

## **Eagle Plains Area**

### **An Inventory of Governmental Information/Data Summaries and Gap Assessment**

#### **Report and maps**

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**for Parks and Protected Areas**

**November 30, 1998**

**Note: The electronic version of this report does not include digital maps or Appendix "A" - YPAS Technical Paper #2 - Contact Yukon Renewable Resources Parks Branch for further information.)**

## **Executive Summary:**

### **Overview of the project**

This report is intended to provide an overview of existing governmental data/information sources related to Eagle Plains area (see Section 3 for description of the area). The report is organized to reflect key information requirements and/or selection criteria identified in the draft Yukon Protected Areas Strategy (see Appendix A). The project has not involved original research, nor is it intended to result in recommendations regarding the identification of candidate protected areas. It is, however, intended to support future planning and protected area selection processes by providing an inventory and assessment of existing information. It is anticipated that this will assist both government and local planning groups (Renewable Resource Councils, Planning Commissions) in the early stages of a formal planning process.

Key results are presented in Section 5 - "Results - Data/Information Matrix", Section 6 - "Results - Data/Information Summaries" and Section 7 - "Results - Data/Information Gap Analysis". Recommendations are limited to suggestions regarding how to address early planning process information needs, where information/data gaps have been identified. The report addresses a full range of information requirements including: geological, biophysical, wildlife and habitat, social, cultural, heritage and recreation.

Bio-physical components such as geology, landforms, and soils and vegetation are the framework on which many of the natural values of the land are based. Knowledge of these components leads to a better understanding of ecosystem health, bio-diversity, resilience and viability. Much of our appreciation of nature and sense of a "place" comes from the unique or representative combination of these components. Information related to wildlife and habitat, social, cultural, heritage and recreation identifies what is currently known about the significance of the area as it relates to past, present or future human use and values. Where possible, both biophysical and other information, has been summarized and presented in map/overlay form. Where practical these maps have been reproduced and incorporated into the report; where not practical originals remain in the possession of Yukon Parks Branch.

## Table of Contents

<b>Executive Summary</b>		
<b>1.0</b>	<b>Introduction - purposes</b>	<b>5</b>
<b>2.0</b>	<b>Eagle Plains Area - Policy Context</b>	<b>5</b>
<b>3.0</b>	<b>Eagle Plains Area - Social and Physical Context</b>	<b>6</b>
<b>3.1</b>	<b>Descriptions of Ecoregions</b>	<b>6</b>
<b>3.1.1</b>	<b>Eagle Plains Ecoregion</b>	<b>6</b>
<b>3.1.2</b>	<b>British/Richardson Mountains</b>	<b>7</b>
<b>3/1/3</b>	<b>Peel River Plateau</b>	<b>7</b>
<b>4.0</b>	<b>Methodology</b>	<b>10</b>
<b>4.1</b>	<b>Key Components - Study Design</b>	<b>10</b>
<b>4.2</b>	<b>Literature and Data Base Search</b>	<b>12</b>
<b>5.0</b>	<b>Preparation of Data/Information Summary</b>	<b>14</b>
<b>5.1</b>	<b>Data/Information Summary Matrix</b>	<b>14</b>
<b>5.2</b>	<b>Results - Data/Information Summaries</b>	<b>33</b>
<b>5.2.1</b>	<b>How to use this section</b>	<b>33</b>
<b>5.2.2</b>	<b>Geophysical</b>	<b>33</b>
<b>5.2.2.1</b>	<b>Physiographic subdivisions</b>	<b>33</b>
<b>5.2.2.2</b>	<b>Bedrock Geology</b>	<b>36</b>
<b>5.2.2.3</b>	<b>Mineral Deposits/Occurrences</b>	<b>36</b>
<b>5.2.2.4</b>	<b>Surface Geology/Landforms</b>	<b>37</b>
<b>5.2.2.5</b>	<b>Soils</b>	<b>37</b>
<b>5.2.3</b>	<b>Biological</b>	<b>40</b>
<b>5.2.3.1</b>	<b>Vegetation</b>	<b>40</b>
<b>5.2.3.2</b>	<b>Biology/Wildlife and Habitat</b>	<b>40</b>
<b>5.2.4</b>	<b>Culture Heritage and Spiritual Values</b>	<b>41</b>
<b>5.2.5</b>	<b>Outdoor Recreation and Tourism</b>	<b>41</b>
<b>5.2.6</b>	<b>Existing Land Uses</b>	<b>42</b>
<b>5.2.7</b>	<b>Air Photo Coverage</b>	<b>42</b>
<b>6.0</b>	<b>Results - Data/Information Gap Analysis</b>	<b>42</b>
<b>6.1</b>	<b>Summary of Data/Information "Gap" Analysis</b>	<b>42</b>
<b>6.2</b>	<b>Geophysical</b>	<b>43</b>
<b>6.2.1</b>	<b>Bedrock Geology</b>	<b>43</b>
<b>6.2.2</b>	<b>Mineral Potential</b>	<b>44</b>
<b>6.2.3</b>	<b>Soils and Landforms</b>	<b>45</b>
<b>6.2.3.1</b>	<b>Soils</b>	<b>45</b>
<b>6.2.3.2</b>	<b>Landforms/Quaternary Geology</b>	<b>45</b>
<b>6.3</b>	<b>Biological</b>	<b>45</b>
<b>6.3.1</b>	<b>Vegetation</b>	<b>45</b>
<b>6.3.2</b>	<b>Wildlife and Habitat</b>	<b>46</b>
<b>6.4</b>	<b>Culture, Heritage and Spiritual Values</b>	<b>46</b>
<b>6.5</b>	<b>Outdoor Recreation and Tourism</b>	<b>47</b>
<b>6.6</b>	<b>Existing Land Uses</b>	<b>47</b>
<b>6.7</b>	<b>Air Photo Coverage</b>	<b>47</b>

**Appendices:**

- Appendix "A" - Draft YPAS Selection Criteria - Technical Paper #2**
- Appendix "B" - Additional References**

**List of Maps:**

<b>Map #</b>	<b>Description</b>	<b>Page #</b>
1	Eagle Plains Area - Physical and Social Context	8
2	Eagle Plains Area - Eco-Regions	9
3	Eagle Plains Area - Physiographic Units	35
4	Eagle Plains Area - Soil Types	39

**List of Tables:**

<b>Table #</b>	<b>Description</b>	<b>Page #</b>
1	Protected Areas Strategy - Draft Selection Criteria	11
2	Eagle Plains Area - Information Summary Matrix	15
3	Summary of Data/Information "Gap" Analysis	43

## 1. Introduction - purposes

This report provides an inventory of data/information on the Eagle Plains area related to: bio-physical, wildlife and habitat, social, cultural, heritage and recreational components of the environment. The report format was developed as a prototype for potential use in other areas. It is structured to reflect protected areas selection criteria contained in the draft "Yukon Protected Areas Strategy (see Table 1, page 11, for summary and Appendix A for Draft YPAS Technical Paper #2). The project/report is not intended to address the full range of YPAS information requirements, or to provide recommendations regarding candidate protected areas. It is a background paper, intended to facilitate preliminary protected areas planning processes, by ensuring that governmental and local planners (Renewable Resource Councils, Planning Commission, etc.) are apprised of existing governmental data/information and its adequacy to address draft YPAS selection criteria. It is also intended to provide a preliminary overview of key YPAS values within the area, including socioeconomic and ecological values. This should improve the efficiency of the overall process by facilitating access to existing data/information, while also identifying "gaps" which will require additional research and/or data gathering. Terms of reference for the project did not include original research or interpretation of information/data.

The terms of reference for this project includes: researching and compiling a bibliography of published materials on geology, mineral potential, landforms and soils, vegetation, wildlife and habitat, social, cultural and recreational uses, and; preliminary identification of key values within the area. Results are presented in a manner consistent with draft Yukon Protected Areas Strategy selection criteria (see Table 2, page 15). A base map of the study area and overlays of key information were prepared by Applied Ecosystem Management, Whitehorse Ltd. from readily available electronic files. The basemap includes topographic contours and hydrology; acetate overlays include Yukon Soil Landscapes (1992), Yukon Ecoregions (1995) and MinFile data (1997). In addition to electronic records, a hand drafted map was prepared to present basic geology, surficial geology, a summary of surface geology, physiographic units and a summary of vegetation classes provided by satellite imagery. In addition, air photo coverage maps were ordered for this area and are now available at Yukon Renewable Resources - Parks Branch.

This report deals with the Eagle Plains area as identified on Map 1 (page 8) and described in Section 3 - Eagle Plains Area - Social and Physical Context.

## 2. Eagle Plains area - Policy Context

Although this project is proceeding within the context of the draft Yukon Protected Areas Strategy (YPAS), its roots predate that process. Preliminary investigation of area values has occurred historically: during the Dempster highway construction era; as an adjunct to oil and gas and pipeline studies; as part of the Dempster Corridor Management Planning process, in conjunction with management of the porcupine caribou herd, and; as part of ongoing land and resources management within the Yukon, by both federal and territorial governments. More recently, the values of the area have been considered within the context of establishment of a protected area. Within the context of land claims, the area includes portions of the traditional territory of the Vuntut Gwitch'in and Nacho Nyak Dun First Nations and the primary and secondary use areas of the Tetl'it Gwitchin First Nation.

The draft Yukon Protected Areas Strategy has been developed through a broadly based public consultation process. In its current form, the draft strategy includes reference to both habitat protection and the full range of other values associated with a parks system. In addition, the YPAS was designed to build upon and complement land claims processes and mechanisms, such as Renewable Resource Councils and Regional Planning Commissions.

From ecological perspective, the objectives of the YPAS are consistent with all relevant land claims provisions related to land and resource management. A key component of the YPAS is to establish a viable protected area, representative of each ecoregion within the Yukon. At present this objective has not

been achieved with regard to ecoregions associated with the Eagle Plains area. The draft YPAS is also designed to be consistent with all relevant provisions of the Umbrella Final Agreement, First Nation Final Agreements, and other agreements. Therefore, in addition to focusing on draft YPAS requirements, this project is designed and intended to complement associated land claims provisions and mechanisms.

Finally, this area is located within the boundaries of the Yellowstone to Yukon ("Y" to "Y") initiative, that is currently being promoted by wilderness advocacy groups. The "Y" to "Y" concept is to establish and link viable representative areas throughout the western United States and Canada, using the concepts of core protected areas and wildlife and/or migratory corridors, which are consistent with the goals of YPAS.

### **3. Eagle Plains area - Social and Physical Context**

For the purposes of this project, the Eagle Plains area (see Map 1, page 8) has been defined as being: located between 65 degrees 45 minutes north (north of the Peel River) and 67 degrees north, and; 135 degrees east and 137 degrees 15 minutes west). It is largely contained within the traditional territories of the Vuntut Gwitchin and Nacho Nyak Dun First Nations, but on the eastern portion also involves the primary and secondary use areas of the Tetlit Gwitch'in. The area has a long history of human use and occupation, both from a First Nations and non-First Nations perspective. Non-First Nations use relates originally to the fur trade and more recently to construction of the Dempster Highway, and oil and gas and mineral exploration. In recent years there has been increasing interest in developing a protected area along the highway, possibly in conjunction with the arctic circle. At present, the area is increasing in popularity as both a tourism destination and, as a scenic throughway. The highway is the principal supply route for Old Crow (in conjunction with a winter road), Fort MacPherson and Inuvik and other coastal communities. Activities in the area include not only mineral and oil and gas exploration, but also traditional and recreational harvesting, adventure tourism and non-consumptive recreation. The majority of the area is within Group Trapping Concession #401 (Vuntut Gwitchin). The area is also part of the winter range of the porcupine caribou herd. There are no Guide Outfitting Concessions in the area.

The area also has an interesting geological history, encompassing a broad transition zone between unglaciated Beringia in the west and glaciated portions of the Canadian Shield. The transition zone is most clearly delineated by the Richardson Mountains, with glacial and non-glacial features to the east and west, respectively.

Associated ecoregions include: Eagle Plains, the British Richardson Mountains and the Peel River Plateau. Physiographic features are described in greater detail in Sections 3.1 and 5.2.2.1.

#### **3.1 Description of Ecoregions**

##### **3.1.1 The Eagle Plains Ecoregions (see Map, page 9)**

The Eagle Plains ecoregion covers approximately 3.4% of the Yukon. It is characterized by a gently sloping, rolling plateau, with high elevation generally at 500 m a.s.l. and average relief of 300 m. The highest point within the study area is probably Mount Higgins. at 903 m a.s.l.

The main part of the ecoregion drains north through the Porcupine River drainage; significant tributaries include the Eagle, Whitestone and Miner Rivers. The southern extent drains to the east through the Peel River Watershed. There is only one major lake in the area, Whitefish Lake, but there are numerous smaller lakes, many of thermokarst origin. Most of the region is within a zone of discontinuous permafrost. Vegetation in the Eagle Plains Ecoregion is approximately 59% coniferous forest, 30% transitional forest, 5% mixed and 5% tundra. Forest cover ranges from black spruce and larch below treeline, to white spruce and birch in well drained areas. Vegetation above treeline includes scrub birch and willows, especially in protected valleys.

The Eagle Plains area is underlain by gently folded sandstone, siltstone and shale, which are sedimentary rocks of various ages representing sedimentation in a marine setting, and deltaic sandstone and conglomerate. Carbonate rock, such as limestone and dolomite are also present. These sedimentary rocks were faulted and/or folded later on during a complex history of tectonic activity. Spectacular exposures of complex, banded and folded structures, particularly on the sides of Canyon Creek show rocks that are very distinct from other rock formation in Central and southern Yukon. Fossil bearing strata have been the subject of geological investigations and are documented.

This area of Yukon was not glaciated and the resulting landforms, such as the smooth pediment surfaces, and soils are unique to the Beringia environment. Colluviation and sediments transport are strongly influenced by frost shattering and permafrost processes on most slopes, both north and south facing.

