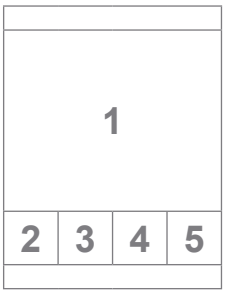
Ts'ude niline Tu'eyeta
Candidate National Wildlife Area

Recommendations Report

March 2012



Cover Photo Credits:

1 Ts'ude niline Tu'eyeta candidate NWA along the Mackenzie River - **Donna Mulders**

2 Dragonfly on lichen - **Joanna Wilson**

3 Lesser Scaup - **Anthony Levesque**

4 Boreal Woodland Caribou - **John Nagy**

5 White-crowned Sparrow - **Anthony Levesque**

Motion #1 – Ts'ude niline Tu'eyeta candidate National Wildlife Area Working Group meeting of March 27-28, 2012

Whereas the Ts'ude niline Tu'eyeta candidate National Wildlife Area Working Groups has considered all the cultural, conservation and economic information collected on the area through the NWT Protected Areas Strategy process;

Whereas the Ts'ude niline Tu'eyeta candidate National Wildlife Area Working Group has recommended an area that is 67% (10,103 km^2) of the original candidate area be established as a National Wildlife Area under the *Canada Wildlife Act;*

Whereas the K'asho Got'ine Dene and Metis have recommended that there be a withdrawal of the lands in the recommended area from subsurface dispositions;

Whereas the Ts'ude niline Tu'eyeta Working Group has provided a rationale for it's recommendations in a Report dated March 28, 2012;

Therefore, be it resolved that the Ts'ude niline Tu'eyeta Working Group approves the aforementioned Recommendations Report pending the wording changes discussed at the March 27 – 28, 2012 meeting in Fort Good Hope, NT.

Moved by:

Seconded by:

Dated:

March 28, 2012

Recommendations Report

Prepared by the

Ts'ude niline Tu'eyeta Candidate
National Wildlife Area Working Group

For submission to the

K'asho Got'ine District Land Corporation
K'asho Got'ine Dene Band
Fort Good Hope Métis Local #54

March, 2012

EXECUTIVE SUMMARY

The Ts'ude niline Tu'eyeta candidate National Wildlife Area (NWA) study area (15,119 km²) is located in the Sahtu region of the Northwest Territories. It is of great ecological and cultural importance to the K'asho Got'ine Dene and Métis of Fort Good Hope. It contains the source waters of the Ramparts and Hume Rivers. The Ramparts River wetlands are important harvesting areas for the community. The Sahtu Places and Sites Joint Working Group in its report 'Places We Take Care Of", identified the Ramparts wetlands as an area that should be legally protected. In 2002, the Yamoga Land Corporation advanced Ts'ude niline Tu'eyeta into the NWT Protected Areas Strategy (PAS).

In 2005, the Canadian Wildlife Service (CWS) reviewed the proposal for sponsorship and determined that Ts'ude niline Tu'eyeta contained nationally significant ecological values that fell within its legislative mandate. CWS agreed to be the sponsoring agency, and to work toward creating the Ts'ude niline Tu'eyeta NWA through the Canada Wildlife Act. In October 2006, a five-year land withdrawal of the Ts'ude niline Tu'eyeta area was secured through a federal Order-in-Council to allow for its further assessment without any new land dispositions beyond those already existing in the area. At the same time, the Ts'ude niline Tu'eyeta Working Group (TTWG) was established to assess the ecological, cultural and economic values of Ts'ude niline Tu'eyeta (Step 5 of the PAS). This report summarizes these assessments and makes recommendations to the K'asho Got'ine District Land Corporation on the following matters concerning Ts'ude niline Tu'eyeta:

- boundary
- legal designation
- surface and subsurface management
- management goals and process

The interim land withdrawal was extended in November 2011 for an additional two years to allow for the completion of the PAS process for the Ts'ude niline Tu'eyeta candidate NWA.

Summary of the Ts'ude niline Tu'eyeta Assessments

Five assessments were completed as part of Step 5 of the PAS (NWT PAS Advisory Committee, 1999).The assessments looked at the cultural, ecological and economic values within Ts'ude niline Tu'eyeta. The TTWG coordinated the assessments and key findings are summarized in Table 1.

Table 1: Summary of the Ts'ude niline Tu'eyeta candidate NWA assessments.

Assessment	Key Findings
Cultural	• Extensive traditional use is due primarily to the abundance of wildlife including fish, game, and furbearing animals. • Strong cultural and spiritual connection to Ts'ude niline Tu'eyeta, including many birth and burial sites, unusual animal sightings, spiritual power, personal experiences, and cultural stories. • Passing the stories on to the young people is very important and the Elders of the past clearly directed the current generation of Elders to protect Ts'ude niline Tu'eyeta for future generations.
Ecological	• The five most abundant plant communities accounted for 73% of Ts'ude niline Tu'eyeta. • 675 species representing 68 families of vascular plants are known, or very likely, to occur in the area. • 1 species of amphibian, 26 species of fish, 175 species of bird, and 18 species of mammal have ranges known to overlap the area. • Four *SARA* listed species were observed: Woodland Caribou - Boreal and Northern Mountain populations, Olive-sided Flycatcher, and Peregrine Falcon (anatum subspecies) and three COSEWIC assessed species were observed: Horned Grebe, Short-eared Owl and Wolverine - Western population. In addition, the range of Rusty Blackbird, Barn Swallow, Grizzly Bear and Collared Pika overlaps the area. • Ramparts Wetlands is a CWS "key migratory bird terrestrial habitat site"; it supports over 1% of the national populations of a number of migratory bird populations.
Non-Renewable Resources	• Gal (2007) assessed the majority of the Ts'ude niline Tu'eyeta area as high potential for hydrocarbons with the remainder as moderate to high. • Drummond (2010) estimated recoverable natural gas at 5,987 million m^3 and 3.2 million m^3 for oil. The overall potential was assessed at moderate to high. • Hannigan (2011, pers. comm..) estimated the total reserves of oil and gas ("high confidence potential") at 7.1 and 9,139 million m^3, respectively (1.1% and 0.4% of the estimated reserves in the Mackenzie Corridor). • Very high zinc-lead and moderate copper potential was assigned to the southern section of Ts'ude niline Tu'eyeta. • Low to moderate diamond potential was assigned to approximately 40% of the area.
Renewable Resources	• Subsistence harvesting and trapping have the highest present and future economic potential. • Trees have high economic value and future potential, mainly for their use in fuel wood harvesting. • Commercial logging has very limited potential. • Tourism, both current and potential, is the highest along the Ramparts River and the Ramparts along the Mackenzie River. • Renewable energy generation (wind and hydro) – some potential but logistics and economic obstacles make development unlikely.

Assessment	Key Findings
Socio-economic	• Current economic output of Ts'ude niline Tu'eyeta is estimated at $7.9 million annually; this includes traditional and economic resource use and ecological goods and services. • Oil development would likely occur ahead of mineral and diamond development owing to the existing Norman Wells oil pipeline and current lack of infrastructure for getting mined product to market. • Hydrocarbons, minerals and diamonds would all provide low levels of NWT and Fort Good Hope employment during exploration and high levels during construction. • Metals and diamonds would provide continuing high employment during production, whereas employment generated from hydrocarbon development would decline to be almost negligible during operations. • Over the short to medium term, no protection of Ts'ude niline Tu'eyeta provides greater economic benefits than full protection; however, this does not include the cultural and social value of the area to which a dollar value cannot be attached. • The socio-economic assessment report concluded that, aside from oil, it is not likely that any non-renewable resource development in the Ts'ude niline Tu'eyeta area would occur for at least 10-20 years.

Recommendations

The Ts'ude niline Tu'eyeta Working Group directs the following recommendations (Table 2) to the K'asho Got'ine District Land Corporation, the K'asho Got'ine Dene Band and the Fort Good Hope Métis Local #54. These recommendations mark the transition from Step 5 to Step 6 of the PAS planning process, which advances Ts'ude niline Tu'eyeta towards establishment as a National Wildlife Area (NWA) under the *Canada Wildlife Act*.

Table 2: Summary of TTWG Recommendations and Positions.

Issue	Recommendations of the TTWG
Boundary	• The Ts'ude niline Tu'eyeta NWA should comprise 10,103 km^2 which is 67% of the original 15,119 km^2 Ts'ude niline Tu'eyeta candidate NWA.
Legal Designation	• The Ts'ude niline Tu'eyeta NWA should be established through scheduling in the Canada Wildlife Act (Wildlife Area Regulations). The administration of surface lands would be transferred to Environment Canada.
Subsurface Management	• The K'asho Got'ine Dene and Métis recommend that the surface land management in Ts'ude niline Tu'eyeta be transferred to Environment Canada under the Canada Wildlife Act and that the subsurface be permanently withdrawn under the Territorial Lands Act • The Government of Canada is currently considering the subsurface disposition options, and recommends that subsurface disposition options form part of the future discussions on the establishment of the Ts'ude niline Tu'eyeta NWA. The Government of Canada does not have a recommendation for any specific subsurface option for the Ts'ude niline Tu'eyeta NWA at this time. • The Government of the Northwest Territories recommends a reduced final boundary excluding areas of highest mineral potential, minimizing the inclusion of high oil and gas potential, and maintaining existing outfitter areas of operation, while still retaining the key water and wildlife habitat values, and the protection of key cultural and spiritual areas. The most sensitive ecological areas should have oil and gas and mineral rights withdrawn, but less ecologically sensitive areas should not have the subsurface withdrawn. • Ducks Unlimited Canada supports the balanced approach that the TTWG has chosen by adjusting the boundary and reducing the area of the proposed NWA to 67% of its original size in order to exclude many areas with non-renewable resource potential. DUC believes it is essential for the final designation to include surface and sub-surface protection to provide clarity and certainty. This would also reflect the vision of the K'asho Got'ine Dene and Métis to make decisions about how their land and resources should be managed for future generations. • The NWT and Nunavut Chamber of Mines recommends a flexible approach to land management for the Ts'ude niline Tu'eyeta NWA such as no withdrawal, partial withdrawal or temporary withdrawal of subsurface rights and the regulation of development through land use planning in combination with existing mechanisms in the NWT. • The Association of Mackenzie Mountains Outfitters supports the currently proposed boundary option, and requests that the operators in the two outfitting concessions that fall within the boundary be consulted during the development of the management plan for Ts'ude niline Tu'eyeta.

Issue	Recommendations of the TTWG
Protected Area Agreement	• After legal designation of the Ts'ude niline Tu'eyeta NWA, and pursuant to 17.2.5 of the Sahtu Dene and Métis Comprehensive Land Claim Agreement, Environment Canada may negotiate a protected area agreement with the K'asho Got'ine District Land Corporation.
Management Goals and Process	• Management goals and objectives based on the K'asho Got'ine Dene and Métis and the Canadian Wildlife Service's shared vision for the Ts'ude niline Tu'eyeta NWA. • A Ts'ude niline Tu'eyeta Management Committee consisting of the K'asho Got'ine Dene and Métis, Environment Canada and other interested parties should be established to co-manage Ts'ude niline Tu'eyeta through the Wildlife Area Regulations, the Ts'ude niline Tu'eyeta NWA Management Plan and possibly a protected area agreement. • All traditional use activities by the K'asho Got'ine Dene and Métis will be allowed without permit. • Communicate and foster public awareness and appreciation of the Ts'ude niline Tu'eyeta NWA. • Management should include all segments of the Fort Good Hope population, especially the youth.

ACKNOWLEDGEMENTS

This report represents the valuable contributions and dedication of the community of Fort Good Hope, and their representatives on the Ts'ude niline Tu'eyeta Working Group, as well as both the government and non-government organizations in bringing the Ts'ude niline Tu'eyeta candidate NWA to completion of Step 5 of the NWT Protected Areas Strategy process.

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VISION STATEMENT

"Ts'ude nılıne Tu'eyeta ıs a beautıful and spırıtual place where wıldlıfe ıs abundant. It ıs a place where younger generatıons learn about theır culture and hıstory. It has provıded for the people and supported the tradıtıons and way of lıfe of the K'asho Got'ıne Dene and Métıs. Ts'ude nılıne Tu'eyeta ıs a place protected from the negatıve ımpacts and long term effects of ındustrıal development; where wıldlıfe and theır habıtats are healthy; where Dene and Métıs can hunt, fısh and trap and lıve on the land as they have for generatıons; where sacred places and burıal sıtes are preserved.

The Ts'ude nılıne Tu'eyeta Natıonal Wıldlıfe Area wıll be managed to ensure the natural and cultural values of the area are protected and preserved for the benefit of future generatıons."

K'asho Got'ıne Dene and Métıs

1.0 INTRODUCTION

1.1 The scope and purpose of this report

The Ts'ude niline Tu'eyeta candidate NWA study area (15,119 km^2) is located in the Sahtu Region of the Northwest Territories (NWT) west of the Mackenzie River and the community of Fort Good Hope (Figure 1). Ts'ude niline Tu'eyeta includes the Ramparts River wetlands and, in the southern portion, the Mackenzie Mountains and foothills.

Ts'ude niline Tu'eyeta is an important cultural and spiritual gathering place for the K'asho Got'ine Dene and Métis. Its diverse landscape, including extensive wetlands, and plentiful wildlife make it a very rich land which has, and continues today, to support hunting, fishing, trapping, and other traditional activities. Ts'ude niline Tu'eyeta's many cultural sites, harvesting areas and traditional trails show the link Fort Good Hope has with Ts'ude niline Tu'eyeta.

Ts'ude niline Tu'eyeta is a candidate NWA that has been advanced through the NWT Protected Areas Strategy (PAS). The PAS is a partnership among communities, governments (Aboriginal, territorial and federal), environmental non-government organizations and industry

(NWT PAS Advisory Committee, 1999). There are eight steps in the PAS (NWT PAS Advisory Committee, 1999). Ts'ude niline Tu'eyeta is now at the end of Step 5 of the PAS process. This report summarizes the assessments done in completing Step 5. It makes recommendations to the K'asho Got'ine District Land Corporation on the following, with respect to a future Ts'ude niline Tu'eyeta NWA:

- boundary
- legal designation
- surface and subsurface management
- management goals and process

All recommendations are without prejudice to future negotiations regarding the establishment of Ts'ude niline Tu'eyeta as a permanent NWA and the development of a management plan. All Aboriginal treaty rights and the Sahtu Dene and Métis Comprehensive Land Claim Agreement take precedence over the PAS. If there is any inconsistency between these treaties and agreements and this report, the treaties and agreements will take precedence (NWT PAS Advisory Committee, 1999).

Figure 1: Location of the Ts'ude niline Tu'eyeta candidate NWA study area within the NWT.

1.2 Regional land management

The Ts'ude niline Tu'eyeta candidate NWA study area has been withdrawn from disposition since October 2006. Since then no new third party rights have been issued for the area, including prospecting permits, mineral claims, and petroleum exploration leases. Prior to then, land use for the area was regulated by the Sahtu Land and Water Board which performs preliminary screenings on development proposals and issues permits for approved proposals which are enforced by the Department of Indian Affairs and Northern Development.

The Sahtu Land Use Plan is presently in the drafting and review process. Once it has been approved by the federal and territorial governments and comes into effect, it would apply to the Ts'ude niline Tu'eyeta NWA. The extent of involvement of the Sahtu Land Use Planning Board in the management of Ts'ude niline Tu'eyeta will depend on the final subsurface land management for the protected area.

With the exception of Sahtu private lands, the area excluded from the original Ts'ude niline Tu'eyeta study area will become a Special Management Zone under the Land Use Plan, and it would be open to industrial activities, subject to special conditions. Three Sahtu private land parcels (14, M5 and M6) should become General Use Zones whereas parcel 21 within the study area boundary should be zoned as a Conservation Zone. Once the Plan is in effect it will constitute the guiding document for the Sahtu Land and Water Board and land use permitting in the Sahtu Region, including the Ts'ude niline Tu'eyeta NWA.

