

Sahtu Land Use Plan

Preliminary Ecosystem-based Planning Recommendations from WWF-Canada May 2005

Purpose

This document is intended to assist with the development of the Sahtu Draft Land Use Plan by encouraging that ecologically sustainable land use activities are described in a zone-based plan. We encourage that the land use plan continue to delineate a minimum of three types of land uses: conservation zones (full protection from industrial resource activities), special management zones (enhanced management) and multiple use zones (best practices).

We have divided our comments into three sections. First, broad policies and agreements, as well as specific federal legislation, have been identified that we suggest should be interpreted in the land use plan. Second, we have attempted to provide an ecosystem approach that addresses the concepts of “limits of acceptable change” or cumulative effects for areas within the Sahtu territory that share similar wildlife habitat and ecosystem dynamics. Third, we have identified specific sites that have been identified by Sahtu communities for more strict protection.

A. Interpretation of National and International Policies and Agreements

Objective

Endeavour to make the land use plan consistent with, as well as implementing, territorial and federal legislation and policy, and national and international agreements related to ecosystem-based planning. The umbrella legislation and agreements relevant to the NWT include:

- Mackenzie Valley Resource Management Act,
- Government of Canada Northern Strategy,
- Convention on Biological Diversity (United Nations),
- Conservation of Arctic Flora and Fauna (Arctic Council).

Excerpts from the documents listed above are provided in Appendix 1.

Table A.1 lists several performance standards related to the 1995 Canadian Biodiversity Strategy, which is Canada’s commitment to deliver the United Nations Convention on Biological Diversity. The umbrella legislation and agreements listed above are related to all performance standards, but additional federal or territorial legislation and/or policies are also listed in Table A.1.

Appendix 1 provides specific passages in the agreements and legislation listed above that may relate to the Sahtu land use plan. In addition, recommended actions are provided in Appendix 2 for the implementation of these policies and legislation.

Table A-1 Possible performance standards that can be interpreted in the Sahtu land use plan.

Possible Standards to Address in the Land Use Plan (Source: WWF-Canada Nature Audit)	Relevant Legislations, Policies, Agreements and/or Strategies
Sustainable Wildlife Management	NWT Biodiversity Strategy NWT Natural Resources Conservation Trust Act
Protected Areas Systems Completion	NWT Protected Areas Strategy NWT PAS 5-Year Action Plan 2002 World Summit on Sustainable Development's Agreement on Oceans
Fisheries Best Practices	Fisheries Act Ocean's Act (ecosystem-based management principles) NWT Sport Fishing Regulations
Forestry Best Practices	NWT Biodiversity Strategy Canada Forest Accord NWT Forest Management Act NWT Forest Protection Act
Mining Exploration and Development Best Practices	INAC Sustainable Development Strategy (developing a long-term development framework for northern resource development (which) respect(s) economic diversity, social stability and ecological integrity of northern communities.) NWT Environmental Protection Act
Hydrocarbon Exploration and Development Best Practices	INAC Sustainable Development Strategy (developing a long-term development framework for northern resource development (which) respect(s) economic diversity, social stability and ecological integrity of northern communities.) NWT Environmental Protection Act
Air and Water Pollution	Fisheries Act NWT Water Resources Agreements Act NWT Environmental Protection Act
Invasive Species Control	
Tourism Guidelines	NWT Tourism Act NWT Hunting Regulations NWT Sport Fishing Regulations
Transportation and Infrastructure Development	
Greenhouse Gas Emissions and Climate Change Adaptation	Kyoto Protocol Canada's Climate Change Action Plan INAC Sustainable Development Strategy (develop regional energy management strategies) NWT Greenhouse Gas Strategy
Species at Risk Recovery Plans	Species at Risk Act

B. Cumulative Effects Thresholds

Objective

Identify specific cumulative effects thresholds to maintain measures of ecological integrity and resilience consistent with the concept of limits of acceptable change.

General Approach

We describe a hierarchical ecosystem-based approach similar to the approach described by the Silva Forest Foundation (www.silvafor.org/ebp/index.htm) and Christensen *et al.* (1996). We considered wildlife ranges and landform physiography to derive four main habitat types for the Sahtu territory. A summary of conservation values within the main habitat types is provided in Table B-1 based largely on information compiled in a report prepared by Cizek Environmental Services (2004). Cumulative effects thresholds to maintain overall habitat quality can be suggested for each major habitat type based on the assemblage of conservation values and characteristic wildlife. See Appendix 3 for example land use requirements for each main habitat types.

Within the main habitat types, areas requiring enhanced (or special) management and sites for permanent protection (no-go areas) can be delineated. Attributes for inclusion in special management zones include connectivity between permanent protected areas to support wildlife movement corridors, areas less resilient to change from human disturbances (sites prone to erosion/slumping, sites prone to fire disturbance, flood plains, sites important for maintaining drinking water quality, wetlands and peat lands sensitive to compaction), and renewable resources requiring sensitive management (fisheries, mammal harvesting, bird harvesting, plant harvesting). Special management areas should be described to accommodate limited landscape and habitat change (i.e. changes to structure and composition), but no significant modification of ecological processes (e.g. hydrological flow, fire disturbance, carbon flow). Suggested focal species based on prominence within the Sahtu and vulnerability to human disturbances include barren-ground caribou (Bathurst East, Bathurst West and Porcupine herds), woodland caribou (boreal and northern mountain populations), moose, grizzly bear, musk ox, Dall's sheep, trumpeter swan, peregrine falcon and other raptors, scaup and scoter, and char.

Major Habitat Types

Four main habitat regions can be recognized in the Sahtu territory based on a coarse review of vegetation, physiography, hydrology and select wildlife ranges. From the west and travelling east, these broad ecosystems are: mountains and foothills, Mackenzie River corridor (including the Franklin Mountains and parts of the Norman Range), Colville Hills and Great Bear Lake plains, and the forest-tundra transition (Horton Plain). Figure B-1 delineates these broad habitat types. A possible fifth main habitat type includes the Canadian Shield in the southeast portion of the Sahtu territory. Cumulative effects thresholds can be applied to these four general areas based on similarity in ecosystem values.