### **3.1.2 British/Richardson Mountains (165)**

The British/Richardson Mountains ecosystem comprises a very large portion of northern Yukon. Estimated at approximately 25,440 square kilometers, it is only the southern "arm" of the area (Richardson Mountains) that is within the study area. That "arm" runs through the center of the study area, extending southwards to the Peel River. The highest elevation is approximately 1,600 m with relief ranging from 450 to 900 m. In the study area, the elevations of the highest peaks (Mt Kearny, Mt Har, Mt Raymond) range roughly between 1,100 to 1,200 m a.s.l. In general, the ecosystem is described as being about 66% alpine and arctic tundra, 18% barren lands, 8% transitional forest and 7% coniferous forest.

The Richardson Mountains are formed of a package of Paleozoic deep water clastic sediments uplifted by thrust faults during the late Cretaceous or early Tertiary. The southern Richardson Mountains are still seismically active.

The rugged mountains were not glaciated during the last 2 million years but their eastern side marks the limit of Laurentide ice which stopped in their eastern foothills. The crest of the mountains have many periglacial features such as well developed active solifluction lobes, terraces and stripes, stred stones and nets.

### **3.1.3 Peel River Plateau (51)**

The Peel River Plateau ecoregion is approximately 19,000 square kilometers in extent (based on Oswald and Senyk, 1984) and covers approximately 3.3% of the Yukon. It is characterized by glaciated foothills, plateaus and basins, including the lower portions of the Wind, Snake and Bonnet Plume drainages. Drainage occurs through the Peel River; associated landscape features include Aberdeen Canyon. The area has numerous small lakes, many of thermokarst origin. Larger lakes include: Hungary, Chappie and Margaret Lakes. The area is mostly below 600 meters elevation, with a few hills over 600 meters. The highest point is at 1014 meters. Most of the region is within a zone of discontinuous permafrost and forms part of the range of the Porcupine Caribou Herd.

Vegetation is estimated to be approximately 67% coniferous forest, 13% alpine tundra, 10% transitional forest and 9% mixed forest. Forest cover ranges from black spruce and larch, to white spruce and birch in well drained areas.

Significant geophysical features include the western most margin of the Laurentide ice, several features such as drumlins, cryoplanation terraces, pingos, landslides and other permafrost related processes.

**Map #1 - Eagle Plains Area - Social and Physical Context**  
(Showing: Area boundary, insert locating within Yukon, waterways/water bodies, major roads, communities, traditional territories significant existing reservations)

**Map #2 - Eagle Plains - EcoRegions**  
(Showing: Ecoregions with Insert showing Yukon Ecozones to locate area within broader context,  
waterways/water bodies)

## 4. Methodology:

### 4.1 Key Components - Study Design

As per the terms of reference for the project, the primary objective was to inventory and assess existing governmental information/data related to the Eagle Plains area, utilizing protected areas selection criteria being developed as part of the Yukon Protected Areas Strategy process. This required that an organizational model be developed that would reflect the YPAS selection criteria.

Key tasks were conceptualized as being two-fold:

1. to complete an inventory of relevant published materials, including a summary of the nature and extent of existing data/information, and;
2. to prepare a gap analysis based of the quality of available information to address YPAS information requirements.

To avoid overcomplicating the presentation of results, it was decided to report out on each key task in separate sections of the report: Section 5 would address Task #1 and Section 6 would address Task #2. This structure reflects both the terms of reference for the project and the common sense sequential approach required to address those terms.

Where appropriate, data is presented in summary matrix form, utilizing standard categories for data organization based upon YPAS criteria.(see Table 1). Criteria were summarized under 10 general categories including:

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| 1. Geophysical                       | 6. Wildlife and Habitat             |
| 2. Biological                        | 7. Cultural, Heritage and Spiritual |
| 3. Naturalness                       | 8. Recreation/Tourism               |
| 4. Ecological Viability and Research | 9. Uncommon Landforms and Features  |
| 5. Education Values                  | 10. Wilderness                      |

The first 5 categories are associated with YPAS Goal #1 - to protect representative core areas from each ecoregion; categories 6-10 are associated with YPAS Goal #2 - to protect Yukon special places. In some cases, such as categories #2 and #6 there will be an almost complete overlap in categorization of relevant records. However, to ensure consistency between this report and the YPAS selection criteria, it was decided to maintain the list as reflecting the full range of YPAS criteria. For additional detail on the content of each general YPAS category, see Table #1(page 11).

With regard to the matrix, reference numbers are utilized to link matrix entries to explanatory notes. The Task #1 matrix is designed to link the record to the full range of YPAS criteria. A rating system is utilized to indicate whether the reference information is: General - "G"; covering the study area - "A", covering part of the area - "P", site specific - "S", or, unknown - "X". An "X" designation indicates that a record was identified, but not found and/or physically reviewed. The matrix summary is followed by text summaries describing the quality and extent of existing governmental information sources.

With regard to Task #2 - "Data/Information Gap Analysis", a similar approach was taken to presenting results. Using the same 10 categories, Section 6 presents a matrix detailing the number of relevant records identified, the adequacy of the records to address YPAS information requirements, and a column providing summary text comments. The balance of Section 6 provides more extensive comments regarding the adequacy of inventoried data/information to address draft YPAS requirements.

In the case of Task #1 the Data/Information Matrix has an information sorting capacity and is designed to allow for incorporation of new data/information, as it becomes available. This will allow the matrix to be a

working tool for both the present and future, for use in planning of both internal (i.e. identification of additional field work or research requirements) and external (i.e. public) planning processes

**Table 1 PROTECTED AREAS STRATEGY - DRAFT SELECTION CRITERIA**

**GOAL #1 - TO PROTECT REPRESENTATIVE AREAS OF EACH ECOREGION**

**General Criteria:**

- |              |                                     |
|--------------|-------------------------------------|
| 1. Climate   | 5. Aquatic and Terrestrial Habitats |
| 2. Landforms | 6. Wildlife                         |
| 3. Soils     | 7. Vegetation                       |
| 4. Hydrology |                                     |

**Geophysical and Biological Components:**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• bedrock age and lithology</li> <li>• surficial materials</li> <li>• physical habitats</li> <li>• soil development</li> <li>• elevation gradient</li> <li>• topographic patterns</li> </ul> | <ul style="list-style-type: none"> <li>• hydrology</li> <li>• climatic subzones</li> <li>• land cover types biomass productivity</li> <li>• terrestrial and aquatic plant and animal populations</li> </ul> |
|---|---|

**Naturalness:**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• roads</li> <li>• settlements or land developments</li> </ul> | <ul style="list-style-type: none"> <li>• surface disturbances due to resource exploration and development</li> <li>• existing land tenures</li> </ul> |
|---|---|

**Ecological Viability: (Not Applicable for current project - exceeds TOR)**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• size - large enough to ensure ecological values can be maintained</li> <li>• size - large enough to recover from natural disturbances</li> <li>• transitional or edge habitats</li> </ul> | <ul style="list-style-type: none"> <li>• connect with habitat links</li> <li>• free of barriers to movement of wildlife</li> </ul> |
|--|--|

**Research and Education Values:**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Natural areas as benchmarks</li> </ul> | <ul style="list-style-type: none"> <li>• representative of unique gene pools</li> </ul> |
|---|---|

**GOAL #2 - SPECIAL PLACES**

**Important Wildlife and Habitat:**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• highly productive habitats</li> <li>• high concentrations or diversity of species</li> <li>• nesting, congregating, staging, calving, lambing or spawning area</li> <li>• important seasonal feeding, resting or wintering ranges</li> </ul> | <ul style="list-style-type: none"> <li>• habitats for endemic, rare, vulnerable, endangered or threatened species</li> <li>• sites of species at the limits of their geographical range</li> <li>• areas affected by geological or microclimactic anomalies</li> <li>• important migration routes and other habitat links</li> </ul> |
|---|--|

**Uncommon Landforms and Features:**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• exceptional landforms, geological or hydrological features (i.e. sand dunes, waterfalls, hot-springs)</li> <li>• exceptional paleontological (fossil related) features</li> </ul> | <ul style="list-style-type: none"> <li>• rare or endemic plant and animal species</li> </ul> |
|--|--|

**Cultural, Heritage and spiritual Values:**

- areas representing diversity of heritage resources in the Yukon
- heritage site and trails
- spiritual and sacred sites
- areas used for important social or traditional activities

**Outdoor Recreation and Tourism:**

- territorially or regionally rare, scarce or exceptional features
- areas with high concentration or variety of recreational features
- areas that meet the demand for natural environment recreation
- areas with opportunities for nature and heritage appreciation and education

**To Protect Wilderness Values: (Not addressed under current project)**

- may include large tracts of roadless landscape, involving intact ecosystems or water sheds, and:
- large tracts of wilderness with important intrinsic ecological values and associated economic values

## 4.2 Literature and Data Base Search

Standard research techniques were utilized to search record systems and/or identify data/information holders. Key categories were addressed separately by Mougeot and DuGuay; Mougeot researched YPAS categories related to geology, soils, landforms and vegetation; DuGuay researched YPAS categories related to wildlife and habitat, culture, heritage and spiritual values, outdoor recreation and tourism, and existing land uses. In this section literature and data base searches are described; the organizational structure reflects the division of categories described above.

### 1. Search for relevant information- Geology, soils, landform and vegetation

Information on a geology, soil or landform type in these areas are often published by federal agencies, universities or research institutions more frequently than by the Yukon Territorial Government branches. In addition to talking to territorial government geologists, references were compiled by searching computer databases, catalogues, and bibliographies. Agriculture Canada and Yukon Agriculture staff were consulted regarding possible information on soil and landform information. Both the federal and territorial geologists, as well as a few geologists from British Columbia working in Northern Canada were consulted regarding information of a geological nature. Forest Services (D.I.A.N.D.) does not have any information on areas located that far north. Yukon-based publications such as the Ecoregions of Yukon (in prep.), the Yukon State of the Environment Report (1996) were also consulted. During the review of this document, additional information may become known and available and will be added to this list.

References were of two types; N.T.S. specific or general references pertaining to more than one N.T.S. map sheet.

The databases were searched using two methods:

1. By N.T.S. map sheet, such as 116I, 106B, 116J/K.  
This method was particularly useful with the Geological Survey of Canada Databases.
2. By keyword, such as Eagle Plains, Dempster Highway, etc.

### Reference Sources

#### a. VLTS

VLTS is an on-line listing of the publications in all DIAND departmental libraries, including thesis publications, "in-house" government reports and interdepartmental or joint government/industry publications. This database is particularly useful for finding theses or government reports pertaining to Yukon geology and geologic hazards which were never published in scientific journals.

**b. Geological Survey of Canada Databases**

The GEOSCAN database is managed by the Canadian Geoscience Information Centre of the Geological Survey of Canada. It contains references to geoscience literature concerning the Canadian landmass and offshore regions supplied by fifteen federal, provincial, academic and professional geoscience organizations located throughout Canada. There are over 190,000 records including serials, books, theses, maps, open files and mineral assessment reports.

**c. GEOREF**

The CD-ROM version of the American Geological Institute's database contains over 1.5 million records on geology journal articles, conference papers and theses. The DIAND library has a workstation where a client can search GEOREF directly from CD-ROM discs.

**d. Exploration and Geological Services Division Map Sales Catalog**

This catalog lists geological reports, maps, open-file reports. It includes a complete listing of products available for sale or viewing carried out under the Canada/Yukon Economic Development Agreement.

**e. Economic Development Library**

This library is located on the fourth floor of the Shoppers Drug Mart building on the corner of 3rd and Main Street. It includes publications by most territorial departments.

**2. Search for relevant information - Biological, Wildlife and Habitat, Cultural, Heritage and Spiritual, Tourism and Recreational, and Wilderness**

Research in these category areas is, in large part, linked to historic, current or potential human use of land and/or resources. It follows that data/information collection and analysis is also influenced by priorities that are set to address human interests. Within this context data/information often falls into one of two categories: either organized or unorganized. An example of organized data/information would be a published record of a wildlife population, possibly including analysis and interpretation of raw data. An example of unorganized information might be raw data gathered in the field about the same wildlife population, but existing only in a working file, uninterpreted and of marginal utility to anyone other than the researcher/biologist. The latter category of information is much harder to locate and assess than organized information.

Given the above, it was necessary to research both information systems and individual resource holders to determine what information was available regarding the study area.

**Libraries/Data Bases - Methodology:**

- Yukon Renewable Resources Library - This library is organized utilizing BiblioFile Intelligent Catalog - it contains an extensive collection of reference documents related to fisheries and wildlife resources and management, and ecological processes - research methods utilized included: key word searches, manual review of subject heading sections and screening of key documents (where possible).
- Yukon Economic Development Library - This library has an extensive collection of reference documents that focus primarily on economic development issues. A remote search was conducted using a data base search engine - methods used key word searches linked to subject and geographic location.
- Canadian Wildlife Service Library - The CWS library and staff collections have been largely entered into a CWS data base - a key word search was conducted on site - search parameters were by geographic location and issue specific (i.e. porcupine caribou herd, Fishing Branch River).
- Yukon College Library - A remote search was conducted using a data base search engine - methods used key word search linked to issue and geographic location.
- Arctic Borderlands Database Information Sources - key word search, search by region and subject, screening of record summaries

**Mapping:**

## Yukon Renewable Resources

- Geographic Information Section - The GIS program has digital files of trapline and guide outfitting concessions, FN traditional territories, game management zones, and highway and road networks (still researching)
- Parks - Recreation Features Inventory - extensive (Yukon wide) mapping and text descriptions of recreational features.
- Habitat Branch - wildlife habitat maps
- Heritage resources - heritage sites inventory (still researching)

**Individuals - Key Contacts (by Job Title)**

Contact with individuals varied from phone and/or in person interviews to reviewing of working file materials. These data/information holders are listed below.

## Yukon Renewable Resources:

- Parks
  - Outdoor Recreation Planner
  - Park Management Specialists
- Fish and Wildlife
  - Fisheries, Chief
  - Sheep and Goat Biologist
  - Wildlife Technician (wolves)
  - Caribou Biologist
  - Moose Biologist (unavailable)
  - Habitat Protection Coordinator
  - Habitat Inventory Technician
  - Regional Management, Chief
- Agriculture Branch
  - Agriculture Lands Disposal Coordinator

- Policy and Planning
  - Land Claims, Manager

## Tourism:

- Heritage
  - Yukon Archaeologist
  - Historic Sites Coordinator
- Industry Services
  - Tourism Planner

## Environment Canada:

- Canadian Wildlife Services
  - Ecosystem Health, Head
  - Resource Management, Head

## Department of Oceans and Fisheries:

- Stock Assessment
  - Area Chief

In all cases information was reviewed (where possible) and screened to remove material not immediately relevant to the study area. Many of these have been included in Appendix B - Additional References.

