

2019

Resource Assessment Report: Summary and Highlights



Dawson Region Planning Commission

6/7/2019

1 Introduction

The introduction chapter of the Resource Assessment Report (RAR) provides the background on the Dawson Region and the regional planning process since its initial establishment in 2010. This chapter covers the key tasks of the Commission and context for regional land use planning as set out in the Final Agreements. It also provides the reader with the basis for understanding the RAR; its background and objectives, how to use it, an outline of the different report sections, and how it was updated for the new Commission.

This edition of the RAR has been updated from the original October 2013 version with the assistance of the Commission's Technical Working Group (TWG). The Parties and select Federal departments were asked to submit comments and updates to the RAR, including new spatial data. YLUPC updated the RAR to reflect the submitted comments and best available data.

The Dawson Planning Region RAR has the following objectives:

- To document and describe the natural, human and economic resources of the region;
- To describe the historical, current and potential future land uses and land use patterns; and
- To describe the potential issues relating to current and future land uses.

The RAR provides information to support the production of a draft regional land use plan for the Dawson Region. Readers are encouraged to refer to the referenced documents for greater detail. Resource assessments are dynamic and information will change over time in response to new research, information and understanding.

2 Vision, Goals and Planning Principles

This chapter has intentionally been left blank as the new Commission is in the process of reviewing the previous Vision, Goals and Planning Principles to reflect their vision and intent for this iteration of the planning process. This section may be updated when the Commission produces their finalized Vision, Goals and Planning Principles.

3 Relevant Legislation and Policies

The basis for this chapter is taken from a document entitled *Overview of Legislation and Policies Pertaining to Regional Land Use Plans in the Yukon*, prepared by the Government of Yukon's Department of Energy, Mines and Resources to assist Commissions with the policy and legislative context in which regional land use planning occurs. A comprehensive list of relevant Federal, Territorial, and Tr'ondëk Hwëch'in legislation is highlighted and briefly described. It also provides a listing of relevant policies, management plans, and best management practices (BMPs) that are in place or in development that pertain to regional planning and land use activities in the region.

Each resource chapter in Section 2 of the RAR (i.e. Water, Heritage etc.) contains a 'Resource Management' section whereby the relevant legislation, policies, UFA boards and councils, and BMPs are listed in greater detail as they relate to the resource.

4 People, Settlement and Economy

This chapter presents a high-level overview of the planning region. The population and employment content for this section was taken from the Canada 2016 Census and the Yukon Bureau of Statistics. A description is provided of the historic and modern day presence of the three First Nations whose Traditional Territory lies within the region and an overview of the historic and present day settlement

patterns in the region. The Economy section of this chapter sets up the framework and definitions for the Market Economy and the Traditional Economy as it is lived by the Tr'ondëk Hwëch'in people.

5 Biophysical Setting

This chapter provides a landscape scale description of physiography, geology, climate, glacial history, landscape types (i.e., vegetation and soils) and natural disturbance regimes in the planning region and potential impacts from climate change. The details in this chapter set the foundation for understanding the resource chapters in Section 2. For example, the background on the region's Geology, Landscape and Glacial History (5.1 & 5.2) provide the basis for understanding the mineral resource maps and also the unique features on the land that are essential for some animal species' critical habitat. This chapter is cross-referenced frequently in the RAR.

6 Land Status

This chapter has two main components. It first describes the status, and current use or designation of the land within the planning region. It provides descriptions of the status of the land within the region such as the Traditional Territories, Settlement Lands, and protected areas. The scope of the region excludes land within the City of Dawson municipal boundary, National Historic Sites and Special Management Areas previously designated under Chapter 10 of the First Nations Final Agreements (FNFAs). These excluded areas fall under different management regimes. This section also provides a comprehensive listing of Crown Land dispositions, i.e. heritage reserves, agricultural, and land use permits for placer and quartz.

The second component of the chapter discusses the 'land use footprint' or the linear surface disturbance that is caused by certain land uses and what the implication of these disturbances might be by touching on the concept of cumulative effects.