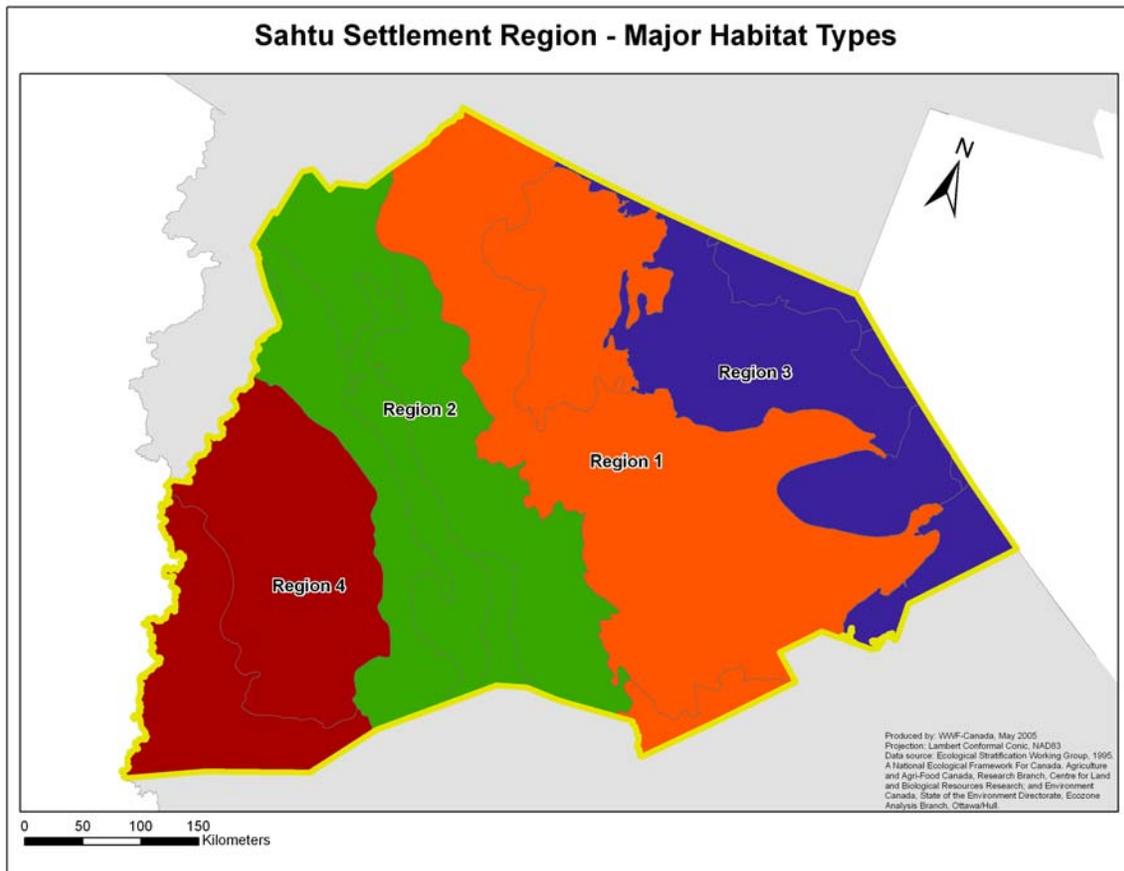


Figure B-1 Major habitat regions in the Sahtu Settlement Area (see Table B-1 for descriptions).

Table B-1 Conservation values within major habitat regions in the Sahtu territory.

Overlapping Conservation Values
<p>Region 1: Coleville Lake south to Deline and Tulita</p> <ul style="list-style-type: none"> - Sahtu Trails – Core use from Coleville Lake to western shores of Great Bear Lake; E-W connection from Coleville to Fort Good Hope; Great Bear River. - IBP (peat and palsa) in Coleville Lake area - range overlap for barren-ground caribou wintering (Bluenose West and Bluenose East herds), northern range of woodland caribou and western range of muskox.
<p>Region 2: Mackenzie River core</p> <ul style="list-style-type: none"> - Brackett Lake (bird species diversity area, IBP) - Southeastern Mackenzie Mountains (Trumpeter Swan nesting) - Carcajou River (moose wintering) - Three Day Lake – Steward Creek (fisheries, moose wintering) and Hare Indian River (woodland caribou, barren-ground caribou, Arctic Grayling) identified by Mackenzie River Basin Board. - The Great Bear River flowing to the Mackenzie can be considered part of this area.
<p>Region 3: North of Great Bear Lake (generally east of Coleville Lake)</p> <ul style="list-style-type: none"> - Horton Plain (Muskox) including Horton Lake - Northeast of Dease arm – Raptor nesting (Peregrine and golden eagle) according to NLUIS maps - Whitefish lakes (in Sahtu Heritage Places)
<p>Region 4: Richardson and Mackenzie Mountains</p> <ul style="list-style-type: none"> - Special Features: Hot springs (IBP 60, 70, 71), endemic snails, unglaciated sites also in Central Mackenzie sub-basin - Critical grizzly habitat from NLUIS in Central Mackenzie sub-basin; also IBP 57 and 58 – grizzly, woodland caribou, Dall’s sheep - concentration of woodland caribou calving (NLUIS) in Central Mackenzie sub-basin - Sheep and goats critical habitat (NLUIS) in Central Mackenzie sub-basin from Yukon border to Mackenzie River - Moose mineral licks (as well as woodland caribou, grizzly, sheep, waterfowl) associated with headwater areas (NLUIS critical habitat)

Ecological Integrity Measures and Thresholds

Measures of habitat condition should attempt to address a range of ecosystem elements. Table B-2 describes a set of potential measures that, although lacking specific thresholds, address aspects of ecosystem composition, structure and function.

Table B-2 Potential measures of habitat condition.