**5.0 Preparation of Data/Information Summary**

Data/Information summaries are presented in two formats:

1. a summary matrix providing an "at a glance" summary of records reviewed, including bibliographical information, linkages to draft YPAS criteria/categories, location of record, and a numerical reference to additional information regarding the record, and;
2. a text summary, providing an overview of the consultants impressions of the record collection regarding its adequacy to address YPAS information requirements.

Note: With regard to #1 above: In cases where the record applies directly to the study area, a summary of the record will be included. This summary will describe the content of the record and highlight key conclusions. Where the record is generic in nature or regional in orientation (i.e. Yukon wide), the summary will be limited to a characterization of the record.

Collectively, the two formats should provide a clear record of the extent and quality of current information as it relates to YPAS protected area selection criteria.

**5.1 Data/Information Summary Matrix (see Table 2)**

**TABLE 2 EAGLE PLAINS AREA - INFORMATION SUMMARY MATRIX**

For Eagle Plain Matrix - G for general, A for area, P for part of the area, S for site specific, X for unknown.

Note: The numbers in the YPAS Criteria column represent the following:

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| 1. Geophysical                       | 6. Wildlife and Habitat             |
| 2. Biological                        | 7. Cultural, Heritage and Spiritual |
| 3. Naturalness                       | 8. Recreational/Tourism             |
| 4. Ecological Viability and Research | 9. Uncommon Landforms/Features      |
| 5. Educational Values                | 10. Wilderness                      |

TITLE	YPAS CRITERIA										AUTHOR AND BIBLIOGRAPHIC INFORMATION	INFO HOLDER	EX NOTE	
	1	2	3	4	5	6	7	8	9	10				
<b>GEOPHYSICAL - MINERAL POTENTIAL/SPECIAL FEATURES</b>														
A review of Cretaceous and Tertiary stratigraphy in the northern Yukon and adjacent Northwest Territories.	G		G									Dixon, J., 1992, Geological Survey of Canada, Paper 92-9, 79p.	D.I.A.N.D. LIBRARY	
Age and Rank of Coals in the northern Yukon	G		G									Cameron, A. R., 1987. Programs with Abstracts Geological Society of North America, 19, 7., p. 609.	D.I.A.N.D. LIBRARY	1
Petroleum resources assessment of Eagle Plain Park Proposal, Yukon Territory, Canada	A		A									1996-	Parks and Protected Areas,	2
Petroleum resources assessment of Eagle Plain Basin, Yukon Territory, Canada	A		A									1995-Done by Energy Research Branch of the National Energy Board for YTG - Contact: Terry Sewell	Parks and Protected Areas,	3
Mineral Potential of Eagle Plain Study area	A		A									Heon, D. , for Dept. of Economic Development , Mineral Resources Branch.	Parks and Protected Areas,	4
Aggressivite chimiques des eaux dans les massifs calcaires du Nord du Yukon	S			P	P					P		Thibodeau, P. et al, 1988, Revue de Geomorphologie Dynamique, 37,2, p. 61-71		5
Composite legend to accompany maps 1514A to 1529A, and structure section diagram 1530A (Operation Porcupine project area)	G											Norris, D.K., 1984b, Geological Survey of Canada,	D.I.A.N.D. LIBRARY	
Ecoregions of the Yukon-draft	G	G		G	G		G	G	G	G		Yukon Ecoregion Working group, march 1998.	Parks and Protected Areas, Renewable Resources	6
Evaluation of the hydrocarbon prospectivity	G		G									Morrell, G Deitrich, J.R. 1993. Bulletin		1

of the Old Crow Flats of the Northern Yukon												of Canadian Petroleum Geology, v.41,		
Geology, Mineral and hydrocarbon potential of Northern Yukon Territory and Northwestern Districts of Mackenzie												Norris, D.K., 1997. Geological Survey of Canada Bulletin 422	D.I.A.N.D. library	7
Geology, Eagle River, Yukon Territory	P											Norris, D.K., 1981. Geological Survey of Canada Map 1523A, 1:250,000 scale	D.I.A.N.D. library	8
Geology: Trail River, Yukon Territory	P											Norris, D.K., 1981. Geological Survey of Canada Map 1524A, 1:250,000 scale	D.I.A.N.D. library	8
Geology : Hart River, Yukon Territory	P											Norris, D.K., 1982. Geological Survey of Canada Map 1527A, 1:250,000 scale	D.I.A.N.D. library	8
Stratigraphy of Mesozoic Strata, Eagle Plains Area, Northern Yukon	P											Dixon, J., 1992. Geological Survey of Canada Bulletin	D.I.A.N.D. library	9
An overview of western Canadian seismicity.												Rogers, G.C. and Horner, R.B., 1991, <i>In: Neotectonics of North America</i> , Slemmons, D.B., Engdahl, (eds.), Boulder, Colorado, Geological Society of America, Decade Map Volume 1.		10
Geology of the northern Yukon and northwestern District of Mackenzie.	G				G						G	Norris, D.K., 1984a, Geological Survey of Canada, Map 1581A, scale 1:500,000.	D.I.A.N.D. LIBRARY	
Groundwater contribution to rivers of the Porcupine drainage basin, Yukon Territory	G											Van Everdingen, R. O. 1972.. Chapter 6 in Steigenberger, L. W., M. S. Elson, and R. T. DeLury (ed.). Northern Yukon fisheries studies, 1971-1974. Volume 1. Technical report PAC/T-75-19,	YTG-W SH224.Y8 N67	

### Notes

1. Report describes potential of various rock formations and puts a general context . Material is included in 2.
2. Discusses formations and reserves in general terms. Material is used in section on mineral potential.
3. Report and map used in this report in section on mineral potential. Mineral potential overlay is produced from the map accompanying this report.
4. Did not find. Could be ordered. discusses relationship between groundwater and limestone rock units.
5. Provides brief summaries for each ecoregion. Draft provides an up to date summary of several fields and references for at the ecoregion levels. It is useful to try to capture representative character of each ecoregion and to put the study area in context
6. Good reference manual, provide detailed description of fossil record, formation characteristics, tectonic history, many photographs, illustrations and geological models, paleogeography of the area as well as northern Yukon. Requires extensive geological knowledge. Excellent source for interpretive material later on .
7. Geological maps at the 1:250,000 scale. Together, maps cover the entire area. Formations are grouped and represented on geology map overlay.

- 8. Detailed description of formation and deposition environment. useful for interpretive material later on.
- 9. General information on seismic activity in northern Yukon. Summarized in figure \*\* in section on geology.
- 10. Good reference map at 1;500,000 scale. Regional correlation.

<b>GEOPHYSICAL-SOIL/LANDFORMS</b>													
Surficial Geology of Northern Yukon and Northwest District of Mackenzie, N.W.T.	G										Hughes, O.L., 1969, Geological Survey of Canada, Paper 68-34		1
Ecoregions of the Yukon-draft	G	G	G	G	G	G	G	G	G	G	Yukon Ecoregion Working group, march 1998.		2
Soil Landscapes of Canada-Yukon	G			G	G	G					Centre for Land and Biological Resources research, Agriculture Canada 1992		3
Terrain evaluation of the Dempster Highway across the Eagle Plain and along the Richardson Mountains, Yukon Territory	P			P	P					P	Richardson. N.W.; E.K. Sauer - Canadian Geotechnical Journal, v. 12, no. 3, pp. 296-319		
International Tour of Permafrost affected Soils - The Yukon and Northwest Territories of Canada	P			P	P					P	Tarnocai, C., Smith, C.A.S. and Fox, C.A., 1993,. Centre for Land and Biological Resources Research, Research Branch, Agriculture Canada, Ottawa, Canada, 197 p.	Yukon Parks Planning	4
Quaternary Geology of the ice free corridor: glacial controls on the peopling of the new world	p			p	p			p		p	Jackson, L.E., Duk-Rodkin, A., 1992		5
Moose Lake, Yukon Territory, surficial Geology and Geomorphology, 1:100,000 scale	P			P						P	Thomas, R.D. and Rampton, V.N. , 1982, Geological Survey of Canada, map 10-1982	D.I.A.N.D. library	6
Rock River, Yukon Territory, surficial Geology and Geomorphology, 1:100,000 scale	P			P						P	Thomas, R.D. and Rampton, V.N. , 1982, Geological Survey of Canada, map 11-1982	D.I.A.N.D. library	6
Lower Ogilvy River, Yukon Territory, Surficial Geology and Geomorphology, 1:100,000 scale	P			P						P	Thomas, R.D. and Rampton, V.N. , 1982, Geological Survey of Canada, map 9-1982	D.I.A.N.D. library	6
Surficial Geology, Trail River-Eagle River, Yukon-Northwest Territories	P	P		P						P	Duk-Rodkin, A. and Hughes, O.L., 1992, Geological Survey of Canada, Map 1744A, scale 1:250,000	D.I.A.N.D. library	6
Surficial Geology and Geomorphology Maps, 106L, 116P and 116O/N	P	P		P						P	Hughes et al. , 1973, Geological Survey of Canada, Open file 167, maps at 1:250,000 scale	D.I.A.N.D. library	6

Terrain Classification and Sensitivity, 106P, 106L, 116O/N	P	P		P					P		, R.L., 1973, Geological Survey of Canada, Open file 210, maps at 1:250,000 scale	D.I.A.N.D. library	7
Northern Yukon Territory and MacKenzie Delta, Canada, guidebook to Permafrost and related features	P			P	P				P		French, H.M. and Heginbottom (eds) 1983	D.I.A.N.D. library	8
Permafrost and ground ice conditions of northwestern Canada	G					G					Heginbottom, J.A. and Radburn, L.K. (comp.), 1992,. Geological Survey of Canada, Map 1691A,	D.I.A.N.D. Library	9
Records in the Yukon Protected Areas Inventory - 1987	X	X				X		X	X		MacPherson N.M., Peterson E.B., Peterson N.M., 1987	Ren Res Library	
XIIth INQUA Congress Field Excursions A20a and A20b - Research in Yukon	G	G		G					G		Morison, S.R. and Smith, C.A.S. (editors.), 1987,. National Research Council of Canada, Ottawa, Canada, 110	D.I.A.N.D. Library	10
Yukon - Environmentally Significant Areas	X	X				X			X		Theberge J.B., Nelson J.G. and Fenge T., Canadian Arctic Resources Committee, - Monograph 4 - Yukon Series, 1981	Yukon Ren Res	
Yukon Parks System Plan- Implementation for the Porcupine-Peel Landscape#7	G	G	G	G	G	G	G	G	G	G	Peepre and ass. , 1993, Parks and Outdoor Recreation Branch, Renewable Resources, Y.T.G.	Yukon Parks and P.A.	11
The formation and properties of soils in the permafrost regions of Canada											Tarnocai, C., Smith, S., 1992 . Proceedings, 1st International Conference on Cryopedology, Russian Academy of Sciences, Puschino, Russia		
Pediments and Cold Climate Conditions, Barn Mountains, unglaciated northern Yukon.											French, H. and Harry, D.G., 1992. Geogr. Ann. 74A 2-3:145-157		
Development of soil structures in some Turbic Cryosols in the Canadian low Arctic											Smith, C.A.S. and Hargreave, A., 1991, Canadian Journal of Soil Sciences, vol 71:11-29		
Some non-sorted patterned ground types in northern Canada											Zoltai, S.C.Tarnocai, C.. 1981. Arctic and Alpine Research, 13:139-151		
References, end of this report											Numerous authors		12

1. Regional context/ reference map at 1; 2,000,000 scale. Does not provide specific information on the study area

2. Provides brief summaries for each ecoregion. Draft provides an up to date summary of several fields and references for at the ecoregion levels. It is useful to try to capture representative character of each ecoregion and to put the study area in
3. Regional context/ reference map at 1; 2,000,000 scale. Very general information.
4. Field guide includes site specific information on soil, permafrost landform processes. Excellent source of interpretive material. Requires some knowledge of soil and geology.
5. Relates glacial history and population movement during the Quaternary.
6. Map at 1:125,000 scale ,or 1:250,000, Together maps cover the entire study area. Maps were used to produce surface geology overlay and cross section. Some map legends include active processes, and comments on hazards.
7. Map at 1:250,000 scale cover a small part of the area. An example of terrain sensitivity map. Sensitivity classification could be extended to include other map units.
8. Field guide contains several good illustration s and site specific information along the Dempster Highway as well a s summaries of soils and surface geology .User friendly.
9. Very general information, useful to put area in regional context.
10. Field guide contains several good illustration s and site specific information along the Dempster Highway as well a s summaries of soils and surface geology .User friendly.
11. Present good summary of issues and values of several northern ecoregions. Most of the information/facts presented are directly taken from Ecoregions of the Yukon (in prep.) or other published documents. User friendly.
12. Numerous studies and site specific studies have been done in the Dempster Highway and other areas, with a very specialized focus and narrow but detailed description of features such as frost boils, solifluction lobes or other permafrost related topic. Not all references were collected, not all references are useful at this time of the study. Feature specific information can be collected later on during the project life.

<b>GEOPHYSICAL - CLIMATE</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>			
Ecoregions of the Yukon-draft											Yukon Ecoregion Working group, march 1998.		1
Climate of Yukon		G		G		G		G			Wahl, H.E., et al., Environment Canada, Atmospheric Environment Service	Renewable Resources Library	2
Proceedings of the meeting on northern Climate											Environment Services, 1986, Environment Canada , Canadian climate Program, Yellowknife,		
Impacts on Climate Change on Resources Management in the North		G		G		G		G			Wall ed., 1993, Dept. of Geography Publication Series, Occasional Paper No. 16, University of Waterloo.	D.I.A.N.D. Library	3

1. User friendly discussion on Yukon climate dynamics as well as ecoregion based climate description.
2. Good reference to discuss climate in study area. Is updated in the Yukon Ecoregion Draft Manual, which is written in a more accessible style
3. Provides answers to some interesting questions regarding global climate changes in Yukon. Does not deal with study area specifically.