1.3 History of Ts'ude niline Tu'eyeta

The Fort Good Hope Registered Group Trapping Area, established in 1956 under the NWT Game Ordinance, was the first formal recognition of the K'asho Got'ine Dene and Métis traditional and economic (i.e., fur trapping) use of the area now known as the K'asho Got'ine District that includes the Ts'ude niline Tu'eyeta area. It provided an exclusive trapping area for General Hunting Licence Holders from Fort Good Hope and Colville Lake.

The Sahtu Heritage Places and Sites Joint Working Group was established through the Sahtu Dene and Métis Comprehensive Land Claim Agreement to make recommendations to government concerning the protection of Sahtu heritage places and sites. The first mention of the need to protect Ts'ude niline Tu'eyeta (Ramparts River and Wetlands) occurred in the report by the Joint Working Group titled 'Places We Take Care Of' (2000). The report recognized the importance of that area to the culture and subsistence of Fort Good Hope families, as well as teaching the young in the ways of the hunt.

From 2001 to 2003, several workshops and community meetings were held to obtain formal support from the key community and regional organizations for moving Ts'ude niline Tu'eyeta into the NWT Protected Areas Strategy. At a community workshop in May 2003, an 'area of interest' boundary was first mapped and potential sponsoring agencies were reviewed. In September 2003, the Yamoga Land Corporation was identified as the lead community organization. In April 2004, the candidate protected area boundary (Figure 2) was finalized and a resolution was passed by the Yamoga Land Corporation, Métis Local #54, and the K'asho Got'ine Dene Band to request that the CWS be the sponsoring agency and proceed with application for an interim

land withdrawal. In June 2005, the CWS agreed to be the sponsoring agency for the Ts'ude niline Tu'eyeta candidate NWA.

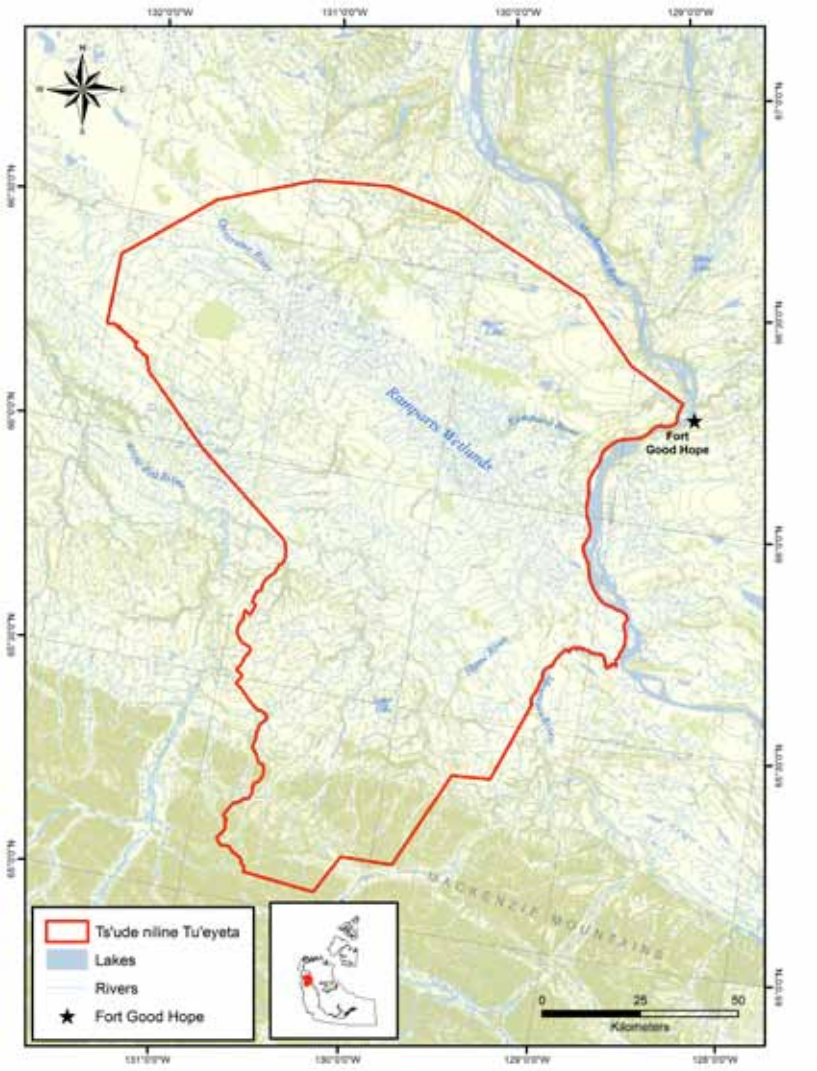

Figure 2: The Ts'ude niline Tu'eyeta candidate NWA interim land withdrawal area.

In October 2006, an interim (five year) land withdrawal of the entire Ts'ude niline Tu'eyeta candidate NWA study area was secured through a federal Order-in-Council. During this time, no new mineral claims and permits or petroleum exploration licences could be issued, which allowed the various assessments under Step 5 of the PAS process to be conducted without the complications arising from the issuance of additional third party rights. It was understood that a future protected area would not necessarily consist of this entire area. The interim land withdrawal was extended in October 2011 and will expire in November 2013.

1.4 The Ts'ude niline Tu'eyeta Working Group (TTWG)

The TTWG was established to guide and oversee the ecological, cultural and economic assessments of Ts'ude niline Tu'eyeta, as part of Step 5 of the PAS (Terms of Reference – Appendix 2). The TTWG is made up of the following Aboriginal, territorial and federal governments, communities, environmental non-government organizations, and industry representatives:

- Yamoga Land Corporation
- K'asho Got'ine Dene Band
- Fort Good Hope Métis Local #54
- Fort Good Hope Renewable Resources Council
- Canadian Wildlife Service (CWS)
- Aboriginal Affairs and Northern Development Canada (AANDC)
- Ducks Unlimited Canada
- Government of the Northwest Territories (GNWT), Environment and Natural Resources (ENR)
- Association of Mackenzie Mountains Outfitters
- NWT and Nunavut Chamber of Mines

Reviewing results of Ts'ude niline Tu'eyeta assessment work in community of Fort Good Hope, June 2011.

Gina Ridgely

2.0 TTWG OUTCOMES

2.1 TTWG Consultations and Workshops

Consultation with stakeholder communities and the general public is essential in the PAS process. A key function of the TTWG was to involve the member organizations and the community of Fort Good Hope throughout the process. The TTWG held meetings in Fort Good Hope as well as update meetings for the general public on progress being made on the Ts'ude niline Tu'eyeta process (Appendix 3).

2.2 PAS Site Assessments

As part of the PAS process, several assessments of the study area are conducted to identify the ecological, cultural, and economic values found within the area.

2.2.1 Cultural Assessment

The Ts'ude niline Tu'eyeta cultural assessment (PacTeam, 2009) was a compilation of existing information from a number of cultural information gathering programs in the past. This information was augmented by interviews of Fort Good Hope community member in 16 interview sessions. Approximately 637 sites were mapped. These included specific place names and more general locales within Ts'ude niline Tu'eyeta, trails and travel routes, camps and campsites, cabins, burial sites, and sacred areas. Figure 3 is a summary of much of this information (PacTeam, 2009).

Summary:

Traditional patterns of land use within Ts'ude niline Tu'eyeta reflect the abundance and distribution of wildlife, fish, game, and furbearing animals. Traditional use is evident by the numerous trails, seasonal and semi-permanent camps and much of this is centered about the lower Ramparts River and the Ramparts River wetlands. This active and ongoing land use resulted in a cultural and spiritual connection to Ts'ude niline Tu'eyeta, including many birth and burial sites, unusual animal sightings, spiritual power, personal experiences, and cultural stories.

It is apparent the K'asho Got'ine Dene and Métis of Fort Good Hope have a long and rich history with Ts'ude niline Tu'eyeta. It is the place of legends and a cultural landscape that is the very foundation of their beliefs and values. Repeatedly, the K'asho Got'ine Dene and Métis voiced the opinion that while protecting Ts'ude niline Tu'eyeta was important from a strictly conservation point of view, in effect it is essential to preserving their very identity.

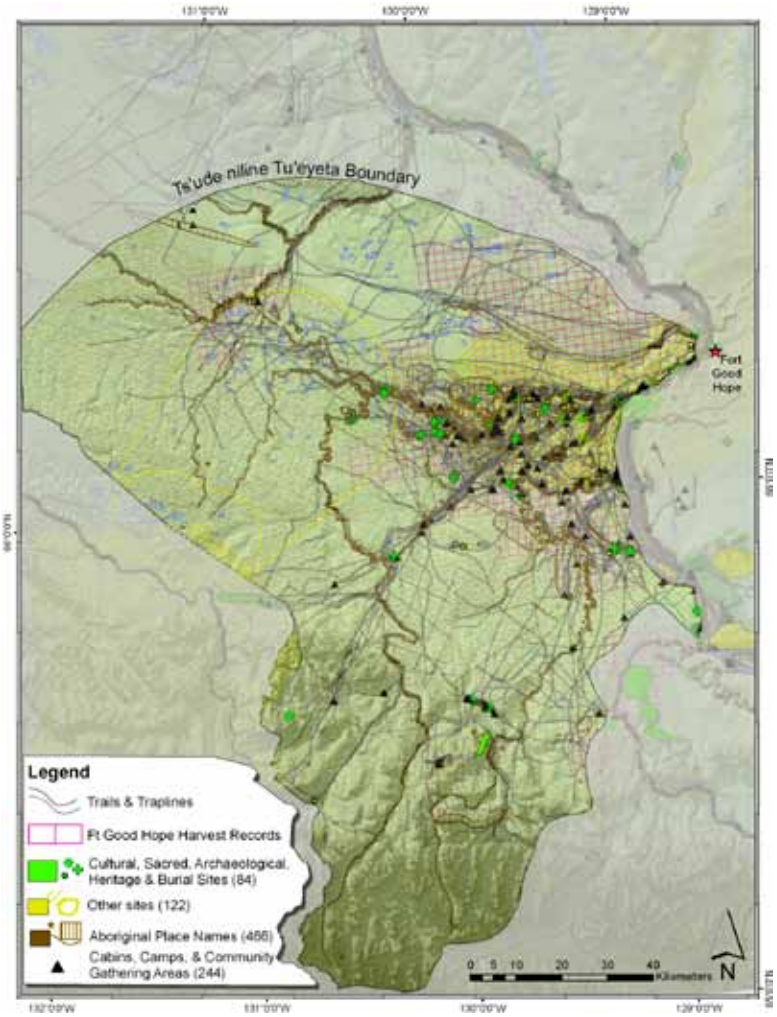

Figure 3: Distribution of cultural and traditional use values within the Ts'ude niline Tu'eyeta candidate NWA (from PacTeam, 2009).

Jane Kelly stretching beaver pelts in Fort Good Hope.
Deborah Simmons

2.2.2 Ecological Assessment

CWS (2007) described the diversity and distribution of species in Ts'ude niline Tu'eyeta. This information ensures the candidate area includes a wide range of successional stages, habitat types, self-sustaining land and water systems, and sensitive/rare species.

Summary:

Plant Communities: The five most abundant vegetation classes (Mackenzie Earth Cover Project - Ducks Unlimited Canada, 2006) accounted for 73% of the Ts'ude niline Tu'eyeta area, namely: open-needleleaf, woodland needleleaf lichen, low shrub, woodland needleleaf other, and closed needleleaf.

Plant Species: A total of 675 species representing 68 families of vascular plants are known, or very likely to occur in Ts'ude niline Tu'eyeta. Ten plant families accounted for over 63% of the species total: Asteraceae, Cyperaceae, Brassicaceae, Poaceae, Rosaceae, Salicaceae, Ranunculaceae, Saxifragaceae, Caryophyllaceae, and Fabaceae. There are potentially 37 species of rare plants (Cody, 1979; McJannet et al., 1995).

Wildlife Species: Fish studies were not conducted as part of the ecological assessment, but information was available from various studies and surveys conducted in the Ts'ude niline Tu'eyeta area since the 1970s. Twenty-six fish species have been identified in the area.

The ecological assessment documented one species of amphibian, 67 species of bird and 13 species of mammal. For birds, a wide range of waterfowl, waterbirds, raptors (including two species of conservation concern) and forest birds (primarily songbirds) were observed. The data indicated that there were at least four distinct forest bird communities based on vegetation characteristics. There are a total 175 and 18 species of birds and mammals, respectively, whose ranges overlap the Ts'ude niline Tu'eyeta candidate NWA.

Aerial surveys documented late winter distribution of boreal woodland caribou and moose (Popko et al., 2006), indicating Ts'ude niline Tu'eyeta's importance as winter habitat for these species.

Key ecological features of Ts'ude niline Tu'eyeta include:

- *Key Migratory Bird Terrestrial Habitat:* The Ramparts River wetlands are what the Canadian Wildlife Service considers as a "key migratory bird terrestrial habitat site" in the NWT (Latour et al., 2008). These wetlands annually support over 1% of the national populations of Scaup and Scoter spp., and quite likely Pacific Loon. These wetlands, along with the large wetlands at Mills Lake and Brackett Lake, constitute the three most significant wetlands in the Mackenzie Valley migration corridor.

- *Species at Risk:* Ts'ude niline Tu'eyeta contains species listed under the *Species at Risk Act:* Boreal Woodland Caribou (Threatened), Northern Mountain Woodland Caribou (Special Concern), Olive-sided Flycatcher

(Threatened), Peregrine Falcon - *anatum* subspecies (Threatened) and Rusty Blackbird (Special Concern). In addition, Wolverine - Western Population, Grizzly Bear - Northwestern Population, Collared Pika, Short-eared Owl, Horned Grebe - Western Population have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Special Concern. Barn Swallow was recently assessed by COSEWIC as Threatened.

- *Drainages:* The Ts'ude niline Tu'eyeta candidate NWA study area contains two complete drainages – the Ramparts and Hume Rivers, and a section of the Ontaratue River. These drainage basins are of great importance to the subsistence economies and culture of Fort Good Hope.

- *Ecoregion Representation:* Ninety per cent of the Ts'ude niline Tu'eyeta candidate NWA lies largely within the Taiga Plains Ecozone consisting of the Fort McPherson Plain, Mackenzie River Plain, and Peel River Plateau Ecoregions. The remaining extreme southern portion (10%) lies within the Taiga Cordillera Ecozone consisting of the Mackenzie Mountains Ecoregion.

Early morning mist forming over a wetland in Ts'ude niline Tu'eyeta candidate NWA.

Donna Mulders

2.2.3 Non-Renewable Resource Assessment

Phase I Assessment:

The Ts'ude niline Tu'eyeta Candidate NWA Phase I Non-Renewable Resource Assessment - Minerals (Mills, 2008) provided an initial assessment of the mineral potential of Ts'ude niline Tu'eyeta. Satellite imagery, aerial maps, reports written by government and exploration companies, geological knowledge, expert opinion and modeling were used for the assessment.

Summary:

Minerals: Scant geological and exploration information existed for Ts'ude niline Tu'eyeta up to the Phase I report (Mills, 2008). Exploration work involving significant lead and zinc deposits has occurred immediately south of the area, primarily in the Gayna River drainage.

Mills (2008) stated that Mississippi Valley-type (MVT) lead-zinc, sedimentary exhalative (SEDEX) lead-zinc, breccia-hosted iron-oxide copper/gold, sediment-hosted copper, nickel-copper-platinum group elements, iron-formation, coal, and industrial minerals are the main potential mineral deposit types. Mills (2008) concluded there was limited information on which to base an assessment and that further fieldwork would be required (Phase II assessment). No mineral rights exist in Ts'ude niline Tu'eyeta at this time.