Ecosystem Elements	Design of Potential Thresholds (by land use zones)
Composition	
Percent conversion by major habitat type	Set thresholds for amount and density of permanent infrastructure
Percent disturbance by major habitat type	Set thresholds for proportion of habitat modification based on long-term recovery rates from natural disturbance
Age class distribution within natural ranges of variation	Determine acceptable deviation from baseline conditions
Species composition within natural ranges of variation	Determine acceptable deviation from baseline conditions
Structure	
Interior habitat to edge ratios	Set thresholds based on disturbance regimes for major habitat types
Proportion of contiguous habitat	Set thresholds based on focal species habitat requirements
Function	
Hydrological dynamics (base flow, flooding regime, erosion potential)	Set limits of watershed disturbance Set limits for stream crossings
Critical wildlife habitat and movement pathways	Set limits for maintenance of critical and available habitat for selected focal species. Set thresholds for permanent and non-permanent disturbance related to wildlife population effects for selected focal species.

Appendix 3 describes specific thresholds related to the ecological integrity measures above. Although the information is derived from available studies, primarily background reports for the Deh Cho Land Use Planning Board, we recognize the preliminary nature of the suggestions at this time.

C. Conservation and Special Management Zone Site Descriptions

Objective

Describe potential conservation zones consistent with the format for describing candidate protected areas under the NWT Protected Area Strategy.

NWT Protected Area Strategy

The NWT Protected Area Strategy currently supports a community-based, partnership approach to identifying and establishing protected areas within its boundaries. The following definition is used to define what a protected area is under the NWT-PAS.

The International Union for the Conservation of Nature (IUCN) Definition:

An area of land or sea especially dedicated to the protection and maintenance of biological diversity, and its associated natural and cultural resources, managed through legal or other effective means.

Some of the following areas are not actively being pursued at this point in time under the protected area strategy (in boxes) and are mentioned because of the known outstanding cultural or natural values included in the area(s). Others are in various stages of the PAS process actively being considered for permanent legislated protected area status. The PAS rationale for areas being actively pursued under the PAS process is only briefly mentioned and further elaboration is available for those sites.

Description of Specific Sites (Comment: some areas are given in acres, some in sq. km.)

Nahanni Headwaters- (1,691,498 acres)

Parks Canada is working with Tulita Land Corporations to garner motions of support for an interim land withdrawal for the Headwaters. WWF and CPAWS have been working with the Tulita Band Council and Parks Canada, who will be sponsoring the withdrawal application, to obtain the necessary supporting documentation from land corporations in the Tulita District of the Sahtu. The application for interim withdrawal should be submitted in 2005. The Headwaters are designated as a Conservation Zone in the draft Sahtu Land Use Plan.

Sahoyúé - ʔehdacho-(1,368,032 acres)

Parks Canada will be sponsoring an application to extend the current interim land withdrawal of Sahoyúé - ʔehdacho to allow for more time to complete permanent protection of the area. The current withdrawal ends in November 2005. At the end of 2004, the Working Group met on several occasions and these meetings resulted in an improved relationship between Parks Canada and the other members of the group, more in depth discussion on the issues, and the development of a clear step by step work plan

to complete Steps 5 and 6 of the PAS process, which would conclude the tasks of the Working Group. A Deline Advisory Team has been formed to ensure thorough community consultation in the upcoming decisions on the boundary, protective designation and management regime for the area. However Parks Canada has still not released their preferred legislative designation or management options for the areas, although the issue has risen in priority, with the CEO becoming more involved.

Edaiila/Caribou Point (6,352 sq. km est.)

Located in the Deline District of the Sahtu on the Northeastern end of Great Bear Lake, this is an important resource area to the people of Deline, a known caribou seasonal habitat range, (fall concentration area for Blue nose east caribou) and domestic fishery area. The Sahtu Heritage Places and Sites Working Group recommended special consideration to this area in the land use planning process. The point is comprised of Sahtu and Crown lands and may have sport fishing 3rd party interests in the area. Report of the Sahtu Heritage Places and Sites Joint Working Group recommended Caribou Point for special consideration in the land use planning process, and possible designation as a critical wildlife area to protect caribou, while permitting access to local hunters. Currently has no process status within the Protected Area Strategy protocol.

Turili/Johnny Hoe Fishery (600-1000 sq. km estimated)

Located in the Deline District of the Sahtu Settlement region, just south of the SE McVicar Arm of the Great Bear Lake is the Johnny Hoe River flowing into the Lac Ste. Therese. This is a thriving spring fishery area, historic cultural meeting place of Slavey and Dogrib peoples, as well as winter foraging ground for Caribou, where caribou protection measures have been sought (1998-RWED). This area is considered to be critically sensitive habitat for caribou, moose, fish, beaver and other animals. Mercury was found recently to have contaminated the domestic fishery, impacting local use severely. Numerous cabins are located in the area. The Sahtu Heritage Places and Sites Joint Working Group identified the area for special consideration in the land use planning process. No land withdrawal status currently being sought under the NWT-PAS.

Tulita Conservation Initiative (acreage under consideration, est. 32,000,000 sq. km)

Led by the Tulita Dene Band, in July 2004, the Tulita work moved into Phase 2 of the PAS process. In early 2005, through a series of community meetings and workshops, new areas were identified and combined with areas formerly identified individually (like Kelly Lake, [now captured by Area 1], in the draft Sahtu land use plan), and re- identified as areas under consideration: **Areas 1, 2, 3. The areas comprise various culturally important sites, including Willow Lake, the Mahony Lake Masacre Sitem Bear Rock and Red Dog Mountain, as well as ecologically significant areas within the watersheds of the Keele, Ravenstroat and Redstone rivers, calving areas for mountain caribou and important Dall's sheep habitat.** The Tulita Dene Band is now considering a move to share work on the conservation effort with the three Tulita Land Corporations. This would be a joint effort to plan the additional community meetings

needed, as well as ensure that the outstanding motions, required by March 31, 2005 (the end of the NWT fiscal year) are passed as soon as possible by the Tulita Land and Financial Corporation, Fort Norman Métis Land Corporation and Tulita District Land Corporation. Existing ecological and cultural information was presented to the community in early 2005 to determine the boundaries of Areas 1, 2, and 3. Boundaries were delineated by a 'Tulita Council of Elders', and have captured many significant areas of cultural and natural value. Next steps include seeking the appropriate sponsoring agency to submit an application for interim land withdrawal. Culturally significant Red Dog Mountain is included in the draft boundaries at this time but may present a large 3rd party interest conflict for protection of the larger Area 2 of which it is contained. Bear Rock, comprised of mostly Sahtu land, is located in Area 1 and is of great cultural significance to the people of the entire Sahtu region. Recent preliminary work on Bear Rock included verifying that an oil and gas exploration permit obtained by an oil and gas company in 2000 had lapsed at the end of 2004.