<b>BIOLOGICAL</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>			
Annotated Bibliography of the Peel River Watershed	G P S	G P S	G P S	G P S	G P S	G P S	G P S	G P S	G P S	G P S	Gwitch'in Geographics, 1995, produced for the Peel River Watershed advisory Committee	Yukon College	1
Northern Protected Areas and Wilderness	G	G	G	G	G	G	G	G	G	G	Peepre J., Jickling Bob (Editors) - Proceedings of a Forum On Northern Protected Area and Wilderness, Whitehorse, Yukon. 1994	Various Public Venues	2
Wildlife Research in the Vuntut Gwitchin Traditional Territory - Reference Manual		G P S		G P S		G P S	G P S	G P S			O'Donoghue M., Kluane Wildlife Consulting, 1996	Ren Res - Regional Management	3

1. Very useful annotated bibliography covering the full range of issues/criteria in the Peel River watershed on a regional and site specific basis. Used extensively to augment research in this study.
2. General text/overview of protected areas issues/strategies.
3. Very useful annotated bibliography covering wildlife issues in the Vuntut Gwitchin Traditional Territory. Used extensively to augment research in this study.

<b>BIOLOGICAL - VEGETATION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>			
Eagle Plains Study Area -Classified Ground Cover Map from Landsat Imagery		A		A		A				A	Terrain resources LTD, 1996 for Yukon Parks and Outdoor recreation, Dept. of Renewable Resources, map at 1:300,000 scale		1
Ecological Summary of Eagle Plains Park Candidate areas-draft		A				A					Renewable Resources, Y.T.G. 1998?		2
Reconnaissance of vegetation and soils along the Dempster Highway, Yukon Territory: I. Vegetation types	A			A	A	A					Stanek, Walter; K. Alexander; C.S. Simmons - Report, 1981 - prepared for Canadian Forest Service - Pacific Forest Research Centre (Victoria)	Environment Canada, Canadian Wildlife Service	3
The Plants of northwestern Canada, with special reference to the Dempster Highway		A		A	A	A					Kershaw, L. (dissertation)	Environment Canada, Canadian Wildlife Service	
Paleoecology of Beringia	G	G		G		G					Hopkins, D. eds. 1987, Academic Press, New York	D.I.A.N.D. Library	4
Ecoregions of the Yukon-draft											Yukon Ecoregion Working group, march 1998.		5

Wetlands of Arctic Canada		G										Tarnocai, C., and Zoltai, S.C., 1988. pages 27-53 in : National Wetlands Working Group, Wetlands of Canada, Ecological Land Classification Series, No. 24, Environment Canada.		6
The nature of the Arctic Step Tundra in the northern Yukon		G			G						G	Cwynar,, 1980. Abstracts-International Palynological Conference		

1. Satellite image at the 1:300,000 scale, covers the entire area. Provides very broad vegetation classes and their distribution. Information summarized on vegetation overlay.
2. Short report and summary of vegetation communities found in the area. Was used in vegetation summary section.
3. Could not locate a copy.
4. Contains many scientific articles dealing with Beringia. May be very useful to provide context to the evolution and landscapes of the area, as well as paleontology and archeology of the Beringia.
5. Information of general nature based on ecoregion. Provide basic vegetation structure with comments on elevation, aspect, drainage and associated vegetation communities. Was used in vegetation summary section.
6. Wetland classification and descriptions, not area specific, no mapped information.

<b>BIOLOGICAL - WILDLIFE AND HABITAT - FISH</b>	1	2	3	4	5	6	7	8	9	10				
Additional aerial survey information of some of the rivers in the northern Yukon - April, 1973		P				P						Birch, G. J. 1975. Chapter 1(b) in Steigenberger, L. W., M. S. Elson, and R. T. DeLury (ed.). Northern Yukon fisheries studies, 1971-1974. Volume 1. Technical report PAC/T-75-19	YTG-W SH224.Y8 N67	1
An overview of potential impacts of gas pipeline construction and operation on use and value of Yukon fisheries		P				P						Eby, P. and Associates. 1977.. Unpublished report prepared for Habitat Protection Directorate, Department of Fisheries and Environment	YTG-W FI38	1
Aspects of the historical and present day fisheries exploitation in the northern Yukon Territory		G				G	G	G				DeLury, R. T., L. W. Steigenberger, and M. S. Elson. 1975.. Chapter 5 in Steigenberger, L. W., M. S. Elson, and R. T. DeLury (ed.). Northern Yukon fisheries studies, 1971-1974. Volume 1. Technical report PAC/T-75-19, prepared by Northern Operations Branch, Fisheries and Marine Service, DOE	YTG-W SH224.Y8 N67	2

Assessment of chinook salmon (Oncorhynchus tshawytscha) stocks in the upper Porcupine River drainage in northern Yukon Territory		P				P				Milligan, P. A., W. O. Rublee, D. D. Cornett, and R. A. C. Johnston. 1984.. Technical report, Fisheries No. 5b, DFO.	YTG-W F1172	2
Fish		P				P				Graves, F. 1978.. Pages 361-422 in Interdisciplinary Systems Ltd. Initial impact assessment - Dempster Corridor - Background report I - Physical and biological environments - Dempster and Klondike segments	DIAND TD195.P4 I5	2
Fish resources of the northern Yukon		G				G				Steigenberger, L. W., R. T. DeLury, G. J. Birch, and J. Fisher. 1973.. Fisheries Service, Department of Environment		2
Northern Yukon Fisheries studies - 1971-1974		G				G				Steigenberger, L. W., M. S. Elson, P. G. Bruce, and Y. E. Yole. 1975.. Volume 2, Technical report PAC/T-75-23, Fisheries and Marine Service, Department of Environment	No location	2
Northern Yukon freshwater fisheries studies - 1973		G				G				Steigenberger, L. W., G. J. Birch, P. G. Bruce, and R. A. Robertson. 1974.. Report 74-20, Information Canada Catalogue No. R57-15/1974, prepared by the Northern Operations Branch, Fisheries and Marine Service, DOE	YTG-W FI9	2
Preliminary environmental overview of alternate gas pipeline routes - Fisheries		G				G				Beak Consultants Ltd. 1977.. Unpublished report prepared for Foothills Pipe Lines	Yukon Archives 330.971 BEA	2
Preliminary information on the winter classification of the rivers in the northern Yukon, their physical and chemical characteristics and the fish statistics of the various water bodies examined during the first Yukon pipeline winter survey, 1982		G				G				Steigenberger, L. W. 1975.. Chapter 1(a) in Steigenberger, L. W., M. S. Elson, and R. T. DeLury (ed.). Northern Yukon fisheries studies, 1971-1974. Volume 1. Technical report PAC/T-75-19,	YTG-W SH224.Y8 N67.	2
Salmon - Information Holder/Expert		A		A		A				Sandy Johnson - Federal Department of Fisheries		3
Salmon stream and spawning ground reports		G A				G A				Canada Department of Fisheries and Oceans. 1981.. File 5871-BC3-10, Northern British Columbia/Yukon subdistrict	No location	2

The influence of pipeline development on freshwater fishery resources of northern Yukon Territory: Aspects of research conducted in 1971 and 1972		G P				G P					Bryan, J. E. 1973.. Report 73-6, prepared by Northern Operations Branch, Fisheries Service, DOE	YTG-W SH224.Y8 B79	2
Wildlife Research in the Vuntut Gwitchin Traditional Territory - Reference Manual		G P S		G P S		G P S	G P S	G P S			O'Donoghue M., Kluane Wildlife Consulting, 1996	Ren Res - Regional Management	4

1. Regional - somewhat dated information regarding parts of the study area.
2. General text with useful descriptions of the study area - somewhat superseded by more recent work.
3. Regional DFO biologist has 20+ year data base of relevant information.
4. Very useful annotated bibliography covering wildlife issues in the Vuntut Gwitchin Traditional Territory. Used extensively to augment research in this study.

<b>BIOLOGICAL - WILDLIFE AND HABITAT - WILDLIFE</b>	1	2	3	4	5	6	7	8	9	10			
A study of furbearers associated with proposed pipeline routes in the Yukon Territory and Mackenzie River Valley, 1971		P				P					Ruttan, R. A., and D. R. Wooley. 1974.. Canadian Arctic Gas Study Ltd., Biological Report Series Vol. 8	Yukon Archives 330.971 CAGSL BRS-8	1
An inventory of wildlife habitat of the Mackenzie Valley and northern Yukon		G A				G A					Watson, C. H., W. H. Prescott, E. A. DeBoch, J. W. Nolan, M. C. Dennington, H. J. Poston, and I. G. Stirling. 1973.. Report No. 73-27, prepared by Canadian Wildlife Service		2
Atlas of moose habitat maps. Wildlife habitat inventory of the Mackenzie Valley and the northern Yukon		G A				G A					Prescott, W. H., G. L. Erickson, L. E. Walton, and D. G. Smith. 1973.. Unpublished report, Canadian Wildlife Service	No location	2
Current status of Dall sheep in the southern Richardson Mountains - 1988		P				P					Barichello, N., J. Carey, and R. Sumanik. 1988.. Progress report PR-88-2, Fish and Wildlife Branch, Renewable Resources	YTG-W	2
Dall sheep and grizzly bear, atlas of wildlife habitat inventory maps		G A				G A					Nolan, J. W., B. C. Goski, and G. W. Wilde. 1973.. Canadian Wildlife Service.	No location	2
Dall sheep and their habitat in relation to pipeline proposals in northwestern Canada		P				P					Nolan, J. W., and J. P. Kelsall. 1977.. Unpublished report prepared by Canadian Wildlife Service	YTG-W (Sheep Library) 8.	2
Dall sheep distribution, abundance and "critical" areas along the proposed Dempster lateral pipeline route		P				P					Hoefs, M. 1979.. Progress report PR-79-5, Renewable Resources, YTG	YTG-W WM678	2

Dall sheep in the Richardson Mountains - Distribution, abundance and management concerns		P				P					Hoefs, M. 1978.. Technical report TR-78-3, Wildlife Branch, Renewable Resources, YTG	YTG-W (Sheep Library) 1	2
Distribution, abundance, and management of wild sheep in Yukon		G	G			G					Hoefs, M., and N. Barichello. 1985	KNP	3
Disturbance studies of caribou and other mammals in the Yukon and Alaska, 1972		G				G					McCourt, K. H., J. D. Feist, D. Doll, and J. J. Russell. 1974.. Canadian Arctic Gas Study Ltd., Biological Report Series, Vol. 5	Yukon Archives 330.971 CAGSL BRS-5	4
Estimation of numbers and description of present distribution of present distribution of wild sheep in the Yukon Territory		G				G					Hoefs, M. 1975.. Pages 17-22 in Wild sheep in modern North America. Boone and Crocket Club (also Technical report TR-76-4, Renewable Resources, YTG	YTG-W	2
Fur Harvest Reports for Yukon (database)		G				G					Yukon Renewable Resources		5
Grizzly bear sightings, northern Yukon		G				G					Mossop, D. H. 1974.. Progress report PR-74-3, Renewable Resources, YTG		3
Kills in the Peel River Watershed		P				P		P			Yukon Renewable Resources, 1995	Yukon Renewable Resources	3
Lumpy jaw in thinhorn sheep in the Yukon		G				G					Barichello, N., J. Carey, M. Hoefs, and H. Hoefs. 1989.. Technical report TR-89-13, Fish and Wildlife Branch, Renewable Resources	YTG-HJ	2
Mammals.		P				P					Schmidt, R. K. 1978. Pages 209-272 in Interdisciplinary Systems Ltd. Initial impact assessment - Dempster Corridor - Background report I - Physical and biological environments - Dempster and Klondike segments	DIAND TD195.P4 I5	2
Mount Cronin Dall sheep report		P				P					Russell, S., and M. Hoefs. 1979.. Technical report TR-79-4, Wildlife Branch, Renewable Resources	YTG-W (Sheep Library) 514	2
Mountain sheep status and harvest in the Yukon: A summary of distribution, abundance, and the registered harvest, by game management zone		G				G					Barichello, N., J. Carey, and M. Hoefs. 1989.. Progress report PR-89-1, Renewable Resources, YTG	YTG-HJ	3

Observations of grizzly bears in the northern Yukon Territory and Mackenzie River valley, 1972		G				G					Ruttan, R. A. 1974.. Chapter 7 in Ruttan, R. A., and D. R. Wooley (ed.). Studies of furbearers associated with proposed pipeline routes in the Yukon and Northwest Territories. Canadian Arctic Gas Study Ltd., Biological Report Series, Vol. 9	Yukon Renewable Resources	3
Preliminary environmental overview for alternate gas pipeline routes - Mammals		G				G					Beak Consultants Ltd. 1977.. Unpublished report prepared for Foothills Pipe Lines, Calgary	Yukon Archives 330.971 BEA	3
Report on the status of furbearers in the Yukon Territory		G				G					Slough, B. G. 1985.. Progress report PR-85-5, Fish and Wildlife Branch, Renewable Resources	YTG-W	3
Sheep count - British Mountains and Richardson Mountains		G P				G P					Mossop, D. H. 1974.. Progress report PR-74-3, Renewable Resources, YTG		2
Sheep distribution and abundance along the proposed Dempster lateral pipeline route		P				P					Hoefs, M. 1978.. Progress report PR-78-3, Renewable Resources	YTG-W MA439	2
Sheep management in the Yukon Territory		G				G					Hoefs, M. 1980.. Technical report TR-80-2, Wildlife Branch, Renewable Resources	YTG-W (Sheep Library) 158	3
Status and management of wolves in the Yukon Territory		G				G					Smith, B. L. 1981.. Progress report PR-81-3, Renewable Resources, YTG		3
Status and management of wolves in the Yukon Territory		G				G					Smith, B. L. 1983.. Pages 48-50 in L. N. Carbyn (ed.). Wolves in Canada and Alaska. Report Series No. 45, Canadian Wildlife Service		3
Studies of beaver habitat in the Mackenzie valley and northern Yukon		G				G					Dennington, M. C., and B. Johnson. 1974.. Rep. No. 74-39, Environmental-Social Committee, Northern Pipelines, Task Force on Northern Oil Development	YTG-W MA44	3
Surveys of ungulates along the proposed Dempster Lateral Pipeline Corridor		P				P					Thompson, D. C., and D. F. Penner. 1979.. Unpublished report prepared for Foothills Pipe Lines (Yukon) Ltd	YTG-W	2
Wildlife Research in the Vuntut Gwitchin Traditional Territory - Reference Manual		G P S	G P S			G P S	G P S	G P S			O'Donoghue M., Kluane Wildlife Consulting, 1996	Ren Res - Regional Management	6
Yukon wildlife key habitats		A				A					Yukon Habitat Management Section. 1995.. Unpublished report, Fish and Wildlife Branch, Renewable	YTG-W (Habitat Library).	7

1. Regional - interesting, but dated - superseded by more recent work.
2. Regional - somewhat dated - more current information available from YTG Renewable Resources biologists.
3. General information - of limited usefulness for planning in the study area.
4. General text with useful descriptions of the study area - somewhat superseded by more recent work.
5. Relevant and current information to support high level (preliminary) YPAS planning.
6. Very useful annotated bibliography covering wildlife issues in the Vuntut Gwitchin Traditional Territory. Used extensively to augment research in this study.
7. Regional and relevant information to support YPAS planning.