Oil & Gas: Gal and Udell (2005) and Gal (2007) provided an initial assessment of the petroleum potential of Ts'ude niline Tu'eyeta. The Kee Scarp Carbonate, Cretaceous Clastics, and the Arnica/Landry platform plays are considered to have the highest potential. The large part of Ts'ude niline Tu'eyeta outside the Mackenzie Mountains was ranked moderate to high and high for petroleum potential (Figure 4). The Mackenzie Mountains portion was ranked mainly low.

Drummond (2010), in a further analysis of the hydrocarbon potential of Ts'ude niline Tu'eyeta, concluded that the entire area outside the Mackenzie Mountains had high petroleum potential. Drummond estimated that, based on the available evidence, Ts'ude niline Tu'eyeta contained a potential of 5,987 million m^3 and 3.2 million m^3 (20 million barrels) for recoverable natural gas and oil respectively. Twenty-two wells were drilled in Ts'ude niline Tu'eyeta between 1960 and 1973 (Drummond, 2010) with one gas showing. No oil and gas rights exist in Ts'ude niline Tu'eyeta at this time.

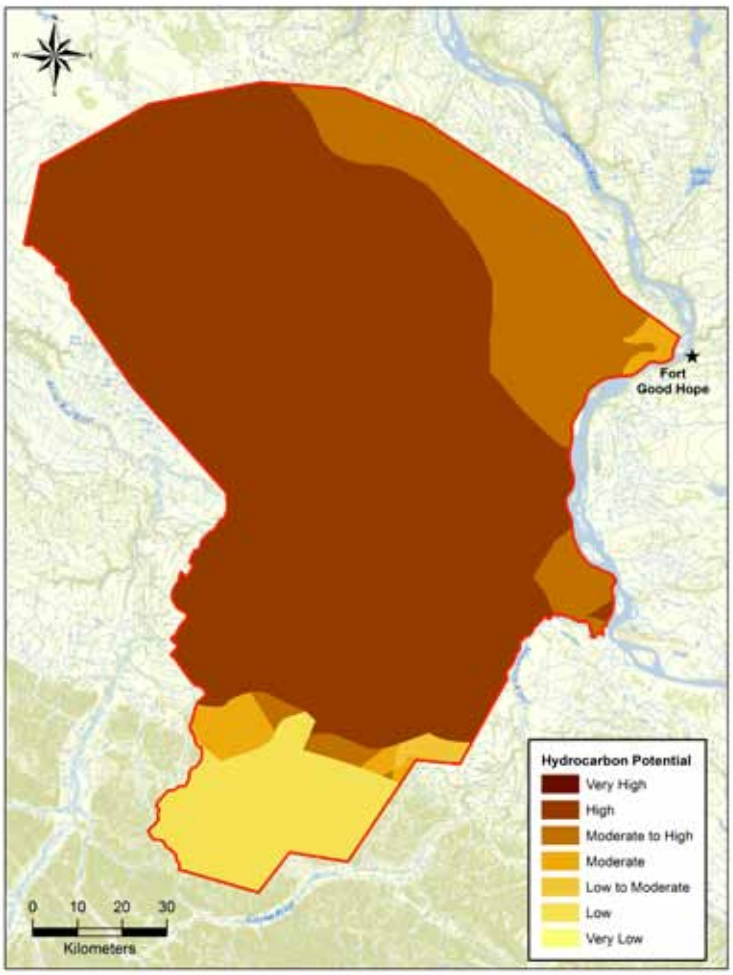

Figure 4: Distribution of the hydrocarbon potential of the Ts'ude niline Tu'eyeta candidate NWA (from Gal and Udell, 2005).

Collection of silt samples during Ts'ude niline Tu'eyeta NRA assessment fieldwork.

Andrea Mills

Phase II Assessment:

Ozyer (2010) described the results of water, stream sediment and till sampling within Ts'ude niline Tu'eyeta to assess mineral potential, and presence and characteristics of diamond indicator minerals.

Summary:

Minerals: The front ranges of the Mackenzie Mountains in the south of Ts'ude niline Tu'eyeta were assessed as having very high potential for Mississippi Valley Type Zinc-Lead and moderate potential for sediment-hosted copper (Figures 5). Gold potential in the candidate NWA was assessed as low based on the wide and low density distribution of gold grains across the area and showing evidence of fluvial and glacial transport.

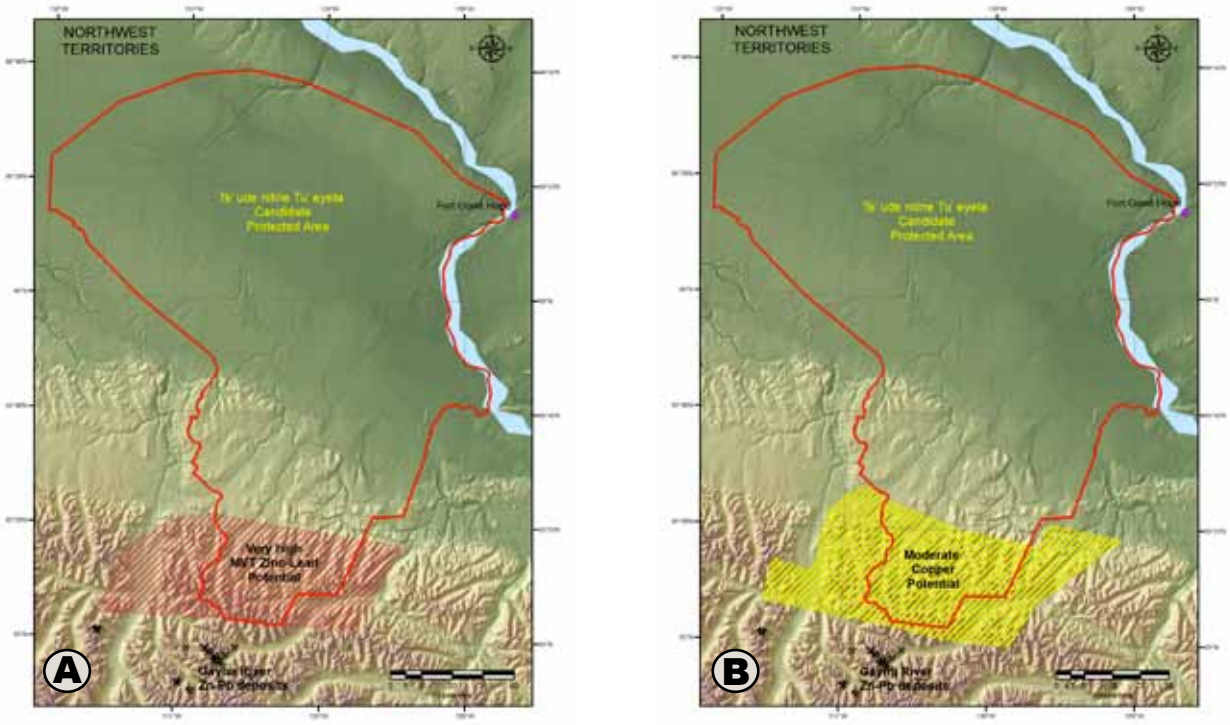

Figure 5: **Distribution of the very high zinc-lead (A) and moderate copper (B) potential in the Ts'ude niline Tu'eyeta candidate NWA (from Ozyer, 2010).**

Diamonds: Diamond potential in Ts'ude niline Tu'eyeta was assessed at low to moderate (Figure 6). Kimberlite indicator minerals were found in both stream sediments and till at a number of sites in the area. The chemical characteristics of these minerals indicate origins in both the diamond forming zones in the earth's mantle as well as outside it. However, the physical characteristics of the mineral grains suggest the likely transport of most of these minerals into the area during the last glaciation.

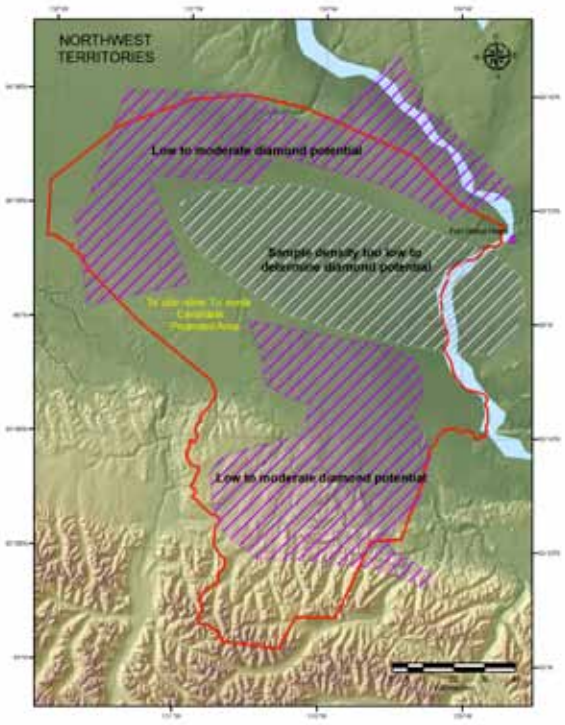

Figure 6: **Distribution of the low to moderate diamond potential in the Ts'ude niline Tu'eyeta candidate NWA (from Ozyer, 2010).**

2.2.4 Renewable Resource Assessment

EBA (2006) examined where renewable resources are found in Ts'ude niline Tu'eyeta, how they are currently being used, how they could be used in the future, and how important they are economically.

Existing information was summarized and key people and agencies were interviewed, as well as the community of Fort Good Hope. The study area included Ts'ude niline Tu'eyeta and a 25 km buffer around it. Information specific to Ts'ude niline Tu'eyeta is limited so conclusions were based, in part, on information from the region (EBA, 2006).

Summary:

Wildlife, fish, trees and a number of other plants are the most important renewable resources within Ts'ude niline Tu'eyeta for their economic and traditional values. Subsistence harvesting and trapping have the highest future potential and subsistence harvesting has the highest economic value (EBA, 2006). Resident (non-aboriginal) hunting is insignificant; there are two big game outfitters catering to non-NWT hunters and whose zones include the Mackenzie Mountains portion of Ts'ude niline Tu'eyeta. The current economic value of outfitted hunting to the local community is unknown. There is limited recreational fishing and no commercial fishing or hatcheries.

Trees have high economic value and future potential, mainly for their use as fuel wood and other domestic uses such as saw logs. There is no commercial fuel wood harvesting or commercial logging within Ts'ude niline Tu'eyeta and the potential is low. Agricultural potential is low. Environmental conditions, logistical constraints, and small demand are limiting factors at this time to forestry and agriculture.

Tourism, both current and potential, has considerable potential considering the varied terrain and significant waterways, although high transportation costs in getting to the general area then accessing Ts'ude niline Tu'eyeta are currently an impediment.

Finally, renewable energy generation appears to have limited potential. Winds do not attain the required threshold for wind-powered electricity generation. The Mountain and Ramparts Rivers have limited hydroelectric potential.

2.2.5 Socio-Economic Assessment

Phase 1 of the Ts'ude niline Tu'eyeta socio-economic report (InterGroup Consultants Ltd., 2009) presented an array of social statistics from the community of Fort Good Hope and related them to the overall NWT situation. In summary, the population is primarily Aboriginal (93%), and compared to the NWT average, is characterized by: a negative population growth rate (-1.7 vs 0.2), a younger population (53% < 30 years vs. 48%), a higher ratio of males to females (55:45), a lower level of education, a lower likelihood of being employed, a higher likelihood of being employed in services other than health, education, or business (34%), a lower average family income in 2005 ($65,000 vs. $102,000), higher living costs than many NWT communities, a greater amount of housing in need of major repair (49%), a higher percentage of households in core need (37%), a higher crime rate, and a greater likelihood of participating in traditional land uses.

Phase 2 of the Ts'ude niline Tu'eyeta socio-economic report (AMEC, 2011) conservatively estimated the current economic output of Ts'ude niline Tu'eyeta at $7.9 million annually (Table 3). This includes 'traditional resource use' (wild meat, fish), 'commercial resource use' (trapping, outfitting), and 'ecological goods and services' (existence values of wildlife in particular boreal caribou, climate regulation). Cultural and historical values are very difficult to quantify. The total value of economic benefits, excluding non-renewable resource development, forecasted to 2065 is $57.5 million.

Phase 2 estimated the total economic potential from non-renewable resources of the Ts'ude niline Tu'eyeta candidate NWA (Table 4), based on limited information and a number of assumptions about the scale of development based on past NWT experience, its duration, exploration and development costs, and marketability.

Table 3: Summary of Annual Economic Benefits Currently Associated with Ts'ude niline Tu'eyeta (from AMEC, 2011).

Type of Benefit		Value
Traditional Resource Use and Values	Consumption of fish	$8,200
	Consumption of wildlife	$115,600
	Native plants and berries	Unknown
	Wood for fuel	$51,700
	Recreation	$60,100
Commercial Resource Use and Values	Trapping	$26,600
	Outfitted hunting	$500,000
	Tourism	$19,000
	Arts and crafts	Unknown
	Commercial forestry	Unknown
Ecological Goods and Services	Drinking water	Unknown but small
	Climate regulation	$2,675,000
	Value of migratory waterfowl - hunting	$21,300
	Value of migratory waterfowl - recreation	$354,600
	Existence value for Woodland Caribou	$640,150
	Existence values for a protected area	$3,450,650
Cultural Values		Not quantified
TOTAL		**$7,962,300**

Summary:

Oil Development: Rising demand and price mean oil development could occur as early as 2015 (Table 4), assuming the construction of a 130 km feeder line to the existing Norman Wells pipeline. The Ts'ude niline Tu'eyeta area could encompass 12 Call for Bid areas (avg.= 86,750 km2 based on 2011 Tulita District leases). If the issuance of these was spread over 28 years, oil field exploration and development would cost $275 million and would result in $300 million in operational revenues, but only if the oil recovered was three times that predicted by Drummond (2010) (i.e., revenues exceed costs). Oil development and operations in Ts'ude niline Tu'eyeta requires a specialized and technical workforce and would have limited effect on NWT employment. Construction of the feeder line would result in a short (2 year) increase in employment of which a considerable amount could be supplied by Fort Good Hope (30) and the NWT. Oil field production would support 5 jobs which could be filled by Fort Good Hope after specialized training. The Net Present Value of benefits spread over the 28 years (taxes, royalties, and retained profits) from oil development in Ts'ude niline Tu'eyeta (Table 5) discounted at 7% is $27.4 million of which 32% accrues to the NWT of which, in turn, 24% ($2.1 million) accrues to Fort Good Hope.

Natural Gas Development: Depressed prices, lack of transportation infrastructure, and the relatively modest estimated reserves in Ts'ude niline Tu'eyeta mean that natural gas exploration and development there is not likely to occur in the foreseeable future. Assuming the construction of the Mackenzie Gas pipeline from the Mackenzie Delta, a feed-in from Ts'ude niline Tu'eyeta might be expected in 2037 (Table 4). As with oil development, if the issuance of 12 leases was spread over 20 years, natural gas exploration and development would cost $146 million and would result in $192 million in operational revenues spread over 25 years. Natural gas exploration and development would result in modest employment opportunities for the NWT and Fort Good Hope workforce. Construction of a feeder line to the Mackenzie gas pipeline would result in short (2 year) increase in employment of which a considerable amount could be supplied by Fort Good Hope and the NWT. Natural gas production would create 5 jobs which could be filled by Fort Good Hope after specialized training. The Net Present Value of benefits from natural gas development in Ts'ude niline Tu'eyeta (Table 5) discounted at 7% is $5.7 million of which 26% ($1.7 million) would accrue to the NWT of which, in turn 15% ($0.4 million) would accrue to Fort Good Hope.

