational attainment and large percentages of households in core need, will continue and may worsen over time.

Summary

Each of the potential development scenarios has its own suite of potential benefits and costs. Scenarios that offer either full protection or open all of the area to development tend to maximize the benefits of either protection or development at the expense of the other. On the other hand, scenarios that propose some combination of development and protection potentially provide the broadest range of benefits for regional residents. Opening Edézhíe to some non-renewable resource development will affect traditional uses in two ways. First, the environmental disturbances associated with non-renewable resource development may limit the capacity of Edézhíe to continue to sustain traditional uses although the magnitude of the effects will depend on the actual location of this development and the relative importance of traditional uses at these locations. Second, by offering more regional residents with an opportunity to participate in a wage economy, non-renewable resource development may cause a decline in the number of people who are able to continue to participate in traditional uses, thereby reducing the need to retain some areas for traditional uses. It will be up to each community to decide how best to balance the competing needs of traditional land uses and economic development now and in the future.