<b>BIOLOGICAL - WILDLIFE AND HABITAT - BIRDS</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>			
1979 peregrine falcon recovery project - Yukon Territory		P				P					Mossop, D. H., and R. D. Hayes. 1979.. Progress report PR-79-4, Renewable Resources,	YTG-W B1154	1
1985 Annual report - Birds of prey and non-game birds - Inventory, population studies and management projects		G P				G P					Mossop, D. H., <i>et al.</i> 1985.. Progress report PR-85-4, Renewable Resources, YTG		
1986 Annual report - Birds of prey and non-game birds		G P				G P					Mossop, D. H., <i>et al.</i> 1986.. Progress report PR-86-4, Renewable Resources, YTG		
An ornithological study of proposed gas pipeline routes in Alaska, Yukon Territory and the Northwest Territories, 1971		P				P					Schweinsburg, R. E. 1974.. Arctic Gas Biological Report Series, Volume 10		2
Atlas of waterfowl habitat maps: wildlife habitat inventory of the Mackenzie Valley and northern Yukon		G A				G A					Poston, H. J., A. J. Doberstein, and S. R. Barber. 1973.. Unpublished report prepared by Canadian Wildlife Service	No location	3
Avian and habitat diversity/distribution information for the Pacific and Yukon Region		G				G					Boyd, W. S. 1983.. Canadian Wildlife Service, Delta, B. C. 9 pages	CWS JH757	1
Birds		P				P					Moyles, D. 1978.. Pages 273-360 in Interdisciplinary Systems Ltd. Initial impact assessment - Dempster Corridor - Background report I - Physical and biological environments - Dempster and Klondike segments	DIAND TD195.P4 I5	2
Birds of prey and the Dempster Highway Transportation Corridor - Interim report		P				P					Mossop, D. H., R. W. Nelson, and R. D. Hayes. 1977.. Progress report PR-77-5, Renewable Resources		2
Effects of Dempster Highway on nesting falcons and eagles		P				P					Nelson, R. W., and A. Nelson. 1978.. Technical report TR-78-7, RenRes		4

Inventory, population studies and management projects - Annual report - Birds of prey		G P				G P				Mossop, D. H. 1980.. Progress report PR-80-4, Renewable Resources, YTG		1
Nesting populations of eagles, peregrine falcons, and gyrfalcons along and near the Dempster Highway, Yukon		P				P				Nelson, R. W. 1977.. Progress report PR-77-6, Renewable Resources	YTG-W BI154	2
Observations of gyrfalcon nesting in the Porcupine watershed - Yukon Territory - 1978.		P				P				Mossop, D. H., and R. D. Hayes. 1978. Progress report PR-78-9, Renewable Resources, YTG	YTG-W BI154.	2
Ornithological data from the northern Yukon Territory, 1975		G P				G P				Mossop, D. H. 1975.. Progress report PR-75-6, Renewable Resources, YTG	YTG-W WM706	2
Raptor productivity studies on the Porcupine & Old Crow Rivers, 1975		P				P				Mossop, D. H. 1975.. Progress report PR-75-5, Renewable Resources, YTG	YTG-W WM706	2
Snow geese of the western Arctic - Baseline report, 1958-1983		G				G				Barry, T. W., S. J. Barry, and B. Jacobson. 1983.. Unpublished report, Canadian Wildlife Service		1
Some important migratory bird habitats in the Yukon Territory		G				G				Dennington, M. 1985.. Unpublished report, Canadian Wildlife Service	YTG-W, CWS JH763.	3
Some important migratory bird habitats in the Yukon Territory		G				G				Canadian Wildlife Service. 1981.. Internal report prepared for Inland Waters Directorate, Whitehorse		1
Some important migratory bird habitats in the Yukon Territory.		G				G				Dennington, M. 1976. Internal report, Canadian Wildlife Service		1
Studies of raptor populations in the northern Yukon Territory		G P				G P				Mossop, D. H. 1976.. Progress report PR-76-3, Renewable Resources	YTG-W WM706	2
Studies of the peregrine falcon on the Porcupine River drainage, Yukon Territory - Summer 1977		P				P				Hayes, R. D., and D. H. Mossop. 1977.. Progress report PR-77-4, Renewable Resources, YTG	YTG-W BI154	2
The nesting raptor populations located along the Dempster lateral gas pipeline corridor		P				P				Hayes, R. D., and D. H. Mossop 1978.. Technical report TR-78-2, Renewable Resources, YTG		2
Wildlife Research in the Vuntut Gwitchin Traditional Territory - Reference Manual		G P S	G P S			G P S	G P S	G P S		O'Donoghue M., Kluane Wildlife Consulting, 1996	Ren Res - Regional Management	5
Yukon Territory - 1978 - Studies of birds of prey - Peel River drainage		P				P				Mossop, D. H., and R. D. Hayes. 1978. Progress report PR-78-9, Renewable Resources	YTG-W BI154	2
Yukon Territory - 1978 - Studies of birds of prey - Porcupine River drainage		P				P				Mossop, D. H., and R. D. Hayes. 1978.. Progress report PR-78-9, Renewable Resources, YTG	YTG-W BI154	2

Yukon Territory - 1979 - Studies of birds of prey - Peel River drainage		P				P						Mossop, D. H., and R. D. Hayes. 1979.. Progress report PR-79-4, Renewable Resources	YTG-W BI154	2
Yukon Territory - 1979 - Studies of birds of prey - Porcupine River drainage.		P				P						Mossop, D. H., and R. D. Hayes. 1979. Progress report PR-79-4, Renewable Resources, YTG	YTG-W BI154.	2
Yukon wildlife key habitats		A				A						Yukon Habitat Management Section. 1995.. Unpublished report, Fish and Wildlife Branch, Ren Res, YTG	YTG-W (Habitat Library).	3

1. General information - of limited usefulness for planning in the study area.
2. Regional - interesting, but dated - superseded by more recent work.
3. Relevant and current information to support high level (preliminary) YPAS planning.
4. General text with useful descriptions of the study area - somewhat superseded by more recent work.
5. Very useful annotated bibliography covering wildlife issues in the Vuntut Gwitchin Traditional Territory. Used extensively to augment research in this study.

<b>BIOLOGICAL - ECOLOGICAL VIABILITY AND RESEARCH</b>	1	2	3	4	5	6	7	8	9	10				
A review of northern grizzly bear ecology and habitat mapping techniques		G		G		G						Johnston, W. G., J. A. Staniforth, and C. A. McEwen. 1985	Ren Res Library	1
Ecological studies of aquatic systems in the Mackenzie-Porcupine drainages		G P		G P		G P						Brunskill, G. J., D. M. Rosenberg, N. B. Snow, G. L. Vasscotto, and R. Wagemann. 1973.. Unpublished report, Environmental-Social Committee, Northern Pipelines, Task Force on Northern Oil Development.	No location	2
Ecology of gyrfalcons in the Yukon		G		G		G						Barichello, N. 1979. Unpublished report for World Wildlife Fund Canada	Upublished	1
Ecology, status, and harvest of black bears (Ursus americanus) in the Yukon		G		G		G						MacHutchon, A. G., and B. L. Smith. 1990. Technical report TR-90-2, Fish and Wildlife Branch, Renewable Resources, YTG	Yukon Renewable Resources	1
Freshwater aquatic ecology in northern Yukon Territory 1971		G		G		G						Bryan J. E., C. E. Walker, R. E. Kendel, and M. S. Elson. 1973.. Report 73-21, prepared by Northern Operations Branch, Fisheries Service, Pacific Region, DOE	Yukon College QH106.2.Y84 F73	1

Northern Protected Areas and Wilderness	G	G	G	G	G	G	G	G	G	G	G	Peeprie J., Jickling Bob (Editors) - Proceedings of a Forum On Northern Protected Area and Wilderness, Whitehorse, Yukon. 1994	Various Public Venues	3
Toward a Yukon Protected Areas Strategy - Applying the Principles of Conservation Biology		G	G	G		G	G	G		G		Proceedings of a Workshop, Whitehorse, Yukon - May 1996	Various Public Venues	3
Wild Hunters, Predators in Peril		G	G	G	G	G				G		Hummel M., Pettigrew S. - World Wildlife Fund, 1991	Yukon Renewable Resources - Habitat Protection (JL-L)	1

1. General information - of limited usefulness for planning in the study area.
2. Regional - interesting, but dated - superseded by more recent work.
3. General text/overview of protected areas issues/strategies.

<b>CULTURAL, HERITAGE AND SPIRITUAL</b>	1	2	3	4	5	6	7	8	9	10			
1909 - How the People Used to Live Between Peel River and Dawson					P		P				Peters S., 1973 - COPE Gwitch'in Language Documentation. L27	Gwitch'in Language centre, Fort McPherson	1
A Book of Indian Legends and Stories from Old Crow, Yukon Territory					P		P				Netro, Joe - Undated	Yukon Renewable Resources - Habitat Protection (JL-L)	1
A Long Time Ago, #1-#5: A Life History of Mr. Christopher Colin					P		P				Colin C., COPE Gwitch'in Language Documentation. L32/1-5, 1973	Gwitch'in Language Centre, Fort MacPherson	1
Archaeological Reconnaissance in the Porcupine-Peel Landscape					A		A				LeBlanc R.J., 1994 - Field report	Yukon Heritage Branch	2
Archaeology Sites Inventory - Peel River Watershed, Yukon					P		P				Canadian Heritage Information Network, 1995	Environment Canada Library	2
Blackstone Dempster Highway Dream Team					P		P				Profeit-LeBlanc L., 1990 - newspaper article (Dannzha, June 20 - 1 page)	University of Alberta, Edmonton	1
Canadian Heritage Inventory Network (CHIN)					A S		A S				Yukon Heritage Branch	Yukon Heritage Branch	2
Council for Yukon Indians Resource Atlas Traditional Land Use Data					A S		A S				Council for Yukon First nations - Restricted access data base	CYFN	3
Dempster Highway Corridor, 1989 Heritage Site Assessment Work					P		P				Greer S., 1989	Yukon Heritage Branch	2

Dempster Highway Corridor Heritage Resources: Significance Assessment					P		P				Greer S.	Yukon Heritage Branch	2
Dempster Highway Corridor Human History and Heritage Resources					P		P				Greer S., 1989	Yukon Renewable Resources	2
Dempster Highway Corridor Traditional Land Use Atlas					P		P				Greer S., 1989	Yukon Heritage Branch	2
Dempster Highway Corridor, Human History and Heritage Resources					P		P				Greer S., 1989	Yukon Heritage Branch	2
Dempster Highway Corridor, Traditional Land use Atlas, Additional Materials					P		P				Greer S., 1989	Yukon Heritage Branch	2
Field Notes, Summer 1989 Dempster Highway					P		P				Greer, S., Profeit-LeBlanc L., 1989	Yukon Heritage Branch	2
Gwitch'in Nation Comprehensive Land Claims Agreement (1992)	P	P			P	P	P	P	P		Gwitch'in Nation - Land Claims (Subject Heading)	Various Public Venues	
Han Kutchin (Athapaskan) Place Names and Traditional Land Use					P S		P S				Ritter J.T., 1976	University of Alberta, Edmonton	2
Nacho Nyak Dun First Nation Final Agreement Implementation Plan	G	G			G	G	G	G	G		Nacho Nyak Dun First Nations - Land Claims (Subject Heading)	Various Public Venues	2
Nacho Nyak Dun First Nations Land Claims Final Agreement	G	G			G	G	G	G	G		Nacho Nyak Dun First Nations - Land Claims (Subject Heading)	Various Public Venues	2
Northern Protected Areas and Wilderness	G	G	G	G	G	G	G	G	G	G	Peeprie J., Jickling Bob (Editors) - Proceedings of a Forum On Northern Protected Area and Wilderness, Whitehorse, Yukon. 1994	Various Public Venues	4
Oral Tradition and Oral History in the Blackstone Uplands					P		P				Greer S., 1990 - paper delivered at the annual meeting of the Canadian Archaeological Association		2
Photo Record, Dempster Highway Corridor, 1989 Historic Sites Study					P		P				Greer S., (photographers): Towriss W., Profeit-LeBlanc L., 1989	Yukon Heritage Branch	1
Place Names in Heritage Site Research, Dempster Highway Corridor, Yukon					P S		P S				Greer S., 1990, prepared for Energy Mines and Resources, Ottawa		2
Pleistocene archaeology in Old Crow Basin, a critical reappraisal	S	S			P		P	P			Morlan, R. 1986, New Evidence for Pleistocene peopling of the Americas, University of Maine publ. p. 27-48		2
Porcupine-Peel Landscape, Archaeological and Traditional Values Study					P S		P S				Greer S., Gotthardt R., LeBlanc J., Vuntut Gwitch'in First Nation, 1995	Yukon Heritage Branch	2
Re: Yukon Heritage, Life on the Blackstone					P		P				Profeit-LeBlanc L., 1989 - newspaper article (Dannzha, Sept. 11 - 1 page)	University of Alberta, Edmonton	1

Sub-Arctic Athapaskan Bibliography -1984		X			X	X	X				Helm J., Kurtz R., 1984	Prince of Wales Northern Heritage Centre, Yellowknife	
Summary of Documentary Evidence for Native Land Use and Occupancy in the North Half of the Half of the Yukon Territory					G		G				Greer S., McDonnel R., 1984 - Manuscript prepared for the Dene mapping Project, University of Alberta		1
The Distribution of the Kutchin and Their Spacial Pattern of Trade					P		P				Ugarenko S.E., 1979 - M.A. Thesis, York University	York University, Toronto	5
The Northern Yukon: A History					G		G				Coates, K.	Various venues	5
Valuing traditional activities in the northern native economy: The case of Old Crow, Yukon Territory		G					G	G			Murphy, S. C. 1986.. M. A. thesis, University of British Columbia	No location	
Vuntut Gwitchin First Nation Final Agreement Implementation Plan	G	G			G	G	G	G	G		Vuntut Gwitchin First Nations - Land Claims (Subject Heading)	Various Public Venues	2
Vuntut Gwitchin First Nations Land Claims Final Agreement	G	G			G	G	G	G	G		Vuntut Gwitchin First Nations - Land Claims (Subject Heading)	Various Public Venues	2

1. Relevant and current information to support high level (preliminary) YPAS planning.
2. Regional and relevant information to support YPAS planning.
3. Relevant and current information to support planning, but with restricted access.
4. General text/overview of protected areas issues/strategies.
5. General information - of limited usefulness for planning in the study area.