7 Resource Values

Section 11.1.1.6 of the Final Agreements states that "Land Use planning must ensure that social, cultural, economic and environmental policies are applied to the management, protection and use of land, water and resources in an integrated and coordinated manner so as to ensure Sustainable Development". In addition the FAs state an obligation to specifically consider First Nation traditional values and Sustainable Development in the land use planning process. This chapter identifies and defines the five 'values' that are described in the RAR for each resource chapter of Section 2, these are:

Natural Value | Traditional Value | Socio-Cultural Value | Traditional Value | Economic Value

There is of course overlap within and between these values for each of the resources and the intention is not to hold them separate, but rather create a holistic picture of each resource to aid the Commission when considering land use decisions to achieve the goal of Sustainable Development.

8 Heritage

Due to the region's history and unique geological landscape, it is rich in heritage resources that are categorized into historical, archaeological, and paleontological records. This section describes the inventory of heritage resources that are found in the Dawson Planning Region, and identifies areas of heritage artifact potential in the region that remain undisturbed. This section also highlights the interpretation of heritage from a First Nations' perspective, broadening the definition to root it in the landscape and understanding heritage as a way of life.

Heritage resources are defined and interpreted differently by the Government of Yukon and the First Nations governments of the region. Key points in this chapter include:

- First Nations in the region have a broader interpretation of heritage resources than what is defined in Government of Yukon legislation.
- First Nations view their traditional territory as a holistic cultural landscape, with land at the center of culture. Heritage is understood as a way of life, it is alive and changing.
- Tr'ondëk Hwëch'in have traditionally occupied, travelled or harvested in virtually every corner of the planning region. Traditional use sites, spiritual and story locales, harvest areas, as well as long ago sites all contribute to the cultural fabric of the TH landscape.
- The region holds the highest concentration of historic sites in the territory, relating to goldmining from early 1900s to late 1960s as well as First Nations history.
- Prehistoric and archaeological sites in the planning region span the period from the end of the last Ice Age to historic times.
- Placer mining activity has been the principal discovery mechanism of ice age fossil remains with exceptional preservation. Virtually every creek with intact frozen silts and gravels in the unglaciated parts of the planning region has potential for palaeontological resources.
- Heritage resources are an important attraction for the region and provide substantial economic benefits from heritage tourism.
- Large areas of the planning region have not been surveyed for heritage resources. Increasing land access and human activities, particularly land clearing and disturbance of sediments, raises the potential for impacts. Heritage resource assessments and the use of best management practices help in mitigation.
- YG has identified specific areas that are expected to have high concentrations of heritage resources.
- The proposed Tr'ondek—Klondike World Heritage Site region is on Canada's shortlist to be nominated as a UNESCO World Heritage Site. In 2018 the nomination was withdrawn by Canada for reassessment, and may be resubmitted for UNESCO's consideration in the future.
- The effects of climate change have the potential to impact heritage resources through thawing of permafrost, rising water levels, accelerated erosion and sedimentation, and more frequent storms and wildfires.

9 Water

The water resources of the region (e.g., rivers, lakes and wetlands) are highly valued for their role in supporting industry, providing important fish and wildlife habitat, food, drinking water, nutrient-rich sediments, transportation connections, opportunities for traditional economic activities, and as landscapes with spiritual and aesthetic value. Although it is likely the most essential resource to the region, relatively little is known about the region's water resources. This chapter outlines the different phases of water as it flows through the region, identifies gaps in knowledge, and provides an understanding of the regulatory processes concerning its use. It emphasizes the importance of water to the health and productivity of region's ecosystems, people and economy. Key points in this chapter include:

- Water's location and availability is never static and each phase of the hydrologic cycle plays an important role in supporting ecosystems.
- The Yukon River is a major contributor of water and solutes to the Bering Sea and Arctic Ocean ecosystems. Changes in the Yukon River, either flow or water quality, could also influence these ecosystems.
- Few lakes or large open water wetlands exist in the region, and all are significant to waterfowl.
- The water resources of the region are highly valued for habitat, sustenance, transportation, economic activity, recreation and spiritual qualities.
- The Dawson region is considered data sparse; the region has four active hydrometric stations, three active snow survey courses and one long term water quality monitoring station managed by Water Resources Branch.
- Break-up of the Yukon River at Dawson has advanced by a week in the last 30 years.
- Stresses on watersheds from increased development pressure and climate change can compromise the health and productivity of aquatic and terrestrial ecosystems and affect their ability to provide ecosystem services.
- Future industrial demand for water is expected to increase.
- A large number of industries in the region utilize water, rely on the availability of water for their operations and have the potential to impact water resources.
- Placer mining dominates the allowable licensed use by a substantial margin, accounting for 93% of the gross allowable water use.
- Water use and protection are considered during assessment and regulatory processes. Water licenses contain operating conditions, discharge standards and requirements for monitoring, sampling and reporting.
- Tr'ondëk Hwëch'in Elders and community members have identified water as of utmost importance, essential for the health of every part of the land and for every aspect of survival.
- From a holistic perspective indicators of an unhealthy watershed can be; decreased populations or changes in the distribution and health of fish and wildlife, which in turn affects the health of people who eat these foods.
- EMR is developing a guide for wetland reclamation for the placer mining industry as a reclamation plan is often a stipulation in the approval or license process.

- The Government of Yukon is developing a Wetland Policy for the territory which may not be completed in time for the Dawson Regional Planning process, however the Policy will likely look to other processes, like Regional Planning, to provide detailed management decisions within the Policy.
- Some predicted impacts associated with climate change include changes to soil moisture and runoff regimes, shifts in vegetation, changing drainage from permafrost loss and altered fire cycles.

10 Forests

This chapter first situates the Dawson forest resources within the earth's larger boreal ecosystem and discusses the importance of the region's forested areas from an environmental, economic and sociocultural perspective. Many connections can be made in this chapter to the other resources discussed in the RAR, such as transportation and access, wildlife habitat, and tourism and recreation. Emphasis in this chapter is on the elements of the Dawson Forest Resources Management Plan. Key points in this chapter include:

- The forested areas of the region are part of a large circumpolar boreal region and these forest ecosystems are complex and dynamic.
- The boreal forest provides essential habitat for many of the region's flora and fauna, including moose and caribou. It also helps mitigate climate change as the boreal forest processes and stores carbon.
- Wildfire is an important driver of diversity in forest type, seral stage and age class, which in turn provides a variety of habitats for birds and wildlife, cultural landscapes and harvest opportunities.
- Yukon forests boast a number of important values including:
 - Environmental: Ecosystem services such as fresh water, carbon storage, and erosion control; fish and wildlife habitat.
 - Economic: Timber and other harvested forest products, tourism opportunities, trapping and hunting, and traditional economy.
 - Social and Cultural: Cultural and historic resources, traditional arts, outdoor recreation opportunities, and natural beauty.
- The Forest Resources Act provides a comprehensive planning, tenures, compliance and enforcement regime to support the sustainable use and management of forests in the region.
- As per Chapter 17 of the THFA, forest management in the region is guided by the Dawson Regional Forest Resources Management Plan which was developed in partnership between Government of Yukon and Tr'ondëk Hwëch'in.
- Government of Yukon and Tr'ondëk Hwëch'in have recently established a monitoring program with indicators to assist forest managers in making informed decisions about best management practices.
- During the first iteration of the Dawson Region planning process the Land Management Units identified in the Plan Alternatives package were somewhat based on the Dawson Forest Land Use Zones.
- The Dawson Forest Management Plan must be consistent with the Dawson Region Land Use Plan.
- There are currently 12 Timber Harvest Plans (THP) that have been developed in the Dawson Region and there is interest in developing a THP for the gold fields area.

11 Fish and Wildlife Habitat

Relative to other parts of Canada, the region is remote and largely undeveloped. The region supports a variety of wildlife species including moose, caribou, sheep, furbearers, freshwater fish and salmon. This chapter focuses on fish and wildlife habitat in the region by predominantly focusing on a set of 'focal species' and their habitat requirements. A good quality habitat provides space, food, water, and shelter for the different stages of an animal's life cycle. The resource management section emphasizes the complex nature of species and habitat considerations with legislation and policy covering territorial, federal, and international jurisdictions. Key points in this chapter include:

- Focal Species: are identified at a landscape scale due to the fact that they are widely dispersed and their habitat requirements also encompass many other species' habitats. For example, a healthy grizzly bear habitat not only benefits the grizzly bear, but many other species that live within the same landscape.
- There are many species that occur in the region that have been assessed by COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and subsequently listed on Schedule 1 of the Species at Risk Act (SARA), including grizzly bear, wolverine and caribou.
- There are 46 mammal species in the planning region; mammalian biodiversity is higher in the southern portions of planning region.
- Moose populations appear stable within the TH traditional territory, however there are a few 'Game Management Sub-Zones' that are experiencing over-hunting pressures possibly due to the ease of accessibility.
- Key areas for waterfowl include wetlands, riparian areas adjacent to rivers and creeks and the flyway along the Tintina Trench.
- Due to the migratory habits of salmon and caribou there are additional transboundary management considerations both nationally and internationally.
- Mineral licks, lakes and wetlands, riparian zones, grassland slopes, unglaciated mountains, springs, old growth forest and rare plants all represent important habitat requirements for the animals of the region.
- Wetlands are considered ecological hotspots and are considered to have a high threat magnitude in the region.
- For most species late winter habitat is most critical for survival although it may not be used every year.
- The Tintina Trench is a major migration route within the planning region, and the diversity of habitats within it sustains a wide range of birds.
- Fish and wildlife habitat is a valued resource in the region both for direct (e.g. hunting, trapping) and indirect (e.g. wildlife viewing, tourism) use values.
- It is largely recognized that reducing habitat fragmentation and maintaining landscape and habitat connectivity is an important consideration for regional planning.

12 Protected Areas and Conservation Opportunities

Within Yukon, regional land use planning under Chapter 11 of the Final Agreements is one of the primary tools used to identify new protected and conserved areas. These areas can serve to protect fish and wildlife habitats, areas of cultural and historic significance and the traditional economy. This chapter describes the site selection elements and site/network design elements of conservation planning. It also highlights differences in approaches between the indigenous and western perspectives in conservation planning.

- When planning for protected and conserved areas, key considerations include an understanding of ecological representation, areas important for biodiversity and focal species.
- Landscape connectivity is integral to healthy, sustainable, and resilient ecosystems.
- The Dawson planning region includes one existing protected area (Tombstone Territorial Park) and two directly adjacent protected areas (Yukon-Charley National Preserve and Fishing Branch Habitat Protection Area).
- Land use planning in the north should plan for the impacts of a changing climate. For example, changes in vegetation, shifting wildlife habitats and an increase in disturbance regimes (e.g. fire).
- Areas of broad conservation interest in the planning region include intact subwatersheds, river corridors, wetlands and the Tintina Trench flyway.
- Protected area planning must equally consider western science and traditional/community knowledge and interests, while respecting indigenous values and perspectives.
- The Tr'ondëk Hwëch'in are currently working on a Land Stewardship Framework (LSF) that will help inform the Dawson planning process. The overall purpose for the LSF is to enable TH to take strong stewardship actions over the lands and waters in TH Traditional Territory (TT).

13 Minerals

Mining has been a mainstay in the Dawson Planning Region for over a hundred years. There is a strong cultural and economic connection to the industry in the region. The Mineral Chapter discusses placer and quartz (hard rock) potential, exploration, regulation, licensing and activity in the region.

Connections in the chapter can be made directly to the RAR chapters on 11 Fish and Wildlife, 12 Conservation Priorities, and 17 Transportation and Access.

- For over a century, Yukon economic development has been closely linked to its mineral deposits.
- There is a positive outlook for the long-term health of the mining industry in the Yukon.
- Hard rock (quartz) mining and placer mining are distinct and different land use activities; each has its own unique pattern of exploration, development, production and reclamation.
- There are 6 main deposits of gold, silver, copper, barite and tungsten in the planning region.
- In 2018 the total number of active and pending quartz claims in the planning region was 47,784 covering an area of 8,865km², or 22% of the region.
- Hard rock mineral exploration is a significant economic activity within the planning region. In 2018 the exploration expenditure in the region was a record \$147 million, a record high.
- The proposed Coffee Gold Project is an open-pit gold mine that is expected to be in operation for 12 years.
- In 2017 placer gold production in the Yukon had an estimated value of \$120 million.
- The Dawson Placer Mining District is by far the most productive placer mining district in the territory.
- Active and pending placer claims cover about 1,400 km² or about 3% of the planning region and include the drainages of the Klondike, Indian, west Yukon (Fortymile, Sixtymile and Moosehorn Range rivers) and lower Stewart rivers.
- Advanced mineral exploration is an extensive activity with potential for adverse cumulative effects on ecological and cultural resource values.
- Hard rock mine development occurs on a very small footprint, but with potentially significant and enduring impacts.

