



Kaska Dena Conservation Analysis for an Indigenous Protected and Conserved Area in British Columbia

Prepared by

Dena Kayeh Institute
on behalf of
Kaska Dena Council

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Acknowledgements

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Executive Summary

The Kaska Dena Indigenous Protected and Conserved Area represents the spiritual and cultural core of the Ancestral Territory of the Kaska Dena in British Columbia. The traditional knowledge and science-based Conservation Analysis provides a biological and cultural justification for the protection of our proposed Kaska Indigenous, Protected, and Conserved Area (KIPCA).

The rationale is based on our joint needs to provide ecosystem services, preserve our way of life, protect special, and sensitive ecological sites; ancient, historical, and cultural sites; spiritual, social, and economic areas; and revive our customary laws and our role as land stewards. We also provide opportunities to pursue a green economy, to build capacity, expand our knowledge of the environment, our heritage, and offset the potential effects of climate change, as well as help revive our languages.

The Kaska Dena in British Columbia have been engaged in a multitude of planning processes that include the Muskwa-Kechika Management Area¹, British Columbia Strategic Land and Resources Management Plans², and importantly, community plans that incorporate cultural values and Kaska law³. The proposed Kaska Indigenous, Protected, and Conserved Area has been incorporated around these land use plans and their management direction that allow for the engagement of ecosystem-based management in the extraction of resources, where much needed employment is located, while ensuring large, intact, contiguous landscapes are protected from resource extraction.

The proposed area is approximately 40,000 km² (~4,000,000 ha) in the core Ancestral Territory of the Kaska Dena in British Columbia. It located wholly within the Makenzie River Basin and includes portions of 5 ecoregions, 13 ecosections, 10 major watersheds, 4 biogeoclimatic zones, and provides connectivity to 14 provincial protected areas.

It is an area that is central to the core spiritual and cultural landscape that is critical to the sustainability of Kaska cultural wellbeing. It is an area which supports the criteria of Title as laid out by the Supreme Court of Canada. Boundaries have been established to focus the proposed area within the exclusive use area of the Ancestral Territory to reduce potential concerns with neighbouring Nations. It also has been developed recognising existing and potential resource development, and the boundaries were developed to reduce conflicts with these sectors. For example, in existing land use plans in the ancestral territory in B.C., the Kaska have agreed to access corridors for potential future development of resources through Environment Land Use Corridors. Forestry interests have been met and are exclusively Kaska controlled, as the tenures are area based, and strategically located outside of the KIPCA to reduce the impact of forestry operations. The three First Nations Woodland Licences will provide jobs in sustainable forestry. In regard to subsurface development (e.g., mineral development and oil and gas development), the proposal boundaries were designed to capture the largest contiguous core area of the territory while avoiding or minimizing overlap with existing dispositions. In addressing fee simple lands or leases, the parcels identified will be netted out due to exemptions to Right of Ways and proximity to settlement areas (e.g., Toad River or Muncho Lake). The remainder of surface dispositions are not in conflict with the

¹ www.muskwa-kechika.com/

² www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/skeena/deaseliard-srmp ,
www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/omineca/mackenzie-lrmp ,
www.for.gov.bc.ca/tasb/slrp/plan65.html

³ kaskadenacouncil.com/

protected area and have a history of being grandfathered as allowable land uses (e.g., commercial recreation, guide outfitting, commercial trapping, or recreational land leases) in existing provincial protected areas.

The Kaska Dena are supportive of the existing guide outfitting territories and recognise it has been an activity providing long-term economic opportunities for Kaska members, communities, and non-Kaska communities and families for generations. It is our approach to have guide outfitting infrastructure, activities, and authorizations included as an ongoing activity with renewable authorizations. It is with this same view that Adventure Tourism, and Registered Traplines for the commercial sale of fur are incorporated into the management of the proposed area.

The Kaska Dena have a history of working with the Government of BC through the co-management of lands and resources. It is our view that co-management will be required for all land use decisions in the future, as the Kaska will continue to engage with the provincially elected leadership and the government staff. The structure of co-management is envisioned to be through existing government to government agreements. It is with this view that the Kaska are working towards the designation of the proposed area as a Conservancy under the provincial protected areas legislation. It is, in our view, the most preferred designation that utilises joint management decision-making, allowing for the protection of Kaska ancestral, spiritual, and traditional uses, including the protection of our rights and title.

Overall, the establishment of the KIPCA will provide additional protection or representation for wilderness, intact ecosystems and sensitive species such as the northern eco-type woodland caribou by:

Northern Mountain Population Woodland Caribou Herds

- 24% of the Muskwa Herd Range
- 86% of the Rabbit Herd Range
- 53% of the Gataga Herd Range
- 84% of the Frog Herd Range
- 49% of the Horseranch Herd Range
- 4% of the Finlay Herd Range
- 39% of the Liard Plateau Herd Range

Ecoregions

- 38% of the Northern Canadian Rocky Mountains
- 52% of the Liard Basin
- 38 % of the Hyland Highland

- 16% of the Boreal Mountains and Plateau
- 1 % of the Muskwa Plateau

Major Watersheds

- 35% of the Liard River
- 18% of the Beaver River
- 24% of the Dease River
- 66% of the Kechika River
- 0.6% of the Fort Nelson River
- 99% of the Rabbit River
- 68% of the Toad River
- 0.01% of the Stikine River
- 0.5% of the Pitman River
- 19% of the Finlay River

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1 Introduction

1.1 Present Situation of the Kaska Dena

The Kaska Dena are Athabaskan speaking First Nations people residing in Northern British Columbia, the Southeast Yukon, and the Southwestern corner of the Northwest Territories. The Kaska Dena First Nations in British Columbia are the Dease River First Nation in Good Hope Lake, the Daylu Dena Council in Lower Post and the Kwadacha First Nation in Fort Ware, while the Yukon Kaska Dena reside in the communities of Ross River administered by the Ross River Dena Council and Watson Lake under the Liard First Nation (Map 1). In British Columbia, the Kaska communities are represented by the Kaska Dena Council (KDC), a Society formed in 1981 to advance the interests of Kaska Individuals through the promotion and protection of Kaska Dena Indigenous Rights and Title.

As a Nation, these communities were separated into four Indian Act bands and were forced to negotiate separately with two different provincial and territorial authorities. The Kaska Dena were and always have been a self-governing Nation with their own laws, culture and way of life. With the imposition of the Indian Act the lands in which the Kaska traditionally governed were divided into ‘lands set aside’. The small amount of land allotted to the Kaska Dena by the Crown is contested as there is no comparison between it and the 240,000 km² of land encompassing traditional Kaska territory⁴. This land is referred to as Dene Kayeh which translates as ‘the people’s country’.

The Kaska Dena of British Columbia are represented by Kwadacha First Nation, Daylu Dena Council, Dease River First Nation, Muncho First Nation, and Fireside. The Kaska Dena Council, which represents the British Columbia Kaska Dena members for protection of rights and title has been in existence since 1981 and has participated in modern treaty negotiations for the last twenty-five years. During that period, the Kaska Dena have been involved in a number of planning initiatives that range from strategic level planning to local landscape level plans that direct the management of resources and conservation of the ancestral territory in British Columbia.

For the last eight years, the Kaska Dena have been engaged at a shared decision-making table with British Columbia, the Strategic Engagement Agreement (SEA). It is an agreement that has been renewed twice by the Government of British Columbia and the Kaska. The renewal has demonstrated the capacity of the Kaska to engage in shared decision making for natural resources and conservation. It is another example of the two governments achieving success in reaching consensus agreements. Other examples include the range of Strategic Land and Resource Management Plans (SRMP), legislated land use designations (e.g., Muskwa-Kechika Management Area [MKMA]), and protected areas (e.g., Ne’ah Conservancy). Part of the reason for that success has been the history of Kaska engagement with the Government of British Columbia over the years. The Kaska are keen to negotiate jobs, to create a northern economy where there is none, and have a desire to work with industrial partners to ensure that the objectives of Sustainable Development and the associated jobs are met. To that end, the land use plans that have been created to date establish zones where development can take place while retaining the cultural and social practices that keep the Kaska Dena culture vibrant.

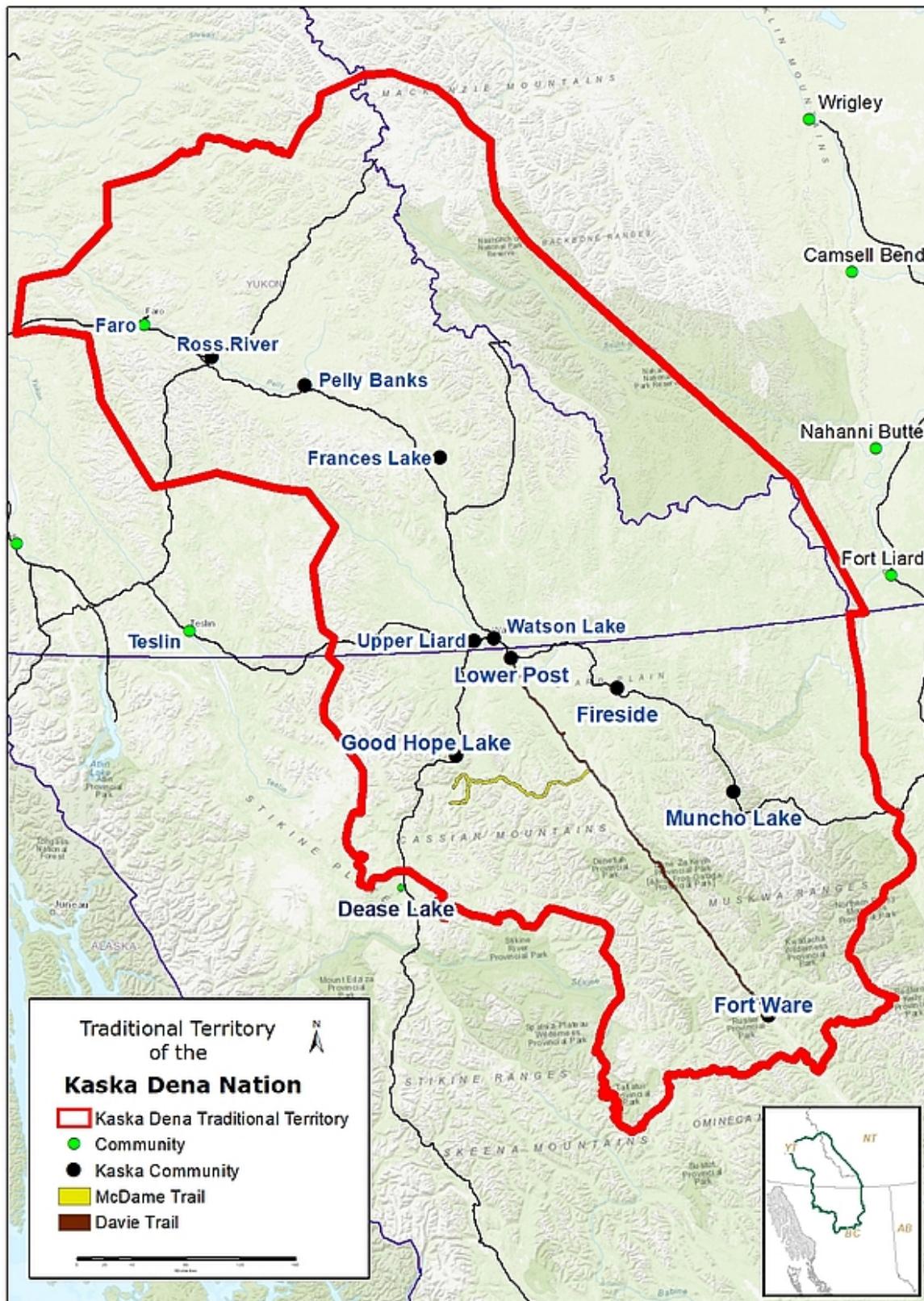
The management approach of the Kaska Dena reflects the philosophy that has been developed through centuries of producing food, shelter, medicine, and clothing from forested landscapes while sustaining

⁴ kaskadenacouncil.com/our-land/

the resources from which these materials are derived. To accomplish the task of balancing the traditional uses of the forest while providing an economic framework for sustainable Kaska communities and ensuring available habitat for existing species, a new approach has been taken.

In the Kaska model of landscape management all values are given an equal weight in the planning process and appropriate measures are taken to ensure that the landscapes are managed in an ecologically sustainable manner. In addition, this model of management fully incorporates the traditional knowledge of the Kaska Dena. The primary goal of Kaska management is fully functioning ecosystems. The intent is to sustain a diversity of ecosystems, for humans, fish and wildlife populations and their associated habitat, across the forested landscape at multiple temporal and spatial scales. A core theme of Kaska planning is that healthy ecosystems support healthy communities with economies derived from the ecosystems. By maintaining, restoring and conserving key features of the ecosystems within the Kaska Nation's Ancestral Territory, we are in turn sustaining the Kaska Nation that depends on these ecosystems.

Traditional Knowledge is integral to the successful development of a Kaska management plan for the Indigenous Protected Area. The Kaska Dena consider Traditional Knowledge as being much more than information concerning ecological relationships. Unlike scientific knowledge, it is woven into and inseparable from the social and spiritual context of their culture. For example, the Kaska Dena's choice for the location of Indigenous Protected Areas and smaller protected areas are a function of their spiritual and cultural decisions along with the "Scientific" representation requirements for particular ecoregions. As a result, the outcome combines the highly localised knowledge base of the Dena Kayeh Institute of Kaska Land Stewards (including Elders, hunters, fishers, and gatherers), whose knowledge is inextricably linked to the quality and reliability of their ecological observations, with the science of conservation biology.



Map 1. Kaska Dena Ancestral Territory

1.2 Global Significance of the Boreal Forest and the Kaska Dena Ancestral Territory

The boreal forest of Canada has been identified as a critically important continental region. To say that it is of key importance to the health of the global biosphere is not an overstatement⁵. The ecological integrity of this landscape is steadily being eroded, and conservation strategies for protection must include land planning models that integrate ecological and cultural justice in addition to ecological values.

The Kaska Dena Ancestral Territory encompasses 240,000 km² and within British Columbia represents over 10% of the province. The Ancestral Territory is remote with limited human infrastructure. The Ancestral Territory represents a significant refugia for intact boreal ecosystems and all the benefits associated as mitigations for climate change. The proposed protected area represents approximately 40,000 km² of boreal ecosystems.

Please note the reader is encouraged to look at Appendix 1 for Kaska Dena Place Names when reviewing maps and this document to assist in understanding the significance of the area to Kaska Dena.

1.3 Dena Kayeh Institute

The Dena Kayeh Institute (DKI) was formed in 2004 in recognition of the need to establish an environmental organization that:

- supports and aligns with the Kaska Dena mandate regarding the collection, storage and management of traditional ecological knowledge (TEK) that provides for:
 - reclaiming our role as stewards of land and resources in our ancestral territory;
 - development of long-term capacity and capability to promote and implement a Kaska land ethic which is an ecosystem-based approach to land management, based on the maintenance of biodiversity and ecological integrity. This approach requires that areas of high ecological, cultural, spiritual and aesthetic values are identified and protected, and ecological processes continue to generate biological diversity.
 - recognition that land stewardship requires our communities to be healthy and it is our belief that economic activity that generates jobs and wealth can be achieved consistent with our land ethic; and ultimately the mission of the DKI is to protect the ecological integrity of our lands and waters, and enhance the cultural and socioeconomic well-being of our people;
 - collaboration in its natural resource-based initiatives with environmental groups, government and industry for the benefit of all in:
 - influencing policy and policy makers;
 - areas of mutual interest with respect to sustainable development, research, conservation, and public education;
 - developing a stable base of funding for the DKI; and
 - developing decision support tools and capacity for land and resource decision making.

1.4 Vision

The vision of the Kaska Dena in British Columbia is to reclaim our role as stewards of the land and resources within our ancestral territory. Towards this end, we need to develop long-term capacity and

⁵ www.nrcan.gc.ca/forests/boreal/13071

capability to promote and implement our land ethic. Our land ethic is based upon our philosophy that has been developed through centuries of producing food, shelter, medicine, and clothing from the land while sustaining the resources from which these materials are derived. To balance traditional uses of the resources while providing an economic framework for sustainable Kaska communities will involve working in partnership with Government, other First Nations, industry, local residents and interested third parties.

The Kaska Dena expect to implement a joint management approach with the provincial and federal governments and proponents in land and resource management that provides new opportunities for economic development while respecting and recognising Kaska Dena unextinguished rights, titles, and interests. The relationship has to be based on joint management including planning, land protection, implementation, monitoring, revenue sharing, and capacity benefits. The new approach for land and resource management requires that all parties engage the Kaska Dena early on in the process to seek common understandings, and the development of agreements that provide economic, social, cultural, environmental, capacity, community benefits, and legacies for future generations.

To accomplish this for resource development and land management, governments and third parties have to recognise the Kaska Dena as having consent driven decision-making powers on all matters for land and resource management.

1.4.1 Principles

The guiding principles for the Kaska Dena related to land and resource management are:

- recognition of Kaska Dena's rights, title, and decision-making powers in our ancestral territory;
- recognition of Kaska Dena members continuing to harvest and rely upon the land and water within their Ancestral Territory to sustain our integral way of life as an northern indigenous peoples. This way of life is perpetuated by transmitting their traditional knowledge on to future generations;
- respect of sacred laws – A'IE and application for land and resource management;
- Kaska Dena ownership of intellectual property rights to Traditional Knowledge;
- maintain ecological processes, which sustain biological diversity;
- decision-making based on all sources of knowledge (western science, local, and traditional knowledge);
- recognition of federal and provincial indigenous initiatives, policies, and commitments to implementation of United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and Free Prior Informed Consent (FPIC); Truth and Reconciliation Commission Calls to Action; and related court decisions;
- non-conflict and consistency with federal and provincial laws and policies;
- consistency with court decisions and case law;
- accountability and transparency for all parties, in the decision process;
- acknowledging the role of existing statutory decision makers with consent-based decisions by Kaska Dena, BC, and Canada;
- ensuring social, educational, and economic benefits and legacies occur for Kaska Dena communities and members; and
- incorporating comprehensive monitoring through capacity development (e.g., land guardian programs or compliance officer programs), collaborative approaches, economic ventures, and delegated regulatory authorities.

2 Kaska Indigenous Protected and Conserved Area

2.1 Purpose

The following Conservation Analysis provides justification for a Kaska Indigenous, Protected, and Conserved Area (KIPCA) in the Kaska Dena ancestral territory. The rationale is based on our joint needs to provide ecosystem services, preserve our way of life, protect special and sensitive ecological, historical and cultural sites, and revive our customary laws and our role as land stewards. We also suggest opportunities to pursue a green economy, to build capacity, expand our knowledge of the environment, our heritage, and the potential effects of climate change, as well as help revive our languages.

The Kaska Dena in British Columbia have been engaged in a multitude of planning processes that include the Muskwa – Kechika Management Area⁶, British Columbia Strategic Land and Resources Management Plans⁷, and importantly, community plans that incorporate cultural values and Kaska law⁸. The proposed Kaska Indigenous, Protected, and Conserved Area has been incorporated around these land use plans and management direction that allow for the engagement of ecosystem-based management in the extraction of resources, where much needed employment is located, while ensuring large, intact, contiguous landscapes are protected from resource extraction.

2.2 Proposed Kaska Indigenous Protected and Conserved Area

The proposed area is approximately 40,000 km² in the core Ancestral Territory of the Kaska Dena in British Columbia. It located wholly within the Makenzie River Basin and includes portions of 5 ecoregions, 13 ecosections, 10 major watersheds, 4 biogeoclimatic zones, and provides connectivity to 10 protected areas (Table 1; Map 2).

The proposed area has been carefully selected to ensure that resource development has been considered. Forestry interests have been met and are exclusively Kaska controlled as the tenures are area based and strategically located outside of the KIPCA to reduce the impact of forestry operations. The three First Nations Woodland Licences will provide jobs in sustainable forestry. In regard to subsurface development (e.g., mineral development and oil and gas development), the boundaries were designed to capture the largest contiguous core area of the territory while avoiding or minimizing overlap with existing dispositions. In regard to fee simple lands or leases, the parcels identified will be netted out due to exemptions to Right of Ways and proximity to settlement areas (e.g., Toad River or Muncho Lake). The remainder of surface dispositions are not in conflict with a protected area and have a history of being grandfathered as allowable land uses (e.g., commercial recreation, guide outfitting, commercial trapping, or recreational land leases) in provincial protected areas.

Table 1. Biophysical zones found in the Kaska Indigenous Protected and Conserved Area (KIPCA)

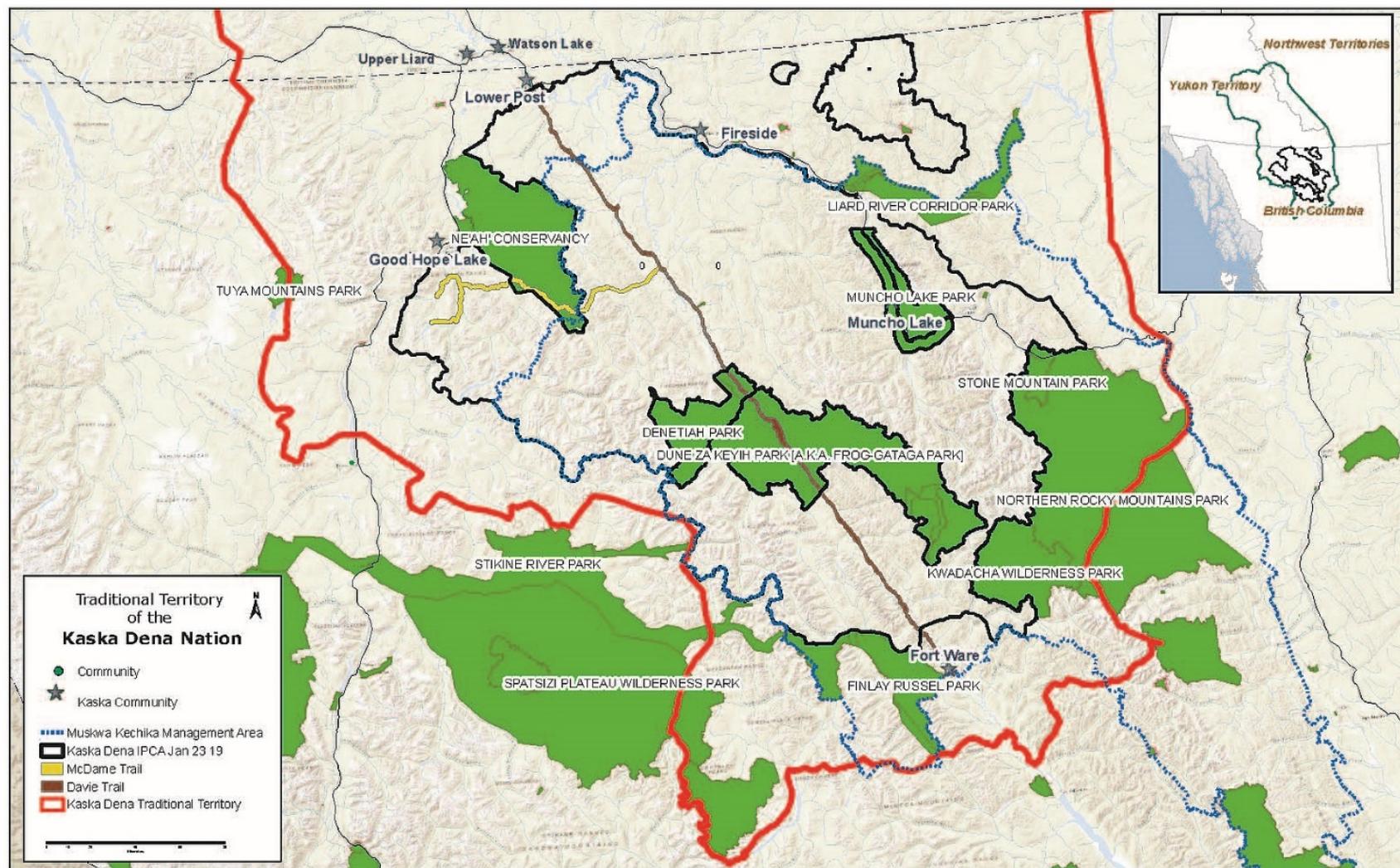
Ecoregions	Ecosections	BEC Zones	Major Watersheds
Boreal Mountains and Plateaus	Cassiar Ranges	Boreal Altai Fescue Alpine	Liard River

⁶ www.muskwa-kechika.com/

⁷ www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/skeena/deaseliard-srmp ,
www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/omineca/mackenzie-lrmp ,
www.for.gov.bc.ca/tasb/slrp/plan65.html

⁸ kaskadenacouncil.com/

Ecoregions	Ecosections	BEC Zones	Major Watersheds
Hyland Highland	Eastern Muskwa Ranges	Boreal White and Black Spruce	Beaver River
Liard Basin	Finlay River Trench	Engelmann Spruce -- Subalpine Fir	Dease River
Muskwa Plateau	Hyland Plateau	Spruce -- Willow -- Birch	Kechika River
Northern Canadian Rocky Mountains	Kechika Mountains		Fort Nelson River
	Kechika River Trench		Rabbit River
	Liard Plain		Toad River
	Muskwa Foothills		Stikine River
	Muskwa Upland		Pitman River
	Northern Omineca Mountains		Finlay River
	Rabbit Plateau		
	Southern Boreal Plateau		
	Western Muskwa Ranges		



Map 2. Proposed area of the Kaska Indigenous Protected and Conserved Area (KIPCA).