<b>RECREATION/TOURISM</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>			
Access-related impacts of backcountry roads to wildlife and management approaches to mitigate them		G						G		G	Mychasiw, L., and M. Hoefs. 1988.. Technical report TR-88-4, Renewable Resources, YTG	YTG-W	1
Consumer demand for wildlife viewing in the Yukon								G			Crane Management Consultants. 1989.. Unpublished report prepared for YTG Tourism	No location	
Dempster Highway area nature interpretive program		P			P	P		P			McEwen, C., and D. H. Mossop. 1985.. Unpublished report, Renewable Resources, YTG		2
Dempster Highway area nature interpretive program - 1986		P			P	P		P			McEwen, C. 1986.. Miscellaneous report MRC-86-1, Renewable Resources, YTG	YTG-W	2
Dempster Highway Corridor Background Analysis and Management Recommendations		P			P	P	P	P			Crombie M., 1982	Inuvik Research Centre Library	2

Dempster Highway interpretive centre/raptor research project - 1988 season report		P			P	P		P			Stiven, S., and J. Snyder. 1988.. Progress report PR-88-6, Renewable Resources, YTG	YTG-W PR430	2
Dempster interpretive centre/raptor research project - 1987.		P			P	P		P			McEwen, C., and J. Majiski. 1988. Progress report PR-88-6, Renewable Resources, YTG	YTG-W PR430	2
Dempster interpretive centre/raptor research project - 1989		P			P	P		P			Talarico, D., J. Snyder, and J. Nathan. 1989.. Miscellaneous report MRC-89-3, Renewable Resources, YTG	YTG-W PR430	2
Dempster interpretive centre/raptor research project - 1990		P			P	P		P			Hocking, P. 1990.. Miscellaneous report MRC-90-3, Renewable Resources	YTG-W PR430.	2
Final report: Dempster interpretive centre/raptor research project - 1992		P			P	P		P			Pattimore, J. H. 1992.. Unpublished report, Renewable Resources, YTG	YTG-W PR-430	2
Final report: Dempster interpretive centre/raptor research project - 1993		P			P	P		P			Pattimore, J. H. 1993.. Unpublished report, Renewable Resources, YTG	YTG-W PR430.	2
Final report: Dempster interpretive centre/raptor research project - 1991		P			P	P		P			Pattimore, J. H., and K. V. Digby. 1991.. Miscellaneous report MRC-91-1, Renewable Resources	YTG-W PR430	2
Highways to Wilderness - Paddling Yukon Rivers								G			Madsen, K., 1992	Various Public Venues	3
Interpretive potential of wildlife in the Dempster corridor		P			P	P		P			Pangman, J., and D. H. Mossop. 1984.. Progress report PR-84-3, Renewable Resources, YTG		2
Interpretive potential of wildlife in the Dempster Highway Development Area		P			P	P		P			Guenter, K., and D. H. Mossop. 1983.. Progress report PR-83-4, Renewable Resources, YTG	YTG-W BI	2
Recreational Features Inventory - Northern Yukon			A S					A S	A S		Peepre and Associates, Juan de Fuca Environmental Consultants - prepared for Yukon Parks and Outdoor Recreation Branch, 1988	Yukon Ren Res - Parks Branch	2
Summary Report on the Wild Rivers Survey	G P							G P			Parks Canada, 1977	DIAND Library	3
The Dempster (A Travellers Guide)		P			P	P	P	P			Calef, G., 1994	Various Public Venues	4
Wild Rivers Survey	G P							G P			Parks Canada, 1971	DIAND Library	5
Wild Rivers: Yukon Territory	G P							G P			Park Canada, 1982	Ministry of Natural Heritage Library, Ottawa	2

1. General text/overview of protected areas issues/strategies.
2. Regional and relevant information to support YPAS planning.
3. General text, with useful and current information about the study area.
4. General information - of limited usefulness for planning in the study area.
5. Regional - interesting, but dated - superseded by more recent work.

## **5.2 Results - Data/Information Summaries**

### **5.2.1 How to use this section**

This section provides information summaries of material cited and reviewed. It provides both an overview of material and the researcher's impressions of the adequacy of the collected materials to address draft YPAS selection criteria. The organization of this section parallels the one utilized in the "Information Summary matrix" - the main organizational categories are: Geophysical, Biological, "Cultural, Heritage and Spiritual" and Recreation/Tourism. Although there is no "Existing Land Uses" category in either the summary matrix or the draft YPAS criteria, it was added to this section to provide a convenient mechanism for presenting information regarding human use and occupation of the study area. There are also no sub-sections dealing specifically with 'Ecological Viability and Research', "Wilderness" or "Uncommon Landforms/Features": in the case of the first two categories, they fall outside the parameters of the project terms of reference; in the case of "Uncommon Landforms/Features", they are generally covered under the "Geological" or "Soils/Landforms" sections. Where records were identified within these three categories, they are discussed and/or cross referenced in other 'Information Summary' sub-sections. This section does not provide the "gap" analysis, which is presented in Section 6, but can be read in conjunction with it, to ensure a complete overview of information assets and needs.

### **5.2.2 Geophysical**

#### **5.2.2.1 Physiographic subdivisions**

The study area include parts of 3 ecoregions (see map, page 9), including parts of the Eagle Plains, Richardson Mountains and Peel Plateau ecoergions. In some cases, the physiographic subdivisions are similar to the ecoregion and share a name and boundaries as is the case for the Richardson Mountains and Peel Plateau, but the Eagle Plains ecoregion is subdivided into four units; Eagle Plains Hills, Eagle Plain Plateau, Porcupine/Eagle Plains Hills and Eagle River Valley ( Rampton, 1982) (see map, page 35). These units will be referred to later in the text when discussing surface geology, soil and vegetation (Sections 5.2.2.4, 5.2.2.5, and 5.2.3.1).

The Richardson Mountains run roughly north south through center of the study area. They reach elevation of up to 1700 m and are slightly lower in the south. Drainage is away from the central ridge to the side in a trellis pattern. Only one stream, Canyon Creek crosses the axis of the mountains. Mountain tops are broad and flat to rounded, slopes are steep and gullies are narrow. The mountains are formed of Upper Cambrian to Lower Devonian Shale (Road River Formation). Richardson Mountains acted as barrier to the glaciers moving westwards from the Laurentide ice cap (Canadian Shield).

Areas east of the Richardson (Peel Plateau) were affected by glacial ice and meltwater. Average elevation is 580m and surface material is dominantly moraine and small glaciolacustrine deposits incised by gullies flowing into the Caribou, Trail and Road Rivers.

Areas west of the Richardsons (Eagle Plains Hills, Plateau and River Valley) were not glaciated and surfaces were exposed to long period of erosion and colluviation. The Eagle River runs roughly north south and is fed by several smaller streams flowing from the Richardson Mountains. The Eagle Plains Ecoregion is part of the Porcupine subdivided based on general elevation and characteristics.

1. Eagle Plains Plateau, north of Dempster Highway has average elevation of 450 m, with almost accordant crest of interfluvium and relief of less than 300 m. Elevation of 602 m maximum. Both units have a drainage well integrated and dendritic drainage formed by streams flowing in broad valleys separated by long broad rounded ridges. Both areas are underlain by Cretaceous sandstones, shales and limestones and by Devonian sandstones and shales.

2. Eagle Plains Hills south of the Dempster highway has average relief of 450 m and reaches elevation of 900 m.

3. The Eagle River exhibits a flat-floored valley with steep terraced sides, unlike the broad v-shaped valleys of the other small streams. The Eagle River floodplain range from 900 to 1000 m in width and is characterized by numerous meander scars, oxbow lakes, infilled channels and low terraces.

4. Area called here Porcupine/Eagle plains foothills has no official name but was separated from other areas as it has broad low lying areas with north-south oriented elongated ridges, 200 m relief, and 600 maximum elevation streams flow from the Richardson Mountains westwards in a trellis drainage pattern. The underlying bedrock marks the first exposed belt of folded and faulted rocks of the Richardson Mountains and comprises Devonian shales sandstones and siltstones.

### **Physiographic units map (see Map, page 35)**

The physiographic units map presents rough boundaries of each subdivision. Vegetation, soil, landforms and climate will be often discussed in terms of these subdivisions. The ecoregion level has been used in several publications but may not present sufficient fragmentation of land to represent variations of physical characteristics within the areas.

### **Summary of printed resources**

The principal sources of information are: the draft Ecoregions of the Yukon manual, (Yukon Ecoregion Working Group, 1998); the Yukon Ecoregion (Oswald and Senyk 1977), and; the Yukon Parks System Plan Implementation Project for the Porcupine Peel Landscape #7 (Peepre and Associates, 1993). These manuals attempt to summarize knowledge about each ecoregion and also present an updated reference list of material dealing with each field at the ecoregion scale. An abbreviated summary, based on these reports is contained in Section 3 of this report.

**Map #3 - Eagle Plains - Physiographic Units**

### **5.2.2.2 Bedrock Geology**

#### **References available**

Several maps are available at the 1:250,000 scale for a complete coverage of the study area. In addition, several reports present either a summary of the bedrock geology or very detailed description (Norris, 1997) of the history and features of each major rock formation (or rock family). A Regional Stream Sediments Survey was published in 1976 and covers the southwestern and northeastern parts of the area. Parts of this area was field checked by D. Heon in 1997 and 1998 and information from her report adds to our knowledge of the area.

The information available in map and text format covers the entire area at the 1:250,00 scale (Norris; 1981, Cecil;-1982) as well as general summaries (Yukon Ecoregion Working Group; in prep, Heon; 1997). Detailed description of rock formation and their history are available (see table). Subject specific publications are also available for some interesting features such as fossil bearing formation, significant tectonic (faults and folds) features and paleogeography of the North American continent over many millions years.

Formation distribution and characteristics can be described and values such as representativeness and uniqueness at a general scale. In some cases, site specific values or special features can be identified. this may not be applicable to the entire study area but to areas that were field checked only.

#### **Bedrock Geology Map**

A bedrock geology map will be available in digital format in the next few months from the Geoscience branch of Economic Development.

### **5.2.2.3 Mineral Deposits/Occurrences**

Mineral potential (Heon, 1998) and petroleum-based resource potential have been studied and summarized in at least two reports dealing specifically with the study area. These reports include all published information available to date as well as summary maps. In addition, Norris (1997) provides a more regional picture with description of mineralization types and mineral potential associated with some rock formations. Several assessment reports (see list below) are available and may provide information the age and extent of trenching, drilling sites, seismic lines, roads and camp size and locations.

#### **Partial List of Companies who have filed/published reports on the Eagle Plains Area**

Amerada Hess Corporation, 1957, 1958, 1959, 1960  
Amoco Canada Petroleum Company, 1960  
Aquitaine Company of Canada, ( now Husky), 1973, 1974  
Candel Oils LTD, 1972  
Chevron Canada 1971, 1972  
Eagle Plateau Syndicate, 1958  
Esso Resources Canada, 1963, 1969, 1972  
Forward Resources LTD, 1985  
Guaranty Trust Company of Canada, 1957, 1960  
Hudson's Bay Oil and Gas company Limited (now Amoco) 1959, 1960.  
Husky Oil LTD, 1958,  
Mobil Oil Canada LTD, 1961, 1963, 1964  
Peel Plateau Exploration, 1953, 1955, 1959, 1958  
Petcan Resources 1957  
Petro- Canada, 1976  
Petrofina (now Petro-Canada) 1971  
Spres Exploration, 1958  
TransOcean Oil Canada , 1970, 1971, 1972.  
Ulster Petroleum Ltd. , 1969

Union Oil company of Canada, 1960, 1961, 1962  
United Canso Oil and Gas Ltd. 1957  
Western Minerals Ltd. 1958, 1961, 1962, 1967

#### **5.2.2.4 Surface Geology/Landforms**

##### **Published information available**

There is nearly complete coverage for the entire area with the exception for the area south of the Peel River. Maps (3) at the 1:125,000 (Rampton, 1982) cover the west half of the study area and more general maps, at the 1:250,000 cover the eastern part of the area (Peel Plateau). In each case, a general description of the surface deposits is attached to each surface polygon but individual features or landforms are not marked on the maps, with the exception of landslides, pingos and cryoplanation terraces.

Several field guides (Heginbottom and French; 1983, Morison and Smith; 1987, Tarnocai, Smith and Fox; 1993, Burn ed. 1998) provide detailed description of soil, vegetation and landforms along the Dempster Highway.

Several articles in professional journals describe features found in the area although their field work may have been in a different subarctic or arctic area. For example, pingos have been researched in depth by McKay and interpretive material to describe them could be derived from such publications.