Colville Lake Protected Area Initiative- acreage under consideration

In September 2004, three representatives the PAS Secretariat initiated discussion with a visit to the site of the Behdzi Ahda First Nation early ancestors' caribou hunting camp on Horton Lake. Community PAS meetings were recently held April 14-15th, 2005 at the community hall where residents turned out to formalize a discussion on the idea of establishing protection for special lands of importance to the community. A working draft boundary of large size was identified preliminarily for discussion and further refining work with the community at a meeting proposed tentatively for mid May 2005. This area currently includes the culturally significant areas of Maunoir Dome, Yamoga Rock, T'agan (section of Anderson River), Tasin Tue (part of Lac de Bois), White Muskeg Lake, Whitefish Lakes, Tunago Lake (mentioned p. 66 in SLUP Draft) and others. These areas were mentioned during the April Colville Community meeting and recommended by the Sahtu Heritage Places and Sites Working Group to be protected for their outstanding cultural, and/or critical wildlife habitat values.

Ts'ude'hliline–Tuyetah (Ramparts River and Wetlands) 3,706,575 acres

A key cultural area and outstanding wetland complex, it is being proposed as a candidate area under the NWT-Protected Area Strategy (since June 2002). The lead community organization in Ft. Good Hope is the Yamoga Land Corporation. Isadore Manuel is the community coordinator. Current status is to complete interim land withdrawal application. Community support for interim land withdrawal has been secured. Sponsorship for legislated protection will be from Canadian Wildlife Service. Application for interim land withdrawal expected in 2005. This is located in the K'asho Got'ine district, comprised of mostly Sahtu land and some crown land.

Shigago-Little Chicago (immediate area 20 sq. km)

This is an important cultural area for people in the Fort Good Hope, K'asho Got'ine District of the Sahtu. It is located on the east bank of the Mackenzie River. This is comprised of mostly Sahtu land; it is also the proposed site of the Little Chicago Compressor Station as outlined in the Mackenzie Valley Pipeline EIS. The Report of the Sahtu Heritage Places and Sites Working Group (2000) recommended this be the site of a Territorial Historic Park, and "should be identified for special consideration in the land use planning process" also recommended that more research was needed on the site. No current status under the Protected Area Strategy.

Tuktu Nogait National Park- (Sahtu Settlement Area proposed at 1500 sq. km)

Royal Assent to legally establish this park was given in 1998, though Sahtu settlement regions of the Park that were being considered under the drafted proposal put forth were still under negotiation. No status within the NWT-PAS process.

D. References Cited

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Salmo Consulting Inc. 2004. Deh Cho cumulative effects study. Phase 1: Management thresholds and indicators. Prepared for the Deh Cho Land Use Planning Committee. Prepared by Salmo Consulting Inc. in association with Axys Environmental Consulting Ltd., Forem Technologies, and Wildlife & Compnay Ltd. 151 pp.

Appendix 1a: United Nations Convention on Biological Diversity

At the 1992 Earth Summit in Rio de Janeiro, world leaders agreed on a comprehensive strategy for "sustainable development" -- meeting our needs while ensuring that we leave a healthy and viable world for future generations. One of the key agreements adopted at Rio was the Convention on Biological Diversity. This pact among the vast majority of the world's governments sets out commitments for maintaining the world's ecological underpinnings as we go about the business of economic development. The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources. Canada is a signatory to the Convention and as per Article 6 section b, is committed to:

Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programs and policies.

The Ecosystem Approach, the primary framework for action under the Convention, has particular relevance to the Sahtu Region. Based on ecosystems classification, the Draft Land Use Plan classifies the Sahtu Region into conservation, special management and multiple use zones.

"Ecosystem" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit". ([Article 2 of the Convention](#)).

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. It is based on the application of appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans with their cultural diversity, are an integral component of ecosystems.

CBD Articles Relevant to the Sahtu Land Use Plan

Possible Standards to Address in the Land Use Plan	Relevant Article and Subsections of the Convention on Biological Diversity
Sustainable Wildlife Management	Article 8 Sections (c) and (i)
Protected Areas Systems Completion	Article 8 Sections (d) and (e)
Best Practices: Fisheries, Forestry, Mining Exploration and Development	Article 10 Section (b)
Best Practices: Hydrocarbon Exploration	Article 10 Section (e)

and Development	
Invasive Species Control	Article 8 Section (h)
Protection of right to Indigenous Lifestyles	Article 8 Section (j); Article 10 Section (c)
Remedial Action	Article 10 Section (d)
Impact Assessment	Article 14 Section (a)

Text of Relevant Convention Articles

Of the 42 articles in the Convention of Biological Diversity the three most relevant cover Article 8 (In-situ Conservation), Article 10 (Sustainable Use of Components of Biodiversity) and Article 14 (Impact Assessment and Minimizing Adverse Impacts). The following is a listing of the actual text:

(8c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;

(8d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;

(8e) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;

(8h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;

(8i) Endeavor to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components;

(8j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;

(10b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity;

(10c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;

(10d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and

(10e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

(14a) Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures.

Appendix 1b: Relation of the Mackenzie Valley Resource Management Act to the Sahtu Land Use Plan

The purpose of the Mackenzie Valley Resource Management Act (MVRMA) of 1998 is to provide for an integrated system of land and water management in the Mackenzie Valley, to establish certain boards for that purpose and to make consequential amendments for other Acts. One of the requirements under the Sahtu Dene and Metis Comprehensive Land Claim Agreement is the establishment of a land use planning board. The MVRA outlines the general provisions for such a board and stipulates guiding principals, purpose and contents of the subsequent land use plan. Under the Act, land use planning for the settlement area shall be guided by the following principles:

- (a) the purpose of land use planning is to protect and promote the social, cultural and economic well-being of residents and communities in the settlement area, having regard to the interests of all Canadians;
- (b) special attention shall be devoted to the rights of the Sahtu First Nations under their land claim agreements, to protecting and promoting their social, cultural and economic well-being and to the lands used by them for wildlife harvesting and other resource uses; and
- (c) land use planning must involve the participation of the first nation and of residents and communities in the settlement area.