Zinc-lead and Copper: Although the potential is generally high for metals, extensive exploration is required to identify commercially viable deposits. There could be more than one mine developed in the Ts'ude niline Tu'eyeta area, but the timing is difficult to predict because of the lack of transportation infrastructure (roads and/or railroads) into the northern Mackenzie Mountains and the erratic prices of metals. Assuming the construction of an all-weather road from the Dempster Highway (estimated $525 million), metal mining in the southern portion of Ts'ude niline Tu'eyeta might commence around 2050, although this would be preceded by 25 years of exploration (Table 4). Unlike petroleum, exploration for metals, all weather road construction, mine construction, and ongoing production would result in heavy labour demands including on the suitable workforce in Fort Good Hope (estimated at 30 jobs) as well as the NWT workforce. Metal production in Ts'ude niline Tu'eyeta from a mine could amount to $306 million annually. The life of a mine would be around 15 years. The Net Present Value of benefits from a zinc-lead and/or copper mine discounted at 7% is $1.9 million (Table 5) of which 43% would accrue to the NWT of which, in turn, 6% ($0.05 million) would accrue to Fort Good Hope. These values are much less than those for petroleum because of the late forecast period (2050) and the high level of uncertainty due to the remote location and the need for a permanent transportation link.

Diamonds: The low to moderate diamond potential in the sampled portion (46%) of Ts'ude niline Tu'eyeta and the need for extensive advanced exploration mean that diamond mining there is a remote possibility until at least 2020 with an operating mine no sooner than 2037 (Table 4). Exploration, mine construction, and ongoing production would result in heavy labour demands including the suitable workforce in Fort Good Hope (estimated at 36 jobs), as well as the NWT workforce. The probabilities associated with developing a diamond mine in Ts'ude niline Tu'eyeta diminish rapidly, starting at 100% for exploration, and declining to 20% and 10% for bulk sampling and construction, respectively. The Net Present Value for diamond mining discounted at 7% (Table 5) is $2.8 million of which 51% ($1.4) would accrue to the NWT of which, in turn, 15% ($0.2 million) would accrue to Fort Good Hope.

Table 4: **Measures of resource development in the Ts'ude niline Tu'eyeta candidate NWA (from AMEC, 2011).**

Attribute	Oil	Gas	Zinc-lead or Copper (one mine)	Diamonds
Resource Potential	Estimated 3.2 million m^3 recoverable reserves	Estimated 5,987 million m^3 recoverable reserves	High potential for lead-zinc; moderate copper potential.	Low to moderate potential
When	Exploration: 2015 Construction: 2020 Production: 2022	Exploration: 2030 Construction: 2034 Production: 2037	Exploration: 2020 Construction: 2047 Production: 2050	Exploration: 2020 Construction: 2025 Production: 2037
Duration	Exploration: 8 years Construction: 2 years Production: 25 years	Exploration: 9 years Construction: 3 years Production: 30 years	Exploration: 25 years Construction: 3 years Production: 15 years	Exploration: 15 years Construction: 2 years Production: 20 years
Cost	Exploration: $98 million Construction: $135 million Production: $50 million/yr	Exploration: $66 million Construction: $80 million Production: $40 million/yr	Exploration: $11 million Construction: $175 million Production: $44 million/yr	Exploration: $30 million Construction: $750 million
Total Annual Revenues	$300 million ($100/barrel)	$192 million	$306 million	$100 million
Labour Benefits	Exploration: 50 PYs Construction: 268 PYs Operations: 5 PYs/year	Exploration: 30 PYs Construction: 168 PYs Operations: 5 PYs/year	Exploration: 10 PYs Construction: 333 PYs Operations: 220 PYs/ year	Exploration: 20 PYs Construction: 1,425 PYs Operations: 144 PYs/year

Table 5: Net Present Value of benefits associated with non-renewable resource development in Ts'ude niline Tu'eyeta, discounted at 7%.

Benefit	Oil (2015-2045)	Natural Gas	Zinc-lead and Copper	Diamonds	Total
NPV of Benefits for Canada (millions)					
Labour Income	$4.5	$0.8	$0.5	$1.1	$6.9
Royalties	$4.2	$0.9	$0.3	$0.4	$5.8
Canadian taxes	$7.6	$1.6	$0.5	$0.7	$10.4
NWT taxes	$2.5	$0.5	$0.2	$0.3	$3.5
Retained profits	$8.5	$1.8	$0.4	$0.3	$11.0
Total	$27.4	$5.7	$1.9	$2.8	$37.8
NPV of Benefits for NWT (millions)					
Labour Income	$4.5	$0.8	$0.5	$1.1	$6.9
NWT taxes	$2.5	$0.5	$0.2	$0.3	$3.5
Retained profits	$1.7	$0.4	$0.1	$0.1	$2.3
Total	$8.8	$1.7	$0.8	$1.4	$12.7
Percent of Canada	32%	30%	43%	51%	39%
NPV of Regional Benefits (millions)					
Labour Income	$1.9	$0.3	$0.04	$0.2	$2.5
Retained profits	$0.2	$0.0	$0.01	$0.01	$0.2
Total	$2.1	$0.4	$0.05	$0.2	$2.7
Percent of NWT	24%	22%	6%	15%	21%

Petroleum and Minerals: If all types of non-renewable resource development were to proceed as described above, the future economic benefits would have a net present value of $37.8 million for Canada, based on a discount rate of 7% (Table 5). Of these benefits, 33% would occur in the NWT ($12.7 million) while benefits to Fort Good Hope would amount to $2.7 million or 21% of the NWT benefits. For Canada, incremental labour income would only account for 18% of total benefits, with corporate taxes and royalties accounting for 43%. For the NWT, incremental labour would account for 53% of economic benefits. The importance of employment income would increase to 92% for Fort Good Hope.

3.0 ANALYSIS OF CONSERVATION AND ECONOMIC VALUES

3.1 Methodology

The TTWG was faced with the complex task of considering multiple layers of conservation and economic values overlying the Ts'ude niline Tu'eyeta candidate NWA and designing a protected area taking into account all of these values. As an initial, objective approach to this task CWS, as part of the TTWG, conducted a MARXAN analysis (Game & Grantham 2008, Ardron et al. 2010).

MARXAN is a computer program that identifies the optimal solution for incorporating a range of information into the smallest geographic area. In the case of a candidate NWA such as Ts'ude niline Tu'eyeta, MARXAN is provided representation target levels for each of the conservation values identified for the area and attempts to meet these targets within a minimum sized area. Different scenarios with respect to the economic values are explored by attaching 'cost' to those values or, in other words, the degree to which MARXAN should avoid economic values when identifying areas for achieving conservation value target levels.

The analysis was performed simultaneously at two geographic scales. At the landscape or ecoregion level, targets were set to achieve NWT-PAS' goal of protecting core representative areas within each ecoregion (NWT PAS Steering Committee 1999; Gah et al. 2008). Within the context of a protected area boundary, targets were also set to achieve ecological integrity and meet community expectations. The conservation values and their representation targets were:

Landscape Level:

- 60 landscape units or areas with similar soil parameters. Targets ranged between 10-75% based on abundance, i.e. less common landscape units received higher target values than the more common ones;

- 99 vegetation cover types from a mosaic of EOSD data and Ducks Unlimited Canada Land cover classifications. Targets ranged between 15-75% based on abundance, i.e. abundant cover types were assigned lower target values;

- 26 physiographic units or areas with similar climate, landforms (including types, elevation, slope and aspect), vegetation and soils. Targets ranged between 10-25% based on abundance, i.e. abundant physiographic units were assigned lower target values.

Boundary Level:

- Watersheds – Ramparts River (75%) and Ontaratue River (10%);

- Sahtu Heritage Sites – Tuyát'ah (100%) and Shit'a Got'ine (65%);

- Key Migratory Bird Terrestrial Habitat Site # 13 (Ramparts River Wetlands) – 100%;

- Boreal Woodland Caribou critical habitat – patches >200km^2 (100%) and patches <200km^2 (50%);

- Fort Good Hope wildlife harvesting area – 75%;

- Combined ecological services valuation of biomass and dead soil organic matter – High (100%), Medium (50%), Low (10%);

- Combined ecological goods valuation of protected area, woodland caribou and waterfowl – High (100%), Medium (50%), Low (10%)

- Important Wildlife Areas for species of interest – Northern Mountain population of Woodland Caribou (75%), Peregrine Falcon (75%), Moose (75%)

- Special fine filter features – glacial refugium (60%) and alvars (100%)

The economic values[1] considered were:

- Zinc-lead potential

- Copper potential

The entire study area, in this case the Ts'ude niline Tu'eyeta candidate NWA, is divided into equal size 'planning units'. There were 3,251 such planning units within Ts'ude niline Tu'eyeta and each planning unit has a certain conservation and economic value signature based on the specific values occurring in it. These planning units are the fundamental unit of the MARXAN analysis. In the results below, the dark green area on the map (Figure 8) represents planning units that were selected more than 75% of the time in 100 runs of the program. MARXAN, however, does not delineate the actual boundary location of a possible protected area. The boundary line was later drawn by the TTWG taking into account the MARXAN conservation solution, the distribution of economic potential, significant features of the area, and the location of Sahtu settlement lands.

3.2 Conservation and Economic Values

The community of Fort Good Hope's vision for Ts'ude niline Tu'eyeta has always been that of protecting the conservation values of the area above economic development. In order to maximize the conservation potential of the area (but not necessarily the size of the area), the analysis was run without consideration to the economic potential. The MARXAN analysis, therefore, used an equal 'cost' attached to all planning units within the Ts'ude niline Tu'eyeta candidate NWA (Figure 7; Section 3.3).

1 Oil and gas potential was too widespread to use in a useful way in the Marxan analysis. Diamond potential was also omitted from the analysis as the potential was low to moderate and the kimberlite source of unknown origin.

3.3 Results

Using conservation targets alone, MARXAN excluded 90% of zinc-lead and copper potential within Ts'ude niline Tu'eyeta while reducing the area by 30% (Figure 7). The MARXAN solution was successful at capturing all the various conservation values at their pre-determined target levels (Section 3.1) within the candidate area. In addition, the MARXAN solution achieved 68, 60 and 23% of the NWT PAS goal of protecting core areas in ecoregions 51, 53 and 56, respectively (Peel River Plateau, Fort MacPherson Plain, and Mackenzie River Plain).

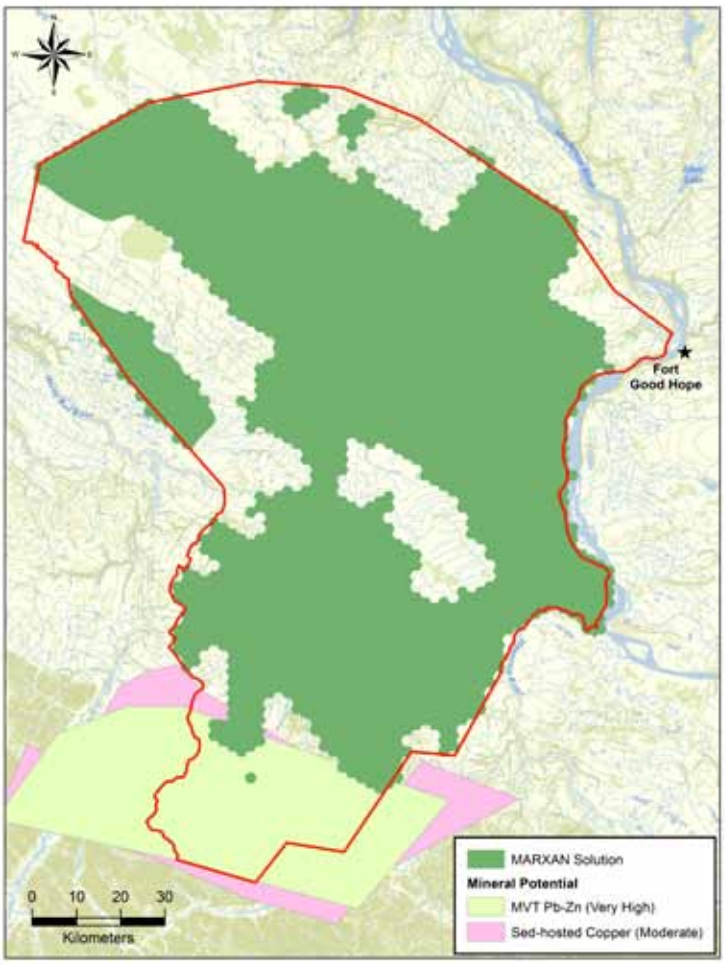

Figure 7: The areas of conservation value selected by MARXAN within the Ts'ude niline Tu'eyeta candidate NWA.

4.0 RECOMMENDATIONS

The Ts'ude niline Tu'eyeta Working Group directs the following recommendations to the K'asho Got'ine District Land Corporation. These recommendations mark the transition from Step 5 to Step 6 of the PAS process, which advances Ts'ude niline Tu'eyeta towards establishment as an NWA under the *Canada Wildlife Act*.

4.1 Boundary

The TTWG recommends that an area covering 67% (10,103 km^2) of the original Ts'ude niline Tu'eyeta candidate NWA (15,119 km^2) be considered for establishment as a permanent protected area (Figures 8 and 9).

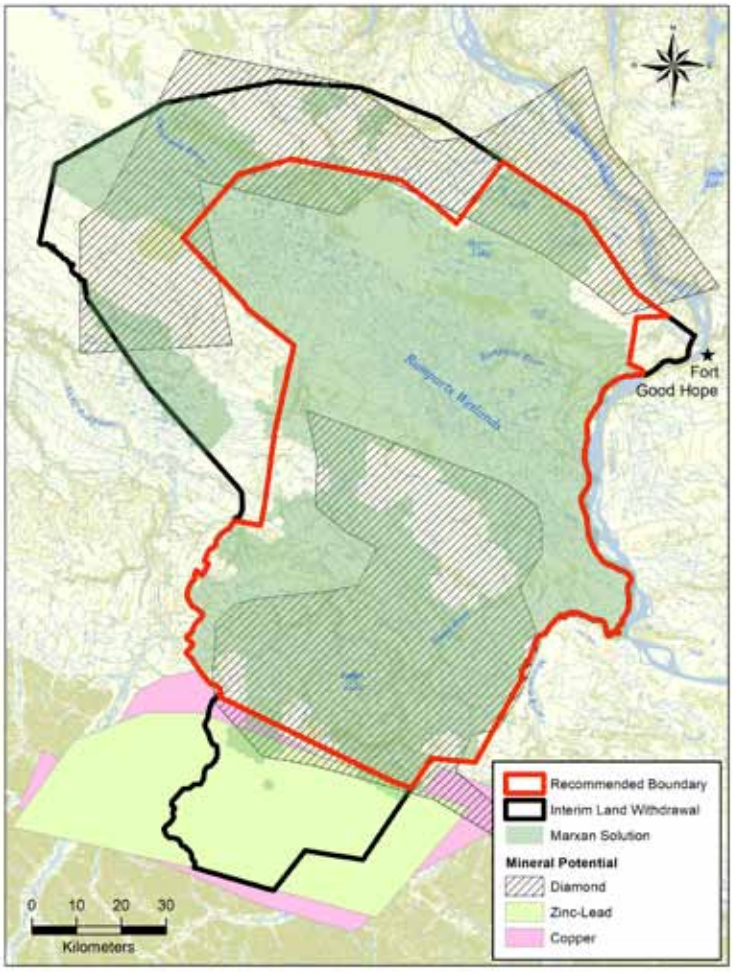

Figure 8: The TTWG's recommended boundary in relation to the original candidate NWA, conservation values (MARXAN solution), and mineral potential.