##### **Surface Geology Overlay**

A surface geology map would show a generalized grouping of material types. Permafrost is expected to be present in most areas.

The Eagle Plains Hills and Plateau show large units of thin colluvium over rock where many periglacial landforms and cryoturbated soils are present. These are the old, weathered surfaces of Beringia with abundant features related to slope and permafrost processes.

The Richardson Mountains are also composed of thin colluvial over rock but on steep slopes and with a much higher percentage of exposed rock.

The Peel Plateau Foothills are part of the western most extent of the Laurentide ice, shown as a green line. East of this line, steeper topography is part of the mixed moraine, colluvium and reworked sediments found close the ice margins.

The Peel Plateau Hills are dominantly composed of moraine, thin lacustrine sediments over moraine and gullies (dissected till, colluvium and rock). Sediments are expected to be less variable and thicker in the south east areas located further behind the ice terminus.

#### **5.2.2.5 Soils**

##### **Published information available**

Mapped information available is restricted to the Yukon Soil/Landscape map at the 1:1,000,000 scale. The authors of the map have rated the reliability of mapping in this area as low. This means that field checks were minimal (roughly 10 km spacing) or that mapping was done from the air or by interpreting LANDSAT imagery. Information attached to the map includes parent material, broad slope class, drainage class, soil sub-group, presence of absence of permafrost and expected thickness of the active layer. Polygon boundaries are broadly defined and coincide with the ecodistricts boundaries.

General soil characteristic and landform associations are described at the ecoregion level in the Ecoregions of the Yukon (Yukon Ecoregion Working group, draft 1998).

Site specific and detailed soil descriptions are available at a few points along the Dempster Highway (Morison and Smith; 1987, Tarnocai, Smith and Fox; 1993, Burn ed.: 1998). Articles in professional journals provide description of similar soil types and soil processes for other subarctic and arctic locations which could be used to develop interpretive material.

##### **Soils Map (se Map, page 39)**

The soil map was produced by Applied Ecosystem Management LTD without any modification from the Agriculture Canada electronic files. Numbers in black refer to the national reference system. The hand written numbers in blue ink, correspond to numbers from the text accompanying the Soil/ Landscape of the Yukon manual (1992).

Boundaries coincide with ecodistrict boundaries. The Richardson Mountain are dominated by exposed bedrock, showing steep gradient (greater than 61%), with their eastern side covered by Turbic Cryosol on sandy colluvium.

Most of the soils on the mountains have formed under varied geologic parent material and this is reflected in their texture and chemistry. Where there is a gentle enough slope to allow for colluvium accumulation, the soils tend to be acidic (particularly if formed on shale) high in organic, and have shallow active layer, less than 50 cm.

The Peel Plateau is dominated by Turbic Cryosols over moraine with moderate slopes of 10 to 15%.

River valley floors are classified as Regosols, which mean that the surfaces are too young to possess soil horizons, or that active deposition or sedimentation is still taking place. Permafrost is often present on the terraces of the landforms but is absent from area where seasonal flooding takes place and under standing water bodies, like large lakes and ponds.

Map unit 211 (northwest corner) show thick lacustrine units also showing cryoturbated soils with ice rich permafrost. These soils re usually fairly homogeneous, with a high clay and silt content. They are poorly usually moderately well to very poorly drained and are prime candidates for the development of thermokarst lakes and ponds.

### Legend

code	terrain	slope	soil dev	texture
179	Alluvium level	1-3	Regosol	sand
180	Colluvium, ridged	16-30	Turbic Cryosol	sandy loam
181	Rock, undiv, dissected	31-60	no	
182	Moraine undulating	4-9	Turbic Cryosol	clay loam
183	Alluvium level	1-3	Regosol	sand
194	Alluvium level	1-3	Regosol	sand
195	Moraine dissected	10-15	Turbic Cryosol	
196	Colluvium inclined	16-30	Turbic Cryosol	sandy loam
197	Rock, undiv. steep	61+		
198	Colluvium inclined	4-9	Turbic Cryosol	clay loam
199	Colluvium dissected	16-30	Turbic Cryosol	clay loam
210	Colluvium inclined	4-9	Turbic Cryosol	clay loam
211	Lacustrine	1-3	Turbic Cryosol	clay loam
212	Colluvium inclined	4-9	Turbic Cryosol	clay loam
213	Colluvium inclined	16-30	Turbic Cryosol	loam
237	Moraine inclined	10-15	Turbic Cryosol	sandy loam
238	Moraine undulating	4-9	Turbic Cryosol	clay loam
402	Colluvium, ridged	16-30	Turbic Cryosol	sandy loam

**Map #4 - Eagle Plains - Soils Map**  
**(Showing Soil Types - with key?)**

## 5.2.3 Biological:

### 5.2.3.1 Vegetation

#### Published Information Available

General vegetation communities are described in the Ecoregions of Yukon (Yukon Ecoregion Working Group, draft 1998) which provides general correlation between slope, elevation, drainage and broad vegetation communities.

A satellite image of vegetation in the area provides a very general distribution of very broad vegetation classes for most of the east half of the study area (Eagle Plains east of the Richardson Mountains, part of the Peel River Valley). This image and the classification of vegetation classes are very general. In several areas, there is a high proportion of "unknown" or "shadow units". Terrain and vegetation relationships and description formulated during a 8 days field investigations and provide elevation and general terrain-vegetation associations.

In general, high elevation areas will support boreal and alpine vegetation communities which are with less variable and more predictable communities and less diversified than those found on lower, gentler surfaces occupied by fluvial terraces, toe of alluvial and colluvial fans and wetlands. Vegetation communities have been described in some details along the Dempster Highway at specific sites.

#### Vegetation Overlay

The satellite image covers only part of the study area and shows large expanse of surface dominated by Black Spruce/Moss Lichen. According to the ground cover image (Renewable Resources; 1994), the dominant forest community in the Eagle Plains area west of the Richardson Mountains are Black Spruce/Moss/ Lichen, Black Spruce/Lichen with Birch/Black Spruce and White Spruce/Birch/Alder as the minor association.

### 5.2.3.2 Biology/Wildlife and Habitat

**Mapping:** In addition to habitat maps cited below, maps in digital format are available showing, trapline and guide outfitter concessions and game management zones. These designations are not considered particularly relevant to the inventory area for the following reasons:

- the entire area is part of a single trapping area;
- there are no guide outfitting concessions within the area, and;
- the entire area is contained within Game Management Zone 1.

**Fish:** 14 records were cited dealing specifically with fishery resources within the study area. Although the coverage is generally good, nine of the records date back to the mid-1970's and an additional three to the 1980's. The cited records are primarily regional, covering the entire northern fishery, with specific information related to specific drainage/river systems. Although no published record was located, the researcher was informed that the Regional Fisheries Program (DFO) had spawning data for the Fishing Branch area dating back over 20 years. In addition to records addressing biological factors, 2 records were located dealing with aquatic ecological (listed under Ecological Viability and Research). A number of references in the Cultural, Heritage and Spiritual Values section, describe and/or assess the historic and contemporary domestic fishery.

**Wildlife:** 30 records were cited, including 2 references to wildlife habitat atlases (covering moose, dall sheep and grizzly) and 1 map collection (RenRes - Habitat Branch). Also located was an annotated bibliography of published wildlife records relevant to the Vuntut Gwitchin Traditional Territory (used extensively to augment this report). Records cover fur harvest, moose, dall sheep and grizzly. However, as in the case of the fishery, many of the records date back to the mid-1970's and early 1980's and little new field work has been undertaken in recent years. Coverage of dall sheep in certain parts of the study area is extensive. In addition to the above, 3 records were located that deal with wildlife ecology and a number of records dealing specifically with First

Nations domestic harvesting (listed under Ecological Viability and Research and Cultural, Heritage and Spiritual Values, respectively, in the Information Summary Matrix). With regard to current population estimates and harvest data, biologist/information holders cited in Section 4.2 of this report have advised that, with regard to harvest data, up to date information is available for some harvesting (trapping, non-resident hunting), and: for population estimates, that rough estimates can be extrapolated from population studies in nearby or similar areas. Notable local wildlife values which have been studied extensively include the Mount Cronin dall sheep population.

*Not referenced in this report are records related to the Porcupine Caribou Herd. Coverage of this herd is so extensive that literally hundreds of specialized documents would have to be screened. The obvious conclusion is that YPAS information requirements related to the herd can be fully addressed based upon existing information.*

**Birds:** 26 records with specific relevance to birds in the study area were cited. They include an atlas of waterfowl habitat, a habitat map collection (Ren Res - Habitat Branch), 16 records dealing with birds of prey (including a number of interim reports), 4 CWS internal papers dealing with migratory bird (unpublished). Coverage of raptors is extensive, including significant work along the Dempster Highway corridor and the Peel and Porcupine River drainages. Additional records of a general/regional (Yukon/North America) nature were identified, but not cited. Finally, the same annotated bibliography of published wildlife records relevant to the Vuntut Gwitchin Traditional Territory cited in the "Fish" and "Wildlife" sections, was also cited here.

The waterfowl atlas was published in 1973, most of the raptor/bird of prey studies occurred in the late 1970's through the 1980's.

Notable "bird" values which have been extensively studied in the area include peregrine falcons and other raptors.

#### **5.2.4 Cultural, Heritage and Spiritual Values**

The Eagle Plains area includes portions (and overlaps) of the traditional territories of the Vuntut and Tetl'it Gwitchin and Nacho Nyak Dun First Nations. The western portion is within unglaciated Beringia and the eastern portion within an area that was historically glaciated; the central portion (the Richardson Mountains) formed the transition zone between these two areas. There is a long history and record of occupation for this area and significant research has been undertaken, particularly with regard to heritage resources located along the Dempster Highway corridor. 33 records were cited: 1 dealing with pleistocene archaeological; 3 dealing with archaeological or traditional values or sites in the Porcupine and Peel River watersheds; 8 dealing with heritage sites and values and place names along the Dempster Highway, including a traditional land use atlas and "additional" materials; 2 dealing with heritage sites and placenames throughout the area; 5 dealing with oral histories, or the oral history tradition; 1 book of legends and stories from Old Crow; 1 record dealing with subsistence harvesting; 5 land claims related records, and; 4 incidental records providing general/historical background information. For the most part the records are current and provide fair coverage of the study area. However, it is unlikely that the current record is complete, given the size of the area and its long term historic occupation by the three first nations.

#### **5.2.5 Outdoor Recreation and Tourism**

20 records were cited regarding recreation and tourism. These include: the Recreational Features Inventory (YTG - Parks - map and text descriptions); two management related documents involving general issues about access and wildlife viewing; 11 records dealing specifically with the Dempster Highway area interpretative program (2 general reports, 7 related to raptors and 2 related to wildlife); 4 general records related to rivers; the Dempster Highway corridor Background Analysis and Management Recommendations (1982), and; a travelers guide. Collectively, these records provide a good overview of area recreation and tourism potential, especially with regard to the Dempster Highway corridor. The Recreational Features Inventory provides excellent coverage

of the entire study area, although it is not designed, nor intended, to assess issues related to recreational sustainability (i.e. can a recreational feature support sustained recreational use). No records relating to guide outfitting were cited, as only the southernmost portion of the study area involves operator concession areas.

Based on existing records, there would appear to be extraordinary recreation/tourism opportunities associated with the Dempster Highway corridor portion of the study area..

### **5.2.6 Existing Land Uses**

*(Not including mining or oil and gas).* Predominant human use of the area is associated with traditional harvesting activities by members of the Vuntut Gwitchin and Tetl'it Gwitch'in First Nations. For the purposes of management of trapping, the entire study area is part of a common trapping area. There is no guide outfitting concession within the study area. The area is noted for high recreation values and as a travel and tourism corridor. There is a highway camp at Eagle Plains and a tourism site marking the Arctic Circle. Land and resource (mining, oil and gas) dispositions are a matter of public record and data is available at relevant government offices.

### **5.2.7 Air Photo Coverage**

Parks Branch, Department of Renewable Resource, has an extensive, but unorganized collection of air photos of the study area.

## **6.0 Results - Data/Information Gap Analysis**

### **6.1 Summary of Data/Information "Gap" Analysis**

This section builds upon the results reported in Section #5. Table #3 is a Summary Chart providing an 'at a glance' review of:

- the number of relevant documents identified, matched to draft YPAS selection criteria (note - there is some double counting as some records are relevant to more than 1 criteria)
- an one word summary assessment of the adequacy of the existing data/information to address draft YPS requirements (poor = requiring additional work; fair = sufficient for early planning, but would benefit from additional work, and; adequate = sufficient for early stages of YPAS planning), and;
- brief comments highlighting data/information gap issues.

Table #3 is followed by more detailed text summaries of data/information gaps, again, following the same organizational structure utilized in Section #5 - Results Data/Information Summaries.

**Table 3- Summary of Data/Information “Gap” Analysis**

#	YPAS Category	# of Relevant Records	Gap Analysis	Comment
1	Geophysical	46	fair to sufficient	Additional work should focus on areas of interest.
2	Biological	138	poor to fair	Additional work should focus on areas of interest.
3	Naturalness	14	Adequate	current and historic developments and dispositions can be identified
4	Ecological Viability/Research	27	N/A - poor	outside scope of study - limited record identified
5	Educational Values	56	poor- fair	
6	Wildlife and Habitat	113	Fair	marginal data exists - good coverage of Dempster corridor
7	Culture, Heritage and Spiritual	46	Fair-Adequate	significant work has been done along Dempster corridor
8	Recreational/Tourism	40	Fair-Adequate	adequate for early planning - good coverage of sites and Dempster corridor, but inadequate data re: recreational sustainability
9	Uncommon Landforms/Features	22	fair to sufficient	Additional work should focus on areas of interest.
10	Wilderness	13	N/A	outside scope of study

## 6.2 Geophysical

### 6.2.1 Bedrock Geology

Several maps and bedrock geology maps and reports provide good coverage of the study area at the 1:250,000 scale. In addition, several technical articles and reports deal with topics of specific interest, such as fossil bearing layer, resource potential, paleogeography of north America.

Publications are sufficient to begin pulling together the geological history of the area, the general distribution of rock types and complex structures as well as to describe some interesting and special features.