The purpose of the land use plan is to provide for the conservation, development and use of land, waters and other resources in a settlement area. The Act stipulates the following contents for such a plan:

- (a) Maps, diagrams and other graphic material
- (b) Written statements, policies, guidelines and forecasts
- (c) Descriptions of permitted and prohibited uses of land, waters and resources
- (d) Authority for the planning board to make exceptions to the plan and the manner of exercising that authority and
- (e) Any other information that the planning board considers appropriate

The Mackenzie Valley Land Use regulations consist of definitions, applications of the law, and prohibitions. The regulations cover rules for small fuel caches, excavations, watercourse crossings, clearance of lines, trails/rights of way, monuments, historical sites, archeological sites, burial grounds and camp sites. Rules cover all aspects of permits including eligibility, application, conditions, reports, plans, determination of land use fee, security, permit suspension and permit cancellation. The full text is available on the MVRA Land Use site <http://laws.justice.gc.ca/en/M-0.2/SOR-98-429/>.

Significance of the Land Use Plan is highlighted in the MVRMA para 41: The Gwich'in and Sahtu First Nations, departments and agencies of the federal and territorial governments, and every body having authority under any federal or territorial law to issue licences, permits or other authorizations relating to the use of land or waters or the deposit of waste, shall carry out their powers in accordance with the land use plan applicable in a settlement area.

Cumulative environmental impact is addressed in para 146: The responsible authority shall, subject to the regulations, analyze data collected by it, scientific data, traditional knowledge and other pertinent information for the purpose of monitoring the cumulative impact on the environment of concurrent and sequential uses of land and water and deposits of waste in the Mackenzie Valley.

Right to unaltered waters are guaranteed through para 75: Subject to sections 76 to 78, the Gwich'in First Nation and the Sahtu First Nation have, in relation to waters when on or flowing through their first nation lands or waters adjacent to their first nation lands, the right to have the quality, quantity and rate of flow remain substantially unaltered by any person.

MRVA Most Relevant sections to the Sahtu Land Use Plan

Possible Standards to Address in the Land Use Plan	Most Relevant Sections of the MVRMA
Protection of Rights to Indigenous Lifestyles	Principles A, B
Participatory Land Use Planning	Principle C
Water Rights of Indigenous People	Para 75
Impact Assessment	Para 146

Appendix 1c: Relation of the Northern Strategy to the Sahtu Land Use Plan

In December 2004 federal and the territorial governments agreed to develop — in cooperation with Aboriginal governments organizations and northern residents — the first-ever comprehensive strategy for the North. The purpose of the Northern Strategy is to develop a common long-term vision for the North and to jointly identify the actions and initiatives that need to be undertaken to achieve this vision. The following three goals and objectives of the Framework relate directly to the Sahtu Land Use Plan.

1. Economic Development

Proposed Goal: To build strong, sustainable, diversified economies where northerners share in the benefits of northern development

Examples of Objectives:

- Diversification of northern economies, such as support for small businesses, traditional economies, agriculture, fisheries, tourism, and forestry
- Development of transportation, communication, energy, and other infrastructure
- Training and human resource development responsive to the needs of community and regional labour market conditions and economies
- Advancement of large-scale projects such as pipelines and mines
- Development of regulatory regimes to improve efficiency and apply consistent standards and practices

2. Environmental Protection

Proposed Goal: To engage all partners in the North in the protection and stewardship of the environment.

Examples of Objectives:

- Remediation of contaminated sites
- Development of northern-based environmental emergency response capacity
- Mitigation of, and adaptation to, climate change impacts
- Environmental monitoring to ensure environmental standards are maintained
- Effective land and water management processes
- Increased use of cleaner energy sources such as hydro-electricity, natural gas and new technologies

3. Preserving, Revitalizing and Promoting Culture and Identity

Proposed Goal: To ensure that the importance of language, traditional knowledge and way-of-life is recognized and encouraged.

Examples of Objectives:

- Preservation and promotion of Aboriginal languages for present and future generations
- Recognition and promotion of the linguistic and cultural diversity of the people of the North, including francophone communities
- Promotion of the use of traditional knowledge and practices in northern decision making
- Preservation and promotion of northern history and culture

Possible Standards to Address in the LUP	Relevant Goal/Objectives
Diversify economy	Goal 1: Economic Development
Develop infrastructure	Goal 1: Economic Development
Mining/hydrocarbon development	Goal 1: Economic Development
Advancement of large scale projects	Goal 1: Economic Development
Remedial Action	Goal 2: Environmental Protection
Climate Change adaptation	Goal 2: Environmental Protection
Use of cleaner energy sources	Goal 2: Environmental Protection
Encourage indigenous lifestyles	Goal 3: Culture and Identity
Preserve and promote culture	Goal 3: Culture and Identity

Appendix 1d: Relation of the Conservation of Arctic Flora and Fauna to the Sahtu Land Use Plan

The Arctic Council advocates an ecosystem approach to conservation, acknowledging the ecological processes that support species and landscapes and the social systems that are themselves supported by a healthy environment. The ecosystem approach recognizes that humans, with their cultural diversity, are an integral component of ecosystems. Therefore, lasting conservation depends on a strong commitment to the principles of environmental protection and sustainability, including appropriate human uses. According to CAFF, the overall goal of Arctic nature conservation is to ensure that *Arctic ecosystems and their biodiversity remain viable and vigorous for generations to come and, therefore, able to sustain human socio-economic and cultural needs.*

CAFF recommends that the Arctic States in collaboration with indigenous people and communities, other Arctic residents, and stakeholders:

1. Identify important freshwater, marine and terrestrial habitats in the Arctic and ensure their protection through the establishment of **protected areas** and other appropriate conservation measures
2. Promote an **ecosystem approach** to resource use and management in the circumpolar Arctic, through, inter alia, the development of common guidelines and best practices.
3. Encourage the **participation** of Arctic indigenous people, local communities, and schools in conserving and monitoring of Arctic species and ecosystems.