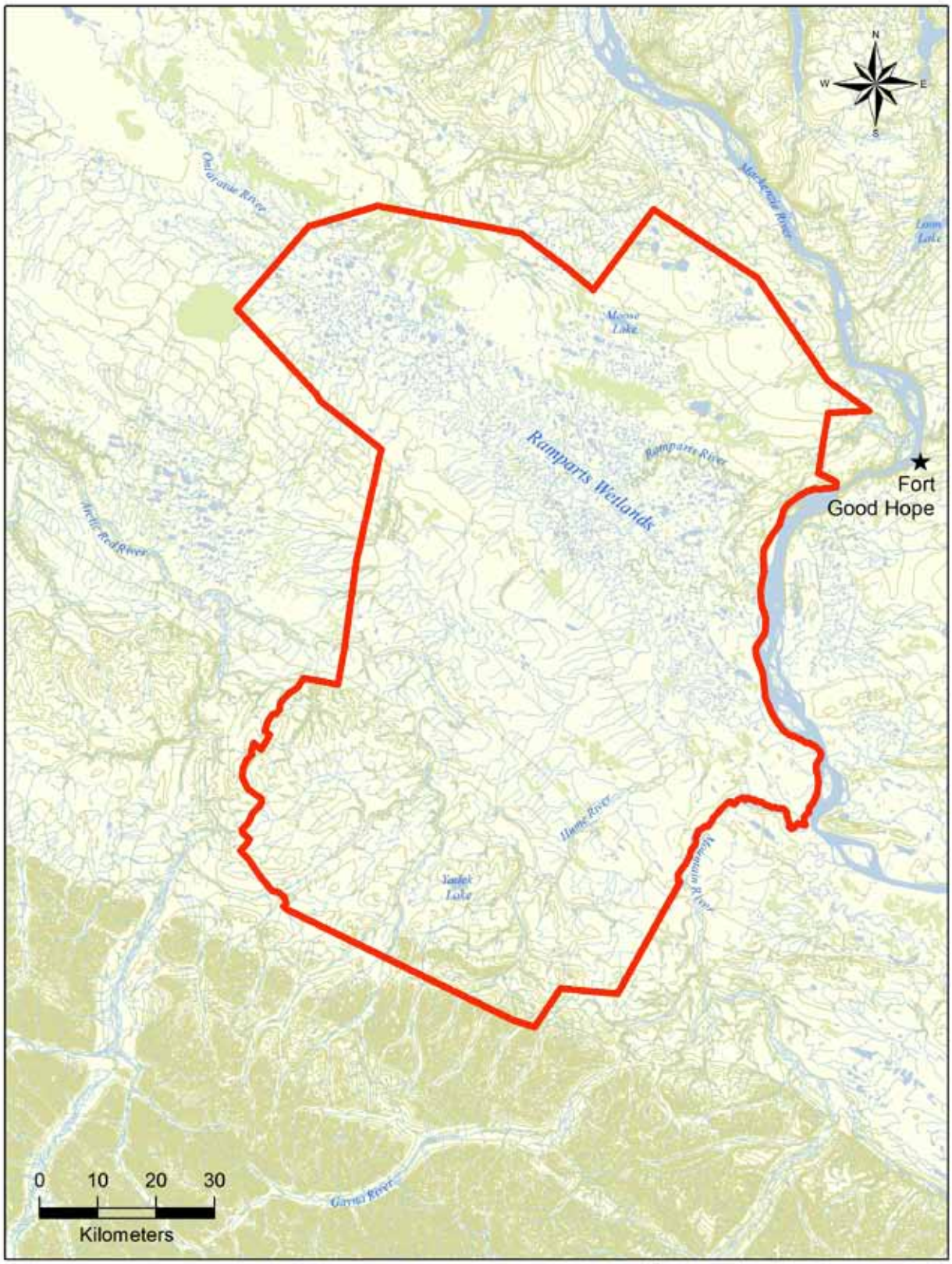

Figure 9: The TTWG's recommended boundary in relation to topographic features.

4.1.1 Cultural and Conservation Considerations

A large majority (83%) of the cultural and conservation values analysed in the MARXAN analysis (Figure 7) in the original Ts'ude niline Tu'eyeta candidate NWA are included in the recommended area. The exact inclusion (%) of specific cultural and conservation values in the recommended area is as follows:

Cultural:

- 93% of camps and cabins
- 50% of heritage sites[2]
- 100% of burial sites
- 98% of Aboriginal place names
- 40% of archaeological sites[3]

Conservation:

- 75% of the Ramparts, 43% of the Ontaratue and almost 100% of the Hume River watersheds
- 100% of the 'Places We Take Care Of' Tuyát'ah area (Figure 10)
- 95% of Fort Good Hope's harvesting area on the west side of the Mackenzie River (Figure 11)
- 97% of the CWS Key Migratory Bird Terrestrial Habitat Site (Figure 11)
- 100% of the winter range of boreal mountain caribou along the foothills of the Mackenzie Mountains in the original candidate area (Figure 12A)
- 100% of the 'secure unburned' habitat for boreal woodland caribou (Figure 12B), plus large amounts of 'secure burned' habitat in the original candidate area

2 An additional number of Heritage Sites found on Sahtu private land within the candidate area.

3 An additional number of Archaeological Sites found on Sahtu private land within the candidate area.

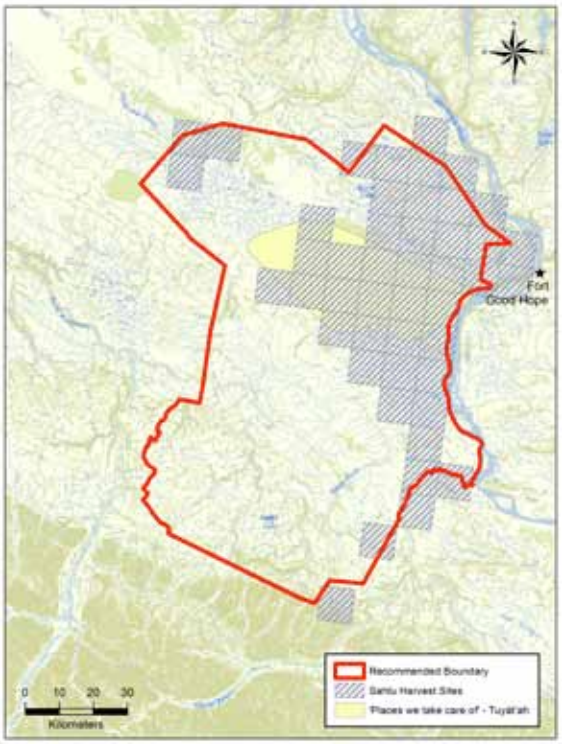

Figure 10: The TTWG's recommended boundary in relation to Tuyát'ah (in 'Places We Take Care Of') and Fort Good Hope's harvesting area on the west side of the Mackenzie River (from Sahtu Heritage Places and Sites Working Group, 1999 and Sahtu Harvest Study, 1995-2002).

Figure 11: The TTWG's recommended boundary in relation to the CWS Key Migratory Bird Terrestrial Habitat Site.

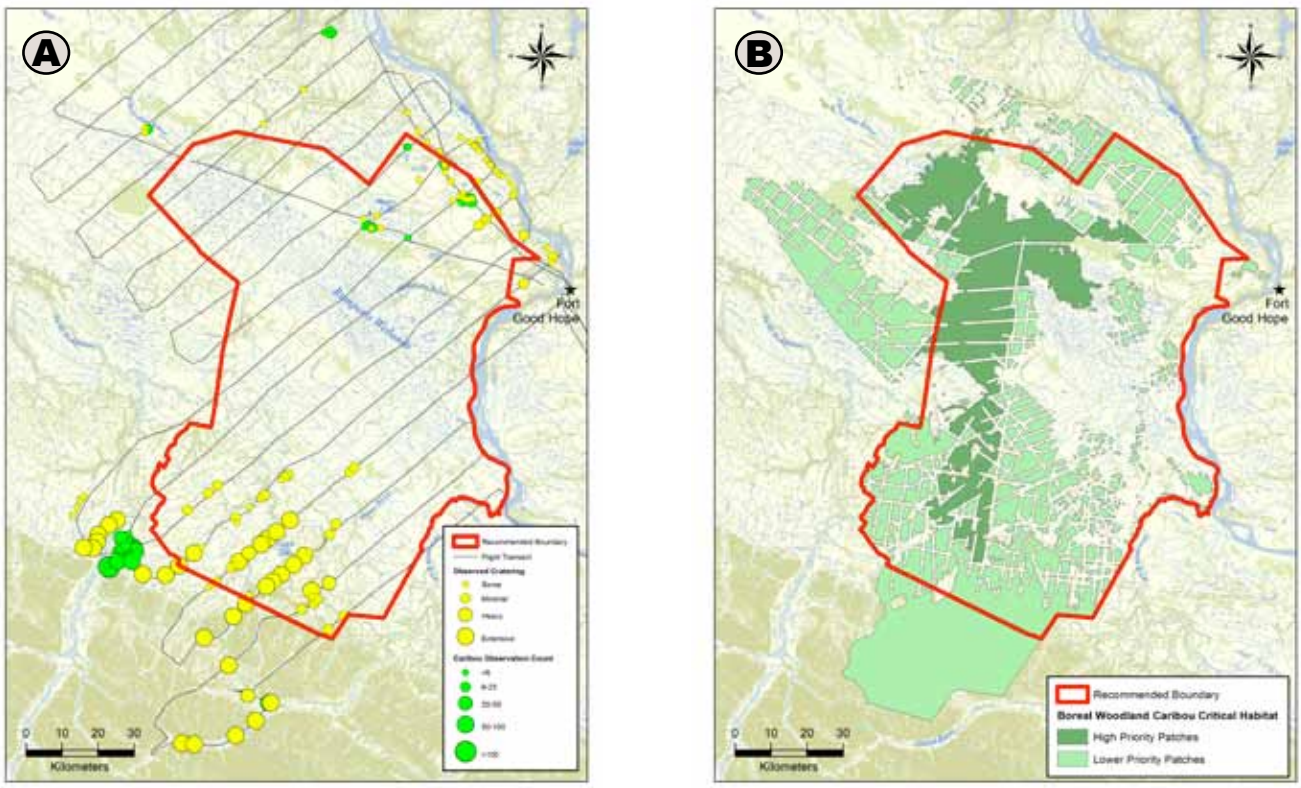

Figure 12: The Ts'ude niline Tu'eyeta Working Group's recommended boundary in relation to boreal mountain caribou late winter distribution (A) (from Popko, 2006), and boreal woodland caribou habitat (B) (from Nagy, 2011).

Boreal Woodland Caribou.
John Nagy

4.1.2 Economic Considerations

Minerals

All of the very high zinc-lead and moderate copper potential in the original Ts'ude niline Tu'eyeta candidate NWA (Section 2.2.2) is excluded from the recommended area and is available for future disposition (e.g., prospecting permits and leases) in Special Management Zones under the Sahtu Land Use Plan. Such development, however, remains hypothetical at this time (AMEC, 2011) considering the remoteness of the area and the need for a transportation link to the outside. The same assumptions would apply to mining development within the recommended area.

Hydrocarbons

The entire Ts'ude niline Tu'eyeta recommended area overlies 'moderate to high' and 'high' hydrocarbon potential. Drummond (2010) estimated the volumes of recoverable natural gas and oil in the area. Approximately 25% of the natural gas and 20% of the oil estimated recoverable reserves in the original candidate area are now excluded from the recommended area (Figure 13 – A and B).

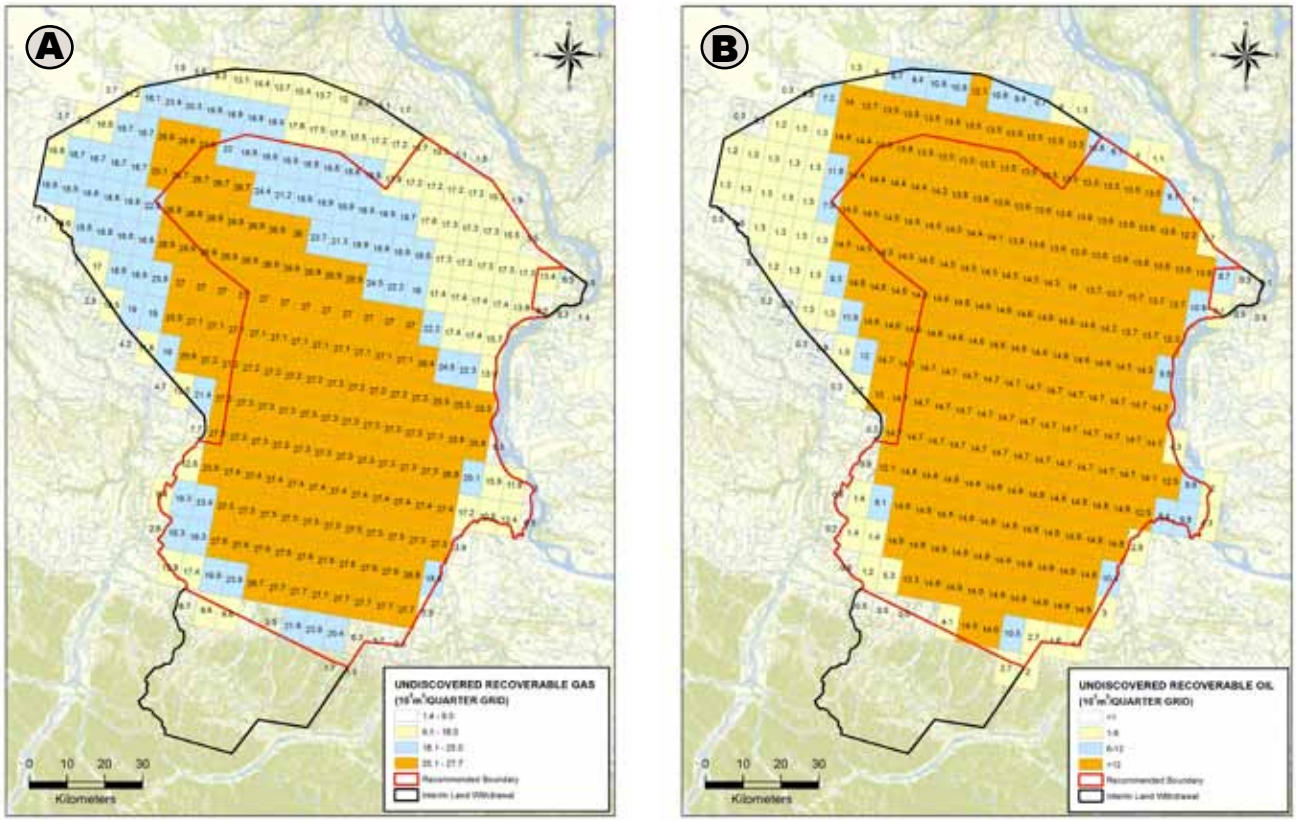

Figure 13: Distribution of undiscovered recoverable natural gas (million cubic meters per quarter grid) (A), and undiscovered recoverable oil (thousand cubic meters per quarter grid) (B) (from Drummond, 2010).

In the context of the overall hydrocarbon potential in the Mackenzie Corridor. Hannigan estimated volumes of natural gas and oil, both recoverable and unrecoverable, in the original candidate NWA. This was done on a 'mean play potential basis' potential' for all plays within the Interior Platform and Northern Foreland Provinces (= Mackenzie Corridor) (Figure 14).