Geological units have impact of the colluviation style taking place in the unglaciated areas and on the composition of the surface deposits. They also influence the types of mass movement taking place in the Richardson Mountains( shattered shale creates rock aprons, large joints in rock may result in rock avalanche). The chemistry of the soils is also related to the lithology of the bedrock. These ties may be reflected in ground cover vegetation.

General characteristics and distribution of the formations will provide a base for discussion of representiveness and also some unique features. There is sufficient information to describe the unique nature of this area at a national and regional level as well as to characterize each physiographic units and ecoregion within the study area at a general planning level.

Values and topics of interest should include history and evolution of the paleogeography of the area, with fluctuating sea levels in proximity to the shoreline of Old America. The thick package of sedimentary rocks found in many spectacular exposures along the Dempster Highway and in along river cuts were originally flat lying rock formations ( they still are in some areas) and were later folded, faulted and modified by tectonic events. Intricate structures and fossils bearing formations present unique features of the area, in addition to the very thick geological record exposed in places. These values can be addressed at a general level and scale by using published maps and reports. A story relating the major geological events and providing a regional

framework for the area could be written with appropriate figures and maps insets to illustrate these events, with short sections dealing with topics of specific interests, e.i. the significance of certain fossils and their story, the presence of particularly accessible and spectacular rock exposure and its story, etc.

Mineral and oil and gas potential is directly related to the geological history of this area. The history of mineral and hydrocarbon exploration is a result of the unique character of the area very different for example than in the Klondike area, where placer gold extraction drove much of the development. The general potential models and the history of exploration of the area could be written from available reports and maps. Some additional research may be required to provide a national or territorial perspective to approximate values of areas with greater potential .

The relationship between climate, topography and geology influences both landforms and vegetation visible in the area today and these relationships again play a role in the striking appearance of the area. General elevation model can be derived from published information. Additional field work will be needed to fine tune and complete these and to assign study area specific character.

Published information is gauged fair to sufficient to address these values at a general planning level. Once areas of interest for selection are identified, field work should follow and insure that sufficient information is available to address all the selection criteria for final land and status selection.

## **6.2.2 Mineral Potential**

Reports and maps prepared for the study area based on all data presently available provide a sufficient base to assign general values and define the distribution of potential deposits in a preliminary fashion. Areas with insufficient data will be inadequately described as long as new development or new models are developed in similar rock formations. Technical reports available are sufficient to describe and provide a general context to deposit types and rating. A regional and national context could be added to the result of these reports to facilitate comparison between deposits .

There is sufficient information to describe the unique nature of this area at a national and regional level as well as to characterize each physiographic units and ecoregion within the study area at a general planning level. Site specific information and final selection of land of particular geological interest will require some additional work but a first attempt at selection could be drafted from the published information. As mentioned in the section above, the exploration history and resource potential is quite different than in the Klondike area or the south central Yukon and this could be highlighted and described from published information, with additional research needed to provide regional and territorial comparison basis of the potential deposit values.

## **6.2.3 Soils and Landforms**

### **6.2.3.1 Soils**

Mapped information available is of very general nature and at the 1:1,000,000 scale and considered as low reliability by the authors of the map. In most cases, the soils will be directly related to landforms and this strong correlation will allow soils and landforms to be mapped, studied and described together during future work.

### **6.2.3.2 Landforms/Quaternary geology**

Several maps and reports provide a general distribution and types of landforms and quaternary deposits types. From these maps a map showing grouping of landforms of special interest as well the representative sequence and distribution of landforms could be developed. There is sufficient information to describe the unique nature of this area at a national and regional level as well as to characterize each physiographic units and ecoregion within the study area at a general planning level.

Of special interest in the area are the unglaciated surfaces and landforms present in Beringia, west of the Richardson Mountains, with the imprint of long-term weathering and erosion such as the well-developed pediment surfaces, permafrost-related landforms and slope- and surface water-processes associated with them. The relative absence of thick forest adds to the appeal of this rich geomorphic inventory by making all these features readily visible either from a road, river or foot traverse. The crossing of the Richardson Mountains present features of geological interest and mass movement related processes, with interesting drainage development in the foothills. The eastern side of the Richardson Mountains has a very different history and was subjected to the Laurentide Glaciation, unlike most of Southern and Central glaciated Yukon which was subjected to glaciers originating from the Cordillera. All these recent events in the geology of the study area have left their mark on the land and are part of its character.

Just as is the case with the geological component of the story, the regional and territorial context is provided by published information. Preliminary land selection should be followed by field work to insure the completeness and accuracy of information, and to insure that it is applicable to the area(s) selected and sufficient to describe it appropriately.

Published information is gauged fair to sufficient to address these values at a general planning level. Air photo interpretation and mapping of areas selected during the preliminary selection process should follow to provide data at a more detailed scale and to build a basemap to support other observations, such as habitat types, archaeological sites, trails, vegetation plots. As is the case in many part of Yukon, vegetation, soils, landforms and geology are closely related. Although a general association model can be derived from the existing information, field work will also provide insight and data into these relationship, their uniqueness to this area. This work should focus on areas identified through a preliminary selection process.

## **6.3 Biological**

### **6.3.1 Vegetation**

Mapped information provides a general knowledge of broad community types and their distribution, as well as the general variability of community grouping for part of the study area only.

General association with terrain types can be derived from published information for part of the study area, mostly along the Dempster Highway. Traverse through selected areas should take place next summer, preferably in late June to early July. Air photo interpretation could fill in gaps of vegetation data provided by the satellite image.

### **6.3.2 Wildlife and Habitat**

#### **Fish:**

Although much of the published information is somewhat dated, it does, in combination with a significant body of unpublished information, provide both baseline and sufficient current information to adequately address early information/planning requirements associated with draft YPAS selection criteria. However, given the requirement for additional work to fully organize existing information, the overall rating is on the summary chart (under wildlife and habitat) is fair". (see Section 7 for suggestions re: additional work).

#### **Wildlife:**

Although there is a significant body of published information, much of it is focused on the Dempster corridor and does not address either the eastern or western portions of the area. Information related to the corridor itself (including interpretative potential) is extensive and would be adequate to support early YPAS planning. There is good coverage of the porcupine caribou herd and local bird (raptor) values. With regard to other big game species, published information is good with regard to the Mt. Cronin sheep population (but somewhat dated), but only fair with regard to other species and the eastern and western portions of the area. However, with the assistance of technical experts/information holders, it would be possible to generate high level estimates of wildlife values in the area, by extrapolation from more current data from nearby or similar habitat areas. With expert assistance current habitat information is adequate to address early information/planning requirements associated with draft YPAS selection criteria (see Section 7 for suggestions re: additional work).

#### **Birds:**

Information is rated as being "good". There is good coverage of bird of prey values in the Peel and Porcupine River watersheds and along the Dempster Highway corridor, current to the late 1980s. Migratory bird values are understood at the flyway level. With expert assistance current habitat information is adequate to address early information/planning requirements associated with draft YPAS selection criteria. (see Section 7 for suggestions re: additional work).

#### **Summary:**

Given that much of the most current data/information is focused on the Dempster Highway corridor and that information regarding the balance of the area is less comprehensive, and given that to some degree it is possible to extrapolate estimated values for these areas from work done in other areas, it is recommended that a workshop be arranged involving key data/information holders (see section 4.2). The workshop should be 1 day in duration and should be supported by a clear working agenda and background materials (the draft YPAS selection criteria and this report could be distributed as part of the package). Workshop outputs should include: ascertaining what is available in working files/unpublished reports; an assessment of the adequacy of existing data/information (including material in working files) to address draft YPAS information requirements, and; the identification of additional data/information requirements (if any) and recommendations about how to address outstanding issues.

### **6.4 Cultural, Heritage and Spiritual Values**

For the most part the records are current and provide "good" high level coverage of the Eagle Plains and surrounding area. Much of what is known, has been organized and recorded, with extensive research and field work having been completed along the Dempster Highway corridor. However, given the broad nature of the category and the limited field work undertaken outside of the corridor, it is necessary to characterize the existing data/information as "fair-adequate", only. (see Section 7 for suggestions re: additional work).

Given the inherent difficulty in fully assessing heritage, cultural and spiritual values and the fact that the predominant occupiers of the area were and are the Vuntut and , to a lesser degree, Tetl'it Gwitchin First Nations, and given the much of their history resides in an oral tradition and that the VGFN and TGFN are the information holders regarding current cultural activities (i.e. spiritual, subsistence, etc.), it is recommended that YTG -Parks Branch initiate a joint project with

Vuntut and Tetl'it Gwitchin and Yukon Heritage Branch to enhance current knowledge of heritage resources within the area and to assess adequacy of the record for YPAS planning purposes.

## **6.5 Outdoor Recreation and Tourism**

Coverage of recreational features is adequate for early planning, although ground proofing and additional research would be necessary to assess the recreational sustainability. Information on rivers and river travel is extensive. Information on existing tourism and/or tourism potential is adequate, although it may be possible to generate improved estimates of use and potential. Coverage of wildlife viewing potential and wildlife values along the Dempster Highway corridor is extensive. Coverage of similar values in the eastern and western portions of the area is only fair. Records dealing with information and issues management along the Dempster corridor are adequate to good to support early YPAS planning needs. (see Section 7 for suggestions re: additional work).

No additional work is required regarding identification of recreational sites. However, additional work will be required to assess the recreational sustainability of identified sites. This is a mid to long term information requirement that will become more important during assessment of potential candidate sites. No additional work requirements at the present time, with the possible exception of ground proofing sites with the highest apparent potential recreational values.

## **6.6 Existing Land Uses**

Information is adequate - current and historic developments and dispositions can be identified. The area has been explored to assess oil and gas potential and there is ongoing interest in development. It is also used for subsistence hunting and trapping and non-consumptive recreation/tourism.

No additional data/information gathering required at this time. However, it is recommended that a record collection and record updating mechanism be created to maintain a current inventory of land uses/dispositions in the Fishing Branch and surrounding area to support ongoing planning.

## **6.7 Air Photo Coverage**

It is recommended that the YTG Parks Branch collection be organized and a "gap" analysis conducted to determine and address additional requirements.

**APPENDIX "A" - DRAFT YPAS SELECTION CRITERIA  
TECHNICAL PAPER #2**

## APPENDIX "B" - ADDITIONAL REFERENCES

- Burn, C.R., 1994. Permafrost, Tectonics, and past and future regional climate changes, Yukon and adjacent Northwest Territories. *Canadian Journal of Earth Sciences*, vol 31, p. 181-191.
- Harris, S.A. 1987. Altitude trends in permafrost active layer thickness, Kluane Lake, Yukon Territory. *Arctic*, **40**: 179-183.
- Brown, R.J.E. 1967. Permafrost investigations in British Columbia and Yukon Territory. National Research Council of Canada, Division of Building Research, Technical Paper 253.
- Burgess, M.M., Judge, A.S., and Taylor, A.E. 1982. Yukon ground temperature data collection - 1966 to August 1981. Energy, Mines and Resources Canada, Earth Physics Branch Open File 82-1.
- Burn, C.R. 1982. Investigations of thermokarst development and climatic changes in central Yukon Territory, M.A. Thesis, Carleton University, Ottawa, Ontario
- Burn, C.R. 1988. The development of near-surface ground ice during the Holocene at sites near Mayo, Yukon Territory, Canada. *Journal of Quaternary Science*, **3**: 31-38.
- Burn, C.R. 1990. Implications for palaeoenvironmental reconstruction of recent ice-wedge development at Mayo, Yukon Territory. *Permafrost and Periglacial Processes*, **1**: 3-14.
- Burn, C.R. 1991. Permafrost and ground ice conditions reported during recent geotechnical investigations in the Mayo District, Yukon Territory. *Permafrost and Periglacial Processes*, **2**: 259-268.
- Burn, C.R. 1992. Recent ground warming inferred from the temperature in permafrost near Mayo, Yukon Territory. *In* *Periglacial geomorphology*. Edited by J.C. Dixon and A.D. Abrahams. John Wiley and Sons, Chichester, U.K. pp. 327-350.
- Burn, C.R. 1993a. Permafrost degradation following forest fire, Takhini Valley, southern Yukon Territory. *In* Programme with Abstracts, 3rd International Geomorphology Conference, McMaster University, Hamilton, August 1993. Compiled by D. Ford, B. McCann, and S. Vajoczki. p.116.
- Burn, C.R. 1993b. Comments on "Detection of climatic change in the western North American arctic using a synoptic climatological approach". *Journal of Climate*, **6**: 1473-1475.
- Burn, C.R., 1989. Frost heave of subaqueous lake-bottom sediments, Mackenzie Delta, Northwest Territories.; in *Current Research, Part D*, Geological Survey of Canada, Paper 89-1D, p. 85-93, 1989
- Burn, C.R. 1994. Permafrost, tectonics, and past and future regional climate change, Yukon and adjacent Northwest Territories. *Canadian Journal of Earth Sciences*, **31**: 182-191.
- Pollard, W.H., and French, H.M. 1984. The groundwater hydraulics of seasonal frost mounds, North Fork Pass, Yukon Territory. *Canadian Journal of Earth Sciences*, **21**: 1073-1081.
- Riseborough, D.W., and Burn, C.R. 1988. Influence of an organic mat on the active layer. *In* *Permafrost, Proceedings of the 5th International Conference, Trondheim, Norway, August 1988*. Tapir, Trondheim, Vol. 1, 633-638.
- Smith, M.W. 1975. Microclimatic influences on ground temperatures and permafrost distribution, Mackenzie Delta, Northwest Territories. *Canadian Journal of Earth Sciences*, **12**: 1421-1438.

Smith, M.W., and Riseborough, D.W. 1983. Permafrost sensitivity to climatic change. In Permafrost, Proceedings of the 4th International Conference, Fairbanks, Alaska, July 1983. National Academy Press, Washington D.C., Vol. 1, 1178-1183.

Viereck, L.A. 1973. Ecological effects of river flooding and forest fires on permafrost in the taiga of Alaska. In Permafrost, Proceedings of the 2nd International Conference, Yakutsk, U.S.S.R., July 1973. North American contribution, National Academy Press, Washington D.C., 60-67.