In its publication: *Arctic Flora and Fauna: Status and Conservation*, CAFF asserts that:

The creation of protected areas is one of the most common conservation approaches worldwide. Such areas include national parks, wildlife refuges, special habitat areas, sites of scientific interest, and sacred sites. The rationale behind protected areas is that they restrict human influence, allowing natural processes or areas of great beauty to remain undisturbed.

Possible Standards to Address in the LUP	Relevant Recommendations
Protected Areas Systems Completion	Recommendation 1
Ecosystems Approach	Recommendation 2
Participatory Land Use Planning	Recommendation 3

Appendix 1e: Relation of the Ramsar Conservation to the Sahtu Land Use Plan

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Canada is a signatory to the Convention. The Sahtu Region consists of significant wetland areas that support migratory waterfowl.

Ramsar Convention Articles Relevant to the Sahtu Land Use Plan

Possible Standards to Address in the Land Use Plan	Relevant Article and Subsections of the Ramsar Convention
Sustainable Wildlife Management	Articles 2(2); 2(6) and 4(4)
Protected Areas Systems Completion	Articles 2(2); 3(1); 4(1)
Mining/Hydrocarbon Exploration and Development Best Practices	Article 3(2); 4(2)

Text of Relevant Convention Articles

Article 1 Section 1: For the purpose of this Convention wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.

Article 2 Section 2: Wetlands should be selected for the List on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology. In the first instance wetlands of international importance to waterfowl at any season should be included.

Article 2 Section 6: Each Contracting Party shall consider its international responsibilities for the conservation, management and wise use of migratory stocks of waterfowl, both when designating entries for the List and when exercising its right to change entries in the List relating to wetlands within its territory.

Article 3 Section 1: The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory.

Article 3 Section 2: Each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference. Information on such changes shall be passed without delay to the organization or government responsible for the continuing bureau duties specified in Article 8.

Article 4 Section 1: Each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening.

Article 4 Section 2: Where a Contracting Party in its urgent national interest, deletes or restricts the boundaries of a wetland included in the List, it should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat.

Article 4 Section 4: The Contracting Parties shall endeavour through management to increase waterfowl populations on appropriate wetlands.

Appendix 1f: Relation of the Kyoto Protocol to the Sahtu Land Use Plan

In December 1997, Canada and more than 160 other countries met in Kyoto, Japan, and agreed to targets to reduce greenhouse gas emissions. The agreement that set out those targets, and the options available to countries to achieve them, is known as the Kyoto Protocol. Canada's target is to reduce its greenhouse gas emissions to 6 percent below 1990 levels by the period between 2008 and 2012. This is comparable to the targets taken on by our major trading partners.

Articles Relevant to the Sahtu Land Use Plan

Possible Standards to Address in the Land Use Plan	Relevant Articles and Subsections of the Kyoto Protocol
Forestry Best Practices	Article 3 Section 3
Mining/Hydrocarbon Exploration and Development Best Practices	Article 2 Section 1; Article 3 Section 3
Greenhouse Gas Emissions and Climate Change Adaptation	Article 3 Section 7; Article 10 Section B

Text of Relevant Articles

Article 2 Section 1: Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote sustainable development, shall:

- (a) Implement and/or further elaborate policies and measures in accordance with its national circumstances, such as:
 - (iv) Research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies;
 - (vii) Measures to limit and/or reduce emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector;

Article 3 Section 3. The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article of each Party included in Annex I. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8.

Article 3 Section 7. In the first quantified emission limitation and reduction commitment period, from 2008 to 2012, the assigned amount for each Party included in Annex I shall be equal to the percentage inscribed for it in Annex B of its aggregate anthropogenic

carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A in 1990, or the base year or period determined in accordance with paragraph 5 above, multiplied by five. Those Parties included in Annex I for whom land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 shall include in their 1990 emissions base year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in 1990 from land-use change for the purposes of calculating their assigned amount.

Article 10 Section B: All Parties ... shall:

- (b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change:
 - (i) Such programmes would, *inter alia*, concern the energy, transport and industry sectors as well as agriculture, forestry and waste management. Furthermore, adaptation technologies and methods for improving spatial planning would improve adaptation to climate change; .

Appendix 2: Recommended actions for the Sahtu land use plan related to the implementation of international agreements and relevant national legislation.

Standards	Policy/ Agreement	Sahtu LUP Interpretation	Action
CONSERVATION ZONES			
Sustainable Wildlife Mgt	CBD(8)	Conserve biological resources	Prohibit industrial resource activity
	CBD(8.1)	Ensure current land use supports conservation	Permit indigenous land uses only
	RAMSAR (2.2); (2.6)	Protect waterfowl breeding wetlands	Include significant wetlands in Conservation Zones
	RAMSAR (4.4)	Increase waterfowl populations	Prohibit non-indigenous hunting
Protected Areas System Completion	CBD(8.D)	Maintain species populations through habitat protection	Ensure functional connectivity between protected areas and intervening landscapes. Limit road access to conservation zones to limit threats.
	RAMSAR (3.1); (4.1)	Conserve wetlands	Include wetlands in conservation reserves
	CAFF(1)	Protect freshwater, marine and terrestrial habitat	Establish protected areas
Invasive Species Control	CBD(8.H)	Prevent introduction of invasive species	Prepare list of indigenous species; request for permits must include listing of species intended to be cultivated/ introduced
Right to Indigenous Lifestyle	CBD(8.J); (10.C)	Respect and preserve indigenous lifestyles	Permit traditional land uses in conservation zone and reserves
	NS(3)	Encourage traditional lifestyles	Permit traditional land uses in conservation zone and reserves