3 Natural History of the Kaska Dena Territory

The Kaska Dena Ancestral Territory combines great boreal forests and mighty mountains and is still one of the most rugged and pristine landscapes in Canada. The territory's splendours are well known, much of the area has recently been declared a special management area (the Muskwa-Kechika) in recognition of its globally significant wildlife and landscape values. The Kaska Dena can identify scores of places that embody the best qualities of their territory and their way of life and that deserve special attention. The earliest European traders to penetrate Kaska Dena territory were awed by the region's magnificence.

In 1824, Samuel Black made his way up the Peace River and then the Finlay River. After weeks of battling the rivers' fierce currents, he reached a great waterfall. He described the challenge that lay ahead of him in words of admiration and dismay:

The river which falls 80 feet heavily over the smooth extended bank with a hollow noise like distant thunder...looks like a thin white sheet...the shelf part of the water fall is precipitated, oozing through the mass by small perforations and the whole body thus precipitated slowly recovering takes a second tumble into the basin, at one part the water having freer scope boils up furiously giving the idea of the Devils cauldron (Black 1955).

The Government of British Columbia has recognized the unique qualities of the Kaska Dena Ancestral Territory by designating over half its area as provincial parks, recreation areas, ecological reserves, a special management area (i.e., the Muskwa-Kechika), and other protected areas (Kaska Dena Council 1998).

3.1 Vast Variation

The Kaska Dena Ancestral Territory is vast and there is a great deal of variation in the landscape. There are barren mountain summits, glaciers, plains, plateaus, thin forests, thick forests, wetlands, water's edge, lakes, rivers and streams, all unevenly distributed over 100,000 km² of northern British Columbia. The following descriptions are based on information reported in the *Strategic Natural Resource Development Plan and Five-Year Operating Plan for the Kaska Dena* (Kaska Dena Council 1998), *A National Ecological Framework for Canada* (1996), *The Ecological Framework for Canada*⁹, and *Yukon State of the Environment* reports¹⁰.

3.1.1 Northeast

The Rocky Mountains lie along the eastern boundary of the Kaska Dena Ancestral Territory, and come to their northern end at the Liard River. The Liard flows through a broad gap between the Rockies and the Mackenzie Mountain ranges to the north. The plateau between the Liard River and the legendary Nahanni River in the Mackenzie Mountains is part of the Kaska Dena Ancestral Territory.

3.1.2 North Central

The north central part of the Kaska Dena Ancestral Territory from the Liard River to beyond the Yukon border, rises gently above the eastern plateau to mean elevations of about 1,400 metres above sea level, although some local mountain ranges achieve summits above 1,800 metres. This area is much drier than the level plateau found further east and the cover of boreal forest is dominated by black and white spruce.

⁹ ecozones.ca/english/

¹⁰ www.env.gov.yk.ca/publications-maps/report-archive.php

The mean annual temperature for the area is -2°C with a summer mean of 10°C and a winter mean of -18°C . Precipitation varies from 500–600 mm, with most precipitation at higher elevations in the northern part of the region. There is a wide range of wildlife species, including moose, red fox, beaver, snowshoe hare, arctic ground squirrel, wolf, lynx, weasel, snowy owl, and various raptors.

Slightly further west, the rising country levels into a broad, rolling low-lying plain. These low hills, lying between 620 and 930 metres above sea level, are built of ancient limestone and more recent sandstone and shale bedrock mantled with glacial and river deposits, deeply cut by the Liard River and its northern tributaries. The boreal forest is dominated by lodgepole pine, white and black spruce, and aspen. The mean annual temperature for the area is approximately -3°C with a summer mean of 11°C and a winter mean of -8.5°C . Annual precipitation is 350–450 mm. Wildlife includes moose, black bear, wolf, beaver, muskrat, snowshoe hare, waterfowl, crane, ruffed grouse, and other birds.

There are accessible forests and good potential for commercial minerals. The Alaska Highway crosses the north with a joining highway (the Cassiar Highway - Highway 37) heading south to meet with Highway 16 between Terrace and Smithers.

3.1.3 West

The entire western part of the Kaska Dena Ancestral Territory towers above the easterly plain and lowlands in a rugged and complex landscape of peaked mountains, high level-topped plateaus, steep and deep valleys, and fast mountain streams. The mountains in the Coastal Ranges have an ancient granite core capped with limestone. Some mountains approach 3,000 metres above sea level and a few are topped with glaciers. Temperature and precipitation vary greatly with elevation, and the westernmost part of the region feels the moderating effects of Pacific weather systems. The mean annual temperature for the area is -2°C with a summer mean of 10°C and a winter mean of -15°C . The mean annual precipitation ranges between 400–700 mm. Vegetation also varies with elevation and latitude and ranges from bare bedrock on the mountain summits to alpine fir and white spruce at middle elevations and forests of lodgepole pine, and white and black spruce at lower elevations. Wildlife includes mountain goat, Stone's sheep, grizzly bear, moose, ptarmigan, ground squirrel, and caribou.

The crystalline core of the mountains has mineral potential, but there is little potential for forestry. Most of the western territory is inaccessible by road.

3.1.4 East

The eastern side of the Kaska Dena Ancestral Territory is shaped by the Rocky Mountains and the Muskwa Ranges and is even more rugged than the mountainous western side. The limestone and dolomite mountains achieve elevations of 3,200 metres and are covered with glacial ice.

The mean annual temperature for the area is -0.5°C with a summer mean of 15°C and a winter mean of -13°C . Mean annual precipitation ranges from 500 mm at lower elevations and surrounding plateaus up to 800 mm at higher elevations and in the mountain passes. Like the western mountains, vegetation ranges from lichen crusts on bedrock summits to forests of lodgepole pine, and white and black spruce at lower and warmer elevations. Wildlife includes moose, elk, Stone's sheep, caribou, and mountain goat. Grizzly bear, black bear, wolverine, lynx, and wolves are common in the valleys.

There is no known potential for subsurface resources except oil or gas, and very limited potential for forestry. Except for the Alaska Highway to the north, the entire region is inaccessible by road.

3.1.5 South

In the south, the Rockies in the east and the Coastal Ranges in the west face one another over the Rocky Mountain Trench. The Trench drains to the south towards the Peace River and beyond.

The southern part of the Kaska Dena Ancestral Territory is a transition area sharing coastal, main range, and southern interior environments. Conditions depend very much on location.

The steep valleys in the south are richly forested near their bottoms, and the western mountains have known mineral deposits. A rough forestry road, recently completed with the construction of a permanent bridge over the Ingenika River, connects Kwadacha (Fort Ware) to Mackenzie.

3.2 Harsh Reality

A few of history's most daring and intrepid explorers visited the interior of the Kaska Dena Ancestral Territory, including Robert Campbell¹¹, Samuel Black¹², John McLeod¹³, and George Dawson¹⁴. Their journals both marvel at the landscape, and dread what must be done to travel it, often in the same line. A few adventurers made it to the fringes of the territory before giving up in defeat and others tried hard, but died of starvation, cold, drowning, accident, disease, and warfare with peoples protecting their lands.

Between 1823, when John McLeod first entered the Kaska Dena Ancestral Territory, and 1942, there were rarely more than a dozen non-aboriginals anywhere in the Kaska Dena's 100,000 km² of territory in British Columbia. Even today, there are only a few dozen non-aboriginals in the Kaska Dena Ancestral Territory outside the small towns and villages in the region.

The Kaska Dena face the same environment as did the European explorers, but they have an entire culture based on living in that particular landscape. Kaska Dena culture has succeeded in this environment for at least the past 4,500 years.

¹¹ www.biographi.ca/en/bio/campbell_robert_1808_94_12E.html

¹² www.biographi.ca/en/bio/black_samuel_7E.html

¹³ www.biographi.ca/en/bio/mcleod_john_m_7E.html

¹⁴ www.biographi.ca/en/bio/dawson_george_mercer_13E.html

4 Human History of the Kaska Dena Territory

The history of our human ancestors is preserved in the archaeological record and provides us with a thorough but not complete understanding of pre-contact societies in Kaska Ancestral Territory. What they can tell us about the people who once lived in the region varies on the geological record. In Northern British Columbia and Southeast Yukon, this record is unique, and the archaeological sequencing that transpired from the regions environmental factors and cultural influences created a part of the world that is one of the most significant areas for archaeology in North America.

Early on in the field of archaeology, typologies were made to establish chronological sequences based on the different artifact types in the different ecological regions. In the Subarctic and Boreal regions of Canada, there are broadly six sequencing periods of note that created the history of the archaeological record in this region. Many researchers have reviewed the culture history of this broader area and presented the information using a variety of terms and temporal ranges (Clark 1981; West 1996; Workman 1978; Stryd and Rousseau 1996). The archaeological chronologies that best characterized the stage of history in the region are the:

1. Beringian Period (Pre 13,000 BP)
2. Transitional Period (13,000 – 9,500 BP)
3. Early Prehistoric Period (9,500 – 5,000 BP)
4. Middle Prehistoric Period (5,000 – 1,200 BP)
5. Late Prehistoric Period (1,200 BP – 1800's)
6. Historic Period (1800's – Present)

4.1 Beringian Period (Pre 13,000 BP)

The first period of note was during the time of the Late Wisconsin glacial epoch, which marked the most recent degree of the continental ice sheets merging in North America at approximately 20,000-18,000 years before present (BP). During this time, a large amount of water within the glacial ice sheets caused the lowering of the ocean levels, which exposed the landmass between Siberia and Alaska known as the Bering Strait Land Bridge. This unglaciated area, known as ‘Beringia’, extended from northeastern Siberia into the central Yukon. For many years the most commonly accepted theory by archaeologists was that the first peoples of Northern America came via the Bering Strait Land Bridge from Siberia, into Eastern Beringia, and eventually down an ice-free corridor into North America. These early migrants were commonly associated with the particular tool types known as the Clovis culture, and its hallmark fluted bifacial spearpoints that are prevalent throughout North, Central and South America. There is, however, a growing body of evidence and literature supporting a pre-Clovis peopling of North America dating to before the establishment of an ice-free corridor. This evidence has strengthened alternative theories which describe how people moved into northwestern North America via a maritime route along the west coast.

Regardless of the appropriate theories of the earliest humans into North America, there is substantial geological evidence to suggest that during the Late Pleistocene (17,000 – 11,700 BP), the Kaska Dena Ancestral Territory had been mostly covered in a large ice sheet. In the Northern Rockies portion of the Kaska Territory, researchers believe that this mountain range experienced some of the latest episodes of glaciation which began around 15,000 BP, where deglaciation also began earlier as soon as 14,000 BP (Bobrowsky & Rutter 1992: 36). These mountains, therefore, could have experienced as few as 1,000 years

of glaciation which explains the hard shale formations in the Northern Rockies. Since deglaciation began, the climate shifted to become warmer and drier (Wicander & Monroe 1993:520). Supported by this climate change, travel was better facilitated by the comparatively lower valleys that were left behind after the glacial carving that created the Rocky Mountain Trench corridor as well as the major meltwater channels that were created at the end of the ice age – the Liard River is a prime example.

This recent geological history suggests that human occupation could have begun as early as 14,000 years ago in this region. The idea that the Northern Rockies experienced a relatively light treatment during the late Wisconsin glaciation invokes thoughts of the possibility of deeply buried proglacial sediments in the valleys which may be valuable sources of information regarding the earliest plant and animal, including human colonization of the area (Harris, 2001). Unfortunately, there has been no archaeological evidence to date that demonstrates that human-occupied these areas during this time in history.

Other evidence that would suggest human occupation during this time, is within the oral traditions held by the Kaska Dena. After the glacial advances in the Pleistocene, there are a variety of stories that Ethnographer John Honigmann recorded during his time with the Kaska that would suggest the mutual occupation of Humans and Mastodons in this region. The Kaska word for this prehistoric creature is known as ‘negutih’. Although these oral traditions have not been confirmed by faunal evidence in Kaska Ancestral Territory, there is evidence of woolly mammoth populations being present at the end of the Pleistocene in the Peace Region (Harington, 1978). Based on samples of pollen in silt in sites in Kaska Territory, it shows that a herbaceous tundra environment existed during this time with local grass sedge meadows (Klassen, 1987), an ideal habitat for Mastodons and People.

4.2 Transitional Period (13,000-9,500 BP)

In the current Holocene epoch (11,700 – Present), the glacial ice sheets of northern Canada receded, and deglaciation of the area occurred. Human habitation began in some of these areas at the earliest onset of this period between 9,5000 – 10,500 years BP when the post-glacial landscape stabilized (Fulton, 1989). In British Columbia, the landscape was transformed from wet tundra to shrubby taiga, to cold grassland, mixed wood parkland, and finally, the extensive boreal forest of today.

Thomas Loy, a researcher who has done archaeological work in the Kaska Dena Ancestral Territory, devised a cultural chronology to describe the sequence and timing of cultural events in north-central British Columbia (Mitchell and Loy 1980; Loy 1984). The most critical observable differences between these units are within the artifact types and materials assigned to each period. The oldest archaeological sites in the Kaska Dena Ancestral Territory are known as the Highland period which would correspond to this transition period that allowed for the earliest human populations to develop in the region. The tool types characterized by this period consisted of obsidian blades, scrapers and engravers. Obsidian is a naturally occurring volcanic glass highly valued for its cutting qualities. It only occurs naturally in a limited number of locations, one of the primary quarry sources being from Mount Edziza near the Stikine in northwestern British Columbia, other source materials for obsidian artifacts found in Kaska ancestral territory are also connected with quarries from Keele River in N.W.T. The widespread distributions of this natural material for tools indicate trade as the most probable distributive mechanism. Chert was used for making spearheads and knives, and some of this material came from a site in the northern Mackenzie Mountains while others came from mountains surrounding places like Frances Lake (Gotthardt, 1987).

The research of Driver (1996) indicates that human habitation in northern and central British Columbia dated back to 10,500 BP based on evidence at Charlie Lake Cave, north of Fort St. John and recent excavations in Prince George also demonstrated an early occupation to 8,000 to 9,000 BP. The first occupants of the area were likely fairly mobile hunter-gatherers due to the lack of dependable and predictable resources during this period.

4.3 Early Prehistoric Period (9,500-5,000 BP)

Northeastern British Columbia was made up of a variety of different environmental regions with distinct cultural patterns. After the significant changes post-glaciation and the warming and drier climate that developed, the majority of archaeological sites found during this period of occupation appear to date older than 7,000 to 8,000 B.P. It is believed that people were most likely travelling at higher elevations for hunting and gathering and perhaps for trade purposes. The tool technology known as the microblade was predominately used in Kaska Ancestral Territory during this early prehistoric phase. Archaeologist, Loy (1984) accounts for these changes as the result of a significant environmental change that saw the transition from a bison supporting prairie to the relatively austere modern boreal forest. This change appears to have started between 5,000 and 4,000 years ago.

Microblades, made from Obsidian were prevalent in interior Alaska throughout the Holocene and probably spread down from there through Yukon to the Rocky Mountains. Outside of Alaska, during the Middle to Late Holocene microblade tools appear to settle in the southern Yukon, western Mackenzie District, and on the southern British Columbia coastline. Microblade technology then spreads northeastward, mainly in the central Northwest Territories and northern Alberta. Why microblade technology replaced a pre-existing adaptation is unclear, but the possible patterning in this new tool type was the mountain adaptation of the people during this time. When analyzing the microblade tool assemblages in the archaeology record there is a clear connection between its distribution and the location of Athabaskan speakers. In the Late Holocene, microblade technology is represented in identifiable Athapaskan assemblages in British Columbia, Yukon, Northwest Territories, and northern Alberta (Magne and Fedje, 2017).

Based on archaeological resource inventories carried out in the upper Liard River drainage of the Kaska ancestral territory, sites have been documented containing evidence of microblade technologies up to 7,790 years old. These sites were found under a contemporary fish camp and represents the oldest archaeological site in the southeast Yukon (Hare, 1998).

4.4 Middle Prehistoric Period (5,000-1,200 BP)

In the Middle Prehistoric Period evidence for cultures started to accumulate that was more easily recognizable as ancestral to those of the ethnographic period. There was cultural patterning that was develop based on the indications of regional exchange of ideas and tool technologies. This period, known more broadly as the Northern Archaic Tradition, has been characterized by a community of hunter and gathers that utilized lithic assemblages of side-notched projectile points, unifacial knives and endscrapers (Hare et al., 2008). Loy (1984) characterized the local inventories of tools in the Kaska Ancestral territory as the Muncho and Liard period where the types were reduced to mostly include large bifaces, side-notched points, and heavier scrapers.

During this phase in history, there was an increased movement of people into northern British Columbia due to the northward expansion of the postglacial forests, which corresponded to the transition of the microblade technologies into an archaeological sequence of great variety. This period was known by Loy (1984) as the Callison Period in the Kaska Dena Ancestral Territory. During this time, the use of obsidian was reduced as is the assortment of smaller tools. After about 4,500 B.P., there is less evidence of microblade use in the Yukon, and an increase in the use of notched projectile points and a variety of scraping and carving tools labelled the Taye Lake phase in the Yukon (Hare 1995; Workman 1978).

Notched projectile points were mainly associated with dart-throwing technologies used by alpine hunters. Caribou, for example, was an important species for the Kaska Dena. The seasonal round of the Kaska was tied to the annual movements of the local herds. Recent archaeological finds in permanent alpine snow patches have shown the prehistoric human hunters of caribou. It was noted in early ethnographic accounts that the Kaska also used the atlatl as the dart-throwing technologies used to hunt caribou (Honigmann 1964;1981).

The reason for this change from Microblades to dart throwing technologies is debated, but one of the theories is about how there was a significant archaeology shift that occurred in the middle prehistoric period that postdates the early microblade technology but predates the destructive geological event that occurred in White River, Yukon. Workman (1978) reviewed previous work in the area within the larger archaeological record and evaluated the sites in the southern Yukon at this time as represented by the Taye Lake Phase which has been assessed as ranging from approximately 5,000 BP to around the White River volcanic eruption at roughly 1,200 BP. These sites typically were shallow lithic scatters with burned bone and fire-broken rock. Fladmark (1984) an archaeologist who studied locations near Mountain Edziza, noted that the earliest components without microblade occurred around 3910 BP. Many of these sites occurred in the context of a single occupation episode with low cultural material densities most likely due to the direct result of highly mobile subsistence and settlement strategies of the time.

4.5 Late Prehistoric Period (1,200 BP - 1800's)

This time period, also known as the Athabaskan Period, is defined by archaeologist components dating after the White River eruption around 1200 BP. The transition of new technologies was abrupt based on the change from atlatl darts to and bow and arrow artifacts found in glacial archaeology finds in the southern Yukon (Hare et al., 2004). Loy (1984) argues that this sequence of events could have been experienced by a single, continuing population in the Kaska ancestral territory. That is to say, the direct ancestors of the present population of Kaska Dena could have left the very oldest cultural remains in the area. Indeed, Loy accepts the idea that the Kaska Dena are aboriginal to their Ancestral Territory and can trace their origins back to well before the arrival of Europeans anywhere on what is now Canadian soil. Other sites of note that correspond with this theory are within the archaeology inventory in the upper Liard river drainage, suggest the multitude of late prehistoric sites in the area (Gotthardt, 1993).

Due to the location of the Kaska in the northern interior BC and southeast Yukon, many of the tool technologies were rooted in favour of the natural habitat based on the resources available. Before European contact, traditional subsistence activities typically featured a seasonal round of winter hunting and summer fishing covering vast areas. In summer, families congregated at lakes and rivers, where fish and plants were collected, dried and stored. In late summer, small groups dispersed throughout the uplands and higher valley systems to hunt in clan-owned territories. Temporary campsites, situated within a variety of ecological zones, were often reoccupied year after year to exploit seasonally available

resources (Honigmann, 1981). An example of one of these yearly rounds is found in the Coal River Hotsprings Provincial Park. Known as the 'Tsa Site', this place marks a continual occupation of a spring beaver hunting camp both before and after the white river ash eruption around 1250 BP (Greer, 1985).

There are also historical factors to concern when looking at the tool technologies found in these regions. Before the establishment of the fur trade in the region, the early Kaska ancestral communities also had access to firearms and metal tools from the intensive trade that was occurring to the east and on the Northwest Coast. These trade routes provide the basis of the trails that were an intrinsic part of this economy and traditional subsistence as a whole, in which some still exist to this day.

4.6 Historic Period (1800's to the Present)

Contact with neighbouring Nations was vital to First Nations economies. Interior bands traded hides, furs and obsidian to coastal groups for fish oil, dentalium, woodwork and blankets. Trails were an intrinsic part of this economy and traditional subsistence as a whole. In the early to mid-1800's the presence of euro-Canadian influences was well-entrenched in the Kaska Ancestral Territory. The principal ethnographic descriptions of the Kaska Dena during this period are available in Section 5.5 and review the colonial history based on exploration, the trapping trade, and historic gateways of travel for many different motives.

Archaeological sites found within the Kaska Dena Ancestral Territory suggest the following cultural that areas in southeast Yukon and northern BC were occupied for at least the last 7,000 years. The earliest peoples in the Kaska Ancestral territory came equipped with tools, and a way of life adapted to hunting and surviving in the cold tundra environment. As the climate transformed into boreal forests, people adjusted by changing both their technology and their culture. During that time the people in this region encountered environmental transitions from grasslands to parkland to boreal environments with varying degrees of climate and animal populations to support them. Trade with neighbouring committees also changed in linkages from extensive – widespread trade, to minimal outside trade based on the human population. During the era of euro-Canadian contact, the local people saw a further reduction of trade in non-perishable materials and the stabilization of both animal and human populations due to the outside influences of European trade.

The most notable effects we see in the archaeological record is the reduction in both the numbers of tools and their variety as the area succumbed to borealisation. The decline in the variety of tools, types and number of tools, and even numbers of sites is presumed to relate to the reduction in the population of both absolute numbers and types of game and their human predators. Throughout the Kaska ancestral territory, there were specific source areas that are linked to the artifacts of stone tool manufacturing but there was also a high use of organic materials such as bone, antler and wood that the Kaska used in their hunting technologies. The acidic nature of the boreal forest soils hindered the preservation of these types of materials.

The remoteness of the region and the poorly understood record of environmental change have discouraged archaeological exploration. It is difficult to find archaeological sites in the boreal forest where they are scattered across the landscape, only some being found located near spatial concentrated games resources.

As a result, there is very little known of the archaeology of the Kaska Dena Ancestral Territory, but by the time of the first contact with Europeans early in the 19th century, the Kaska Dena were fully adapted to

their demanding environment. To the Kaska Dena the cultural resources that make up the archaeological and paleontological record of their ancestral territory are of significance to the scientific, ethnic, historical and economic understanding of who the Dena were and are today.

5 Kaska Dena Land and Resource Economy

The earliest explorers reported meeting Kaska Dena people in the 1820s, but they had little to say about Kaska Dena traditions. Instead, we must rely on the words and analysis of more recent observers, especially those of John J. Honigmann (Honigmann, 1964).

John Honigmann, anthropologist, was the academic authority on Kaska Dena culture at the time of contact. In 1942, he was the first professional observer of Kaska Dena behaviour and his published records are a prime source of information. He was there as recent history evolved.

Honigmann's ethnography along with oral history and the collected records of traders, explorers, Indian Agents, missionaries and police officers presents a vision of Kaska Dena culture when John McLeod struggled up the South Nahanni River in 1823.

5.1 Kaska Dena Culture at Contact

Almost everything that sustained Kaska Dena culture at the time of contact (1823, more or less) came from the Kaska Dena Ancestral Territory including food, water, shelter, heat, housing, clothing, tools, health care, education, and entertainment. The Kaska Dena traded for special goods with their neighbors, but what they needed to survive came from their own lands and inventory of resources.