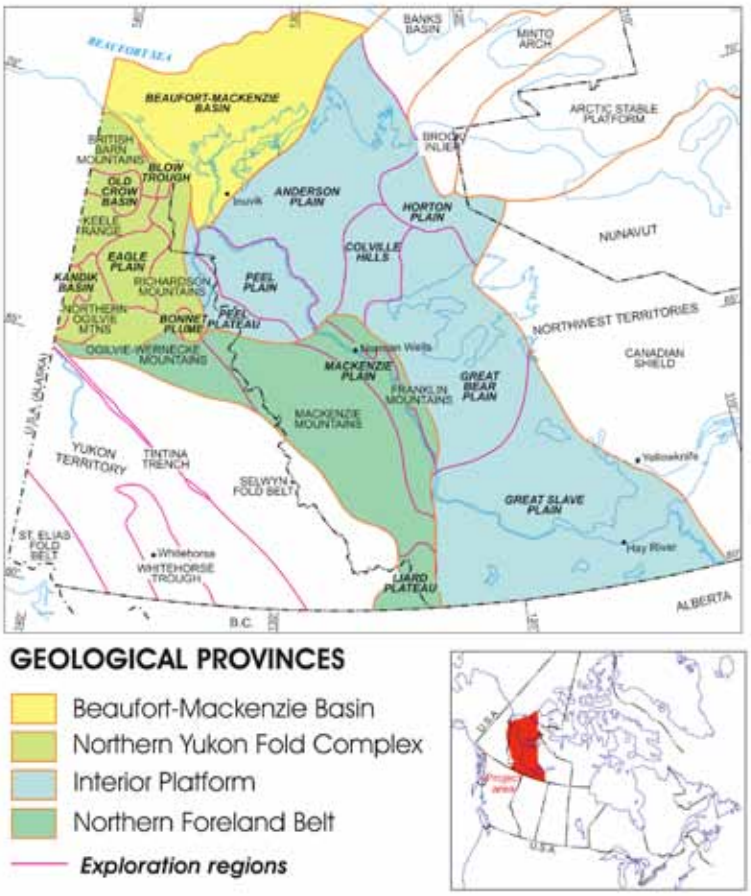

Figure 14: The Mackenzie Corridor consisting of the Interior Platform and Northern Foreland Belt Provinces (Hannigan 2011, pers. comm.).

When this total potential is compared to the 'high confidence potential' for just the plays underlying Ts'ude niline Tu'eyeta (Table 6), it is estimated that the Ts'ude niline Tu'eyeta candidate NWA represents 1.1% (7.1 million m^3) of the Mackenzie Corridor potential for oil and 0.4% (9,139 million m^3) for natural gas. For the smaller recommended area, the estimated potentials decrease proportionally to only 0.74% and 0.27% for oil and natural gas, respectively, of the entire Mackenzie Corridor. It is important to note, however, that the analyses of both Drummond (2010) and Hannigan (2011) are preliminary and based on data from a limited number of wells drilled in the area and in the absence of information on factors affecting recovery such as pool sizes. Nonetheless, oil and natural gas production in Ts'ude niline Tu'eyeta is contingent upon the construction of transportation links to get product to market. Construction of such links in the foreseeable future remains speculative.

Table 6: Oil and natural gas 'high confidence potential' in the Ts'ude niline Tu'eyeta candidate area ('Total play area' refers to the Mackenzie Corridor) (from Hannigan 2011, pers. comm.).

Play name	Mean play potential (million m^3)	Total play area (million hectares)	Play area within Protected Area (million hectares)	Play potential in CPA-high confidence estimate (million m^3)
Interior Platform Province				
Cambrian siliciclastics oil	151.4	14.4	0.3	2.6
Cambrian siliciclastics gas	306,679	14.4	0.3	6,271
Lower Paleozoic platform oil	4.1	28.7	1.4	0.1
Lower Paleozoic platform gas	15,143	28.7	1.4	695
Arnica/Landry platform oil	38.2	19.1	1.2	1.7
Arnica/Landry platform gas	25,812	19.1	1.2	1,414
Kee Scarp reef - Ramparts platform oil	5.3	2.1	1	2
Kee Scarp reef - Ramparts platform gas	145	2.1	1	54
Upper Devonian Imperial siliciclastics (oil)	4.3	4.9	1.2	0.6
Upper Devonian Imperial siliciclastics (gas)	1,004	4.9	1.2	158
Lower Cretaceous siliciclastics-North (oil)	2.1	6.9	0.9	0.1
Lower Cretaceous siliciclastics-North (gas)	2,639	6.9	0.9	222
Total				7.1 (O); 8,814 (G)
Northern Foreland Belt Province				
Lower Paleozoic platform oil	3.7	3.1	0.05	0.04
Lower Paleozoic platform gas	3,299	3.7	0.05	38
Kee Scarp reef - Ramparts platform oil	212.6	1.5	0.04	4.7
Kee Scarp reef - Ramparts platform gas	9,308	1.5	0.04	194
Upper Devonian Imperial siliciclastics (oil)	3.2	2.9	0.05	0.05
Upper Devonian Imperial siliciclastics (gas)	5,883	2.9	0.05	93
Total				4.8 (O); 325 (G)
Grand Total				**11.9 (O); 9,139 (G)**

Diamonds

Approximately 36% of the diamond potential identified in the original candidate NWA is excluded from the recommended boundary and would be open for prospecting and subsequent leases. Since the diamond potential in the recommended area is considered low to moderate, where sampled, the possibility of it leading to a mining development is remote into the foreseeable future.

4.1.2.1 Comparison of 'No protection' versus 'Full protection' Economic Values

AMEC (2011) presented a detailed analysis of the economic potential represented by the renewable and non-renewable resources within the Ts'ude niline Tu'eyeta candidate area, as well as the same potential in the recommended NWA under a full protection scenario. Table 7 summarizes the 'benefit/cost ratios' associated with each protection scenario. It indicates that based on the quantified economic benefits and costs, over the near to mid-term there would be greater economic benefits in terms of new jobs and associated income to Fort Good Hope through the the 'no protection' scenario. However, this analysis does not take into account the erosion of the cultural, social, and land attachment values that would likely result from a 'no protection' scenario.

Table 7: Benefit/cost ratios for 'no protection' and 'full protection' scenarios for residents of Fort Good Hope.

	Discount Rate	No Protection	Full Protection
Benefit/cost Ratio	Undiscounted	1.00	0.65
	3%	1.00	0.63
	7%	1.00	0.64
Net Benefit (millions)	Undiscounted	$0.0	-$9.2
	3%	$0.0	-$5.1
	7%	$0.0	-$2.6

AMEC (2011) also considered all the future economic values (renewable and non-renewable) discounted at the standard 7% to give the 'net present value' for each of the protection scenarios (Table 8). The economic benefits would be highest for the 'full protection' and 'compromise' scenarios. The renewable resource benefits that would result from creating an NWA would be larger than the potential benefits (jobs, income and government revenues) that would result from non-renewable resource development. The compromise scenario would allow for limited non-renewable resource development in the NWA and it would generate the highest overall benefits. However, these benefits would only be slightly higher than the benefits that would occur if all of Ts'ude niline Tu'eyeta were to be designated as an NWA.

Table 8: Present value of economic benefits associated with Ts'ude niline Tu'eyeta discounted at the standard 7% under 3 protection scenarios.

	Without Protection	Full Protection	Compromise Scenario
Net Present Value of Benefits for Canada (millions)*			
Renewable Resources	$9.4	$93.8	$93.6
Non-Renewable Resources	$39.2	$0	$4.2
TOTAL	**$48.6**	**$93.8**	**$97.8**
Net Present Value of Benefits for Fort Good Hope (millions)			
Renewable Resources	$4.5	$4.6	$4.6
Non-Renewable Resources	$2.7	$0	$0.1
TOTAL	**$7.2**	**$4.6**	**$4.7**
Net Present Value of Global Benefits (millions)			
Renewable Resources	$45.1	$45.5	$45.5
Net Present Value of Total Benefits (millions)			
Renewable Resources	$54.5	$139.3	$139.1
Non-Renewable Resources	$39.2	$0	$4.2
TOTAL	**$93.7**	**$139.3**	**$143.3**

* Includes benefits for residents of Fort Good Hope.

4.2 Legal Designation

The TTWG recommends that Ts'ude niline Tu'eyeta be established as a National Wildlife Area (NWA) under the *Canada Wildlife Act* (*Wildlife Area Regulations*), which is administered by Environment Canada.

Rationale:

The TTWG has reviewed the *Canada Wildlife Act* and believes that given the flexibility in management provided by the Wildlife Area Regulations and the wishes of the K'asho Got'ine Dene and Métis to conserve the land and water for future generations, NWA is the best legal designation. It best meets these conservation goals while at the same time allowing limited economic activity and enjoyment by the community and other Canadians.

4.3 Land Management

Section 9(1) of the *Canada Wildlife Act* states: "The Governor in Council may authorize the Minister to lease any lands, or purchase or acquire any lands or any interests or rights in any lands, for the purpose of research, conservation and interpretation in respect of (a) migratory birds; or (b) with the agreement of the government of the province having an interest therein, other wildlife." Therefore, the *Canada Wildlife Act* (*Wildlife Area Regulations*) provides protection

to the surface lands of Ts'ude niline Tu'eyeta through transfer of management to Environment Canada from AANDC. The land remains federal crown land. The *Canada Wildlife Act* does not provide for CWS to manage subsurface lands. However, the CWS Policy When Considering Permitting Prohibited Activities in Protected Areas provides CWS with strong discretionary capability for maintaining the conservation values of the NWA through its permitting authority. The Policy states that a permit may only be issued if:

1) the activity will benefit wildlife and their habitat, considering the importance of unfragmented habitats, or

2) the activity is consistent with the purpose for which the protected area was established, and

3) the activity is consistent with the most recent management plan for the protected area.

If the proposed activity is not consistent with the purpose and criteria used for the establishment of the wildlife area or with the most recent management plan for the NWA, the permit will be denied.

The TTWG considered three options concerning future subsurface lands management in the recommended NWA. **The TTWG does not have a consensus recommendation regarding subsurface dispositions.**

Option 1 - No withdrawal of subsurface rights within the recommended boundary.

Environment Canada assumes surface administration while AANDC retains the subsurface administration and the ability to issue subsurface rights leading to possible industrial development anywhere in the NWA. Such development, however, could occur only through permitting by Environment Canada and as long as it satisfied the criteria set out in the CWS Permitting Policy.

Option 2 - Withdrawal of the subsurface rights through the Territorial Lands Act, for the entire area within the recommended boundary.

AANDC facilitates an Order-in-Council to withdraw the subsurface rights on a permanent basis. No further mineral or hydrocarbon dispositions (rights) are issued by AANDC.

Option 3 - Partial withdrawal of the subsurface rights through the Territorial Lands Act, for the entire area within the recommended boundary.

AANDC facilitates an Order-in-Council to withdraw the mineral or hydrocarbon subsurface rights on a permanent basis.

Option 4 – Zoning.

Create a zone with a full withdrawal of the subsurface rights for the Ramparts Wetlands (Tu'eyeta; Figure 15) with the surface of the remainder being administered by Environment Canada.

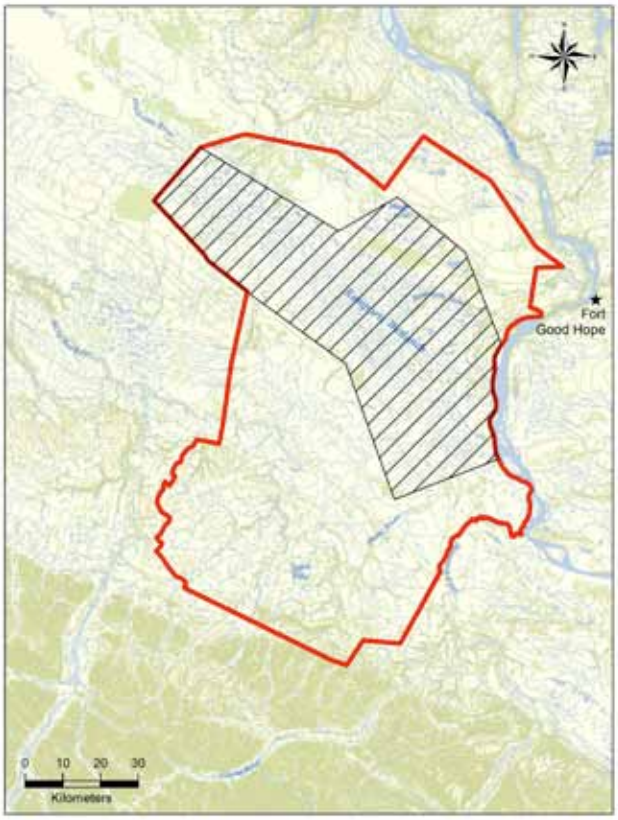

Figure 15: **An example of a full subsurface withdrawal zone within the TTWG's recommended area.**

Wetland habitat in Ts'ude niline Tu'eyeta candidate NWA.
Donna Mulders

4.3.1 K'asho Got'ine Dene and Métis

The K'asho Got'ine Dene and Métis recommend Option 2.

Rationale:

The K'asho Got'ine Dene and Métis have recommended a boundary option that results in a 33% decrease in land area from the original candidate NWA. They believe that this is a significant compromise considering that virtually the entire area of moderate to high mineral potential has been left available for future disposition, as has 37% of the low to moderate diamond potential identified in Ts'ude niline Tu'eyeta and 23% of the hydrocarbon potential. The remaining hydrocarbon potential is considerable and would result in the greatest economic benefits over the medium term, if exploited, compared to renewable resources. The K'asho Got'ine Dene and Métis have taken into account the relatively small contribution the area makes to the overall potential in the Mackenzie Valley. Full protection of the recommended area would result in considerable annual economic benefits from renewable resources in Ts'ude niline Tu'eyeta; and, this does not include the cultural and spiritual values of the area to which a monetary value cannot be attached. The K'asho Got'ine Dene and Métis believe that full protection of Ts'ude niline Tu'eyeta NWA is possible only through a withdrawal of the area from subsurface rights issuance. The land provides the plants and animals that have sustained the community for generations and it will continue to do so provided it is shown respect and care. Ts'ude niline Tu'eyeta holds the history and spiritual basis of the K'asho Got'ine Dene and Métis and protecting it helps give the youth a cultural awareness and foundation for the future, especially in uncertain times.

4.3.2 Government of Canada

Decisions on the subsurface dispositions for NWAs being established under the PAS in the NWT will be made on a case by case basis. The Government of Canada is currently considering the subsurface disposition options, and recommends that subsurface disposition options form part of the future discussions on the establishment of the Ts'ude niline Tu'eyeta NWA. The Government of Canada does not have a recommendation for any specific subsurface option for the Ts'ude niline Tu'eyeta NWA at this time.

4.3.3 Government of the Northwest Territories

The Government of the Northwest Territories (GNWT) has participated in the working group for the Ts'ude niline Tu'eyeta candidate National Wildlife Area by providing technical and expert advice within its mandate. The GNWT recognizes that the TTWG has reviewed the assessment information presented on land values in the vicinity of the Ts'ude niline Tu'eyeta candidate area in a manner consistent with the Protected Areas Strategy process. The GNWT acknowledges that the working group has put forward a boundary option for this recommendations report. The GNWT's views on the recommendations report, including a preferred boundary, will take into consideration feedback from public consultation, as well as other information in order to inform a final territorial position on this candidate area.

A final boundary should be reduced from the original study area to exclude areas of highest

mineral potential, minimize the inclusion of high oil and gas potential, and maintain existing outfitter areas of operation, while still retaining the key water and wildlife habitat values, and the protection of key cultural and spiritual areas. The most sensitive ecological areas should have oil and gas and minerals rights withdrawn, but less ecologically sensitive areas should not have the subsurface withdrawn.

4.3.4 Ducks Unlimited Canada

Ducks Unlimited Canada (DUC) supports final designation of the Ts'ude niline Tu'eyeta National Wildlife Area (NWA) as defined through the Northwest Territories Protected Areas Strategy (PAS) process, by the Ts'ude niline Tu'eyeta Working Group's recommended boundary. This support is based upon its mission to retain wetlands and associated habitats for the benefit of waterfowl.

DUC supports the balanced approach that the Ts'ude niline Tu'eyeta Working Group has chosen by adjusting the boundary and reducing the area of the proposed NWA to 67% of its original size in order to exclude many areas with non-renewable resource potential. DUC believes it is essential for the final designation to include surface and sub-surface protection to provide clarity and certainty with respect to what lands will be protected and what lands may be developed. Achieving surface and sub-surface protection of the area within this boundary also reflects the vision of the K'asho Got'ine Dene and Métis to make decisions about how their land and resources should be managed for future generations.