Participatory LUP	MVRA(C)	Land use planning to involve participation of First Nation and residents	Meaningful community consultation in land use planning. Consult First Nations and residents to identify sensitive areas.
	CAFF(3)	Encourage participation of indigenous people	Meaningful community consultation in land use planning. Consult First Nations and residents to identify sensitive areas.
Water Rights of Indigenous People	MVRMA(75)	Right to unaltered waters	Prohibit any action that would alter quality and quantity of water
Remedial Action	NS(2)	Remediation of contaminated sites	Identify contaminated sites and ensure no adverse impacts to the ecological integrity of conservation zones from contaminated sites outside of conservation zones.
SPECIAL MANAGEMENT ZONES			
Sustainable Wildlife Management	CBD(8.C)	Conserve biodiversity outside protected areas	Identify sensitive areas and list appropriate prohibitions
	RAMSAR(2.6)	Protect waterfowl habitat	Within SM zones, identify waterfowl habitat areas
Best Practices: Forestry	KYOTO(3.3)	Report carbon sink losses	Development plans to include estimates of carbon sink losses and counter or offset measures
Best Practices: Fisheries, Forestry, Mining	CBD(10.B)	Ensure use of resources has minimal adverse impact on biodiversity	Identify, notify and implement industry best practices
Best Practices: Mining/	RAMSAR(3.2)	Record impact of development projects on wetlands	Development plans to identify area and nature of impact on wetlands

Hydrocarbon Exploration/ Development			
Best Practices: Hydrocarbons Exploration/ Development	CBD(10.E)	Public and private sectors to cooperate in developing methods for sustainable use of biological resources	LUP Board and private sector to identify and agree on best practices
	RAMSAR(4.2)	Compensate for loss of wetlands	Create additional nature reserves for waterfowl
	KYOTO(2.1)	Promote use of environmentally sound technologies	Adopt environmentally sound technologies to reduce greenhouse gas emissions and limit adverse impacts of developments on natural buffers of disturbance events (e.g. floodplain buffers, erosion prone slopes, carbon sink areas).
	KYOTO(3.3)	Report carbon sink losses	Development plans to include estimates of carbon sink losses and counter or offset measures.
Invasive Species Control	CBD(8.H)	Protect from alien species which threaten ecosystems	Prepare list of indigenous species; permit requests to list species intended to be cultivated/ introduced
Right to Indigenous Lifestyle	CBD(8.J);(10.C)	Respect and preserve indigenous lifestyles	Permit traditional land uses with monitoring of wildlife and habitat.
Remedial Action	CBD(10.D)	Implement remedial action in degraded areas	Identify contaminated sites
Impact Assessment	CBD(14.A)	Conduct EIA for projects that may have adverse effects	Incorporate EIA requirements as per MVRMA
Right to Indigenous Lifestyle	MVRMA(A);(B)	Protect and promote indigenous lifestyles	Meaningful community consultation in land use planning.
Participatory LUP	MVRMA(C)	Land use planning to involve participation of first nation and residents	Meaningful community consultation in land use planning.

Water Rights of Indigenous People	MVRMA(75)	Right to unaltered waters	
Impact Assessment	MVRMA(146)	Monitor cumulative impact of land use, water use and waste deposits	Responsible Authorities (e.g. Land and Water Boards, Land Use Planning Board) ensure conformity to the land use plan.
Greenhouse Gas Emissions and Climate Change Adaptations	KYOTO(3.7); (10.B)	Adopt best practices and adhere to Kyoto targets	Development plans to incorporate environmentally sound technologies and counter sink losses.
Climate Change Adaptations	NS(2)	Incorporate adaptation and mitigation measures	Development plans to include estimates of carbon sink losses and counter or offset measures.
Use of Cleaner Energy Sources	NS(2)	Increase use of cleaner energy sources such as hydro-electricity, natural gas and new technologies	Identify, notify and implement industry best practices.
Participatory LUP	CAFF(3)	Encourage participation of indigenous people	Consult first nations and residents to identify sensitive areas
MULTIPLE USE ZONES			
Impact Assessment	All policies and agreements	Conduct EIA for projects that may have adverse effects	Adopt project classification that defines projects requiring impact assessments

Appendix 3: Example land use requirements and cumulative effects thresholds for major habitat types in the Sahtu Settlement Area.

Potential Value	Example Land Use Requirements	Baseline Conditions	Example Thresholds
<p>Coleville Lake south to Deline and Tulita</p> <p>- Sahtu Trails – Core use from Coleville Lake to western shores of Great Bear Lake; E-W connection from Coleville to Fort Good Hope; Great Bear River.</p> <p>- IBP (peat and palsa) in Coleville Lake area</p> <p>- range overlap for barren-ground caribou wintering (Blunose West and Blunose East herds), northern range of woodland caribou and western range of muskox.</p>	<p>Education and traditional use opportunities based on proximity to existing communities and historical use (based on Dene Trails data).</p> <p>Land use within and surrounding the breaks of the Great bear River should result in no change in the water flow regime.</p> <p>Permanent protection for community drinking water source.</p> <p>Thresholds for cumulative effects related to sensitivity of peat and palsa formations (i.e. changes in ground thermal regime).</p> <p>Connectivity to Travailant Lake at northern edge of woodland caribou range.</p> <p>Seasonal restrictions during calving. Limited activities related to noise and construction.</p> <p>Thresholds for habitat modification related to density of seismic, proportion of habitat alteration and proportion of permanent infrastructure with consideration of edge effects.</p>	<p>Percent conversion by permanent infrastructure</p> <p>Percent anthropogenic, non-permanent disturbance</p> <p>Composition (% and ha) of habitat types (e.g. shrub and herbaceous wetlands, forested wetlands, forested uplands, heath, tall and low shrub lands).</p> <p>Total amount of available focal species' habitat as well as amount in large contiguous blocks.</p>	<p>Maintain 95% of critical barren-ground caribou winter habitat</p> <p>Maintain 70% of available (suitable) woodland caribou habitat in core landscapes > 1,000 ha and > 500 m wide (Salmo Consulting)</p> <p>Density of permanent infrastructure < 0.6 km/km² generally and <0.3 km/km² in special management zones.</p> <p>Low impact seismic (line width < 5 m and target for 2 m). Source: Pembina Institute</p> <p>Pipeline corridor width no more than 10 m. Minimum of 3 wells per well pad. Source: Pembina Institute, pers. Comm..</p> <p>Pipeline and road development must occur within existing seismic lines. Source: Pembina Institute, pers. Comm..</p> <p>No alteration of drainage flows.</p>