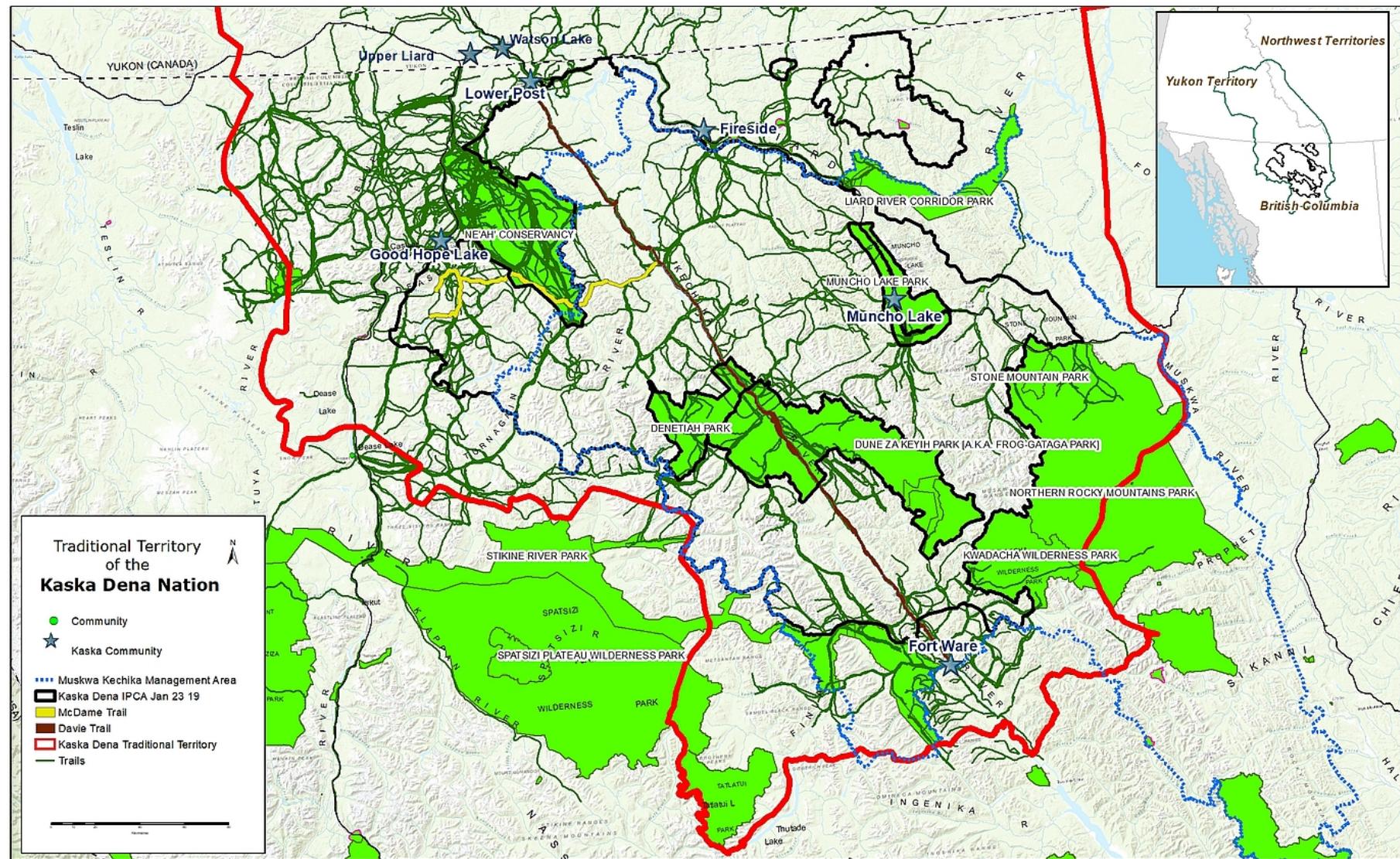
5.2 Technology

Cutting tools were made of fine-grained stone and attached to horn and antler handles. Bone was used to make knives, scrapers, awls, sewing needles, eating implements, and arrow points.

Wood and bark were used to make canoes, storage and drinking vessels, sleds, snowshoe frames, bows and arrows. Animal skins were used for clothing, bedding, ropes and lines, storage bags and even boats.

Shelters ranged from the temporary brush lean-to to fairly elaborate conical and A-shaped houses built of close-placed logs and covered with moss and earth. Some were large enough to house two or three families for a winter. Permanent houses usually had a sweat bath a short distance away, a cache platform, and usually a hut for the seclusion of menstruating women.

The Kaska Dena mostly travelled on foot, with the help of pack dogs. They had watercraft, including moose hide shells, dugouts, and rafts, but the Kaska Dena avoided the powerful rivers in favour of foot travel. A map of their traditional trails throughout the territory (Map 3) shows that the Kaska Dena followed streams when they could, but also used most reasonable overland routes.



5.3 Social Organization

The extended family formed the foundation of traditional Kaska Dena groups. Because the Kaska Dena were nominally matrilineal, the extended family typically included a woman and her husband, her sisters and their husbands, married daughters and their husbands, and unmarried daughters and sons. The closest relationships were formed between sisters and their children, grandparents and grandchildren, and brothers-in-law.

The entire Kaska Dena population was divided into two matrilineal clans, the Wolf Clan and Crow Clan. A Wolf child was expected to marry a Crow child, thus assuring the greatest reach of kin relations amongst a small population. A wide web of kin relations increased each family's opportunities to use lands and resources without encountering resentful neighbours. The husband of the eldest woman in the family was the source of authority and decided how and where the family would be deployed on the land and the kinds of resources they would pursue over a season. Each family had the right to hunt and fish for food anywhere in the Kaska Dena Ancestral Territory, but land use decisions avoided places known to be used by another family.

5.4 Yearly Cycle

The Kaska Dena made economic use of a wide spectrum of plant, mammal, fish, and bird resources. Over sixty species were used for food, ranging from river fish to alpine mountain goat. Such a diverse variety of food resources occurs in very different habitats, and the Kaska Dena were obliged to move freely in their territory to exploit these resources.

In late summer, when big game animals were fattening, families moved to higher elevations to hunt moose, goat, sheep, caribou and groundhogs. Late summer and autumn comprised the main season for men to hunt and women to make dry meat, the staple food during the long winter months. In the late summer camps men were busy making snowshoes, toboggans, and walking poles. As the days got colder, the family moved to a favoured fishing lake in lower country where they built durable, comfortable houses. The cache of dry meat and berries along with fish provided all the food the family needed for the long winter months.

If during the winter the fishery failed, the family would move into territory used by a neighbouring family in expectation of sharing their success. The request to share a more productive territory was rarely refused because next year the tables may have been turned. In early spring, the family left their winter fishing camp and moved to the headwaters of mountain streams to capture beaver and other animals that began to move around more in the longer, warmer days.

In summer, the family moved to a different fishing lake, usually a well-known lake where many families would gather to renew friendships, make marriages, and plan for the next year. Summer was also the time for war and trade. Thus, a successful family would have uninhibited access to a very large base of lands containing as many food resources as possible.

5.5 Contact History

The Kaska Dena Ancestral Territory is entirely surrounded by mountains, and the great challenge for outsiders has been to find ways through this palisade of rock.

5.5.1 Historic Gateways

There are eight historic gateways into the heart of the Kaska Dena Ancestral Territory in British Columbia. To the northeast is the Liard River, which pierces the front ranges of the Rocky Mountains and offers a relatively low and level profile for foot and river travel. Still, the Liard is a powerful, dangerous river that has taken the lives of many adventurers.

From the east, the Muskwa River flanks the front of the Rockies and a tributary, the Tetsa River, leads towards a low pass between ranges of the Rocky Mountains and from there towards the Kechika River.

To the southeast, the Finlay River leads directly into the southern core of the Kaska Dena Ancestral Territory. Just before the Finlay makes a sharp turn to the west, an ancient trail (Atsi Denna Tunna, the "Davie" trail) leads over Sifton Pass and into the headwaters of the Kechika River. From there, it is downstream travel into the heart of Kaska Dena territory.

A much more difficult route followed the Finlay to its headwaters at Thutade Lake and from there overland to the headwaters of the Nass River and eventually the Pacific Ocean.

To the southwest, the Toodoggone River, an important tributary of the Finlay, leads to Metsantan Pass above the headwaters of the Stikine River and the Pacific.

Further north and west, the Turnagain River originates just below a pass separating the Arctic drainage from McBride River, a tributary of the Stikine.

To the west is the major pass between the Liard watershed and the Stikine, following the Tanzilla River and over a low pass to Dease Lake. The Dease River flows easily with only a few major rapids into the Liard River opposite the ancient meeting place now occupied by Lower Post.

To the northwest, a low pass at the headwaters of the Little Rancheria River gives direct access from the Liard to the Jennings River, a headwater tributary to the Yukon River system that drains to the Bering Sea.

All these gateways are well known in Kaska Dena history, along with others located in the Yukon part of their Ancestral Territory including passes at the headwaters of the Nahanni River in the east and headwaters of the Frances River in the west. The Nahanni was an alternative route to the Liard River and the Arctic Ocean, and across a low pass beyond Frances Lake lies the Pelly River, a tributary to the Yukon River. The presence of obsidian and chert from distant quarries confirms that these routes were used to get into and out of the Kaska Dena Ancestral Territory for a very long time, certainly long before Europeans discovered them.

Only a few of these gates were used by Europeans to enter the Kaska Dena Ancestral Territory, but all were used by the Kaska Dena and their aboriginal neighbours. There are no records of Europeans ever having used the Little Rancheria, Thutade Lake, or Toodoggone River gates.

Europeans arrived mostly along the Liard, the Finlay, and the Dease rivers.

5.5.2 Early Contact History – 1823 to 1900

Europeans discovered some of the most difficult routes of access into the Kaska Dena Ancestral Territory first (Karamanski 1983; Elias 1985). In 1823, John McLeod explored the Nahanni River, and in 1824 Samuel Black found the Turnagain River route to the Pacific, but neither of these gates satisfied the Hudson's Bay Company explorers who were looking for efficient ways of moving goods into and furs out of the interior.

After these first efforts to breach the mountains surrounding the Kaska Dena Ancestral Territory, Europeans apparently never again followed these routes.

It was not until the early 1830s that Europeans finally discovered and followed the Liard, Dease and Frances Rivers and these streams became the main access routes for Europeans for the next two generations. There never was a systematic and orderly development of the 19th century fur trade in the Kaska Dena Ancestral Territory, such as there was in much of the Canadian north. In fact, by the end of the century, only seven outposts of European civilization had ever been built and operated anywhere in the territory. Some of these operated for only a few weeks before closing their doors. John Bell traded for several weeks at a post upstream of the Nahanni River, and Campbell's Dease Lake post lasted for one miserable winter before he withdrew.

Other posts operated much longer – Fort Halkett at the mouth of the Smith River lasted from 1832 until 1865, and Frances Lake Post survived from 1840 to 1851– but when they closed, there was no trade influence anywhere in the Kaska Dena Ancestral Territory until the late 1870s. Through this long period from 1832 until 1876, there probably had never been more than six Europeans in the Kaska Dena Ancestral Territory and never more than two Europeans in any given year. Between them, they left a written archive amounting to several hundred pages of hand-written narrative, descriptions, sketches, and business records. Samuel Black and Robert Campbell who explored opposite ends of the Kaska Dena Ancestral Territory wrote the majority of these pages.

5.5.3 Samuel Black and Robert Campbell

As Black, Campbell and other explorers freely admit, they had minimal contact with the Kaska Dena beyond basic commerce and knew very little about them. Their journals make for interesting reading, but the information bearing on the Kaska Dena and their traditions amounts to a few dozen pages at most (Black 1955; Campbell 1958).

Black was a notorious bully on the trail, and his journals include a lot of bragging. Campbell was a sober Scot who gave and demanded the best, and his journals barely mention his astounding accomplishments on the trail. Campbell attracted a core of loyal, hardened adventurers--Lapi, Ketsa, and Hoole - something Black could never do. The fur trade establishment distrusted Black, but admired Campbell and eventually elevated him to partnership in the Honourable Company.

Black, Campbell and the few other journalists had little reason to exaggerate what they saw and thought. They were exploring for good opportunities to expand the fur trade, and their superiors wanted accurate information about the presence of beaver, the abilities of the Indians, and best access routes. Success in answering these questions resulted in advancement in the Company, and personal enrichment, as in Campbell's case.

In the end, the entire contact-era archive of relevant information, amounting to a thin file, should probably be taken at face value, keeping in mind that the file includes the words of less than a handful of Europeans who described the twenty or thirty Kaska Dena they met over a forty-year history in the Kaska Dena Ancestral Territory.

5.5.4 Effects of Contact

Such a sparse and sporadic European presence had an uneven impact on Kaska Dena people living far away from the main rivers chosen for trade access. The exact impacts may never be known, because the

trading explorers were interested first and foremost in trade and not in anthropology, and the few records kept by these Europeans shed little light on how Kaska Dena culture changed as a result of their activities.

One of the most obvious effects of the early trade would have been the result of European technologies. However, even this, the most concrete consequence of trade, is ambiguous. For at least a generation before McLeod's first adventure up the Liard, the Kaska Dena had received European goods from their Tahltan, Tlingit, Slave and Carrier trading partners—who had direct trading links with European explorers and traders; even when direct trade was established, the flow of goods to the Kaska Dena was a mere trickle. For years, the early explorers complained that the Hudson's Bay Company barely gave the traders wintering in the interior the supplies they needed to keep themselves alive, let alone goods to trade with the Kaska Dena.

Furthermore, the earliest traders complained that the Kaska Dena did not have the desire for goods that made them valuable to the Company. Once a family had the few metal and decorative objects they wanted, they would no longer hunt and trap for the Company. Satisfying needs rather than wants did not serve the Company's interests. Thus, the impact of new technology on the Kaska Dena in the 19th century is difficult to measure.

The Company explorers brought with them more than new technology, they also brought new disease. Early explorers actually mention only a few instances of disease and epidemics amongst the Kaska Dena, but the early explorers never met more than a few Kaska Dena and knew nothing about the rest.

Elsewhere in the north, European diseases arrived with the first trade goods, usually traded by a nation in direct contact with European traders. The Kaska Dena traded and raided for goods with the Slave and Cree to the east, the Wet'suwet'en to the south, the Tahltan to the west and the Tlingit to the north. The Kaska Dena were the end users in all these trade systems, and they were insulated for a while in their remote lands, but they must have had epidemics of European diseases that wiped out large numbers. The written record is silent.

5.5.5 Late Contact History – 1873 to 1930

Between 1865, when the Hudson's Bay Company closed the Frances Lake Post and 1872, there were no Europeans anywhere in the Kaska Dena Ancestral Territory (Elias 1985, 1986). In 1873, gold was discovered along Thibert Creek and the Cassiar Goldrush was under way. By the next year, there were 1,500 miners in the region, almost all of whom were settled in the Dease Lake goldfield near the town of Laketon (located at the mouth of Dease Creek). Every creek in the Cassiar District was quickly choked with placer operations and most of the gold was gone before the end of the century.

In 1876, Rufus Sylvester built a small store at the mouth of the Dease River, which he called Sylvester's Lower Post. His Upper Post was located at the mouth of McDame Creek near the present-day community of Good Hope Lake, and he later established an outpost at the mouth of the Turnagain River on the Kechika. This latter outpost was reached by horse pack train over an ancient trail long used by the Kaska Dena to travel across their territory. Sylvester wintered his horses on the grassy flanks of the Horseranch Range. No records of this store's activities have survived.

The Government of British Columbia had a Gold Commissioner located at Laketon during the boom years, and this person's job was to oversee mining operations and to make sure all provincial laws were followed. Especially important was the task of seeing to it that all fees, licenses, and royalties were paid over to the

Crown. The Gold Commissioners were also supposed to make a record of what was occurring in their district.

By the 1890s, the Gold Commissioner at Laketon reported that hopeful miners were reaching out from the near-exhausted Cassiar goldfield and were prospecting along the Liard, Hyland, Frances and Kechika rivers. However, the Gold Commissioner was unable to visit the mines because, he said, he had no way to travel in those remote places. Thus, the Gold Commissioner's records tell almost nothing about the Kaska Dena, where they lived, or their traditions.

The Commissioner did report that labour was in short supply throughout the district. For years, the claim owners had been importing Chinese and Japanese miners to work their claims and, in most years, there were more Asians in the goldfield than there were Europeans. The shortage of labour is reflected in the cost of moving a ton of supplies to the mines. At that time, almost all the miners and their supplies came up the Stikine River by boat to Telegraph Creek where they were loaded onto the backs of humans and horses and carried 120 kilometres over the height of land to Dease Lake. The goods went back into a scow for the journey down Dease Lake and then were carried up the creeks to the placer operations. Each ton of supplies cost \$270 to land at the site of operations.

The Tsay Iona Dena living near Dease Lake and the Dease River worked as freighters, scowmen, woodcutters and hunters for the miners, but little was recorded about the Kaska Dena in the short gold era. By the turn of the century, the Gold Commissioner's office at Laketon was closed as the gold petered out, and even this sparse record of events in the Kaska Dena Ancestral Territory disappeared.

Between 1873 and 1900, only a very few Europeans other than placer miners entered the Kaska Dena Ancestral Territory and few kept written records. In 1887, George Dawson surveyed the Dease, upper Liard, and Frances rivers and R.G. McConnell explored the lower Liard. Both worked for the Geological Survey of Canada, and they both kept meticulous notes about everything they saw. However, neither met with many Kaska Dena. In his published report, Dawson noted nothing was known of the vast landscape beyond view from the river. He also reported that he and his fellow geologists, seven in all, attracted the interest of the Kaska Dena at Lower Post because they had never before seen so many Europeans at one place at one time.

In 1893, R.G. McConnell explored up the Finlay and Fox rivers as far as Sifton Pass. In 1897, as the Klondike Goldrush was underway, Inspector J.D. Moodie of the Royal Northwest Mounted Police travelled up the Peace River to the Finlay, then up the Fox, over Sifton Pass, down the Kechika to the Turnagain River and from there to Sylvester's post on Dease River. He then continued down the Dease River to the Liard, up the Liard and Frances rivers and finally over the height of land to the Pelly River. He is the first known Canadian to travel the Kaska Dena Ancestral Territory completely from south to north, and he reported that prospectors were building cabins and trapping on Kaska Dena land.

Probably from 1873 until the early 20th century the Kaska Dena Ancestral Territory was never entirely free of Europeans, but they were very small in number and only a very few met Kaska Dena people or wrote about them. In 1911, Indian Agent J.D. Cox reported that he had heard of the Kaska Dena but admitted that he had no idea of who they were or where they lived. He had never met a Kaska Dena person. The next year, Indian Agent W.S. Simpson met several Liard River Kaska Dena at McDame Creek, probably Tsay Iona Dena, but he learned little from them. This was the first official contact between a representative of the Crown and the eastern Kaska Dena.

Between 1912 and 1928, the Kaska Dena virtually disappear from the official record. In 1928, Harper Reed was assigned Indian Agent for the Liard and Stikine districts, an office he held until 1942. Reed was the first experienced bureaucrat in the Kaska Dena Ancestral Territory, and he left a rich archive of records behind. When he arrived, he knew only that there were Kaska Dena living at Frances Lake, along the Liard River, and in the vicinity of Fort Graham in the south.

Reed learned quickly, but it was not until 1936 that he met two men from Toad River and was able to describe the lands they occupied. Only then, a mere 83 years ago, could it be said that the Crown had finally met representatives of all Kaska Dena.

5.5.6 Poachers and Dispossession – 1930 to 1940

Harper Reed arrived in the Stikine District on the eve of the Great Depression when outside attention again focused on the Kaska Dena Ancestral Territory. For the entire decade from the late 1920's through the 1930's, Canadians and Americans hoping to make a living in a world where there were no opportunities for employment invaded the territory. They went trapping, often ignoring the fact that they were trapping on lands already occupied and used by Kaska Dena trappers.

Reed spent a great deal of his working time trying to keep the illegal trappers out and to get the trapping grounds registered in the names of Kaska Dena trappers. This was an impossible job for one low-level bureaucrat. The poachers came into the Kaska Dena Ancestral Territory using the Liard River, Finlay River, and Dease Lake gates, none of which were explored, mapped or described. Except for the latter gate, Reed knew nothing at all about the Finlay- Kechika region or the lower Liard River. Furthermore, police officers, game wardens and higher Indian Affairs officers ignored Reed's protests that the Kaska Dena were being pushed off their hunting grounds and continued to issue trapping permits to destitute southerners.

For a few years, Reed had an ally in his struggle to protect Kaska Dena interests. In 1926, Father E. Allard was sent to establish Catholic missions amongst the Tahltan and Kaska Dena. He built his church at McDame Creek, and from there travelled extensively in the Kaska Dena Ancestral Territory. A compassionate man, Allard lobbied hard with his church hierarchy to support aboriginal interests, and he helped Reed's efforts to document Kaska Dena needs. Father Allard drowned in 1935 when his canoe slammed into a logjam at Cottonwood Rapids on the Dease River and he was drawn under the packed trees. Allard kept good records and some of his observations were published in anthropological journals.

By the time the Second World War recreated the global economy, most Kaska Dena families had been disturbed by the alien trappers, many were completely dispossessed of their lands, and an unknown number were dead of diseases carried into the Kaska Dena Ancestral Territory. The Kaska Dena never fully recovered from this assault; trapping grounds that had been licensed to outsiders in the 1930's were beyond their reach and remain so to this day.

5.5.7 The Alaska Highway – 1940 to 1960

The problem with poachers almost disappeared when the wartime economy revived, but the few trappers were nothing compared to the thousands of American soldiers who arrived to build the Alaska Highway. The Alaska Highway for the most part follows ancient Kaska Dena routes from the eastern gate along the Liard River, and through the western Rancheria River gate to the Pacific.

The first construction crews, materials and equipment arrived along the ancient route up the Stikine River and down the Dease to Lower Post. Even though some Kaska Dena men worked the scows used for transport, the 500 American soldiers camped around the reserve complained about the presence of Indians at Lower Post and wanted them removed. Father Poulet, who had replaced Father Allard, refused to let the army enter the community so they were forced to camp all around the outskirts of the tiny village. The Alaska Highway was, of course, completed and in less than a year the remote heart of the Kaska Dena Ancestral Territory was wide open to all the influences that follow access. Scarce goods that once took two years to reach Fort Halkett now reached Lower Post in two days.

There was a moderate demand for wage labour paying cash with which to buy a great variety of new technologies.

Post-war demand for accessible wilderness big-game hunting resulted in the entire Kaska Dena Ancestral Territory being assigned to commercial hunting outfitters by 1946. In 1952, the Cassiar Asbestos Mine started operations and provided impetus for a highway down the west side of the Kaska Dena Ancestral Territory (now Highway 37).

Indian Affairs bureaucracy followed the highway. Children were shipped out to residential schools as soon as the road was complete, and in 1952, a residential school was built at Lower Post. Like everywhere else in northern Canada, federal school policies either divided families or forced them to relocate into reserve villages. In 1952, without any consultation, the northern Kaska Dena traditional groups were joined in the Liard River Indian Band.

5.5.8 Finlay River – 1900 to 1990

The Finlay and Fox rivers provide a natural route over a low pass to the headwaters of the Kechika River and the heart of the Kaska Dena Ancestral Territory. No doubt, people were using Sifton Pass to move in and out of Kaska Dena territory for purposes of trade, marriage, cultural exchange, and battle, but there is no record of Europeans travelling the route over Sifton Pass before R.G. McConnell of the Geological Survey of Canada in 1893.

Apparently, however, during the Cassiar Goldrush, cattle were driven from the Fraser River, probably near Prince George, overland all the way to Dease Lake. Their route went over Sifton Pass, down the Kechika, up the Turnagain to the headwaters of the Stikine River and from there to Dease Lake and, finally, to McDame Creek. The Kaska Dena recall this as a time "when cattle littered the trail" (Stone 1996).

Once established, the Sifton Pass route became a favourite for American and Canadian miners, poachers and other entrepreneurs. Until recently, however, the community of Kwadacha (Fort Ware), at the confluence of the Finlay and Fox rivers, was one of the most remote settlements in Canada, accessible only by aircraft or hard traditional foot trails. No road came anywhere near the community. In the past few years, forestry and mining roads have penetrated the approaches to Sifton Pass and Kwadacha is facing the challenges of easy access.

5.5.9 Recent History

The history of the Kaska Dena and their lands and resources is not exceptional. They are a people who long used, occupied and defended our ancestral territory. Pitted against them were provincial and federal governments, powerful industrial interests, and the agents of alien culture - traders, missionaries, Indian Agents, fierce competitors, game wardens, police, and residential schools. At times they gave way before

relentless pressure and at times they pushed back. There are many aboriginal peoples in Canada who can match this broad sketch of contact history, but in the case of the Kaska Dena, all this happened within living memory.

5.5.10 Present Day Situation

The Kaska Dena Council was established in 1981 to represent the interests of the Kaska people with respect to land claims. The Kaska Dena Council submitted a comprehensive claim in 1982 on behalf of five communities represented through the Fort Ware Band (now called the Kwadacha First Nation) and the Liard First Nation. This claim was eventually accepted for negotiation by the Governments of Canada and BC in October 1993.

At the time of the original claim submission the Liard First Nation, which was established in 1961 by the amalgamation of five Bands (Francis Lake, Watson Lake, Casca, Nelson River, Liard River), represented the interests of the Kaska residing in the B.C. communities of Good Hope Lake, Lower Post, Fireside, Coal River, Liard, Muncho Lake, and Toad River.

In 1985 a referendum was proposed to determine if the Liard First Nation should split into three separate Bands; Liard, Lower Post and Good Hope Lake. Such a referendum was held in Good Hope Lake where it passed. Subsequently, Good Hope Lake separated and established the Dease River First Nation. The remainder of the Liard First Nation membership, however, decided not to separate. In 1981, the Fort Ware Indian Band joined the Kaska Dena Council. Currently, the Kaska Dena Council represents the interests of the Dease River First Nation, Lower Post – Daylu Dena Council (part of the Liard First Nation), and the Kwadacha First Nation.