Two areas, one on the western side and another large area of high non-renewable resource potential in the south, excluded from the selected boundary are within the Ramparts watershed and upstream of key wetlands central to Ts'ude niline Tu'eyeta. A portion of the wetlands themselves was also excluded from the northwest of the recommended boundary. DUC's vision of management of the Ts'ude niline Tu'eyeta NWA includes ensuring appropriate action is taken to maintain the ability of wetland habitat to support breeding, moulting, and staging waterfowl.

Rationale:

The organizations that make up the Ts'ude niline Tu'eyeta Working Group demonstrated their collective commitment to compromise to attain a balance between conservation and development in the region. These organizations also seek clarity and certainty with respect to ensuring the eco-cultural values contained within the remaining Ts'ude niline Tu'eyeta area are protected for future generations and Option 2 is best suited to provide this clarity.

4.3.5 NWT and Nunavut Chamber of Mines

With respect to the boundary for Ts'ude niline Tu'eyeta area, the following are the recommendations from the NWT and Nunavut Chamber of Mines, in order of declining preference:

1. Create no permanent withdrawal of any subsurface lands. If the lands under the candidate protected area are not permanently withdrawn, then the option to explore and potentially

take advantage of economic opportunities from the area can exist in the future. This means relying on environmental laws and regulations for protection. Mining, exploration and other land use activities are among the most heavily regulated activities in the country and must meet stringent thresholds to ensure their activities create no significant adverse environmental effects on the land, water or wildlife.

2. Do not permanently withdraw any of the lands with moderate to very high mineral potential. Lands of with this kind of mineral potential are also rare and thus worthy of protecting for economic development reasons. Given that there are strong environmental regulations in place, these lands can be developed without any significant adverse environmental effects.

3. Protect using the Sahtu Land Use Plan as much as possible. A designation as a "Conservation Zone" will prevent development from occurring today and could be used on areas of highest community concern. Areas of lower concern could be designated as "Special Management Zones" under the plan; development will be possible in these areas but will be subject to conditions aimed at minimizing the environmental impacts. Using the Land Use Plan allows the community the ability and flexibility to re-evaluate the protective designation on a regular basis. The community can choose to protect indefinitely, or they can choose to remove or reduce protections some time in the future based on new needs or technologies, for example.

4. Make permanent protections as small as possible. If the community feels it is absolutely necessary to establish a permanent protected area that will never, ever be developed, then we recommend that this be confined to the smallest area possible. A better option for future flexibility would be to seek to have only the surface protected under that designation, and use the Sahtu Land Use plan to protect the subsurface. For example, we understand that the most sensitive part of the area is the wetlands which occupy roughly a quarter of the proposed area. If the community is insistent on a national wildlife area in this area, the Chamber recommends that you seek only surface protection through the National Wildlife Area, and subsurface protection through the Sahtu Land Use Plan. There are examples from the US of oil and gas production from under bird sanctuaries. There is no threat to the birds or their habitat and industry creates benefits and pays royalties – truly an example of a win: win situation.

The Chamber of Mines urges minimal permanent protection of land in order to leave options open for the future as technology advances and needs of future generations become clearer. If permanent protection is given now, what is possible with future technology and what the needs of future generations are will not matter, as any resource development opportunities provided by the Ts'ude niline Tu'eyeta area will have been nullified.

We believe in "the art of the possible". We do not believe in the simple black and white of development being bad and environmental protection being good. We believe that creative thinking can create very interesting outcomes that can allow us to create development opportunities for communities AND protect the environment.

We encourage the K'asho Got'ine people of Ft. Good Hope and other decision makers to take

a creative approach in finding win: win situations through their deliberations on how to best protect both the environmental aspects and the mineral potential of the Ts'ude niline Tu'eyeta area.

The NWT and Nunavut Chamber of Mines' complete submission to this report can be found in Appendix 4.

4.3.1 Association of Mackenzie Mountains Outfitters

The Association of Mackenzie Mountains Outfitters supports the currently proposed boundary option, and requests that the operators in the two outfitting concessions that fall within the boundary be consulted during the developement of the management plan for Ts'ude niline Tu'eyeta.

5.0 MANAGEMENT

5.1 Principles

Management of the Ts'ude niline Tu'eyeta NWA will be guided by the following principles:

1) Recognition and protection of the traditional and current use of the area by the K'asho Got'ine Dene and Métis.

2) Management will be ecosystem-based and respectful of natural processes that maintain the northern boreal forest and its biodiversity.

3) Management will be based upon both Fort Good Hope's traditional knowledge and scientific ecological information.

4) Conservation of nationally and locally important wildlife and wildlife habitat for the benefit of all Canadians;

5) Encouragement of public awareness of and appreciation for the ecological values of the area.

5.2 Goals and Objectives

Management of the Ts'ude niline Tu'eyeta NWA has the following goals and objectives:

Goal 1: Conserve and protect Tu'eyeta (Ramparts wetlands)

Objective:

1) Ensure that the current quantity, quality, and rate of flow of water in the Ramparts wetlands and associated watercourses are retained.

Sub-objectives:

1) No activities that result in the removal or damage to both riparian and upland vegetation within the Ramparts River wetlands will be allowed.

2) No activities that could potentially result in the release of deleterious substances into the waters of the Ramparts River wetlands will be allowed.

3) Water flow in the Ramparts River wetlands will not be impeded by man-made structures.

4) Potential impacts caused by future development in the Ramparts River headwaters upstream of the Ts'ude niline Tu'eyeta NWA will be minimized.

5) There should be good coordination between Ts'ude niline Tu'eyeta NWA

management and broader land and water research and monitoring initiatives in the Mackenzie Valley.

Goal 2: Maintain the natural biodiversity within the Ts'ude niline Tu'eyeta NWA, especially species at risk.

Objective:

1) Ensure that the coverage of forest vegetation communities presently found within the area is maintained as much as possible at current amounts.

Sub-objectives:

1) Any activities resulting in the removal or damage of forest vegetation will be conducted in such a way as to minimize such removal or damage.

2) Priority for protection must be given to habitats known to be important to species at risk. In particular, consideration should be given to incorporating the protection of old growth spruce forest into fire management activities in the NWA, recognizing its importance to boreal woodland caribou.

Goal 3: Conserve and protect the rich cultural legacy within the Ts'ude niline Tu'eyeta NWA.

Objective:

1) Ensure that all sacred, burial, cabin and camp sites are protected by a buffer of sufficient size.

Goal 4: Conduct and encourage research, monitoring and education in the Ts'ude niline Tu'eyeta NWA.

Objectives:

1) Research involving partnerships with government, industry, and non-government agencies must be aimed at protecting and maintaining naturally occurring habitats and the fauna that depends on them, in particular species at risk.

2) There must be a regular monitoring schedule with emphasis on forest birds and waterfowl.

3) The Ts'ude niline Tu'eyeta NWA should be used as a 'natural laboratory' to foster environmental knowledge within the youth of Fort Good Hope as well as the broader public in and beyond the community.

5.3 Management Process

The TTWG is not prepared to make detailed recommendations on the future management of the Ts'ude niline Tu'eyeta NWA. It does, however, recognize the need for all management partners to be involved in finalization of the current Draft Management Plan. At that time, specific management issues will be addressed in detail.

The TTWG recommends that:

- A Ts'ude niline Tu'eyeta NWA protected area agreement be established, as contemplated in the Sahtu Final Agreement, between Environment Canada and the K'asho Got'ine District Land Corporation. The agreement would address the form and function of the NWA Management Committee as well as opportunities afforded the community of Fort Good Hope through the NWA, the mitigation of any undesirable effects on the community arising from the NWA, and the role of the Sahtu Land Use Planning Board in the management of the NWA.

- The Ts'ude niline Tu'eyeta NWA Management Committee should take its primary direction from the Wildlife Area Regulations, the management agreement, and the Ts'ude niline Tu'eyeta NWA Management Plan.

- Management of the Ts'ude niline Tu'eyeta NWA should include all segments of the Fort Good Hope population, but especially the youth, to whom the Ts'ude niline Tu'eyeta NWA will have the longest lasting legacy.

Open needleleaf habitat in Ts'ude niline Tu'eyeta candidate NWA.

Joanna Wilson

APPENDICES

Appendix 1: Steps in the NWT Protected Areas Strategy

1.	Identify the main areas to be protected.
2.	Prepare a proposal for a protected area. Get support from community and regional organizations.
3.	Regional and government review of the proposal. Send proposal to a sponsoring agency.
4.	Apply for short term (5 year) protection of the candidate area, if needed.
5.	Study and assess the ecological, cultural and economic values of the candidate area. Write a final recommendations report for the area.
6.	Apply to sponsoring agency to set up an official protected area.
7.	The sponsoring agency approves and sets up the protected area.
8.	In partnership, implement, monitor, and review the protected area.

Appendix 2: **Terms of Reference for the Ts'ude niline Tu'eyeta Working Group**

Mandate:

The Ts'ude niline Tu'eyeta Working Group oversees and guides the detailed evaluation studies and consultation required under Step 5 of the PAS planning process. The Ts'ude niline Tu'eyeta Working Group makes recommendations to the K'asho Got'ine District Land Corporation on the boundary and land management based on the results of evaluation studies and consultations.

Working Group Partnership:

One representative each from:

1) Canadian Wildlife Service
2) Yamoga Land Corporation
3) Fort Good Hope Renewable Resource Council
4) K'asho Got'ine Dene Band Council
5) Fort Good Hope Métis Local #54
6) Aboriginal Affairs and Northern Development Canada (AANDC)
7) Government of the Northwest Territories (GNWT), Environment and Natural Resources (ENR) and Industry, Trade, and Investment (ITI)
8) Ducks Unlimited Canada
9) Association of Mackenzie Mountains Outfitters
10) NWT and Nunavut Chamber of Mines

Working Group Partners are appointed by their respective organizations to contribute expertise and information and to secure financial and other resources from their organizations. Working Group Partners have the option of naming an alternate to replace them in situations when they are unable to attend a Working Group meeting.

As required, resource people, traditional land users and/or elders, may be invited to participate in the meetings to provide information or expertise on a topic.

Working Group Partners Duties and Responsibilities:

1) To develop, guide, and oversee the implementation of the overall work plan and budget for the evaluation studies required under Step 5 of the PAS.
2) To develop and oversee the implementation of an Annual Work Plan (complete with a budget) for the evaluation studies required under Step 5. (Please note: Various partners in the Working Group are government agencies. As such they have their own projects, fiscal year, and budget processes to work within. Their projects and expenditures cannot be directed by the Working Group and its Work Plan, however it is hoped that these agencies will contribute to and complement the Annual Work Plan and also be guided by it).
3) To review the Ts'ude niline Tu'eyeta NWA proposal, and other known information, in order to determine knowledge "gaps" required under Step 5, within the context of the Protected Areas Strategy policies.

4) To guide, monitor, and review the Step 5 work conducted by the Working Group Partners, including Canadian Wildlife Service (sponsoring agency for the Ts'ude niline Tu'eyeta candidate NWA), GNWT, AANDC, Ducks Unlimited, or any other agency conducting Step 5 work.
5) To identify and secure financial resources for the evaluation work identified in the Work Plan.
6) To prepare an Annual Report for submission to the Partners of the Ts'ude niline Tu'eyeta candidate NWA. The report will contain:

    - Details of the Step 5 evaluation work conducted.
    - Recommendations for the next Annual Work Plan and future work.
    - A proposed budget required to complete the Step 5 evaluation.

7) To develop communication and consultation plans for the review of the assessment studies (Annual Reports and Work Plans may assist with this duty) and to distribute information amongst partners.
8) To coordinate the public review of the candidate NWA which includes discussions on the protected area status.
9) To make recommendations on the boundary and land management of the protected area to the K'asho Got'ine District Land Corporation.

PAS Secretariat role:

The PAS Secretariat will support the establishment of the Ts'ude niline Tu'eyeta Working Group by:

- Briefing Working Group Partners on evaluation studies.
- Coordinating public communication, consultation and review.
- Assisting in the preparation of work plans and budgets.
- Compiling information and materials for the Working Group.
- Ensuring the Working Group is working within the Protected Areas Strategy.

Meetings:

The Working Group will meet as required to review study results and work plans, and plan consultation activities. Meetings may be face-to-face or by conference call.

Location of meetings:

Working Group meetings will be held in Fort Good Hope to the extent possible.

Review of Terms of Reference:

The Ts'ude niline Tu'eyeta Working Group terms of reference will be reviewed once a year or as required.

Appendix 3: Chronology of the Ts'ude niline Tu'eyeta candidate NWA.

Date	Milestone
September 1993	Sahtu and Métis Comprehensive Land Claim Agreement was signed. Section 26, Heritage Resources recommends for the establishment of a joint working group for Sahtu Heritage Places and Sites. Under 26.4.3 "The joint working group shall consider and make recommendations to the appropriate Minister or government agency and to the Sahtu Tribal Council with respect to the following Sahtu heritage places and sites: a) the Ramparts wetlands……"
December 1999	Completion of the Places We Take Care Of Report by the Sahtu Heritage Places and Sites Joint Working Group. Specific recommendations for Ts'ude niline Tu'eyeta include (pg 68): "Heritage River, Migratory Bird Sanctuary, Critical Wildlife Area; Special consideration in land use planning process; Additional measures to be determined after further evaluation."
August, 2001	NWT Protected Areas Strategy workshop in Fort Good Hope which focused on identifying important areas in the Fort Good Hope area, including the Ramparts River/Hume River Wetlands Complex.
June 27, 2002	Community meeting in Fort Good Hope to discuss the PAS, the link between the PAS and land use planning, and the values of Ts'ude niline Tu'eyeta.
July, 2002	Fort Good Hope Renewable Resources Council formally passed a motion supporting the Ts'ude niline Tu'eyeta initiative and formally enter it into the Protected Areas Strategy.
August 2002	Letter of support for protecting Ts'ude niline Tu'eyeta received from Fort Good Hope Renewable Resources Council.
2003	Release of the Preliminary Draft Sahtu Land Use Plan. Ramparts River and Wetlands (Ts'ude niline Tu'eyeta) is listed as a conservation area. Consultations on the plan occurred over 3 years and included a comprehensive review of economic, ecological and cultural values.

Date	Milestone
February 2003	Letter of support for protecting Ts'ude niline Tu'eyeta as it is defined in the Preliminary Draft Land Use Plan received from the Sahtu Land Use Planning Board.
March 2003	Letter of support for protecting Ts'ude niline Tu'eyeta received from Sahtu Renewable Resources Board.
May 15 and 16, 2003	Community Workshop to review work to date on the Ts'ude niline Tu'eyeta area of interest, confirm an area of interest boundary and options for protection, including review of potential sponsoring agencies. Participants stated the importance of this area but no decisions were made at this workshop.
September 8, 2003	Joint letter from the Yamoga Land Corporation and the Fort Good Hope Renewable Resources Council submit letter to the Protected Areas Secretariat, stating that the Yamoga Land Corporation will be the lead agency on the Ts'ude niline Tu'eyeta area of interest. The Fort Good Hope Renewable Resources Council extended their support for the continuation of the initiative.
April 6-7 2004	Unanimous resolution passed at a PAS workshop held in Fort Good Hope which outlined an interim boundary and that CWS be requested to be the sponsoring agency and immediate interim land withdrawal take place. Yamoga Land Corporation, Métis Local #54, the Chief and three respected elders signed the resolution.
May 25, 2004	Letter expressing desire to protect Ts'ude niline Tu'eyeta sent to Honourable Andrew Mitchell, Minister of Indian Affairs and Northern Development from Yamoga Land Corporation.
September 28, 2004	Letter to Yamoga Land Corporation recognizing the importance of considering the long-term protection of Ts'ude niline Tu'eyeta received from Honourable Andy Scott, Minister of Indian and Northern Affairs.
Fall 2004	Sahtu Dene Council/Sahtu Secretariat Inc. pass resolution #1002/2004 in support of the community of Fort Good Hope in its efforts to move Ts'ude niline Tu'eyeta candidate National Wildlife Area to permanent protection through the Protected Areas Strategy with the Canadian Wildlife Service.