Potential Value	Example Land Use Requirements	Baseline Conditions	Example Thresholds
<p>Mackenzie River Corridor</p> <ul style="list-style-type: none"> - Brackett Lake (bird species diversity area, IBP) - Southeastern Mackenzie Mountains (Trumpeter Swan nesting) - Carcajou River (moose wintering) - Three Day Lake – Steward Creek (fisheries, moose wintering) and Hare Indian River (woodland caribou, barrengound caribou, Arctic Grayling) identified by Mackenzie River Basin Board. 	<p>Expanded Conservation Zones connected to the Mackenzie River to maintain high quality mammal, avian and fish species habitat.</p> <p>Special Management Zone connections to Great Bear Lake shoreline.</p> <p>Restrictions on permanent infrastructure and non-permanent human disturbance related to erosion and flood risk.</p> <p>Restrictions on permanent infrastructure and non-permanent human disturbance, particularly increased vehicle access, that may result in adverse impacts (e.g. siltation, spills) to sensitive fisheries, spawning areas, and/or waterfowl concentration areas.</p> <p>Set thresholds for maximum disturbance on a watershed basis.</p> <p>Consideration of waterfowl and boreal bird migratory routes.</p>	<p>Percent conversion by permanent infrastructure</p> <p>Percent anthropogenic, non-permanent disturbance.</p> <p>Composition (% and ha) of habitat types (e.g. shrub and herbaceous wetlands, forested uplands, heath, tall and low shrub lands, alpine forest, alpine heath).</p> <p>Amount of natural and anthropogenic forest/non-forest edge habitat.</p> <p>Total amount of available focal species' habitat as well as amount in large contiguous blocks.</p>	<p>No alteration of drainage flows given the prominence of wetlands and the importance of hydrological processes.</p> <p>Conversion and non-permanent human disturbance not to exceed 10% on a watershed basis. This is a precautionary value based on the BC Watershed Assessment Procedures.</p> <p>Set low threshold for disturbance in moose refugia/wintering areas.</p> <p>Set threshold for maximum increase in edge habitat above baseline condition (e.g. < 10% above baseline).</p>

Potential Value	Example Land Use Requirements	Baseline Conditions	Example Thresholds
<p>North of Great Bear Lake (generally east of Coleville Lake)</p> <ul style="list-style-type: none"> - Horton Plain (Muskox) including Horton Lake - Northeast of Dease arm – Raptor nesting (Peregrine and golden eagle) according to NLUIS maps - Whitefish lakes (in Sahtu Heritage Places) 	<p>Best practices and thresholds of habitat alteration related to muskox sensitivity.</p> <p>Special Management Zone, at minimum, with no disturbance to core area surrounding suitable nesting sites. Areas with concentrations of raptor nesting sites should be considered for permanent protection.</p> <p>Fisheries best practices and limits to shoreline access.</p> <p>Riparian zone management that considers adaptive management for flood and erosion potential and natural buffers of flood and erosion events.</p>	<p>Percent conversion by permanent infrastructure</p> <p>Percent anthropogenic, non-permanent disturbance.</p> <p>Composition (% and ha) of habitat types (e.g. shrub and herbaceous wetlands, forested uplands, heath, tall and low shrub lands).</p> <p>Road and trail stream crossings.</p> <p>Total amount of available focal species' habitat as well as amount in large contiguous blocks.</p>	<p>No net loss of shoreline habitat.</p> <p>Limited alteration of drainage flows given the importance of subsistence and commercial fisheries.</p> <p>No disturbance within core areas surrounding raptor nesting sites.</p> <p>Maintain a high proportion (e.g. >80%) of available (suitable) muskox habitat in core landscapes > 1,000 ha and > 500 m wide.</p>

Potential Value	Example Land Use Requirements	Baseline Conditions	Example Thresholds
<p>Richardson and Mackenzie Mtns</p> <ul style="list-style-type: none"> - Special Features: Hot springs (IBP 60, 70, 71), endemic snails, unglaciated sites also in Central Mackenzie sub-basin - Critical grizzly habitat from NLUIS in Central Mackenzie sub-basin; also (IBP 57 and 58 – grizzly, woodland caribou, Dall’s sheep) - concentration of woodland caribou calving (NLUIS) in Central Mackenzie sub-basin - Sheep and goats critical habitat (NLUIS) in Central Mackenzie sub-basin from Yukon border to Mackenzie River - Moose mineral licks (as well as woodland caribou, grizzly, sheep, waterfowl) associated with headwater areas (NLUIS critical habitat) 	<p>Permanent protection of special features including buffer to watershed boundaries, where appropriate.</p> <p>Outside of permanent protected areas, provision of optimal and sub-optimal habitat to maintain viable populations of woodland caribou, Dall’s sheep and grizzly.</p> <p>Riparian zone management that considers adaptive management for flood and erosion potential and natural buffers of flood and erosion events.</p> <p>Set thresholds for maximum disturbance on a watershed basis.</p>	<p>Percent conversion by permanent infrastructure (also by watershed).</p> <p>Percent anthropogenic, non-permanent disturbance (also by watershed).</p> <p>Composition (% and ha) of habitat types (e.g. shrub and herbaceous wetlands, forested wetlands, forested uplands, heath, tall and low shrub lands, alpine forest, alpine heath).</p> <p>Road and trail stream crossings.</p> <p>Total amount of available focal species’ habitat as well as amount in large contiguous blocks</p>	<p>Identify and maintain > 95% of critical habitat for grizzly bear, Dall’s sheep and woodland caribou, consistent with the Species at Risk Act.</p> <p>Maintain 70% of available (suitable) habitat for grizzly bear, Dall’s sheep and woodland caribou in core landscapes > 1,000 ha and > 500 m wide (Salmo Consulting).</p> <p>Density of permanent infrastructure < 0.6 km/km² generally and <0.3 km/km² in special management zones.</p> <p>Special management zones for headwater areas associated with mineral licks and waterfowl concentrations (staging and breeding).</p> <p>Conversion and non-permanent human disturbance not to exceed 10% on a watershed basis. This is a precautionary value based on the BC Watershed Assessment Procedures.</p> <p>Some alteration of drainage acceptable (i.e. <10%).</p>