14 Energy

This chapter explores the types of energy resources in the region. Economic and population growth in the region is increasing the demands for energy. With a growing population and new mines set to open in the near future, governments and industries are actively seeking new sources of energy, including potential new sites for hydroelectric projects. Continued development of the mining sector is placing additional pressure to identify adequate and cost-effective local sources of energy production. The Dawson region has limited viable options for increased energy generation and the implications of these options on the stated regional values are discussed. Key points in this chapter include:

- Transportation, commercial, residential, and industrial are the major sectors for energy consumption in the Yukon.
- There are no dispositions for coal in the planning region or surrounding areas, it is unlikely that coal will be pursued for exploration or development in the planning region.
- The northern section of the planning region includes portions of two sedimentary basins with identified potential for oil and natural gas resources; the Eagle Plain and Kandik basins.
- The Government of Yukon is not proceeding with unconventional hydrocarbons (i.e. extracted by means of hydraulic fracturing), developing coal policy or permitting at this time.
- Hydrocarbons continue to be a major source of energy despite the availability of hydroelectric power.
- Demand on existing hydroelectric infrastructure continues to rise with new construction and major mining projects.
- Exploration of a hydro generation facility is underway for the North Fork area.
- Biomass energy (fuelwood) is an important resource for heating in the region. There will likely be increased demand for wood energy over the short and long term. The Dawson Forest Resources Management Plan provides strategic direction for the local fuelwood market.
- Solar energy for heating and electricity is a viable seasonal option.
- There has been limited assessment of sources and options for wind and geothermal energy in the region.
- Renewable energy systems are vital for those people who choose to live 'off the grid' and for those wishing to offset the high costs of petroleum fuels and electricity.
- There are potential negative impacts to the natural value of the region associated with renewable and non-renewable energy resources.
- Future energy requirements in the planning region will depend on population trends, energy efficiency of municipal and territorial infrastructure, and the level and type of economic development activities.

15 Agriculture

This section summarizes the agricultural potential in the region including soil capability; climate; water considerations; existing and future potential production; and economic and strategic planning considerations. Agriculture is generally used in this section to refer to crop and food production. Agriculture activities refer to a wide variety of uses including but not limited to production, storage and sale of: crops, grains, eggs, dairy, honey, bedding plants, landscape trees, sod, beef, pork, meats, and vegetables. Key points in this chapter include:

- The Dawson planning region contains some of the best arable agricultural soil in Yukon
- In this region, high quality soils are associated with the floodplains and terraces of the major rivers. The areas of West Dawson, Sunnyside, Henderson's Corner, and the Klondike Valley contain large areas of suitable agricultural land.
- As of 2018 there are approximately 40 titled lots derived from agriculture land programs (i.e. Spot Land Program). However, spot land applications for agriculture have caused land use conflicts with YFN and individuals who apply in the region.
- TH has noted several Settlement Land parcels that are suitable for agriculture in the region.
- Some degree of self-sufficiency in food production is valued as a key factor for sustainable communities.
- Current agricultural production in the Dawson region is geared towards the local market with an emphasis on direct sales, either at the farm gate or at the weekly farmers' market in the summer. The majority of sales are for fresh vegetables and eggs, although bedding plants, dairy, and meats are increasing.
- Agricultural development may impact traditional activities and disturb heritage resources.
- Improper management practices can result in adverse impact to wetlands and wildlife habitat.
- Yukon's agriculture policy states that no significant loss of key wildlife habitat will occur as a result of new agricultural land development.
- Agricultural land dispositions that require land development are assessed by the Yukon Environmental and Socio-Economic Assessment Board (YESAB). The resulting terms and conditions mitigate any significant adverse effects that would have otherwise impacted traditional activities, heritage resources and/or loss of key wildlife habitat in the project area.
- The Tr'ondëk Hwëch'in Teaching and Working Farm is a valued cultural and economic resource.