5.5.11 Public Input Present-Day Communities

Currently there are 3 major Kaska Dena settlements found within the British Columbia portion of the Kaska Dena Ancestral Territory; they are Lower Post ('D'aelyu'), Good Hope Lake (Kidizah) and Kwadacha (Fort Ware). Several other smaller communities also exist, including Fireside, Coal River, Liard River, Muncho Lake, and Toad River. Lower Post, as described earlier, was the site of an important Kaska Dena meeting place.

The construction of a trading post in 1876, and its subsequent take-over by the Hudson's Bay Company, had the effect of drawing in and concentrating the local aboriginal population which was composed predominantly of Kaska Dena. As the trading post became more permanent, the local aboriginal population began to settle in the area first at Lower Post and later in the nearby community of Watson Lake. In the early 1950s, the Hudson's Bay Company closed their office at Lower Post but the community continued. Following its establishment as a trading post, Lower Post was further supported by a number of transportation improvements which helped link it with more populated areas. Most notable was the construction of a small airstrip in 1925 allowing it to become the first stop on an air route from Edmonton to Whitehorse, and the construction of a rough road linking it to Watson Lake which would eventually become part of the Alaska Highway. The construction of the Alaska Highway during the World War II vastly improved its connection with the outside world. In 1953, Lower Post was selected as the site for a residential school that served a large region in northern B.C. and the Yukon. The school played a major role in the life of the community until its closure in the mid 1970s.

Today, Lower Post has a fluctuating seasonal population and has received some benefits from local mineral and forestry development. Traditional activities, such as hunting and trapping, continue to be very

important to both the community's cultural and economic health, although wage employment is growing. Currently the headquarters for the Kaska Dena Council is at Lower Post.

6 Overview of Kaska Dena Ancestral Territory in British Columbia

In the following sections we present an overview of the Kaska Dena Ancestral Territory — its physical features, climate, biogeography, vegetation, wildlife, human history and geography, including its communities, and its forests and forest uses.

6.1 Physical Features

6.1.1 Geographic Setting

The Ancestral Territory of the Kaska Dena in British Columbia is an area encompassing approximately 10 million hectares of forested lowlands and plateaus, and mountainous terrain. The Territory extends to the Yukon Territory in the north, and encompasses the Cassiar Mountains in the west, the Rocky Mountains in the east, and continues down the Rocky Mountain Trench south, to the Akie River (Map 1).

The Territory is characterised in the south by the large, flat valley of the Rocky Mountain Trench enclosed by rugged mountains and smaller valleys to the east and west. The landscape of the northern portion of the Territory opens up north of Sifton pass to the Yukon Territory into vast plateaus dissected by large river systems. In the south, the village of Kwadacha (Fort Ware) is situated at the confluence of the Finlay and Fox rivers. The community of Good Hope Lake is located in the northwest part of the Ancestral Territory on the Cassiar Highway (Highway 37), a short distance north of the Dease River. Lower Post is situated at the confluence of the Dease and Liard rivers, just south of the border between the Yukon and British Columbia. The proximity of the communities to major river systems demonstrates the importance of the rivers for the Kaska people in trade, travel and sustenance.

6.1.2 Drainage

Water drainage from the Kaska Dena Ancestral Territory is primarily to the Mackenzie River and Arctic Ocean via the Liard and Peace River systems. Sifton Pass in the Rocky Mountain Trench, at an elevation of 998 m, defines the point at which the northward drainage to the Liard River system is separated from the southward flowing drainage to the Peace River system. It divides the southward flowing Finlay and Fox rivers from the northward flowing Kechika River. The Kechika River drains into the Liard River which drains east and north, eventually discharging to the Mackenzie River in the Northwest Territories. The northwestern portion of the Territory is dominated by the Dease Plateau and is dissected by the Dease River which flows from Dease Lake into the Liard River, at the community of Lower Post. In general, the southern streams and rivers drain into the Finlay River system and then flow into Williston Lake, and eventually into the Mackenzie River via the Peace River.

Only a small portion of the Kaska Dena Ancestral Territory is drained by river systems that flow to the Pacific Ocean. The upper reaches of the Stikine and Skeena River systems extend into the southwest portion of the Kaska Dena Ancestral Territory.

6.1.3 Physiography

The information which follows on the physiography of the Kaska Dena Ancestral Territory is summarized from Holland (1976). The southern section of the Kaska Dena Ancestral Territory is defined by the rolling and often terraced topography of the Rocky Mountain Trench, which ranges from two to fifteen kilometres in width (Map 1). On the eastern flanks of the Rocky Mountain Trench the Territory includes the rugged Muskwa Ranges of the Rocky Mountains which extend north to the Liard River. From the Liard

River north to the Yukon border, the Territory encompasses the rounded and flat-topped summits and timbered ridges of the Liard Plateau.

The Territory extends east to where the Fort Nelson River joins the Liard River, and south to the confluence of the Muskwa and Tuchodi rivers. The northeastern section of the Territory where the Liard and Fort Nelson rivers meet is the flat and gently rolling uplands of the Alberta Plateau, east of the Rocky Mountain Foothills. The mountainous area at the junction of the Muskwa and Tuchodi rivers is the eastern portion of the Muskwa Range of the Rocky Mountains. The Territory continues southwest from the confluence of the Muskwa and Tuchodi rivers to include the Truncate Range on the north side of the Akie River. On the western flank of the Rocky Mountain Trench, the Territory begins in the south on the north side of McGraw Creek in the Russell Ranges of the Omineca Mountains. In the southwest, the Territory includes the Swannell Ranges of the Omineca Mountains, west to Thutade Lake. The west is bounded by the Spatsizi and Tatlatui Provincial Parks (Map 2). Continuing northwest, the Territory encompasses the Sifton and Kechika ranges, and the eastern portions of the Stikine Ranges of the Cassiar Mountains. In the northwest, the Territory includes the Dease Plateau which consists of moderately high, flat topped ridges and rounded mountains lying east of the Stikine Ranges and the low, gently rolling lowlands of the Liard Plain. The Liard Plain merges with the Liard Plateau east of the Smith River and with the Rocky Mountain Trench at the confluence of the Kechika and Turnagain rivers.

6.1.4 Geology and Soils

Soil landscapes of the Kaska Dena Ancestral Territory are poorly sampled; the available information is from a small number of field samples taken in a limited survey. Soils and soil landscapes have been described by Valentine et al. (1978), and are summarized here, along with information on the underlying geology.

6.1.4.1 Rocky Mountain Foothills

The Foothills have landforms typical of dipping sedimentary strata with little glacial modification other than a cover of drift. The rock is folded sedimentary rock and is predominately limestone, siltstone, sandstone, and shale. The soil landscape of the Foothills is a mixture of dystic Brunisols and humo-ferric podzols. The dystic Brunisols are often found on glaciofluvial deposits which range in texture from coarse to fine sands. The humo-ferric podzols are mostly located on colluvium and morainal material.

6.1.4.2 Rocky Mountains

The Rocky Mountains are folded and faulted sedimentary and metasedimentary rocks which are chiefly limestone, quartzite, schist, and slate. The Muskwa Ranges are characterised by longitudinal valleys of considerable length and width which are eroded parallel to the structural trend along fault lines or softer, more easily eroded rock. The soil landscapes of the Muskwa Ranges are a mixture of dystic brunisols, humo-ferric podzols, turbic cryosols, and lithic soils. The dystic brunisols are often found on glaciofluvial deposits which range in texture from coarse to fine sands. The humo-ferric podzols are mostly located on colluvium and morainal material. Turbic cryosols are located in the alpine soil landscape where permanently frozen horizons are found on fine textured materials, such as moraines, where subsurface drainage is impeded. The areas of dominantly lithic soils include mixtures of bare rock and significant soil development with inclusions of ferro-humic podzols and folisols.

6.1.4.3 Rocky Mountain Trench

The Rocky Mountain Trench is made up predominately of quaternary sediments. Glacial deposits include till as drumlins, outwash terraces, and glaciolacustrine silt. The Rocky Mountain Trench soil landscape is a mixture of dystric brunisols and humo-ferric podzols. The dystric brunisols are often found on glaciofluvial deposits which range in texture from coarse to fine sands. The humo-ferric podzols are mostly located on colluvium and morainal material.

6.1.4.4 Liard Plateau

The Liard Plateau consists of folded sedimentary rocks. The ice sheet, which moved northeastward and eastward across the surface of the plateau, left drumlin forms east of the Smith River. The Liard Plateau soil landscape is comprised of eutric brunisols and turbic cryosols. The brown coloured eutric brunisols occur on calcareous, coarse textured parent materials, especially on well drained glaciofluvial and colluvial deposits. Turbic cryosols are located in the alpine soil landscape where permanently frozen horizons are found on fine textured materials, such as moraines, where subsurface drainage is impeded.

6.1.4.5 Liard Plain

The Liard Plain is comprised of sedimentary rocks. It is an area of low relief and flat or rolling topography. There is extensive drift cover with numerous lake basins. Drumlins and fluted terrain in both drift cover and bedrock are common. Several major esker systems cross the Liard Plain. The soil landscapes consist primarily of dystric brunisols. These coarse textured soils are characterised by rapid percolation and iron accumulation, especially on acidic parent materials. The presence of charcoal in soil pits indicates a relatively high forest fire frequency.

6.1.4.6 Cassiar Mountains

The Cassiar Mountains are predominately a granitic core surrounded by folded metamorphic and sedimentary rocks. Summit elevations range between 1,800 and 2,700 m. Surfaces below 1,800 m. were overridden by ice and consequently the lower summits are rounded and commonly bear a thin drift cover. The soil landscapes of the Cassiar Mountains are a mixture of humo-ferric podzols, turbic cryosols, and lithic soils.

The humo-ferric podzols are mostly located on colluvium and morainal material. Turbic cryosols are located in the alpine soil landscape where permanently frozen horizons are found on fine textured materials, such as moraines, where subsurface drainage is impeded. The areas of dominantly lithic soils include mixtures of bare rock and significant soil development with inclusions of ferro-humic podzols and folisols.

6.1.4.7 Omineca Mountains

The Omineca Mountains have a granitic core surrounded by folded sedimentary, metamorphic, and granitic rock. Summit elevations range between 1,800 and 2,700 m. Surfaces below 1,800 m were overridden by ice and consequently the lower summits are rounded and commonly bear a thin drift cover. The soil landscapes of the Omineca Mountains are a mixture of humo-ferric podzols, turbic cryosols, and lithic soils.

The humo-ferric podzols are mostly located on colluvium and morainal material. Turbic cryosols are located in the alpine soil landscape where permanently frozen horizons are found on fine textured materials, such as moraines, where subsurface drainage is impeded. The areas of dominantly lithic soils

include mixtures of bare rock and significant soil development with inclusions of ferro-humic podzols and folisols.

6.1.4.8 Alberta Plateau

The Alberta Plateau is comprised of flat and gently dipping shale and sandstone parent material. The sandstones are relatively resistant to erosion and underlie the uplands. Surfaces are generally flat to rolling at elevations of 900 to 1,200 m. Drumlins and fluted till plains are common as are a variety of moraine features. The soil landscapes of the Alberta Plateau are dominantly gray luvisols. This soil occurs on well drained morainal deposits. Slope position, gradient, and slow permeability of morainal materials result in a range from well drained to very poorly drained soils. Organic soils occupy enclosed depressions.

6.2 Climate

The Kaska Dena Ancestral Territory, in general, exhibits a northern, continental climate with long, cold winters and a short growing season. However, because it is such an extensive area and because it also has a large variation in topographic relief, it exhibits considerable variation in its climate. Section 3 summarizes some key climatic variables for the ecological zones found within the Kaska Dena Ancestral Territory.

6.2.1 Climate Change

Climate Change is a global, national, and regional matter, presenting a range of challenges for all governments. The Intergovernmental Panel on Climate Change (IPCC) considers global climate change to be the most significant ecological threat today (IPCC-Stocker et al. 2013).

Weather trends show evidence of an increase of 5.4 °C for winter temperatures from 1948–2013 for the Yukon and Northern British Columbia¹⁵. For the Kaska Dena Ancestral Territory in British Columbia, the annual temperature has increased from 1.0–1.6°C (MOE 2016; Data Range 1900—2013). Other climate changes expected to occur include changes in total precipitation amounts and types of precipitation (rain vs. snow), changes to water peak and low flows, and a higher pace of changes occurring in the Ancestral Territory versus southern Canada. Climate change is expected to cause changes in the distribution and abundance of vegetation, fish, and wildlife.

For example, where climate changes facilitate the expansion of browse species such as willow and other shrubs into higher elevations and latitudes (Sturm et al. 2001, Tape et al. 2016). Increased expansion of shrubs in northern Yukon and Alaska has resulted in moose population increases and range expansions into tundra ecosystems (Environment Yukon 2016; Tape et al. 2016). This is thought to be having negative effects to species such as woodland caribou.

The Government of British Columbia sees the importance of expansive contiguous remote wilderness as benchmarks for resilient forests, carbon sequestration, and protected ecosystems¹⁶. Some of the key climate change strategies for protected areas are the maintenance of functioning ecosystems and ensuring the movements of species within and outside of protected areas.

6.3 Biogeography

Two systems for describing ecological units are commonly used in British Columbia (Pojar et al. 1987), the "biogeoclimatic" ecosystem classification system, and the "ecoregion" classification system. Both are

¹⁵ www.canada.ca/en/environment-climate-change/services/climate-change/science-research-data/climate-trends-variations.html

¹⁶ www2.gov.bc.ca/gov/content/environment/climate-change/adaptation

briefly described here for the Kaska Dena Ancestral Territory because both are used, for different purposes, in land use planning and in the management of the land and its resources.

6.3.1 Biogeoclimatic Classification System

The biogeoclimatic ecosystem classification system incorporates information on climate, soil, and vegetation to provide a framework for resource management and scientific research. It is a hierarchical classification scheme, including zones, subzones, and variants. Unlike the "ecoregion" classification system described in Section 6.3.2, the biogeoclimatic ecosystem classification delineates altitudinal belts of ecological zones within geographical units (Pojar *et al.* 1987). The four biogeoclimatic zones found within the Kaska Dena Ancestral Territory are described in the following sections, and are illustrated, with ecoregions, in (Map 4; Table 1).

6.3.1.1 Boreal White and Black Spruce Zone (BWBS Zone)

6.3.1.1.1 BWBS Dry and Cool—1 (BWBS dk1) Zone

The BWBS dk1 biogeoclimatic zone, also known as the Cordilleran variant of the BWBS zone, is found between 250 and 1,000 m, 100 m in elevation. It occurs from the southernmost reaches of the Kaska Dena Ancestral Territory in the Rocky Mountain Trench to where the Kechika and Turnagain rivers merge. The variant is found in all of the drainages east and west of the Trench at elevations lower than the Spruce-Willow-Birch (SWB) zone. It is found in all of the Turnagain River drainage, and from Dease Lake north to the confluence of the Dease River and McDame Creek near the community of Good Hope Lake. This variant is also located in the One Mile River, Rapid Creek, and Red River drainages.

This zonal site series occurs on a wide range of landforms with morainal, fluvial, and glaciofluvial parent materials. Forests are predominately White spruce, but some forests have a large component of Trembling aspen, Lodgepole pine, and Subalpine fir. Sites dominated by White spruce with a small deciduous component have poorly developed herb and shrub layers. The moss layer is well developed. Mixed forests generally have a greater understory development and greater floristic diversity.

6.3.1.1.2 BWBS, Dry and Cool—2 (BWBS dk2) Zone

The BWBS dk2 is the northernmost variant of the BWBS zone. It is known as the Liard variant. It is found between 350 and 1,200 m in elevation, and occurs north of the BWBS dk1 variant to the borders of the Yukon and Northwest Territories. The variant covers the northernmost area with the exception of the Liard Plateau, which is within the SWB zone (see below). The SWB zone can also be located within the BWBS dk2 variant at elevations higher than 1,200 m.

This zonal site series occurs on gradual slopes with well drained morainal and glaciofluvial parent materials. Forests are Lodgepole pine and White spruce dominated with minor components of Trembling aspen and Black spruce. Another vegetation type dominated by Wild rye and Toadflax also occur on mesic sites and appears to reflect warmer and slightly richer site conditions, as well as a more recent fire disturbance history.

6.3.1.2 Spruce-Willow-Birch (SWB) Zone and Engelmann Spruce—Subalpine Fir (ESSF) Zone

The Spruce-Willow-Birch zone is the subalpine subzone occurring north of the Mesilinka River, and northeast of the Skeena River, to the borders of the Yukon and Northwest Territories. It ranges in elevation from 1,050 to 1,500 m, dropping as low as 800 m in some cold valleys. The SWB zone occurs above the BWBS dk1 and dk2 variants. It is found on the eastern flanks of the Rocky Mountains and above the BWBS

dk1 variant on the western flanks of the Rocky Mountains. The zone covers the Liard Plateau and appears above the BWBS dk2 where that variant exists.

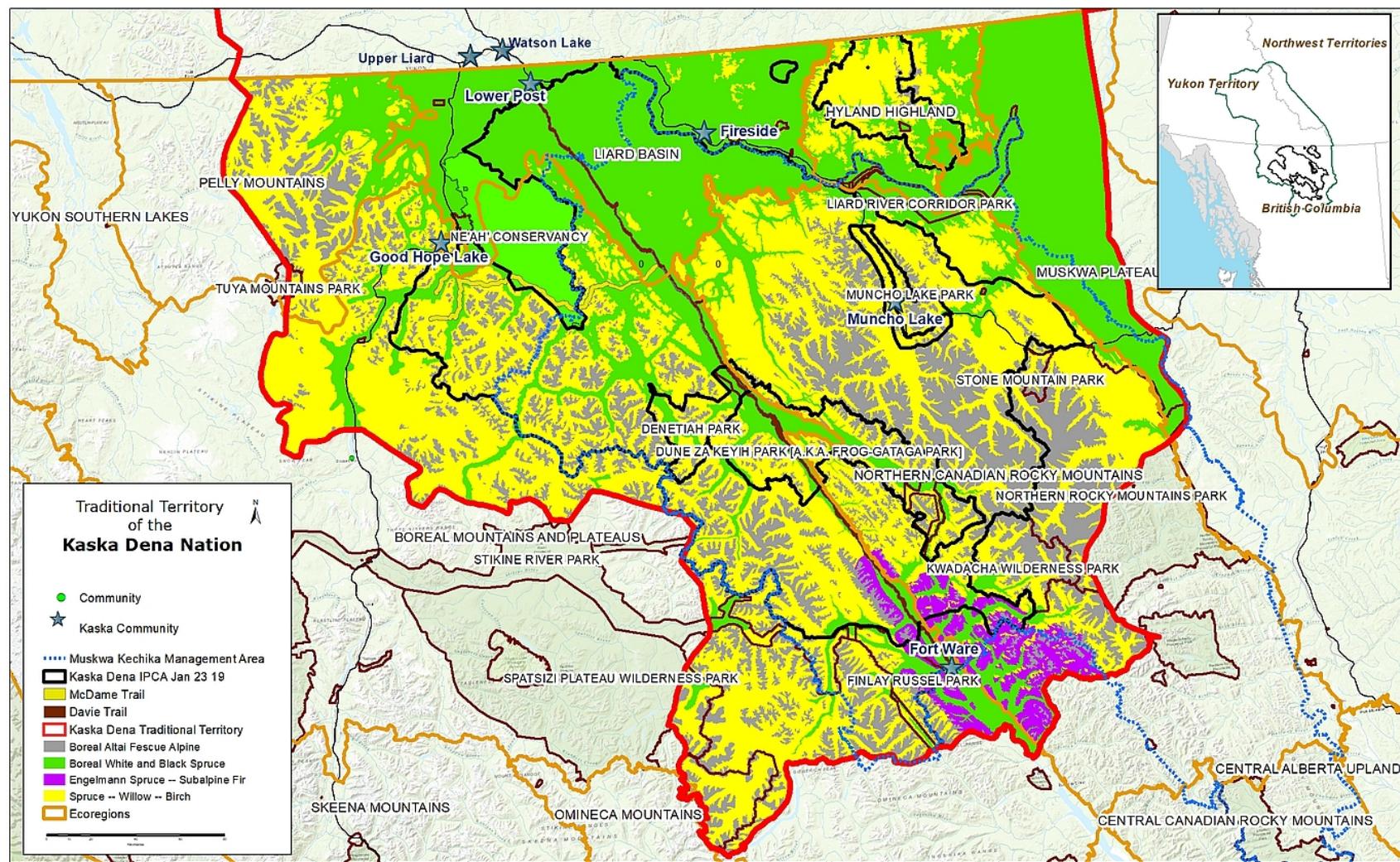
Zonal sites in the forested SWB zone have a well-developed shrub layer dominated by Greyleaved willow and Scrub birch with White spruce appearing as the dominant tree species with minor amounts of Subalpine fir. Upper elevations of the SWB are dominated by tall deciduous shrubs. The SWB zone is near the limit of climatic conditions that can support forest growth.

Associated with the Spruce-Willow-Birch zone and located in small pockets in the southern portions of the Ancestral Territory is the Engelmann Spruce—Subalpine Fir (ESSF) mv4 subzone. This is the Graham Moist Very Cold subzone and represents the northernmost extent of the ESSF zone. The ESSF mv4 subzone is subalpine, with a forest cover similar to the SWB zone, but containing larger amounts of Subalpine fir and smaller components of willow and birch. The ESSF mv4 subzone is slightly more productive from a forest management perspective than the SWB subzones. However, the ESSF mv4 subzone is only represented by a few, scattered pockets in the Kaska Dena Ancestral Territory, located between the BWBS dk1 subzone and the Alpine Tundra zone in the Cormier Range, the Russell Range, the Truncate Range and the northern slopes of Del Mountain, Grave Mountain, Mount Bennett, and Kwadacha Mountain. Because of their small size, these subzone pockets are not illustrated in Map 4.

6.3.1.3 Boreal Altai Fescue Alpine Zone

The Boreal Altai Fescue Alpine (BAFA) zone is the most extensive zone in the northern portion of the province. Most of the northern BAFA zone lies above the SWB zone, above elevations of 1,000 to 1,600 m. The climate of the AT zone is the most severe of any biogeoclimatic zone in British Columbia. The BAFA zone is the alpine zone throughout the area of the Kaska Dena Ancestral Territory. The BAFA zone is normally thought of as being treeless. Trees do occur sporadically in the alpine, however, but usually in a Krummholz form. Rocks, ice, and snow are also characteristic of much of the alpine landscape.

The zonal ecosystem of the BAFA zone is a Dwarf willow, sedge, grass, cryptogram tundra. Another widespread ecosystem is the alpine heath ecosystem, characterised by White mountain heather, White mountain avens, and Netted and Polar willows.



Map 4. Ecoregions and Biogeoclimatic Classifications situated in the ancestral territory in British Columbia.

6.3.2 Ecoregion Classification System

The ecoregion classification system is a hierarchical classification based on the interaction of macroclimatic processes and physiography. It has five different levels of classification, the finest levels of which are the "ecoregion" and the "ecosection". Unlike the biogeoclimatic classification system escribed above, the ecoregion classification system stratifies the landscape into geographical units that circumscribe all elevations. The Kaska Dena Ancestral Territory is covered by five ecoregions, which can be further subdivided into eleven ecosections (Demarchi 1996). These ecosections are illustrated in Map 4 and Table 1.

6.3.2.1 Muskwa Plateau Ecoregion

The Muskwa Plateau ecoregion lies to the east of the northern Canadian Rocky Mountains. This ecoregion is represented within the Kaska Dena Ancestral Territory by one ecosection, the Muskwa Plateau ecosection. This is a dissected upland area that rises above the Fort Nelson Lowland ecoregion to the east.

6.3.2.2 Hyland Highland Ecoregion

The Hyland Highland ecoregion is represented by one ecosection, the Hyland Highland ecosection, which is an area of rolling upland that extends from northern British Columbia into the Yukon and Northwest Territories. This ecosection provides a low barrier between the interior plains to the east and the valleys of the Canadian Cordillera to the west.

6.3.2.3 Liard Basin Ecoregion

The Liard Basin ecoregion is an extensive area of lowland to rolling upland that extends from northern British Columbia into the Yukon. Within the Kaska Dena Ancestral Territory, it has one ecosection, the Liard Plain ecosection. This is a broad, rolling inter-mountain plain with a cold, sub-Arctic climate.

6.3.2.4 Northern Canadian Rocky Mountains Ecoregion

The Northern Canadian Rocky Mountains ecoregion is an area of high, rugged mountains that rise abruptly from the interior plain to the east. Three ecosections are found in the portion of the Northern Canadian Rocky Mountains ecoregion that occurs within the Kaska Dena Ancestral Territory. The Eastern Muskwa Ranges ecosection is the area with the highest, most rugged mountains in the ecoregion. It has more snowfall than the foothills to the east. The Muskwa Foothills ecosection is an area of subdued mountains which are isolated by wide valleys. This area is in the rain shadow of the Rocky Mountains to the west. It is also more commonly under the influence of cold, Arctic air in the winter. The Western Muskwa Ranges ecosection is an area of deep, narrow valleys and rugged mountains. It has a cold, wet climate.