Date	Milestone
May/June 2004	PAS Notice of Application published in News North (May 31st), NWT & Nunavut Chamber of Mines Website (June 6th), The Northern Miner (June 11th), Far North Oil and Gas (Summer 2004), Canadian Association of Petroleum Producers Website and the PAS website.
September 2005	The Yamoga Land Corp., the K'asho Got'ine Dene Band, and the Fort Good Hope Métis Local #54 formally request that the Canadian Wildlife Service be the sponsoring agency for the Ts'ude niline Tu'eyeta candidate National Wildlife Area.
June 2006	The Canadian Wildlife Service agrees to be the sponsoring agency for the Ts'ude niline Tu'eyeta candidate National Wildlife Area.
July 2006	The Canadian Wildlife Service applies to Indian and Northern Affairs Canada for a 5 year surface and subsurface lands withdrawal of the Ts'ude niline Tu'eyeta candidate National Wildlife Area.
October 2006	Indian and Northern Affairs Canada withdraws the surface and subsurface lands of the Ts'ude niline Tu'eyeta candidate National Wildlife Area for 5 years.
July 2007	The first meeting of the Ts'ude niline Tu'eyeta candidate National Wildlife Area Working Group in Fort Good Hope, NT.
October 2010	All Step 5 assessments of the Ts'ude niline Tu'eyeta candidate National Wildlife Area overseen by the Working Group completed (ecological, renewable, cultural, non-renewable).
April 2011	The Ts'ude niline Tu'eyeta Working Group meets to review the Step 5 assessments and to begin discussions on determining a boundary for a future proposal to establish a protected area within the candidate area.
June 2011	A Sahtu Land Use Planning Board public meeting is held to determine the classification of lands in the candidate area not included in a proposed Ts'ude niline Tu'eyeta protected area. Community members recommend an area that is 67% of the candidate NWA and which excludes the high mineral potential in the south.

Date	Milestone
July 2011	The Ts'ude niline Tu'eyeta Working Group meets and approves the 67% area recommended at the June, 2011 public meeting. Discussion is initiated on a recommendation concerning the future land management of the recommended area.
September 2011	The K'asho Got'ine Dene and Métis members on the Ts'ude niline Tu'eyeta Working Group recommend that there should be a full surface and subsurface withdrawal for the area within the recommended boundary.
November 2011	The interim surface and subsurface land withdrawal for the Ts'ude niline Tu'eyeta candidate NWT study area is extended until November 2013.
December 2011	The K'asho Got'ine Dene and Métis members on the Ts'ude niline Tu'eyeta Working Group reaffirm their postion of September, 2011 that there should be a full surface and subsurface withdrawal for the area within the recommended boundary. The Government of Canada and Government of the Northwest Territories provide their recommendations for inclusion in the Working Group's draft recommendations report which was reviewed at this meeting. A Vision Statement for the Ts'ude niline Tu'eyeta NWA is drafted.

Appendix 4: The NWT and Nunavut Chamber of Mines complete submission for the Ts'ude niline Tu'eyeta candidate NWA recommendations report.

NWT & NUNAVUT CHAMBER OF MINES

January 6, 2012

Mr. Paul Latour
Canadian Wildlife Service
P.O BOX 2310
Yellowknife, NT

Dear Mr. Latour,

Re: Proposed Boundary for Ts'ude niline Tu'eyeta candidate protected area

The NWT and Nunavut Chamber of Mines is pleased to provide its views and recommendation on the draft boundary report for the Ts'ude niline Tu'eyeta candidate area.

The Chamber of Mines is the leading champion for mineral exploration and mining in the Northwest Territories and Nunavut. Our Industry members are engaged in activities that create opportunities and benefits through prospecting, exploration and mining.

If industry is to be able to successfully work with communities to generate benefits, it must be able to access land to prospect, explore and mine. If we maximize the amount of land available for exploration then we can increase the odds of exploration success. For this reason, industry continues to ask that permanent protection – or looked at another way, alienation from development – be minimized as much as possible.

Mineral deposits rich enough to mine are rare and hard to find, being found where Mother Nature put them, not necessarily where we might prefer they be located. Given their rarity and their importance to future economic development, they are also deserving of protection.

The Ts'ude niline Tu'eyeta area holds some very good mineral potential that, if developed, can provide socio-economic benefits to the K'asho Got'ine people, to the Sahtu region, and to the NWT in general. To maximize that opportunity and the chances of success, we recommend changes to the draft recommendations report for the Ts'ude niline Tu'eyeta candidate national wildlife area.

Let us explain.

Box 2818, Yellowknife, NT Canada X1A 2R1 Phone: (867) 873-5281 Fax: (867) 920-2145
Email: executivedirector@miningnorth.com Website: www.miningnorth.com

VARIOUS METHODS TO PROTECT OF LAND

There are a variety of tools and methods to consider when contemplating protection of the Ts'ude niline Tu'eyeta area. These are:

- **Status quo, ie, add no specific protected area designation.** Under the current situation, the region is remote, has not had much geoscience research or exploration, and minimal infrastructure. There is virtually no interest from industry to explore there as a result. Land ownership and control remains 'as is'.
- **Use laws and regulations to provide protection.** The Status quo approach above would rely on the variety of NWT laws and regulations that guide how and when development can occur.
- **Use land use plans.** This new tool in the NWT, created through land claims, holds great potential to help balance development and protection needs. The Gwich'in Region has completed the first approved plan, and the Sahtu plan is moving closer to completion. Land Use Plans share decision making between government and local residents and Aboriginal groups. The plans designate where and how lands can be developed and/or protected, over and above the protection of regulations. The advantage of land use plans is that they provide great flexibility as they can be customized to current needs. As they can be revisited on a regular basis (generally every 5 years), they allow changes to be made. Lands that were once designated for protection can be opened to development or vice versa, or no changes need be made. Land use plans allow future generations to make changes should new technologies become available, for example. Another benefit is that land ownership is not affected and control stays close to the community.
- **Use 'ultimate protection' mechanisms.** The most common designations for ultimate protection are National Parks, National Wildlife Areas, and bird or game sanctuaries. These are federally legislated mechanisms and generally close lands forever to development. Any attempts to remove the designations in future are deemed impossible. Land ownership and control is with the Federal Government.

Proposed Ts'ude niline Tu'eyeta Boundary Is Overly Large

The currently proposed candidate area covers 10,000 square kilometres. This is a very large area from a development perspective – it is twice the size of Prince Edward Island, and would encompass all three of the NWT's diamond mines.

Ts'ude niline Tu'eyeta Contains Areas of Very Good Mineral Potential

Government geoscientists have concluded that the Ts'ude niline Tu'eyeta area has very high potential to host economic deposits of zinc-lead and oil and gas. It also has moderate potential to host gold, copper and diamonds. It should be noted that since so little exploration has been done in the area, it bodes well for future discovery.

This kind of mineral potential is worth protecting.

Currently industry has shown little interest in exploring the region. Reasons for this include:

- **Lack of geoscience information**: It is difficult for industry to find mines, which have been compared to finding a needle in a haystack. Government invests in geoscience to help industry to know where the haystacks are, where to begin looking. But very little geoscience has been done in Ts'ude niline Tu'eyeta.
- **High costs**: The region is remote and the lack of transportation infrastructure adds to the hurdles. Industry is challenged to afford building this infrastructure on its own, unless it finds something of tremendous size and/or value that it can afford to pay for that infrastructure.
- **Uncertainty**: The simple act of considering the creation of a protected area over Ts'ude niline Tu'eyeta has put uncertainty on its future. Industry is not interested in risking moneys on land that might become a protected area. It would not be a wise investment.

These hurdles are not impossible to overcome.

Very Good Opportunity Potential, Too

If industry can be convinced to come and invest in exploring the region, and to determine just what resources might be hidden there, it will be able to create employment, business and other opportunities for the K'asho Got'ine, for the Sahtu, and for the NWT.

The socio-economic assessment that was done on the Ts'ude niline Tu'eyeta area was to have indicated the size of those opportunities.

However, our review of that assessment found it to be weak and a difficult read that paints an overly pessimistic view of what is possible. It is not as effective as it could be to help communities and decision makers understand just what is possible from non-renewable resource development in the Ts'ude niline Tu'eyeta area. For example, the Assessment Report:

- does not identify new technologies that could allow development to proceed with much reduced environmental footprint and impact;
- indicates that few benefits would be available for the community of Good Hope from mining development when, in fact, mining has made great strides in recent years to benefit local communities, so much so that mining is now the largest employer of Aboriginal people in Canada;
- pessimistically states that community opportunities from a mine would be so far in the future (2050) as to render them negligible;

- takes an unusual and highly questionable approach to value the land based on the assumption that each Canadian household might invest $5.50 to protect it;
- contains a variety of complex economic calculations and terms like Net Present Value, Internal Rate of Return, etc. that are confusing; and
- ironically, paints a picture of the odds being so great against development that one might naturally draw the conclusion that no protected areas designation is required. Why protect if there is no threat?

We found the document quite discouraging from a minerals development perspective and we are very concerned that decision makers will read it equally as bleakly and reduce the importance of future non-renewable resource development in drawing their conclusions.

A Positive Industry Perspective of Ts'ude niline Tu'eyeta

In our response (attached), we took a much more positive and realistic approach to describe what we believe is possible. We cited examples of how seemingly difficult development obstacles have been overcome elsewhere, including:

- The Ekati diamond mine 300 kilometres north of Yellowknife: Prior to production, it was in much the same situation as any potential mine in the Ts'ude niline Tu'eyeta area. The mine is located in a remote area that attracted very little exploration interest (much like the Ramparts area is now). Yet from the initial discovery of diamond deposits in 1991 to having an operating world class diamond mine was less than seven years. While this is an exceptional case, it does illustrate what is possible in the face obstacles.
- The Diavik diamond mine, also north of Yellowknife: Fifteen years ago, people would have said that it would be impossible to mine diamonds from an open pit on the bottom of a 60 km-long lake. The Diavik diamond mine's engineers rose to the challenge and developed an innovative new dike technology that has allowed them to "borrow" the lake bottom for mining. They are now able to mine three ore bodies from under Lac De Gras, and most importantly they have been able to create hundreds of jobs and new business opportunities for northern communities and residents. This has all been done with no significant adverse impacts to the environment. In fact, the company will create fish habitat when they are finished mining. Diavik's success with their new dike technology received Canada's highest engineering award.
- New transportation technology: The report assumes that the only way a zinc or copper mine can be developed is by using a very traditional approach that would require an all weather road be built to the Mackenzie River, along with a bridge over the river to get the product to an as yet un-built Mackenzie Valley highway. This is a large hurdle that indeed will make mining very difficult. However, the report does not consider other technologies like winter roads to a port on the

Mackenzie River. It does not contemplate emerging Hybrid Air Vehicle technology which could see airships replace roads. This exciting new technology could allow development to occur with little environmental footprint or costs to build roads, railroad, bridges, or ports. This technology could be a complete "game changer".

- Exciting new production technology: Today, the technology exists to produce oil and gas without creating any footprint on the surface above the deposits. Directional drilling technology allows the drill to be situated outside a protected area and to drill to a target horizontally some distance away, thus not disturbing the land above. New technologies like this will facilitate significant leaps forward for sustainable development, and allows us to be much better at combining development and protection.

- Great employment opportunities for Aboriginal people in industry: The report is quite pessimistic on employment opportunities for K'asho Got'ine. A mere 10 years ago, others were also pessimistic. Thankfully though, there were those who challenged this. As a result of very effective training programs and a belief in "what is possible", there are an increasing number of Aboriginal underground miners working in the diamond mines today. They join a significant number of Aboriginal and other northerners who were already working in the mines. By 2010, nearly 18,000 person years of northern employment had been created at the mines, and half of those jobs were filled by Aboriginal workers. This kind of success reinforces why the mining industry has become the largest employer of Aboriginal people in Canada. We believe that if industry is given the opportunity to work with the K'asho Got'ine, many jobs and business opportunities could be created.

Yes, hurdles do exist to any future development in the Ts'ude niline Tu'eyeta area, but as these recent examples show, it does not mean it will never be possible.

Industry Boundary Recommendations

We are a firm believer in the "art of the possible", that we can do whatever we set our minds to, particularly when we know the future will bring new technologies, new ways of thinking, new needs, etc.

In the interests of future generations and the creation of future opportunities, we believe that other solutions should be found rather than to permanently protect subsurface lands from development forever.

The Chamber of Mines understands the values the area holds traditionally and culturally for the K'asho Got'ine people and is sympathetic to the desire to protect Ts'ude niline Tu'eyeta area from permanent damage. We believe that there are ways to do that by using environmental protection legislation and by using the Sahtu Land Use Plan to maximize future opportunities for the K'asho Got'ine, the Sahtu and the NWT while still protecting the environmental values.

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With respect to the boundary for Ts'ude niline Tu'eyeta area, the following are the recommendations from the NWT and Nunavut Chamber of Mines, in order of declining preference:

1. **Create no permanent withdrawal of any subsurface lands**. If the lands under the candidate protected area are not permanently withdrawn, then the option to explore and potentially take advantage of economic opportunities from the area can exist in the future. This means relying on environmental laws and regulations for protection. Mining, exploration and other land use activities are among the most heavily regulated activities in the country and must meet stringent thresholds to ensure their activities create no significant adverse environmental effects on the land, water or wildlife.

2. **Do not permanently withdraw any of the lands with moderate to very high mineral potential**. Lands of with this kind of mineral potential are also rare and thus worthy of protecting for economic development reasons. Given that there are strong environmental regulations in place, these lands can be developed without any significant adverse environmental effects.

3. **Protect using the Sahtu Land Use Plan as much as possible**. A designation as a "Conservation Zone" will prevent development from occurring today and could be used on areas of highest community concern. Areas of lower concern could be designated as "Special Management Zones" under the plan; development will be possible in these areas but will be subject to conditions aimed at minimizing the environmental impacts. Using the Land Use Plan allows the community the ability and flexibility to re-evaluate the protective designation on a regular basis. The community can choose to protect indefinitely, or they can choose to remove or reduce protections some time in the future based on new needs or technologies, for example.

4. **Make permanent protections as small as possible**. If the community feels it is absolutely necessary to establish a permanent protected area that will never, ever be developed, then we recommend that this be confined to the smallest area possible. A better option for future flexibility would be to seek to have only the surface protected under that designation, and use the Sahtu Land Use plan to protect the subsurface. For example, we understand that the most sensitive part of the area is the wetlands which occupy roughly a quarter of the proposed area. If the community is insistent on a national wildlife area in this area, the Chamber recommends that you seek only surface protection through the National Wildlife Area, and subsurface protection through the Sahtu Land Use Plan. There are examples from the US of oil and gas production from under bird sanctuaries. There is no threat to the birds or their habitat and industry creates benefits and pays royalties – truly an example of a win: win situation.

Conclusion

The Chamber of Mines urges minimal permanent protection of land in order to leave options open for the future as technology advances and needs of future generations become clearer. If permanent protection is given now, what is possible with future technology and what the needs of future generations are will not matter, as any resource development opportunities provided by the Ts'ude niline Tu'eyeta area will have been nullified.

We believe in "the art of the possible". We do not believe in the simple black and white of development being bad and environmental protection being good. We believe that creative thinking can create very interesting outcomes that can allow us to create development opportunities for communities AND protect the environment.

We encourage the K'asho Got'ine people of Ft. Good Hope and other decision makers to take a creative approach in finding win: win situations through their deliberations on how to best protect both the environmental aspects and the mineral potential of the Ts'ude niline Tu'eyeta area.

We would be pleased to provide any additional thoughts at your request.

Yours truly,

Tom Hoefer
Executive Director

PERSONAL COMMUNICATIONS

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