16 Tourism and Recreation

The region has a long history as a tourism destination and as an important contributor to regional and territorial economies. Today, tourism is an integral part of a diversified economy for the region, and maintaining economic diversity will be important for continued economic growth and stability. This chapter highlights the many elements of the tourism and recreation infrastructure within the region and discusses the current state of the tourism industry as well as potential opportunities for the future. Key points in this chapter include:

- Scenery, wildlife viewing, Klondike gold rush history, and historical attractions are identified as key tourism attributes of the region.
- Historic resources and attractions tied to gold rush history are concentrated in and around Dawson City.
- Tourism provides seasonal and year-round jobs for local residents, as well as seasonal jobs for summer workers.
- Opportunities for growth include winter activities, lodge-based tourism, First Nation cultural interpretation tours, and ecotourism.
- Areas with high potential for new and expanded recreation activities include the Yukon River Corridor and Forty Mile area; Ogilvie Mountains and Dempster Highway Corridor; the Yukon Ditch trail network; and the Top of the World Highway.
- Within the Regional Economic Development Plan for the Tr'ondëk Hwëch'in Traditional Territory opportunities for growth included:
 - FN Cultural Heritage sites such as Tr'ochëk heritage site, as corner stones to highlight the distinct First Nations culture within Dawson City (and the region); and
 - Tombstone Territorial Park (including the Dempster Highway).
- Another major tourism opportunity for the region is the potential Trondek-Klondike UNESCO World Heritage Site. In 2018 the bid for this designation was withdrawn for reassessment but may be resubmitted in the future by the project partners.
- Visitation data shows significant increases in visitor numbers and tourist spending, new attractions such as the Inuvik to Tuktoyaktuk highway may continue to contribute to a continued rise in the region.
- Tourism operators note that land use and access are potential barriers to business growth; there is limited access to land for infrastructure and uncertainty about land tenure.
- Increased use of popular routes and destinations by visitors and residents may negatively impact environmental and cultural values and resources in the region.
- Best management practices and cross-industry cooperation are key to maintaining a quality wilderness and/or cultural tourism experience.

17 Transportation and Access

Transportation networks and infrastructure have a major influence on the pattern of land use and economic development within the planning region. In this section, various types of land, water and air-based access are identified. Aggregates are also included in this chapter because their primary purpose in the planning region is as a key resource vital for construction and maintenance of the modern road transportation network. Key points in this chapter include:

- The major transportation assets of the region that allow for economic, traditional and recreational activities include; three highways, a community airport and airstrips, an international border crossing, the Yukon River Corridor, a traditional trail system, and numerous secondary roads and trails.
- The Yukon River is the major navigable waterway in the region and one of the most valuable resources to TH and many others. It is a key transportation corridor and essential to their traditional economy.
- Shared corridors provide economic and ecological advantages; advance planning is necessary but route selection for new all-season corridors is difficult without full cost accounting and consideration of potential environmental, social and cultural impacts.
- Increased access in the region can have positive and negative effects on Traditional, Socio-Cultural and Economic Values.
- Many of the negative impacts that result from industrial land uses, particularly to ecological integrity and fish and wildlife populations (and by extension traditional economic activities), are a result of the direct and indirect effects of roads and other forms of access
- The impact of access on ecological integrity and wildlife varies with:
 - size and extent of access features,
 - level of activity associated with those features,
 - and the success of mitigation measures designed to minimize these impacts.
- Limits to access affect the ability of resource users to pursue economic, recreational or cultural activities.
- New all season road infrastructure may occur as a result of increased industrial activity.
- Aggregate resources are limited in the Dawson Region and their availability must be taken into consideration when planning large infrastructure projects and access route creation and maintenance.
- Yukon Government is currently developing a Resource Road Regulation and an Off-Road Vehicle Regulation which will guide access in the territory.
- The proposal for the Northern Access Route to the Dawson Range involves the creation of new roads, upgrading existing roads and stream crossings starting from the Klondike Highway near Dawson City and extending south to the proposed Coffee Mine property.
- Climate change presents risk to the stability of transportation features and uncertainty in route planning to avoid permafrost areas.