6.3.2.5 Boreal Mountains and Plateaus Ecoregion

The Boreal Mountains and Plateaus ecoregion is a large area with a complex of lowlands, rolling and high plateaus and rugged mountains. It has a dry sub-arctic climate. Within this ecoregion, five ecosections are represented within the Kaska Dena Ancestral Territory. The Cassiar Ranges ecosection is a broad band of mountains extending from the southeast to the northeast corner of the ecoregion. The Kechika Mountains ecosection is an area of high mountains, but low wide valleys in the rain shadow of the Cassiar Ranges to the west. The Southern Boreal Plateau ecosection consists of several deeply incised plateaus, where extensive rolling alpine and willow /birch habitat occur. This ecosection is located in the south-central part of the ecoregion. Finally, a portion of the Stikine Plateau ecosection, in the vicinity of Dease Lake, is found in the Kaska Dena Ancestral Territory. This plateau area has variable relief, from lowland to rolling alpine.

6.3.2.6 Pelly Mountains Ecoregion

The Pelly Mountain Ecoregion is rolling upland dominated by the SWB Zone, of mainly shrubs and islands of coniferous trees and extensive areas of the BAFA zone on the mid to upper slopes. It extends north from the low Stikine Upland into the Yukon and as far north as the Tintina Trench. The Alaska Highway passes in the east from the Yukon into British Columbia. The Tuya Range ecosection, in the extreme northwest corner of the Kaska Dena Ancestral Territory, is the most extensive area of rolling, alpine landscape in the Province.

6.3.3 Natural Disturbance Regimes

The Kaska Dena Ancestral Territory and the KIPCA encompasses several ecological regions each with their own unique natural disturbance regime. The Government of BC defines a Natural Disturbance Regime as “*- the historic patterns (frequency and extent) of fire, insects, wind, landslides and other natural processes in an area.*¹⁷” The Government of B.C. has developed Natural Disturbance Types (NDT) which identifies the major disturbance type by BEC zone at the landscape level (Province of BC 1995):

- NDT1: ecosystems with rare stand-initiating events
- NDT2: ecosystems with infrequent stand-initiating events
- NDT3: ecosystems with frequent stand-initiating events
- NDT4: ecosystems with frequent stand-maintaining fires
- NDT5: alpine tundra and subalpine parkland

Natural Disturbance Types are similar across ecoregions and ecosections in the Ancestral Territory and the KIPCA with NDT 3 the primary disturbance regime.

The dominant NDT's by BEC zone are distributed by elevation with the lower boreal forests as NDT 3 with wildfire, flooding, and insect infestations the ecological drivers. SWB and ESSF zones are characterized as NDT 2 with wildfire, insect, and wind the main disturbance types but at much lower frequency than BWBS zone. The alpine BAFA zone is a NDT 1 disturbance regime with rare disturbance events.

¹⁷ www.env.gov.bc.ca/fia/documents/restorationguidelines.pdf

7 Ecologically and Culturally Important Kaska Dena Land and Resource Indices

The Kaska Dena Ancestral Territory is expansive, remote, and diverse. It is the purpose of this report to provide:

- i. Cultural, social, ecological, and economic perspectives our territory;
- ii. The scope of information and indices used to define the proposed KIPCA;
- iii. Results of the conservation assessment;
- iv. Information on the ongoing approaches to successfully implement the KIPCA; and
- v. Finally, our recommendations on the proposed approaches to achieve the establishment and management of the KIPCA.

This section will provide the scope of information and indices used to define the proposed KIPCA. Information

7.1 Kaska Traditional Knowledge

Kaska Dena traditional knowledge is complex, sophisticated, and has been guiding the Kaska Dena way of life for thousands of years. Kaska Leadership had the foresight in the 1980s to recognise that capturing the oral history on maps and text was paramount to the sovereignty of the Nation. In the 1980s and 1990s several encompassing land use and occupancy studies occurred to capture the knowledge onto paper and then into digital formats (Elias 1985, 1986; Kaska Dena Council 1998). Since the 1990s, and under the oversight of the Dena Kayeh Institute additional information has been collected, refined, and digitally captured through Kaska standards and protected through Traditional Knowledge Protocols.

For the KIPCA Conservation Analysis, land and resource use spatial information of sites, trails, and use areas was summarized into themes representing:

- i. Dwellings and Trails;
- ii. Harvesting and Wildlife;
- iii. Spiritual Sites; and
- iv. Spiritual Areas.

The TK data for the Ancestral Territory in British Columbia represents approximately 16,000 – 18,000 sites, trails, and use areas. The range represents the challenges of deciphering oral histories related to sites in close proximity, the 1:250,000 maps being digitized to the standards of the day, and the overlap of data from projects collected over thirty years.

7.1.1 Kaska Traditional Knowledge within the KIPCA

The KIPCA constitutes the core spiritual and cultural landscape that is critical to the sustainability of Kaska cultural wellbeing. The use and occupancy of the KIPCA for the last ten thousand years by the Kaska Dena has resulted in a Traditional Knowledge base that connects to traditional use sites, burial sites, dwellings, trails, harvesting areas, and spiritual sites/areas. These in turn connect to traditional use areas outside of the KIPCA. The Atsi Denna Tunna-Davie Trail bisects the KIPCA providing a linkage between Lower Post and Fort Ware with a side trails extending throughout the territory that link Good Hope Lake, Fireside and Muncho communities. Trails are distributed throughout the KIPCA with higher densities in a number of

areas generally near settlement areas, major rivers, wetland complexes, large lakes, and mountain passes. Traditional Knowledge provides the basis for modern decision making in the Ancestral Territory.

Kaska define Traditional Knowledge as:

It is the information, wisdom and practices (knowledge) necessary to support the community and its culture, based on a deep and inseparable relationship between the land and the people. This includes knowledge about the environment (water, land, air), as well as personal histories, stories and legends, as well as the belief systems that guided and continue to guide the culture.

7.2 Kaska Dena Land Model

In 2014, the Supreme Court of Canada (SCC) made decision regarding the Tsilhqot'in Nation and Aboriginal Title. The decision has direct effects on the question of title, land and resources, and negotiating a Kaska Dena Final Agreement. The SCC 44 decision was reviewed and the key elements of the decision are the following¹⁸:

*..The Supreme Court applied the Delgamuukw test for Aboriginal title, which is based on “occupation” prior to the assertion of European sovereignty. The Tsilhqot'in had to show that occupation of the area claimed was **sufficient**, **continuous** (where present occupation was relied on) and **exclusive**. The Court approached this test in a culturally-sensitive way that combined common law ideas about land with those held by the Tsilhqot'in. The Court confirmed that Aboriginal title is not confined to specific village sites or farms, but can apply to broad areas that were regularly used for hunting, fishing, trapping and foraging.*

The Court held that the Tsilhqot'in had established Aboriginal title. The Tsilhqot'in had regularly used parts of the land claimed. The archeological, historical, geographic and oral evidence indicated continuous occupation. The Tsilhqot'in's pre-sovereignty practice of repelling others from their land and demanding permission from outsiders who wished to enter it showed exclusive occupation.

The court noted that Aboriginal title includes the following rights:

- *decision-making power over how the land will be used;*
- *enjoyment and occupancy of the land;*
- *possession of the land;*
- *economic benefits arising from the land; and*
- *pro-active use and management of the land.”*

Based on the review and the key pieces of SCC 44, Kaska Dena traditional knowledge resources were reviewed to assess the degree of sufficient, continuous, and exclusive criteria for the Ancestral Territory in British Columbia. The traditional knowledge resources include oral histories, spatial data representing close to 18,000 data points, and several land and occupancy studies.

Based on this information, a core area of the Ancestral Territory in B.C. was identified that meets the criteria of sufficient, continuous, and exclusive use. There are shared areas with neighbouring nations on both the east and west boundaries of the Ancestral Territory in B.C. that could be interpreted as not exclusive to the Kaska Dena.

This approach to identify were no shared areas with neighbouring First Nations exist represents approximately 65-75 % of the territory.

¹⁸ KDC Position Paper on Tsilhqot'in Application to AIP VAN LAW 1567112-v1

It was based on this review of the SCC 44 criteria that formed the Kaska Dena Land Model. The model stratified the territory, where shared areas were identified as Strategic Engagement Agreement (SEA) Lands, and exclusive use areas were identified as Stewardship Lands. Stewardship Lands require mutual consent on a suite of land and resource sectors. The mutual consent model is currently under negotiation to provide consistency with the concept of Free, Prior, and Informed Consent outlined in the United Nations Declaration on the Rights of Indigenous Peoples. The land model was developed in 2014 to achieve a 100% Kaska Dena management of lands and resources in the Ancestral Territory in B.C.

7.2.1 Kaska Dena Land Model within the KIPCA

The KIPCA contains over 80% of the Kaska Land Model area that, in Kaska Dena's view, meets the criteria of sufficient, continuous, and exclusive use and supports the proposed consent-based Government to Government management approach. However, as indicated in Section 10.1, Kaska are interested in working with neighbouring Nations to ensure all aboriginal rights, and traditional uses are protected in the KIPCA. In addition, Kaska will be pursuing opportunities for shared management with the Province and neighbouring Nations for the KIPCA.

7.3 Species and Ecosystems at Risk

Information on species and ecosystems at risk in the Ancestral Territory is limited for a number of reasons. One is the remoteness of the area results in viable and healthy populations of plants and animals, second is the actual inventories and records found for species at risk is limited resulting in probably an under reporting, and due to this limited inventory, surrogates by broad ecological classification (e.g., BEC or Ecosystems) are used to link potential of the occurrence of species and ecosystems at risk.

To assess the range of species and ecosystems at risk, the BC Species and Ecosystems Explorer¹⁹ website was used to search the provincial forest districts which intersect the ancestral territory. The search criteria was for all animals, plants, fungi (lichens and mushrooms), and ecosystems that are federally listed under the *Species at Risk Act* and provincially Red (Any species or ecosystem that is at risk of being lost [extirpated, endangered or threatened]) and Blue (Any species or ecosystem that is of special concern) listed species by the Government of BC.

There are records of 16 species with 2 endangered, 65 threatened, 9 special concern ranked species reported to potentially occur in the Skeena-Stikine, Fort Nelson, and Mackenzie Forest Districts (Appendix 2).

7.3.1 Species and Ecosystems at Risk within the KIPCA

There are a number of species at risk which are have the potential to be found within the KIPCA and these include (SC Special Concern, T Threatened, E Endangered):

- Bull Trout SC (2019)
- Short-eared Owl SC (2012)
- Wood Bison T (2003)
- Canada Warbler T (2010)
- Olive-sided Flycatcher T (2010)
- Rusty Blackbird SC (2009)

¹⁹ www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/species-and-ecosystems-explorer

- Peregrine Falcon, anatum subspecies SC (2012)
- Wolverine, luscus subspecies SC (2018)
- Porsild's bryum T (2011)
- Barn Swallow T (2017)
- Northern Myotis E (2014)
- Collared Pika SC (2017)
- Cutthroat Trout, lewisi subspecies SC (2010)
- Hotwater Physa E (2003)
- Woodland Caribou (northern mountain population) SC (2005)
- Grizzly Bear SC (2018)

The Western Arctic Bull Trout populations have been designated as a Special Concern by SARA in 2019²⁰. These populations are found in the KIPCA and MKMA primarily in the upper reaches of the western Arctic drainages. Bull Trout are a slow-growing and late maturing species that require cold, pristine waters, particularly for breeding. Many populations have lengthy migratory routes joining spawning to adult habitat. It has been documented the species is particularly vulnerable to habitat degradation, and fragmentation of river networks by barriers, diversions, or dams. The KIPCA would protect the upper reaches of the Western Arctic Bull Trout Populations and in particular breeding and juvenile survival habitats for the trout. Finally, the KIPCA will provide cold water refugia for spawning and rearing now and in the future as the climate warms.

Grizzly bears (Gla-za) are found throughout the KIPCA primarily associated with the Cassiar, Finlay-Ospika, Hyland, and Muskwa Grizzly Bear Population Units (GBPU) as defined by the Government of British Columbia²¹. To Kaska Dena, grizzly bears are respected in the Kaska culture and are in our traditional stories and legends; however, bears are not actively harvested for social, cultural, or domestic purposes. The KIPCA, at the GBPU scale will protect or provide additional retention of grizzly bear habitats (in addition with existing protected areas) as:

- 15% additional habitat retention of the Cassiar GBPU
- 12% additional habitat retention of the Finaly-Ospika GBPU
- 23% additional habitat retention of the Hyland GBPU
- 72% additional habitat retention of the Muskwa GBPU

Finally, by retaining large areas of habitats for keystone species like grizzly bears will also provide similar functions to wolverine, and other species at risk listed above.

Additional information provided by the Greater Muskwa-Kechika Conservation Assessment will be used for future management direction for species at risk.

7.4 Greater Muskwa-Kechika Conservation Assessment

Dr. J. Weaver, Senior Conservation Scientist, Wildlife Conservation Society is conducting a conservation assessment on the Greater Muskwa-Kechika Area which encompasses the KIPCA. It is systematic analysis of the Greater Muskwa-Kechika Area based on conservation biology (Map 5). It is an assessment supported by Kaska Dena in British Columbia and once completed in spring 2019 will be a key component

²⁰ wildlife-species.canada.ca/species-risk-registry/sar/index/default_e.cfm

²¹ www.env.gov.bc.ca/soe/indicators/plants-and-animals/grizzly-bears.html

of supporting documentation for the rationale for a legal designation and co-management requirements of the KIPCA.

Dr. Weaver has explained the assessment as the following:

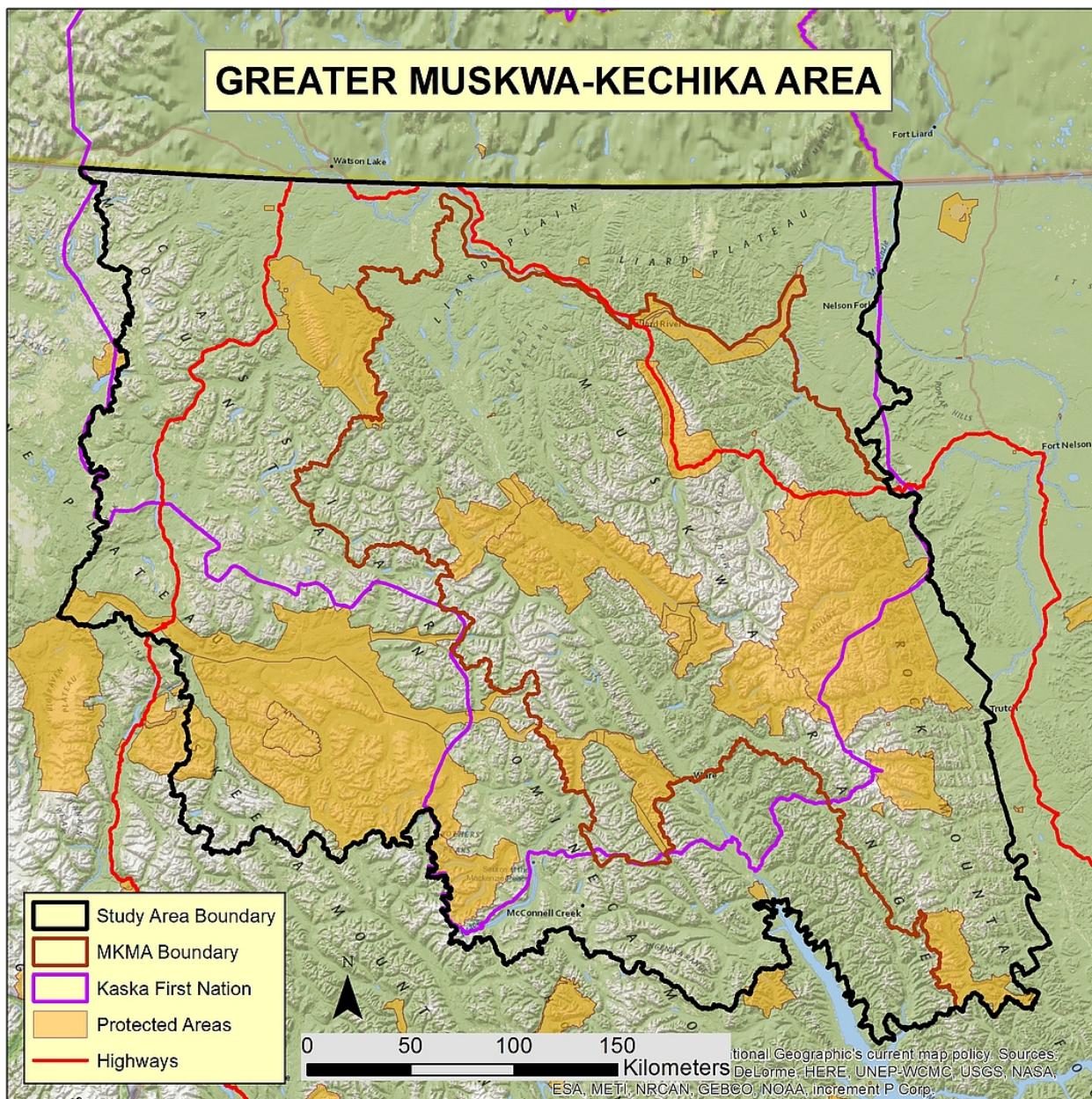
"Established in 1998, the original aim for the Muskwa-Kechika Management Area was to devise a management scheme and landscape blueprint to protect key areas while allowing limited resource exploitation in other areas (essentially, the 'bio-region model' of core and buffer areas). The legislated area covered about 63, 845 sq. km of largely roadless landscape between the Alaska Highway and the Cassiar Highway. The concept garnered widespread support among many interest groups and was launched amid much fanfare. It was heralded as the 'Serengeti of the North' in recognition of its intact landscape with full predator-prey system.

Nonetheless, important areas for ecological and cultural values were not fully protected at that time – both inside and outside the original M-K Management Area. Nor were the interests of the First Nations fully considered. Along with the prospective threats of oil & gas development/timber cutting/wind turbines, the emerging impacts of climate change have come to the forefront. New advances in the concepts and analytical techniques of conservation biology, new forms of collaborative governance, and changes in leadership at the Provincial and Federal levels have prompted a new opportunity for conservation.

The goal of our new assessment is to enhance conservation of wildlife and wildlands across the Greater Muskwa-Kechika area with a more coherent/cohesive network of conservation areas and connectivity zones. The objectives are to:

1. *describe and map the enduring features (the 'geophysical stage'),*
2. *describe and map the current and future ecological zones based upon climate-change scenarios,*
3. *describe and map current and future important areas for a focal suite of terrestrial and aquatic species, and*
4. *devise and map options for a coherent network of s ('gap analysis')."*

Once the assessment is available, it will be used to provide additional information for support of the KIPCA and be a supporting document on the development of monitoring plans, public awareness campaigns, stakeholder engagement, and as an independent western science technical document.



Map 5. Greater Muskwa-Kechika Conservation Assessment Area (Source: WCS)

7.5 Culturally Important Species and Ecosystems

7.5.1 Culturally Important Species

7.5.1.1 Woodland Caribou (*Ku-zeh*)

Woodland caribou are culturally important species to Kaska Dena, are a high-profile species of the north, and the herds (Northern Mountain Population Woodland Caribou) in the ancestral territory are considered a Special Concern under the Federal *Species at Risk Act*. The herds are of such significance that all herd winter ranges have been designated by Kaska as Kaska protected areas called Gu Cha Duga (For the Grandchildren) areas.

Woodland caribou is another prime traditional food source for Kaska Dena harvested throughout the year and in late summer for the winter food supply. Caribou hide is valued by the Kaska Dena and is tanned and made into clothing and other garments. The caribou hide is also used in making drums that are used for Kaska Dena ceremonial purposes.

Woodland caribou use a variety of ranges throughout the year. Calving, summer and rutting range are generally in alpine and subalpine habitats, and as snow levels increase after the rut, caribou will migrate through forested habitats to lower elevation forested winter ranges. Each range is separated by elevation or distance. While maintaining all the ranges are important for survival of the herds, the forested winter range, migration corridors, and calving range are specifically considered important.

The KIPCA will provide retention of seasonal ranges for up to 7 herds, and more importantly will retain seasonal ranges across elevations. This will support movement between winter, calving, summer, and rut ranges without fragmentation as well as support genetic mixing of the herds where there is overlap by individuals across annual ranges.

At the individual herd annual range scale, the KIPCA will protect or provide additional retention of woodland caribou habitats (in association with existing protected areas) as:

- 24% of the Muskwa Herd Range
- 86% of the Rabbit Herd Range
- 53% of the Gataga Herd Range
- 84% of the Frog Herd Range
- 49% of the Horseranch Herd Range
- 4% of the Finlay Herd Range
- 39% of the Liard Plateau Herd Range

The Government of British Columbia Provincial Caribou Recovery Program lists the above herds as part of the northern eco-type which are not declining as the boreal and southern mountain herds²². The program indicates habitat loss and range fragmentation from human disturbance (e.g., roads, resource development, access corridors) and natural disturbance (e.g., fires and insect infestations) as primary causes for the decline. Secondary effects from increased predator pressures from fragmentation and increased access to caribou from road/trail networks is also identified as negative effects on the herds.

The KIPCA would assist in maintaining intact herd ranges and be refugia for woodland caribou populations adjacent to the KIPCA.

7.5.1.2 Moose (ke-dah)

Moose is very important to Kaska Dena, is the primary traditional food source throughout the year, and is in the diet on a weekly basis. Moose is used mainly for food but also has many other parts that benefit Kaska Dena. The moose hide is worked on, tanned, and used for making clothing, mukluks, coats, and mitts. The bones and antlers are used for making tools and hunting items. The moose hide is also used for making rope and bindings for snowshoes and fishnets.

²² engage.gov.bc.ca/caribou/background/

Moose are one of the most widespread and commonly encountered large mammal species in the ancestral territory. They are culturally important to Kaska, and an integral component of large predator-prey systems.

Moose occupy most of the KIPCA in one season or another, and other than cow-calf pairs, moose are typically solitary during most of the year, although groups can occur on winter ranges. In autumn, males and cows may loosely group and rut (breed) in the fall (September to November) with the peak in late September and early October. Most of the winter range occurs in the valley bottoms or on large river floodplains. Moose are associated with riparian habitats, especially floodplains, lakes, and large wetlands. Generally, areas with a mosaic of habitat types are best for moose, including adequate openings for browse, forested cover for thermal, security and snow interception, and mineral licks. The most critical habitats are winter and calving ranges.

The KIPCA will provide retention of seasonal ranges for a number of moose populations, and more importantly will retain seasonal ranges across elevations. This will support movement between winter, calving, summer, and rut ranges without fragmentation as well as support genetic mixing of moose as there is overlap by individuals across home ranges and mixing with moose populations adjacent to the KIPCA.

7.5.1.3 Groundhogs

Groundhogs (di-di-ah) and Gophers (scil-li) are found primarily in the mountain valleys and mountain slide areas of the mountains found in the KIPCA.

Groundhog (marmot) and gopher are a food source for the grizzly bear. They dig up dens located on the side of the mountain valleys. Groundhogs and Gophers are a traditional food source for the Kaska Dena in the summer months and their furs are used in the making of blankets and clothing.

Groundhogs (marmot and ground squirrels) are important as indicator species for alpine ecosystems and vulnerable species (e.g., grizzly bears and wolverines). The KIPCA will provide retention of these ecosystems and maintain habitats for groundhogs which will support species such as the grizzly bear as forage species in the late summer and fall.

7.5.1.4 Stone's sheep (De-ba) and Mountain Goats

Stone's sheep and mountain goat are an important traditional food source for Kaska Dena and considered a valued traditional food delicacy because they are harder to hunt in the mountains.

Stone's sheep are found in B.C., with some limited distribution in Yukon, and the majority of the populations are found in the MKMA. Stone's sheep are found at the highest abundance for both upper and lower elevation habitats in the KIPCA and the MKMA in the province. Seasonal range is primarily alpine habitats with winter range being wind swept and low snow depth slopes. Escape terrain is a critical habitat for sheep and groups are rarely farther than several hundred meters from it. It is used to escape predators and for lamb survival. Mineral licks are a critical habitat for both sheep and goats and animals will travel off slopes to lower elevations to access licks. Inclement spring weather can have negative effects on ewe and lamb survival as well as winters with freeze/thaw cycles can cause ice crusts impeding foraging and movement impacting rams, ewes, and lambs.

It is a species being assessed in greater detail through the Greater Muskwa—Kechika Conservation Assessment (Section 7.4) and direction coming from that assessment will be used for future management direction for the species.

Stone's sheep and mountain goats have individual and group home and seasonal ranges tied to mountain blocks and primarily use alpine and subalpine habitats. Movements between mountain blocks is important for genetic mixing and population growth. Both species have been documented being sensitive to human disturbance and access corridors impeding movements between blocks and populations. The KIPCA as indicated with other species will retain habitats and ecosystems across mountain blocks and provide connectivity for populations within and adjacent to the KIPCA.

7.5.2 Terrestrial Ecosystems

7.5.2.1 Ecosystems and Terrestrial Ecosystem Diversity

Ecosystems are defined across scales and classification systems in British Columbia with a combination of ecozones, ecoregions, ecorections, and Biogeoclimatic Ecological Classification (BEC) systems used for the KIPCA and this analysis. Each unit and at each scale of application represent common ecological units based on geology, soils, climates, vegetation, biodiversity, and species. By maintaining large areas of ecological units at various scales represent a coarse filter approach to maintaining biodiversity and ecosystems at multiple scales.

This supports the ecological concept of representation and it is this approach used to identify how biodiversity and ecosystems are being represented in the KIPCA and being maintained as intact landscapes across scales.

7.5.2.2 Intact Ecosystems and Ecosystems with Natural Disturbance Regimes

There is one ecozone, 5 ecoregions, 13 ecorections, 4 biogeoclimatic zones, and provides connectivity to 10 protected areas identified overlapping the KIPCA (Table 1; Map 2).

At the ecoregion scale the KIPCA will protect or provide additional representation as:

- 38% of the Northern Canadian Rocky Mountains
- 52% of the Liard Basin
- 38 % of the Hyland Highland
- 16% of the Boreal Mountains and Plateau
- 1 % of the Muskwa Plateau

At the ecorection scale the KIPCA will protect or provide additional representation as:

- 1.5% of the Northern Omineca Mountains
- 13% of the Finlay River Trench
- 50% of the Eastern Muskwa Ranges
- 15% of the Muskwa Foothills
- 24% of the Western Muskwa Ranges
- 93% of the Rabbit Plateau
- 53% of the Liard Plain
- 1% of the Muskwa Upland
- 38% of the Hyland Plateau

- 63% of the Kechika Mountains
- 54% of the Cassiar Ranges
- 47% of the Kechika River Trench
- 0.5% of the Southern Boreal Plateau

In regard to the BEC and natural disturbance regimes for the KIPCA see Section 6.2 and 6.3.

7.5.3 Aquatic Ecosystems

7.5.3.1 Wetland Complexes and Large Lakes

Lakes are important in the boreal landscape, and large lakes are gathering places for the Kaska Dena. Often lakeshores or islands are areas of high spiritual areas or burial grounds. The Kaska Dena have identified key lakes for special management or protection including but not limited to:

- Cry Lake
- Graveyard Lake
- Turnagain Lake
- Aeroplane Lake
- Obo Lake
- Spinell Lake
- Fox Lake
- Rainbow Lake
- Meek Lake
- Scoop Lake
- Fish Lake
- Niole Lake

Wetlands, like rivers and lakes are high value to the Kaska and play an important role in the boreal ecosystem. Wetlands provide important habitats for fish and wildlife, purifies the water, and important for waterfowl. Kaska have used wetlands for trapping, hunting, fishing, plant collecting, with camps, cabins and trails nearby.

There are a number of different types of wetlands in the ancestral territory and in varying sizes. Of interest to Kaska Dena include:

- Bogs: Dense layer of peat; acidic; low nutrient content; water table at or near the surface; usually covered with mosses, shrubs and sedges; trees possibly present.
- Fens: Covered with peat; water table at or near the surface; higher nutrient content than bogs; vegetation usually characterized by sedges and grasses; trees and shrubs may or may not be present
- Swamps: Stagnant or slow-flowing pool; high nutrient content; usually covered with trees or shrubbery.
- Marshes: Periodically or permanently flooded; absence of trees; emergent vegetation; usually high nutrient content.
- Shallow Waters: Include basins, pools and ponds, as well as wetlands found beside rivers, coastlines and shorelines; submerged vegetation; floating leaved plants.

In addition to the classes of wetlands is the size and complexity of them. A wetland complex is defined by Kaska Dena as two or more wetlands including vegetation cumulatively greater than 5 ha. Wetland complexes are important cultural areas to Kaska as there is a higher density of traditional and sustenance uses around them due to their ecological importance. Simple wetlands are single wetlands, but wetlands greater than 5 ha have similar cultural and ecological importance to Kaska as wetland complexes.

7.5.3.2 Ducks Unlimited Wetlands Inventory

Similar to the Greater Muskwa—Kechika Conservation Assessment, Kaska Dena are looking to partners to provide their expertise through independent western science inventories or assessment. In regard to lakes and wetlands, Kaska Dena have the benefit of Ducks Unlimited providing a multiscale wetland inventory for the KIPCA. Aquatic ecosystems inventory is a data gap in the ancestral territory and is expensive and challenging for Kaska Dena to develop an inventory for such an expansive territory.

Ducks Unlimited has explained the inventory as the following:

The proposed project is a four-phased approach to be completed over three years to provide technical support to the Dena Kayeh Institute for the Muskwa-Kechika Management Area and other traditional lands in British Columbia. The primary focus of the project will be to support ongoing planning and management by generating products and sharing knowledge including a detailed wetland inventory, and other knowledge sources including a waterfowl habitat assessment, a carbon storage and sequestration assessment, and other wildlife habitat products (e.g., caribou, bison, if desired). We also propose to work directly with communities across the region to understand their needs and concerns, as well as engaging directly with the emerging guardians program to provide training opportunities to assist with knowledge generation and sharing (e.g., field work, use/applications of the data).

In general, this proposed project will also support:

- 1) *increasing shared knowledge on climate change adaptation and the role of boreal ecosystems, including wetlands, in mitigating climate change impacts;*
- 2) *integrating scientific knowledge, along with local perspectives and Traditional Ecological Knowledge (TEK), within an ethical space to achieve collective conservation goals, including wetland conservation and other ecological and cultural values; and*
- 3) *creating sustainable economic benefits to Northern communities while simultaneously advancing collective conservation goals.*

This proposal is intended to support the Dena Kayeh Institute's Challenge Grant proposal under the Canada Nature Fund, which if successful, would commence in June 2019. As detailed in this proposal, DUC will provide a detailed and accurate wetland inventory, along with other information products and services, which will give critical information to stakeholders engaged in land use planning and support guardians and land managers with the eventual implementation and monitoring efforts.

This project will result in detailed, digital spatial products that identify where wetlands and generalized upland features are on the planning landscape. Enhanced classification to specific wetland type provides inferences regarding wetland function and value. Wetlands provide

numerous ecosystem services, including water supply, climate regulation, and biological diversity. In the boreal, wetlands are more important than lakes in cooling the region and humidifying the atmosphere. They are also important areas for Indigenous peoples. Historically, wetlands and riparian areas have provided relatively predictable travel corridors and stable sources for food, clothing, tools, and medicine. Today, boreal wetlands, lakes, and rivers are still an important economic and dietary source for numerous Indigenous communities and have great, sometime sacred, spiritual significance.

The project is planned to commence in 2019 in partnership with Kaska Dena, be a digital tool to support advancement of the KIPCA, develop the management and monitoring programs, and be a capacity program for the Kaska Guardians. The outcomes of the inventory will address the data gap for aquatic ecosystems and provide better accuracy and precision on the identification of key wetlands and lakes for additional management requirements in the KIPCA and the ancestral territory.

The detailed proposal by Ducks Unlimited can be provided upon request.

7.5.3.3 Large River Corridors

Large rivers are found throughout the ancestral territory in British Columbia and play an important function in supporting boreal ecosystems and cultural values. Large rivers tend to be at lower elevations, with broad floodplains, riparian habitats, mosaic of wetlands, lakes, or oxbows, and with critical habitats for many of the Kaska culturally important animal and plant species. Large rivers are also important for wildlife movements or migrations. Trails, hunting and fishing places, gathering areas, sacred areas, grave sites, and communities are predominantly found adjacent to large rivers.

Kaska Dena see large rivers as critical elements to protect biodiversity, cultural values, and be a tool to link Kaska values across the ancestral territory. We see Large River Corridors as a management practice to maintain and protect the water, land, and traditional practices.

Currently the KIPCA has the following rivers identified as Large River Corridors:

- Liard River
- Turnagain River
- Major Hart River
- Kechika River
- Hyland River
- Red River
- Frog River
- Gataga River
- Finlay River
- Kwadacha River

7.5.4 Contiguous Ecosystems and Wilderness Settings

7.5.4.1 Road and Trail Distribution

The distribution and density of roads and trails is best defined at this time by the provincial Digital Road Atlas; however, many of the “roads and trails” are digital interpretations or poor inventory information from previous baseline data.

The Government of British Columbia recognises the limitations of the dataset and is currently collecting updated information through the Resource Roads Project²³.

The Road class attribute was used for this indicator of road and trail distribution as it is defined as the navigational classification used by the province. The data was grouped to include all classes except ferry and trail classes. This was done as there are no ferry routes in the KIPCA and the trail class is poorly mapped. The trail class can include designated trails such as those in the Access Management Area Regulation in the MKMA. It can also include what appear to be trails that are old overgrown seismic lines or horse trails that an ATV could not access. There are also “trails” which have no connection to other networks making them islands in the forests. Where there is known trails or trails that show connections to access corridors they were included in the indicator. Also, any features without a Road Class were not used in the indicator. Road density was not used due to the very low densities that exist in the KIPCA and ancestral territory. Comparing road densities would not be a robust indicator of road and trail distribution in the KIPCA. Rather, major watersheds were used to provide an indication of road distribution as either present or absent with some description of the access in the watershed.

Table 2. Road distribution and trail distribution within the KIPCA and in the ancestral territory in British Columbia.

Major Watershed	Road Rating	Road Rating in the KIPCA	Description
Dease River	High	Low	Highway 37 and non-status roads related to mining. There is only the McDame Trail (Kaska trail) situated within the KIPCA in this watershed.
Liard River	High	Moderate	Highway 37, Alaska Highway and non-status roads related to mining. There is the Atsi Denna Tunna, Davie Trail (Kaska trail) as well as other ATV trails situated within the KIPCA in this watershed.
Kechika River	Low	Low	Mineral roads in the upper Turnagain River Watershed but outside of the KIPCA. Kechika River only has the Atsi Denna Tunna, the "Davie" trail located in the watershed.
Rabbit River	Low	Low	No road or known trail networks in the watershed
Beaver River	Moderate	Low	Road and known trails on the eastern edge of the

²³ www2.gov.bc.ca/gov/content/data/geographic-data-services/topographic-data/roads/resource-roads

Major Watershed	Road Rating	Road Rating in the KIPCA	Description
			watershed from forestry and oil & gas development. No road or known trail networks in the KIPCA area in the watershed.
Toad River	High	High	Alaska Highway and non-status roads related to mining. There are the MKMA designated trails as well as other ATV trails situated within the KIPCA in this watershed. In addition Toad River and Muncho Lake communities are located in the KIPCA.
Finaly River	Moderate	Low	Roads and known trails on the southern and western areas of the watershed from forestry and mineral development. No road or known trail networks in the KIPCA area in the watershed. Only the Atsi Denna Tunna, the "Davie" trail is located in the KIPCA.
Pitman River	Low	Low	Adjacent to the KIPCA with no known roads or trails.
Stikine and Fort Nelson Rivers	Moderate to High	Low	Large watersheds with limited connectivity to the KIPCA. Both have areas of significant road and trail networks but there are limited networks adjacent to the KIPCA.

Intact major watersheds, especially source or headwater watersheds, are an indicator of pristine and broad intact landscapes, and therefore can be used as indicators for wilderness and contiguous ecosystems. As reported, in Section 7.5.4.1, the human footprint is very limited in the KIPCA with most of the road network, resource development, and communities located outside the KIPCA or at edge of it.

By establishing the KIPCA will provide protection or additional intact ecosystems and wilderness representation as:

- 35% of the Liard River
- 18% of the Beaver River
- 24% of the Dease River
- 66% of the Kechika River
- 0.6% of the Fort Nelson River
- 99% of the Rabbit River
- 68% of the Toad River
- 0.01% of the Stikine River
- 0.5% of the Pitman River
- 19% of the Finlay River

7.6 Land Use Designations or Management Plans

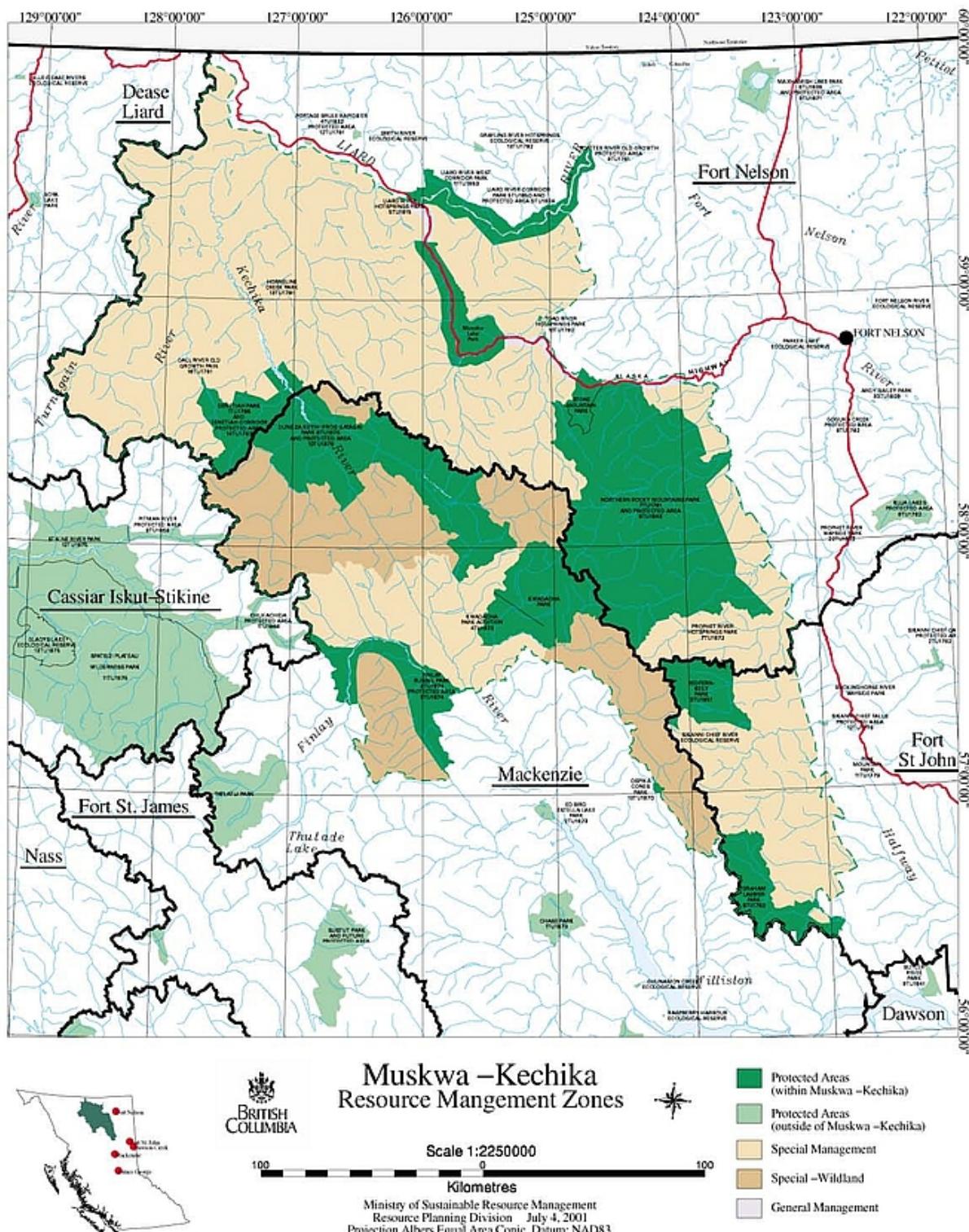
7.6.1 Muskwa—Kechika Management Area and Strategic Land and Resource Management Plans

Through the provincial Strategic Land and Resource Management Plans (SLRMP) the concept of the Muskwa—Kechika was advanced due to its wilderness settings and ecological importance²⁴. The Fort Nelson, Fort St. John, and the Mackenzie plans identified the areas, land management zones, and management designations. SLRMP's provide social direction on allowable land uses and management direction for each plan area with the range of land management designations from Enhanced Resource Development, General Management, Special Management, and Protection.

The Muskwa—Kechika Management Area (MKMA) was established in 1998 and the guidance for the area fall under the *Muskwa-Kechika Management Area Act* and the *Muskwa-Kechika Management Plan Regulation*, adopted through an order-in-council. It is an area of 6.4 million hectares.

The MKMA includes several land use designations identified through the provincial SLRMP process. The key land use designations outside of the establishment of provincial protected areas are the Wildlands Special Management Areas and Special Management Areas. The Wildlands Special Management Areas are land management zones where wildlife and wilderness values are the paramount management objective, forestry is not allowed, and mining is an allowable land use with some limitations (see Mackenzie LRMP). In addition, it is important to note that all the land management designations fall primarily under two categories: Special Management (including Wildlands) and Protection (Map 6).

²⁴ www.muskwa-kechika.com/management-area/Management-Area-2



Map 6. Muskwa-Kechika Resource Management Zones (Source: BC Government²⁵)

²⁵ www.muskwa-kechika.com/resource-library/m-kma-plans-maps

7.6.2 Kaska Land Use Plans

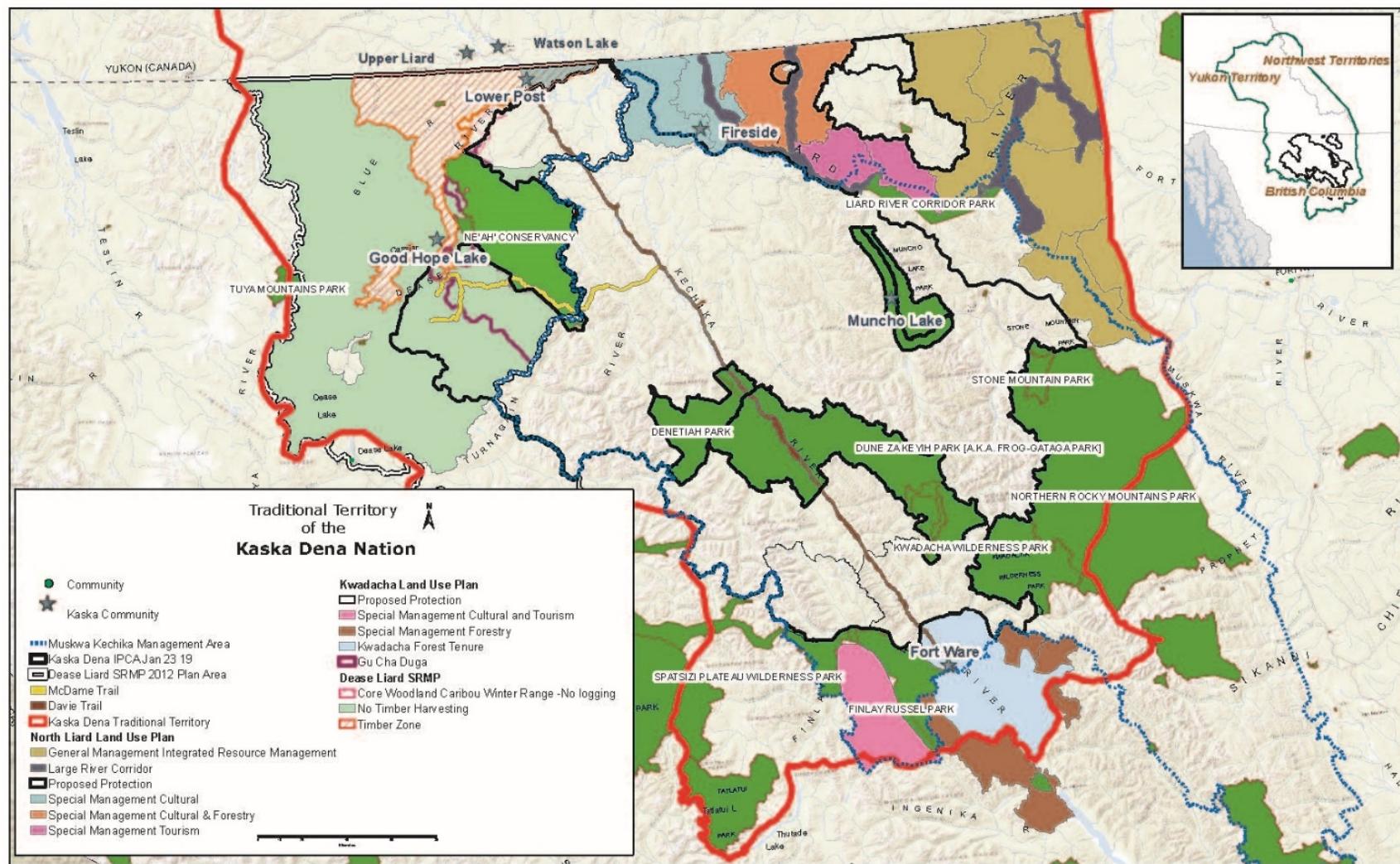
The Kaska Dena have developed three Land Use Plans. One, the Dease Liard Plan has signatories from both the Kaska leadership and the Province of British Columbia. The Dease Liard Sustainable Resource Management Plan (DL SRMP) was approved in 2004 and revised in 2012. The Plan is strategic and provides direction through strategies to achieve the high-level objectives contained in the document. The North Liard Plan and the Kwadacha Plan were developed by the Kaska communities and have subsequently been adopted by the Strategic Engagement Agreement's government to government table, the Natural Resources Council (NRC). The adoption by the NRC table allows for Kaska plans to drive the natural resource decisions made by the Committee. All of the Kaska plans include Traditional Knowledge as the basis for the plans, that include areas set aside for natural resource extraction, protected areas, and a variety of mapped sensitive areas that require special attention in the government to government decision-making process.

7.6.3 Strategic Land and Resource Management Plans

As mentioned in Section 7.6.1, there are provincial Land and Resource Management Plans by the Government of BC that had a number of "Stakeholders" at the table to provide social choices on strategic level objectives to the landscapes within selected Forest Districts. This includes the Fort Nelson, Fort St. John, and Mackenzie Forest Districts from which the management direction for the MKMA arise (Section 7.6.1). The Kaska Dena were observers only at the meetings of the Fort Nelson Forest District as they were not satisfied that the interests of the Kaska would be met. The new North Liard, Kaska community plan covers most the area today. The Kaska did attend the Mackenzie Forest District process and were able to create a number of Special Management zones in the Ancestral Territory that either preclude any forestry activities or establish forestry opportunities with a new Kaska forest tenure area. Mining is restricted but allowed in a few of the Special Management zones. Outside of the MKMA, the Skeena-Stikine Forest District was covered in the Kaska led Dease Liard SRMP (Section 7.6.2). The Kaska were not involved in the Cassiar-Iskut-Stikine Land and Resource Management Plan (CIS LRMP – approved in 2000) since only a minor portion of the plan area was in the Ancestral Territory. Where applicable, some of the high-level objectives and their strategies to achieve them were included in the new community-based plans, while other were rejected.

7.6.3.1 Strategic Land and Resource Management Plan Designations and the KIPCA

For those SLRMP's outside of the MKMA, the key overlaps or intersects with the two plans relate to Special Management Areas or Protected Areas of the DL SRMP and CIS LRMP, respectively (Map 7). For the DL SLRMP, there is a No Timber Harvesting Zone and a Gu Cha Duga (For the Grandchildren) Zone which is a special management area focusing on wildlife and wilderness. The CIS LRMP includes portions of the Pitman and Chukachida Rivers Protected Areas.



Map 7. Land management zones adjacent to the KIPCA and situated in the ancestral territory in British Columbia.

7.6.4 Protected Areas and Conservation Lands

The Government of British Columbia manages lands identified for protection and conservation through a number of ways. Lands requiring legal administrative and management authority are administered through provincial protected areas legislation (Ecological Reserves, Protected Areas, Parks, or Conservancies), *Wildlife Act* designations (Wildlife Management Areas [WMA]) or Wildlife Habitat Areas [WHA]), or the *Forest and Range Practices Act* (Ungulate Winter Range [UWR]).

Conservation lands not requiring legal administrative and management authority are administered through *Land Act* designations (Section 7.8.2).

7.6.4.1 Protected Areas and Conservation Lands

With the proposed KIPCA, there are fourteen significant protected areas situated adjacent to the boundary (Appendix 2; Map 2). All of the protected areas came into existence from the SLRMP processes, except the Ne'āh Conservancy. The Ne'āh Conservancy resulted from the DL SRMP during the revision of the plan and approval in 2012. The existing protected areas will significantly add to the cohesion of the KIPCA as well as provide a connection to areas outside of the KIPCA.

There are also several types of land protection situated in the KIPCA, and connectivity will be established by linking existing protected areas to create a large connected network of protected areas (Map 2). Specifically, the following categories of conservation lands and protected areas are located within the KIPCA:

- i. Ungulate Winter Range (*Forest and Range Practices Act* – 3 Ungulate Winter Range Orders for caribou and goat representing 480 UWR polygons, and 1,073,349 hectares or 10733.49 km². All are located in the Boreal Mountains and Plateaus and Northern Canadian Rocky Mountains Ecoregions; and
- ii. Ecological Reserves/Parks within the KIPCA – Grayling River Hot Springs Ecological Reserve (1,421 ha), Toad River Hotsprings Park (413 ha), and Horneline Creek Park (298 ha).

It is our view the designation of the KIPCA as a Conservancy designation under provincial protected area legislation is complimentary to these types of land designations.

7.7 Subsurface Dispositions and Tenures

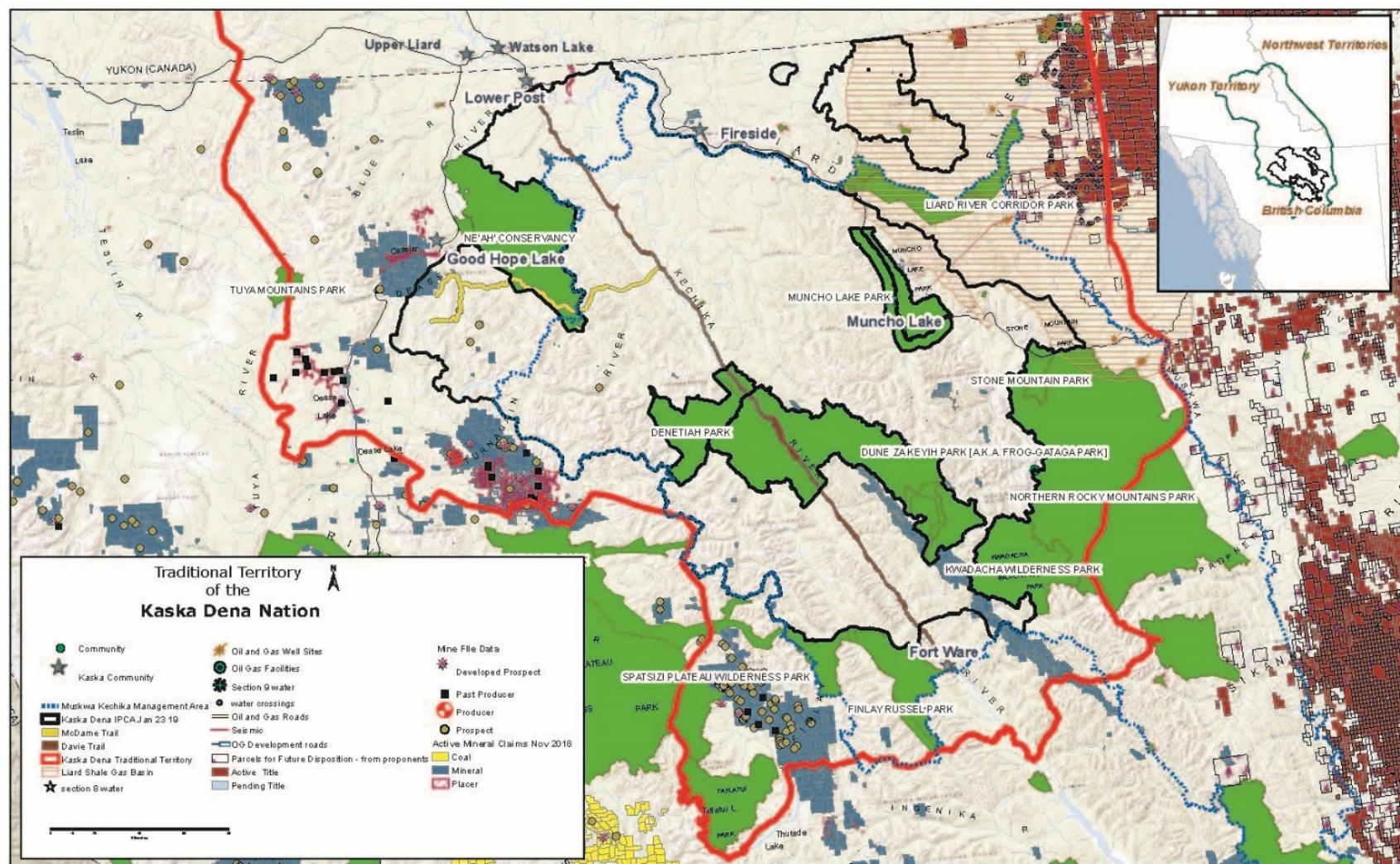
7.7.1 Oil and Gas Development

Oil and gas resource development is primarily regulated through the Oil and Gas Commission (OGC), which is the provincial crown corporation responsible for the regulation and permitting of oil and gas development in the province. This includes the issuance of permits, authorizations, orders and regulations for wells, facilities, oil refineries, natural gas processing plants, pipelines and oil and gas roads. It was established in 1998 under the *Oil and Gas Activities Act*. The OGC also has the authority to issue ancillary permits related to water management and other related matters for oil and gas development.

For this analysis the distribution of permitted activities, roads, seismic lines, wells, and other related infrastructure was assessed for distribution within the proposed KIPCA.

7.7.1.1 Oil and Gas Development in the KIPCA

While the northeast portion of the KIPCA overlaps the Liard Shale Gas Basin, there are no licenced exploration permits or infrastructure located within the KIPCA (Map 8).



Map 8. Subsurface dispositions distribution across the KIPCA and situated in the ancestral territory in British Columbia.

7.7.2 Mineral Development

Mineral development includes the exploration and mining of minerals through surface, and subsurface, methods. Mineral exploration and development is primarily regulated through the provincial *Mines Act* and the accompanying *Health, Safety and Reclamation Code for Mines in British Columbia* (the Code). There are often accompanying permits required under the *Environmental Management Act* and other environmental based regulations.

In British Columbia, to acquire a mineral tenure or claim which is required for exploration or development beyond prospecting and low-level disturbance mining activities is through Mineral Tenures Online which is an internet-based application to acquire and register tenures under the *Mineral Tenures Act*. The distribution of claims is a strong indicator of mineral potential, and ongoing mineral exploration and development activities. Of interest for this analysis, is the distribution and frequency of claims within the KIPCA and outside of the KIPCA in the Ancestral Territory in B.C.

Mining exploration and development is permitted through the *Mines Act* and *Mineral Tenures Act* and a good source of past and current activities is the BC Minfile which is a mineral inventory on the geological, location and economic information past and active mines (metallic, industrial, mineral and coal), deposits, exploration interests, and occurrences in British Columbia¹⁷. The BC Minfile occurrence database provides information on status of the mineral occurrence based on the following criteria²⁶:

- *Showing hosts minor in-situ mineralization.*
- *Prospect is an occurrence documented as containing mineralization which warrants further exploration.*
- *Developed Prospect is an occurrence on which exploration and development have progressed to a stage that allows a reasonable estimate of the amount(s) of one or more of the potentially mineable commodities.*
- *Producer is a currently producing open pit or underground mine from which ore containing one or more commodities is being mined for commercial gain or benefit.*
- *Past Producer is a mine that is not currently being mined and have recorded production in the past, e.g., Active.*

The BC Minfile also has information on the production related to Producers or Past Producers including the type of mine, mineral of interest, and operational time window¹⁶.

Of interest for this analysis, is the distribution and frequency of mineral occurrences within the KIPCA and outside of the KIPCA in the Ancestral Territory in B.C. In addition, the identification of the locations of active Producer and Past Producers is used as an indicator.

7.7.2.1 Mineral Development in the KIPCA

At the time of this report, there were 2,863 mineral claims intersecting the Ancestral Territory in British Columbia and 375 mineral claims by 38 registered owners in the KIPCA. This represents ~13 % of mineral claims in the Ancestral Territory in B.C. (Map 8; Appendix 2). The distribution of claims are located on the boundaries of the KIPCA or within existing legislated access or rights-of-way.

²⁶ catalogue.data.gov.bc.ca/dataset/minfile-mineral-occurrence-database

In regard to mineral occurrences, there are 413 occurrences with the full range of classifications; however, in the KIPCA there are only 32 mineral occurrences of which 4 are Prospects. The rest are Showings with no Producers or Past Producers indicated (Map 8; Appendix 2).

7.8 Surface Dispositions and Tenures

7.8.1 Forest Development

Forestry is a past and current activity in the Ancestral Territory and is an economic interest to the Kaska. Currently Kaska hold 2 renewable forest tenures which will provide up to ~ 250,000 m³/year and are negotiating a third tenure for a similar volume. It is also a land use which has been included by the Kaska and the Province in the establishment of land management designations (Map 9, Section 7.6).

The Kaska Dena goal of ecosystem-based management in forestry is fully functioning forests. The objective is to sustain a diversity of ecosystem services, for humans, fish, and wildlife populations and their associated habitat, across the forest landscape at multiple temporal and spatial scales. A core theme of the Kaska philosophy is that maintaining biologically diverse forests supports diversified communities and their associated economies.

An inclusive approach has been taken by the Kaska in balancing the traditional uses of the forest while providing an economic framework for sustaining Kaska communities and ensuring viable habitat for wildlife species.

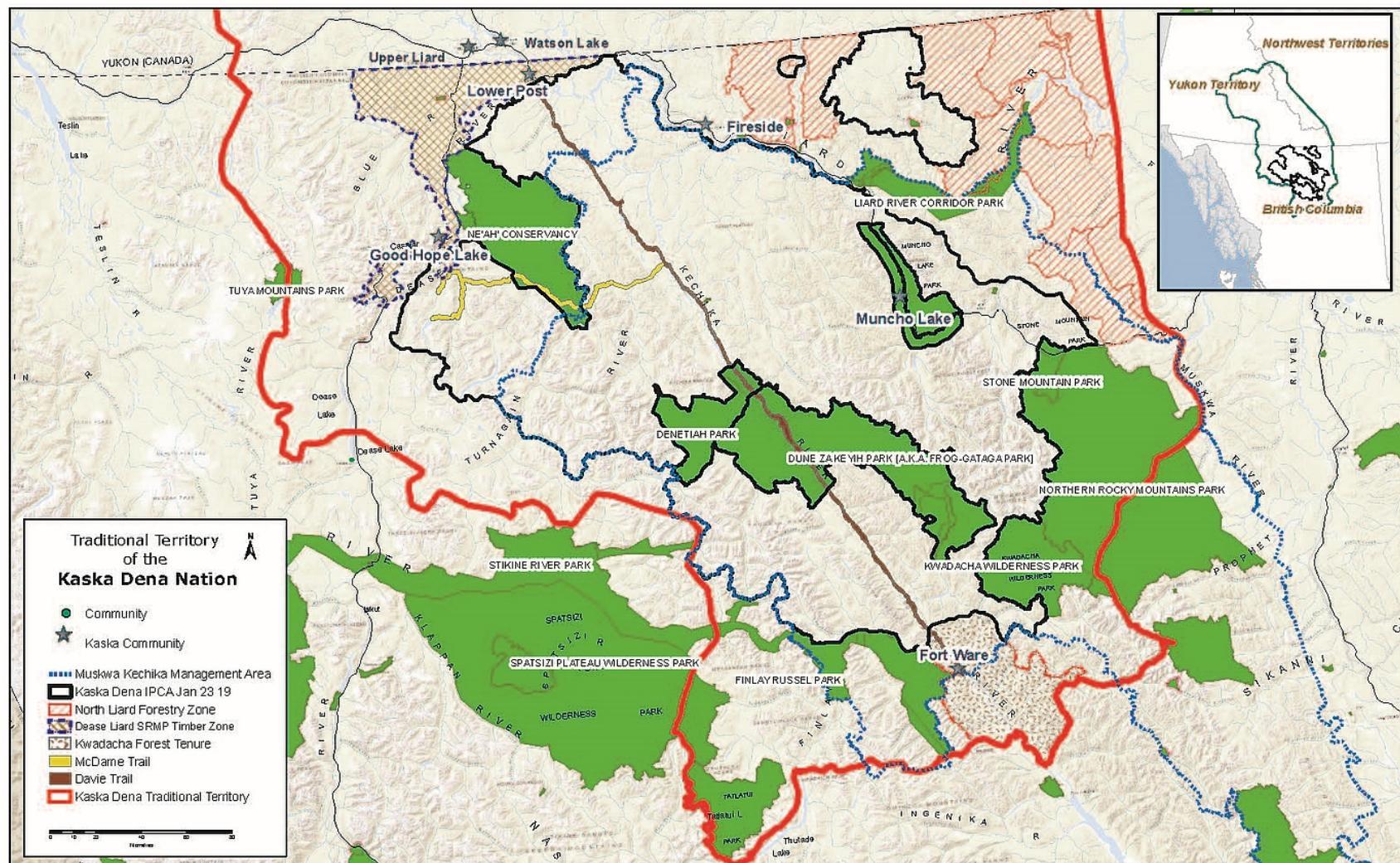
In our model of forest management, all resources, including ecological and Kaska traditional values, are given an equal weight in the planning process, including appropriate measures to ensure that natural resources are managed in an ecologically sustainable manner. In addition, Kaska forest management incorporates Kaska traditional knowledge to inform the provincial regulatory process.

In the Ancestral Territory in B.C., there are three provincial forest districts, the Fort Nelson, Mackenzie, and Skeena Stikine²⁷. Each forest district is required under provincial legislation to conduct Timber Supply Reviews (TSR) which forecasts the available timber volume for harvesting based on economic, social, and environmental conditions.

7.8.1.1 Forest Development

At this time there are no active forest tenures located within the KIPCA, and the three tenures being negotiated by Kaska Dena are not found within the KIPCA. In addition, the TSR's completed for each of the three forest districts have removed any timber harvesting opportunities inside of the proposed KIPCA, primarily due to land management designations, the remoteness of the area providing unsuitable economic opportunities for timber harvesting, and through engagement with the Kaska Dena on land and resource management. It is also important to consider the social choices used in determining the type of land management designations in the KIPCA where wilderness, special management for values outside of timber harvesting and forestry, and protection were the basis of the designations.

²⁷ www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/ministry-of-forests-lands-and-natural-resource-operations-region-district-contacts



Map 9. Forestry development areas situated outside of the KIPCA and in the ancestral territory in British Columbia.

7.8.2 Land Tenures, Private Lands, and Notations

Land dispositions in B.C., occur primarily under the *Land Act* with crown grants including Fee Simple, Conditional Grant, Lease, Statutory Right of Way, Licence of Occupation, or Permission (with fee simple with the strongest rights and permission the lowest) (Map 10).

In addition, under the *Land Act*, the province can establish reserves, prohibition of use, withdrawal from disposition, conditional withdrawal, or notation of interest (sections 15, 16, 17, and 66; all of them except the notation of interest restricting use of land except as defined under their issuance and each are reviewable and not permanent). These types of restrictions are used to identify areas of provincial interest (e.g., flood reserves), ecological importance (e.g., ecological reserves), First Nation interests (e.g., lands identified through reconciliation agreements), or other land uses identified by the province. Map Notations are areas of interest that may become a reserve or as a way to inform the public about the values found in the area.

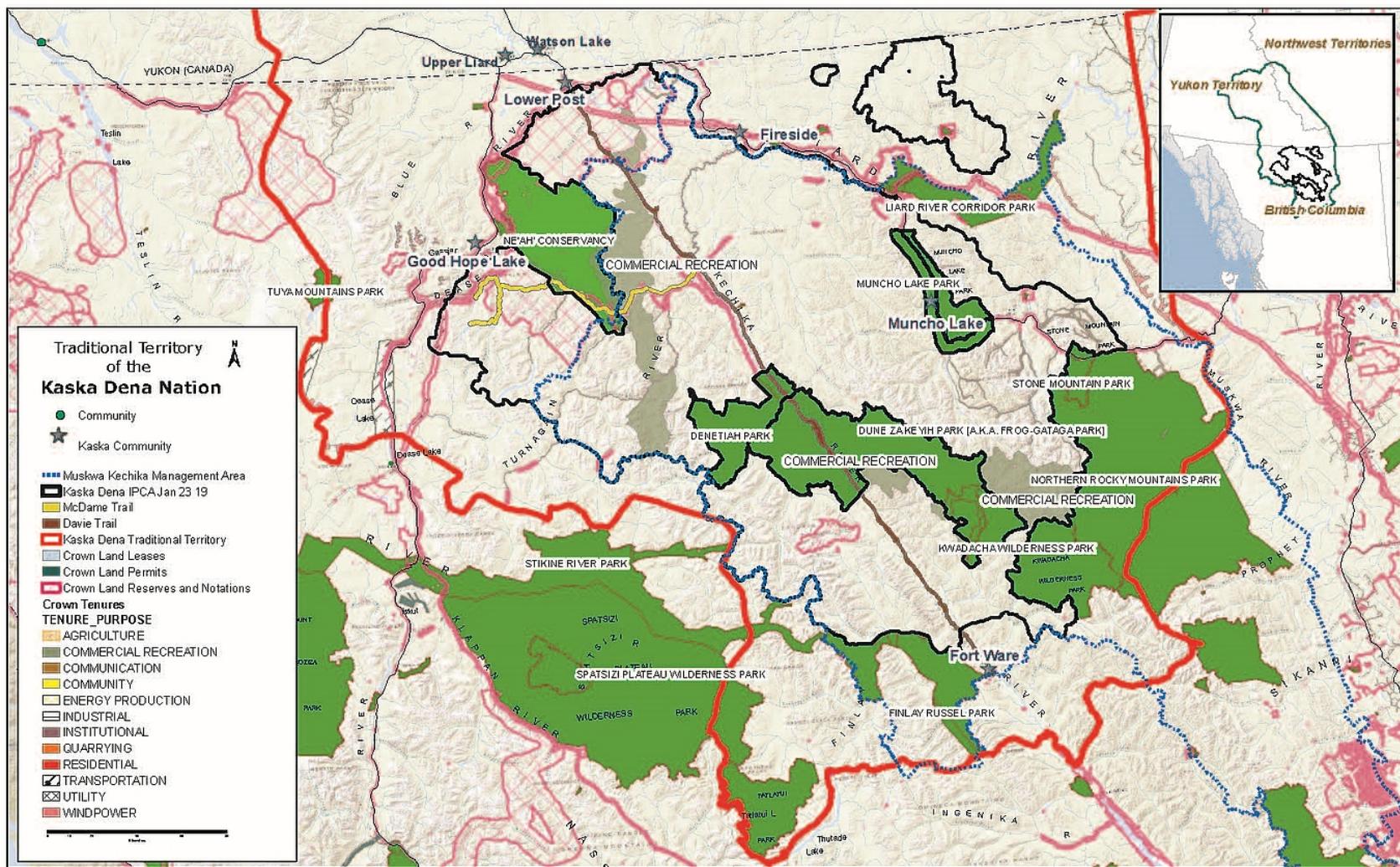
7.8.2.1 Land Tenures, Private Lands, and Notations in the KIPCA

There are currently 36 private or fee simple parcels in the KIPCA, of which all are situated within unincorporated communities (primarily Muncho Lake and Toad River), and the Alaska Highway Statutory Right of Way. It is expected these areas will be netted out given the legal designations.

There are 8 Leases, with 7 of the leases tied to guide outfitter territories which are an allowable activity under the Conservancy designation. The remaining lease is for a communication site.

There are 105 Licence of Occupation with 3 for communication sites: 1 for a borrow pit, 1 for a telecommunication line, 1 for a waste disposal site, and the rest are tied to commercial recreation, or guide outfitter territories (Map 10). The borrow pit, telecommunication line, and the waste disposal site are found within unincorporated communities (primarily Muncho Lake and Toad River), and the Alaska Highway Statutory Right of Way. It is expected these areas will be netted out given the legal designations.

There are 26 Notations of Interest, 2 Section 15 Reserves (ecological interests), 32 Section 16 Reserves (17 are for borrow pits/sand-gravel along the Alaska Highway, the rest are ecological in nature), and 4 Section 17 Designated Use Area (with 2 of them for the expired projects – natural gas pipeline and BC Rail railgrade) with 2 of the areas for Kaska Treaty purposes.



Map 10. Commercial recreation, map notations, and other BC Land Act tenures situated in the KIPCA and the ancestral territory in British Columbia.

7.9 Consumptive and Non-consumptive Uses

7.9.1 Adventure Tourism

The Government of British Columbia describes Adventure Tourism as²⁸:

- *involves operators offering services on provincial Crown land to persons for compensation or reward. Services being offered to guests may include:*
- *guided adventure tourism activities within an extensive operating area.*
- *huts, cabins, lodges, wharves, anchored floating facilities, horse corrals, campsites or other improvements that are linked to a guided experience.*

The primary approach is to apply for the appropriate business licenses from the Government of BC and acquire the appropriate tenure authorizations under the *Land Act* (Section 7.8.2). This can include guide outfitting (fish and wildlife) to acquire tenures for infrastructure, with other aspect of the business being administered through other legislation (e.g., harvest allocation). This can also apply to transporters, a licence that allows the movement of individuals or parties to areas for hunting without guided hunts. In addition, these activities can also occur in protected areas with the appropriate authorization (e.g., Park Use Permits). It also applies for non-consumptive businesses such as trail riding, guided hikes, or guided canoe/rafting trips.

7.9.1.1 Adventure Tourism in the KIPCA

In 2013, there were 30 Park Use Permits and 32 Adventure Tourism Permits reported active in the MKMA²⁹. This is consistent with the land tenures reported in Section 7.8.2.1 where the dominant authorizations were related to adventure tourism, guided trips, guided harvesting, and transporting licenced activities.

7.9.2 Guide Outfitting

Guided hunting trips or guide outfitting is the predominant activity in the Kaska Dena Ancestral Territory in British Columbia. While mining has had an economic influence for short periods of times when global market conditions are aligned, guide outfitting has been an activity providing long-term economic opportunities for Kaska members, communities, and non-Kaska communities and families for generations (Map 11).

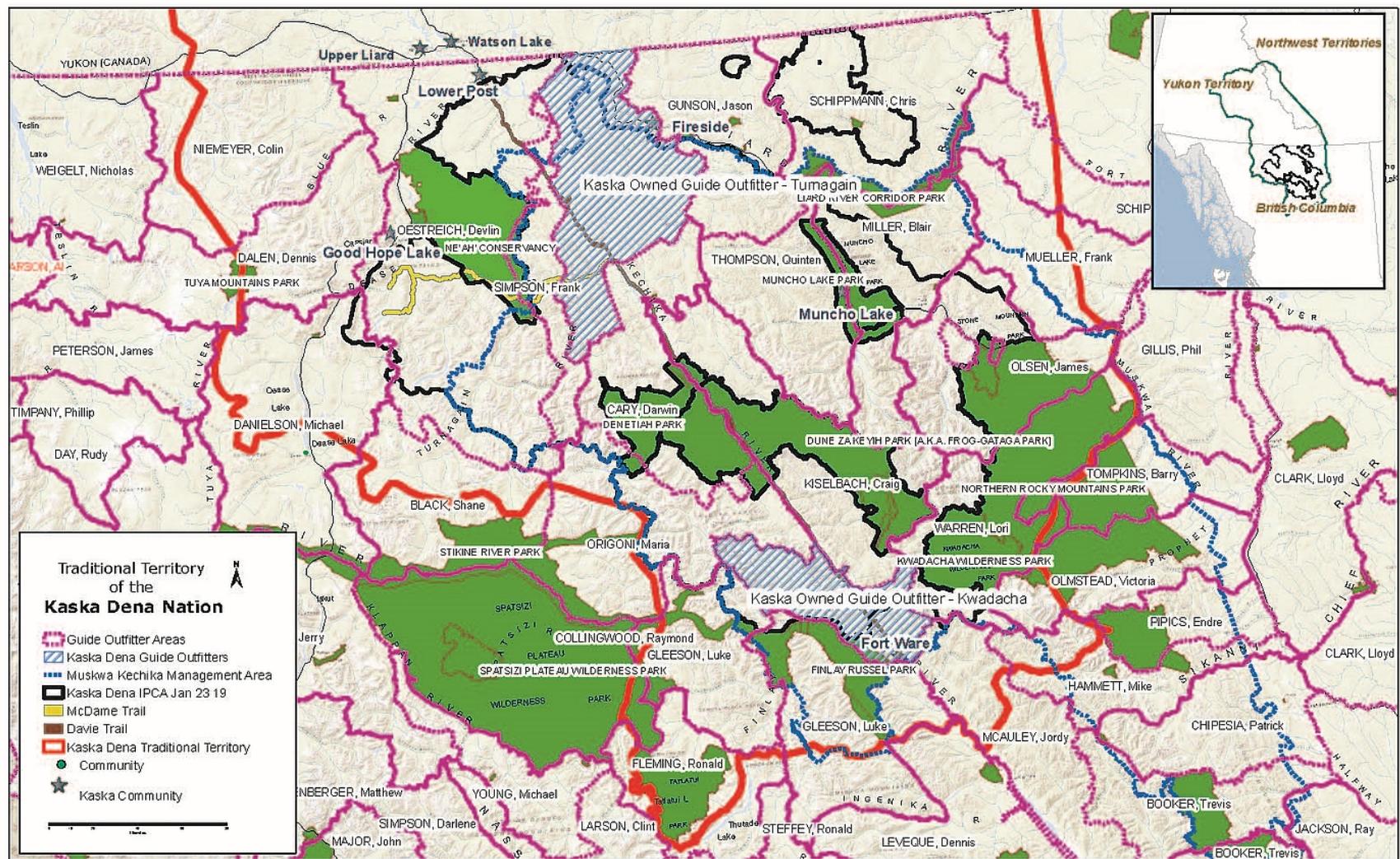
As mentioned in Section 7.9.1, the authorizations to support infrastructure (e.g., cabins, aircraft landing permits, range tenures for horses,) come from the several acts. The harvesting allocations, guide certificates, and guide licences, trophy fees, and quotas fall primarily under the *Wildlife Act*, and associated regulations and policies.

7.9.2.1 Guide Outfitter Territories in the KIPCA

There are 13 guide outfitter territories intersecting the KIPCA, and it is estimated all would benefit from the establishment of the KIPCA. 3.9 million hectares of contiguous wilderness settings and viable wildlife populations are positive indicators for this activity. Kaska, as owners of two territories, sees this as an allowable land use and is planning to have guide outfitters included in the conservancy designation.

²⁸ www2.gov.bc.ca/gov/content/industry/crown-land-water/crown-land/crown-land-uses/recreation-tourism/adventure-tourism-commercial-recreation

²⁹ Garrity, 2013, Eco/Adventure Tourism In the Muskwa-Kechika Management Area Challenges and Constraints.



Map 11. Guide outfitting territories and Kaska Dena owned guide outfitters situated in the KIPCA and the ancestral territory in British Columbia.

7.9.3 Commercial Trapping

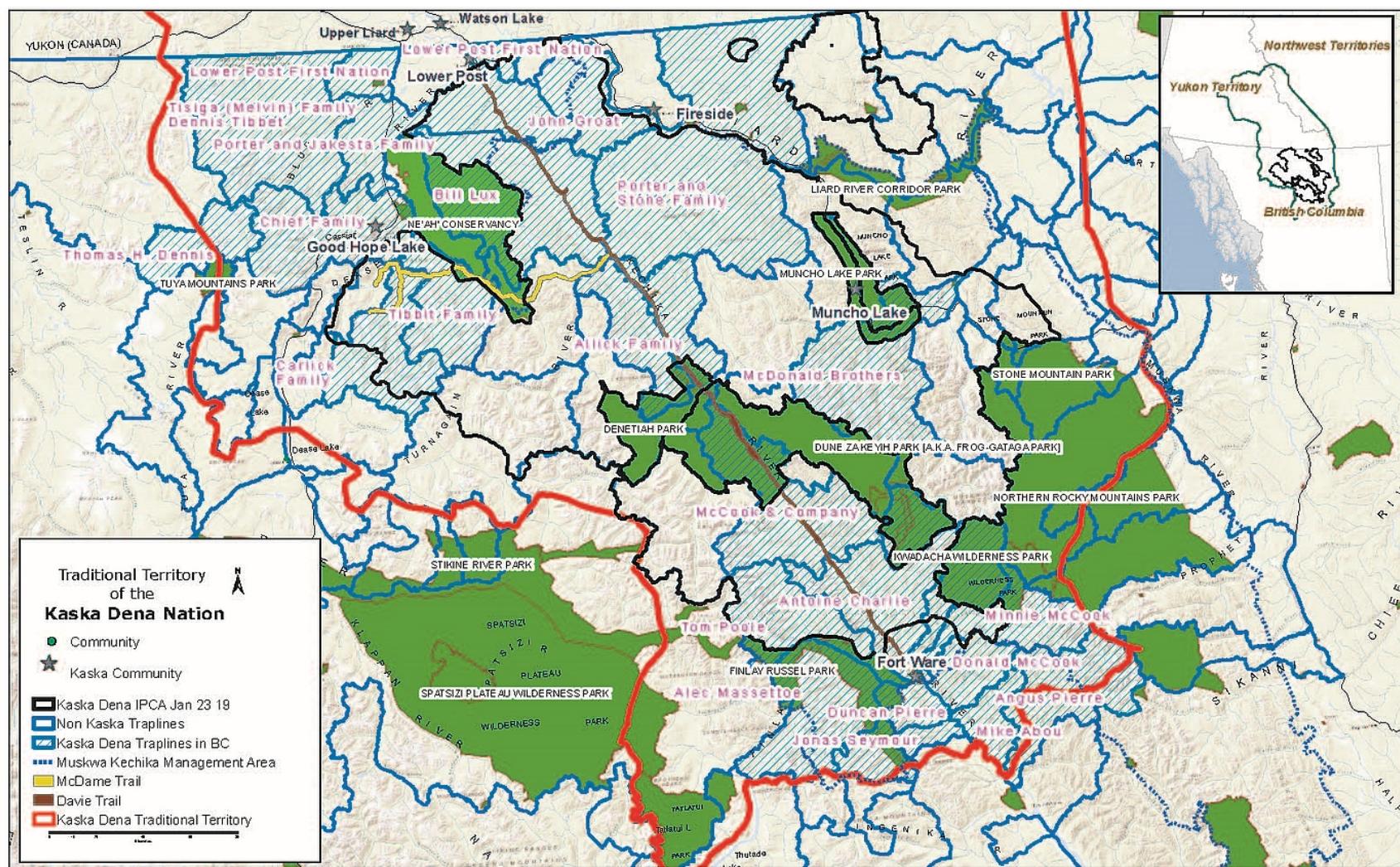
For the purpose of this report, trapping is only the licenced commercial sale of furs from a registered trapline as defined under the provincial *Wildlife Act*. It has no bearing on Kaska or First Nations fur harvesting for social, cultural, or domestic purposes (Map 12).

Trapping is no longer the economic opportunity it once was and has been in decline for some time; however, the legacy of establishing and registering traplines is still an ongoing concern. One of the concerns, is the application of the registered commercial traplines by the Government of BC and the conflict with the First Nations cultural use of family areas in their ancestral territory. It is a misunderstanding that still causes conflict with many Kaska families. In addition, the history of registered traplines being “purchased” by non-Kaska has additional legacies with commercial trapping.

In reviewing the management direction of protected areas in the Kaska Dena Ancestral Territory, Registered Traplines, including cabins, trails, and infrastructure, and commercial trapping for furs are activities permitted under existing legislation. This is consistent with protected areas adjacent and within the KIPCA.

7.9.3.1 Commercial Trapping in the KIPCA

There are 48 registered commercial trapping concessions intersecting the proposed KIPCA with approximately 12 held by Kaska members (Appendix 2). The activity is considered an allowable activity under provincial protected areas legislation and Kaska is proposing to have commercial trapping included as a land use under the provincial conservancy designation.



Map 12. Registered commercial trapping concessions situated in the ancestral territory in British Columbia.

7.9.4 Transporters

At this time, there are several transporters operating in the proposed KIPCA. The licence allows the transport of licenced fish and wildlife harvesters and use of cabins for a fee. It is not expected to be a conflicted land use under a conservancy; however additional monitoring and permitting could be required as management direction through a management plan for the KIPCA.

8 Reconciliation and Protection of Kaska Rights and Title

8.1 UNDRIP Legislation and the Principles Accord

The Federal Government of Canada and the Provincial Government of British Columbia have both agreed to the adherence of the United Nations Declaration of the Rights of Indigenous Peoples. Further to that adherence, the Government of Canada has recently signed Bill 262 whereby Canada has agreed to bring the laws of Canada, where pertinent, into agreement with the UNDRIP. Finally, the Government of BC has committed in the 2019 Throne Speech to implement UNDRIP in provincial legislation.

Canada has provided the following examples of the direction that the people of Canada wish to address in the area of conservation and sustainable development.

1. As a goal to sustain biodiversity and ecological functions, Canada made a commitment under the International Convention of Biodiversity, in 2010, to conserve 17% of the land base by 2020.
2. On May 10, 2016, Canada signed the United Nations Declaration on Rights of Indigenous People (UNDRIP). The Minister of Indigenous Affairs, Carolyn Bennett, who signed the Declaration on behalf of Canadians, said, "We are now a full supporter of the declaration, without qualification... We intend nothing less than to adopt and implement the declaration in accordance with the Canadian Constitution." The declaration recognizes Indigenous Peoples' basic human rights, including the rights to self-determination, language, equality, and land, among others.
3. Canada adopted a policy framework toward Indigenous Self-Governance that recognizes an inherent right, "based on the view that the Aboriginal peoples of Canada have the right to govern themselves in relation to matters that are internal to their communities, integral to their unique cultures, identities, traditions, languages and institutions, and with respect to their special relationship to their land and their resources".
4. In March 2017, Canada proposed to give First Nations a greater role in creating new protected areas. Canada's Minister of Environment, Catherine McKenna, said, "*We will move forward in our commitment to reconciliation with indigenous peoples, including the development of Indigenous protected areas and looking at how we can expand the guardians programs*"... adding that "*We also believe that Indigenous protected areas will be an important approach to meeting our [biodiversity] targets [and] also responding to the desire of Indigenous peoples to determine how best to create healthier, more prosperous communities while protecting the land*".
5. In August 2017, Canada adopted 10 principles toward reconciliation, recognizing that "*Indigenous self-government and laws are critical to Canada's future, and that Indigenous perspectives and rights must be incorporated in all aspects of this relationship*".
6. In February 2018, Prime Minister Trudeau, acknowledging "*that centuries of colonial practices have denied the inherent rights of Indigenous Peoples*", committed to undoing

"...decades of mistrust, poverty, broken promises, and injustices", by working together "to take concrete action to build a better future and a new relationship".

7. In the most recent gesture toward reconciliation with Indigenous Peoples, as well as pursuing its biodiversity targets, Canada committed \$1.3 billion in its recent federal budget, to developing Indigenous Protected Areas. Minister of Environment, Catherine McKenna said, "*We will move forward in our commitment to reconciliation with Indigenous peoples, including the development of Indigenous protected areas and looking at how we can expand the guardian programs...* "We also believe that *Indigenous protected areas will be an important approach to meeting our targets [and] also responding to the desire of Indigenous peoples to determine how best to create healthier, more prosperous communities while protecting their land.*"

8.2 Section 35 Rights and Kaska Law

The Kaska will provide protection to the KIPCA through the reconciliation of their Rights and Title in the Ancestral Territory. The reconciliation of Rights and Title are being constituted through legislation by both the Canadian Federal and British Columbia Provincial Governments with legislation based upon the United Nations Declaration of the Rights of Indigenous People and a Principles Accord signed by both Governments and the British Columbia First Nations Summit in December 2018.

Sections 25 and 35 of the Canadian Charter of Rights and Freedoms address how rights protected under the Charter will intersect with existing rights held by Canada's Indigenous peoples. Section 25 guarantees that no rights protected under the Charter will be used to abrogate or derogate from right belonging to Aboriginal people (including land rights and rights under the Royal Proclamation), Section 35 provides distinct recognition and affirmation of existing Aboriginal and Treaty rights. This is an important step in amalgamating common law and Aboriginal law traditions.

As a means to protect the KIPCA, the Kaska Dena of British Columbia will institute a law called the Kaska Protected Area Law, to protect their Aboriginal Rights, and the area within the KIPCA to govern the relationship between the Kaska Dena and their lands and waters.

The Kaska lands and waters sustain the Kaska Dena culture, language and way of life. These lands must be protected and maintained as a foundation to ensure that the Kaska Dena thrive as a people in the future.

8.3 British Columbia Conservancy Legislation

Conservancies are provincial land designations which provide protection from surface and subsurface resource development, provide greater recognition of social, ceremonial and cultural uses of First Nations, and a broader set of allowable uses for consumptive and non-consumptive recreation (commercial and personal) uses. Specifically, the Government of British Columbia³⁰ sees conservancies as:

"Conservancies are Crown lands set aside for:

- (a) *the protection and maintenance of their biological diversity and natural environments;*
- (b) *the preservation and maintenance of social, ceremonial and cultural uses of First Nations;*

³⁰ www.env.gov.bc.ca/bcparks/about/park-designations.html

- (c) the protection and maintenance of their recreational values; and
- (d) development or use of natural resources in a manner consistent with the purposes of (a), (b) and (c) above."

Conservancies have been designated to date by inclusion in a schedule to the *Protected Areas of British Columbia Act*. A conservancy can also be established by order in council under the *Park Act*.

Any economic opportunities related to a conservancy must not prevent or hinder the maintenance of biological diversity, natural environments, First Nations social, ceremonial and cultural uses, and recreational values.

8.4 Governance of the KIPCA

8.4.1 Kaska Dena Management Structure

8.4.1.1 Kaska Dena Governments and Decision Making

Kaska has a history of working with the Government of BC through the co-management of lands and resource matters, it is our view this will be required and all government decisions for the Kaska will sit with the elected leadership of the day. The structure of the co-management is envisioned to be through existing agreements such as the SEA. Finally, the Kaska Dena have strong and stable leadership, skilled advisors, and a strongly articulated conservation ethic that empowers partnerships with a broad array of allies.

8.4.2 Kaska Dena Management Bodies

8.4.2.1 Kaska Dena Elected Leadership

The Kaska Dena First Nations in British Columbia are the Dease River First Nation in Good Hope Lake, the Daylu Dena Council in Lower Post and the Kwadacha First Nation in Fort Ware, Muncho First Nation and Fireside. These communities were separated into three Indian Act bands and were forced to negotiate separately with two different provincial and territorial authorities. The Kaska Dena were and always have been a self-governing Nation with their own laws, culture, and way of life. With the imposition of the Indian Act the lands in which the Kaska traditionally governed were divided into 'lands set aside'.

8.4.2.2 Dena Kayeh Institute

The Dena Kayeh Institute (DKI) is a wholly owned and operated non-profit charitable organisation of the Kaska Dena. The DKI was developed to assist the communities on the collection, storage and management of Kaska traditional knowledge with the end goal of using it in all planning and management processes. More recently it has been asked to assist the Kaska communities in the develop of guardian programs. The Dane Nan Yé Dāh program was developed in 2015 and we continue to build it. The DKI has a core group that carries out its mandate as well as a group of consultants who work with the DKI when required. The DKI is accountable to the people through established reporting mechanisms including its Directors, members and quarterly reporting to the Kaska Dena Council Board of Directors. As the work of managing the conservation economy derived from the Kaska IPCA increases, the DKI will increase its capacity to meet the need.

8.4.2.3 *Dane Nan Yé Dāh*

The Kaska Guardians program within our communities are in various stages of development, some have been ongoing for 4 years and one is in early stages. Through the land guardian program, we are in fact training the next generation of land managers who will be the ones implementing our co-management and governance models. We intend to train Guardians to work in the areas of wildlife, forestry, mining management, ecosystem monitoring, archeology, climate change, water management, and include the incorporation of traditional knowledge into all of our work. We also intend to train the Guardians in the conservation economy. The Guardians program represents important connections between the social, cultural, environmental, and economic well-being of the Kaska Dena.

8.4.3 Co-Management with British Columbia

The Kaska Dena in conjunction with the Government of British Columbia will co-manage the KIPCA through the Parks Act as a Conservancy. The British Columbia Legislation will be strengthened through the enactment of the Kaska Protected Area Law.

Co-management of the Protected Area will be described in a document that defines the following:

1. The Purpose
2. Obligations of the Parties
3. The Composition and functioning of the KIPCA Management Board
4. Shared Decision Making
5. Management Planning
6. Dispute and Issue Resolution
7. Employment and business Provisions
8. Financial Provisions
9. General Provisions
10. Conservancy Management Plan

9 Conservation Economy

9.1 Cultural Tourism

For Kaska Dena, the approach for cultural tourism is to build off the success and experience of Indigenous Tourism Association of British Columbia³¹ (ITABC) and its members. It is based on their strategic plan for a multifaceted approach of providing tourism services in outdoor adventures, cultural tours, lodges and accommodations, fish and wildlife viewing tours, and indigenous owned tourism facilities and infrastructure.

It has been a successful approach with reported revenues, jobs, and tax revenues of \$ 42 million dollars, 2,266 jobs, and \$ 12 million dollars, respectively, generated in 2010-2011³².

Kaska Dena are already pursuing opportunities in outdoor adventures, and cultural tours with our Atsi Denna Tunna, the "Davie" trail being developed with a vision of cabins and overnight facilities at culturally important areas and being guided by Kaska Dena by foot, and horse on the ground, and in the air to high elevation alpine areas for cultural tours of the many cultural sites along this important trail corridor. In addition, outdoor adventure tours being delivered by Kaska Dena guides and owned by Kaska Dena entrepreneurs along the many Large River Corridors are part of the strategy for cultural tourism development.

Kaska Dena Lodges are also key part of the cultural tourism strategy for the KIPCA; however, it is recognised this requires significant resources, planning, and engagement with experts to plan and implement over the longer term. The strategy is to pursue the expertise to develop candidate cultural and scenic sites as the designation of the KIPCA is advanced. The development of Kaska Dena Lodges linked to the importance of the KIPCA will be a marketing strategy for advancing the projects.

Kaska Dena are aware of the challenges of the cultural tourism industry and are aware of the recent work done by Garrity³³ on the current tourism challenges in the MKMA. In particular, the importance of the challenges of the global economy, changing demographics and associated services in the tourism industry for both younger and older client groups, cost of business in the north, and the perception of the north being heavily impacted from resource extraction. Garrity also sees Indigenous Cultural Tourism as a tourism product that can be successful with the appropriate support and public awareness. By achieving the KIPCA, Kaska Dena see advancements on furthering our cultural tourism opportunities by linking the Kaska culture and wilderness of the KIPCA to tourism opportunities. This is a key component of the proposal submitted to ECCC as some of the economic benefits of the KIPCA.

Kaska Dena has built a Kaska specific tourism strategy in the past³⁴ framed around the analysis of the Kaska economic profile, tourism resources inventory, tourism market status, and range of opportunities. Currently, based on strategic plans and opportunities identified by Indigenous Tourism BC, and Destination BC, the cultural tourism strategy is being aligned to be consistent and take advantage of the expertise available through these organizations to advance Kaska Dena cultural tourism opportunities tied to the KIPCA.

³¹ www.indigenousbc.com

³² [www.indigenousbc.com/assets/corporate/The Next Phase -BCs Aboriginal Cultural Tourism Strategy-AtBC.pdf](http://www.indigenousbc.com/assets/corporate/The%20Next%20Phase%20-BCs%20Aboriginal%20Cultural%20Tourism%20Strategy-AtBC.pdf)

³³ Garrity, M. 2013, Eco/Adventure Tourism In the Muskwa-Kechika Management Area Challenges and Constraints.

³⁴ Kaska Dena Council Tourism Development Strategy. 1998

9.2 Commercial Recreation

The focus of commercial recreation in the KIPCA and for Kaska Dena, outside of cultural tourism, is the guide outfitting industry. Kaska Dena recognise the importance of guide outfitting to the north and its importance to the northern economy, employment, and lifestyles for generations of Kaska and non-Kaska families. Kaska Dena are owners of two guide outfitting territories and understand the economic importance of guided hunting experiences.

Guide outfitting in British Columbia generates approximately \$116 million in revenue each year and employs over 2,000 people³⁵. In Canada, it is estimated that outfitters and clients (both hunting and fishing) spent over \$3.8 billion dollars in 2017 and provided direct employment of an average 9.5 employees/guide outfitter territory³⁶.

There are 13 guide outfitter territories overlapping the KIPCA, with 8 territories predominately within the KIPCA. Stone's sheep are the prized big game species for these territories followed by woodland caribou, mountain goat, and moose. Grizzly bears are now exempt from hunting in British Columbia. Wolves, black bears, and other furbearing species tags are purchased more as harvest opportunities rather than the focus of a guided hunt. Based on the knowledge of the purchase cost for guided big game species hunts, the annual quotas for Stone's sheep and other trophy hunts, and the historical harvest of trophy species for these territories. It is estimated the approximate annual expenditures and revenues can be over \$6 – 7 million dollars. The actual amounts may be greater based on the reporting done provincially and nationally. A conservative approach was applied to assess the economic importance to the KIPCA. The long-term approximate assessment of guide outfitting in this region means that over a thirty-year window close to \$150 - 200 million dollars could have been generated in today's dollars. This is significant when comparing resource revenues generated in the KIPCA over the same period. By establishing, the KIPCA could maintain an important economic driver to the Kaska Dena, the north, and non-Kaska families in the region. In addition, it is recognised that guide outfitters have been expanding their range of services to include adventure tourism so either outside of peak operating seasons or as a manner to attract larger groups who wish to pursue the experience of being in the wilderness, even if one member of the group is off hunting. This an approach Kaska Dena see incorporating into future adventure tourism opportunities with their territories.

9.3 Long Term Funding Strategies for Implementation. Philanthropic, Federal, Provincial

Vast boreal areas, largely uninhabited, are critical to the understanding of and the planning for addressing climate change, and require further study, on-going monitoring and protection of the habitat to sustain wildlife populations into the future.

Canada, by 2010 had conserved 10.5% of its land and freshwater. In 2017, Canada set a Target of 17% of its land and freshwater to be conserved and protected. The Target requires the conservation and protection of an additional 64.35 m ha's. The KIPCA, as described in this Report, provides for the conservation and protection of 3.91 m ha's thereby reducing the Target Goal to 60.45 m ha's.

NOTE: Based on Canada land mass at 990 m ha's; 10.5% = 103.95 m ha's; Target of 17% = 168.3 m ha's; and 2017/2020 Actual/Target difference = 64.35 m ha's.

³⁵ www.goabc.org/guide-outfitting-history/

³⁶ Canadian Federation of Outfitter Associations. 2018. Economic contributions of outfitter businesses in Canada.

Fundamental to the Reconciliation efforts of federal and provincial governments, is the:

- recognition and inclusion of the Kaska Dena in the governance of the KIPCA; and
- training of and support for the Guardians in their day-to-day management of the KIPCA.

Funding of this initiative, throughout short-, medium-, and long-term plans is vital to the realization of Canada's Target, and Reconciliation of the role of Indigenous people in Canada.

Identifying climate change impacts and the development of alternatives to sustain a contiguous land base to support habitat and wildlife in a changing environment, is challenging. It requires the support and working together of governments (federal/provincial/First Nations), industry, land users, and environmental non-governmental organizations (ENGO). Field Data (western science and TEK) is critical, and needs to be assessed for adequacy in determining alternative options to impacts in response to changing environments, that have an effect not only on wildlife and habitat, but the users reliant on the health of the Area.

Funding of work to identify the establishment of a KIPCA, as in this case, has involved the efforts of the DKI and has been generously funded by Canada through the Quick Start Fund. DKI is now developing a Proposal to submit to the Target Challenge Fund and we are hopeful it receives approval to continue the work that has been evolving since the early 1980's within the Kaska ancestral lands.

The funding strategy is based upon funding and support requirements to meet the very high-level objectives and sub-activities, timeline and funding sources set out in Table 3 below.

Table 3. KIPCA objectives, term, and funding sources for the implementation of the KIPCA.

KIPCA Primary Objectives	Term	Funding Source
Area Legislated as a Conservancy	Short (1-3 years)	Canada, ENGOs, Province
Management Plan Completed	Medium (3-4 years)	Canada, ENGOs, Province
Implementation Initiated	Long (5-ongoing)	Canada, Province, Kaska, ENGOs

The short- and medium-term objectives have been addressed through the preparation and submission of a Proposal to Canada through its Challenge Fund Program. Decision, by Canada, will be made in June 2019. Funding support from ENGO's for this Proposal include (Table 4):

- a) Canadian Parks and Wilderness Society: providing in-kind contribution of \$320,000;
- b) Ducks Unlimited Canada: as an Ultimate Recipient of \$600,000 from Canada Challenge Funds through DKI's submission, have committed to providing in-kind contribution of \$120k;
- c) International Boreal Conservation Campaign: providing a cash contribution of \$400,000 and an in-kind contribution of \$650,000;
- d) The Schad Foundation: providing a \$50,000 cash contribution; and
- e) World Conservation Society: providing an in-kind contribution of \$191,000 in-kind.

Table 4.Timeline, stages, and funding sources for the establishment of the KIPCA.

Sub-Activities	Pre-Establishment (2019/2020-2021/2022)	Funding Source
DKI submit Proposal to Canada Nature Fund	Mid-late 2019	Canada
DKI Negotiate with Province for land designation	2019/2020-2021/2022	Canada and Province
DKI Engagement/Campaign with Neighbouring First Nations, Stakeholders, and Public	Mid 2019 through to 2021/2022	Canada and CPAWS
DKI Conducts Field Studies at Key Sites	Fall 2019 and Spring 2020	Canada and DUC
DKI Analysis and Upload of Field Study Findings	2020/2021	Canada and DUC
	Post-Establishment 2021/2022-2022/2023	
DKI Negotiate with Province on Management Plan	2022/2023	Canada and Province
DKI initiates Guardian Program Training	2022/2023	Canada, Province, ENGOs, NGO's (TBD)
DKI Engage with Neighbouring First Nations and Stakeholders	2021/2022-2022/2023 Quarterly Updates (In-Person Meetings)	Canada and CPAWS
	Implementation 2023/2024-2049/2050	
DKI and Province Finalize Management Plan	2023/2024-2024/2025	Province
DKI and Province Review Management Plan	Annually (In-Person Meetings)	DKI and Province
DKI and Province Conduct Field Studies, Upload Data and analyze for Update to Management Plan	Dependent upon Monitoring Reports	Province, ENGOs and NGOs (TBD)
DKI and Province Engage with Neighbouring First Nations and Stakeholders	Annual Updates (In Person Meetings)	DKI and Province

POTENTIAL FUNDING SOURCES:

The development of the various reports and studies conducted and prepared, to date, have informed the development of this much larger plan for going forward. Recognizing there will be additional funding supports required to achieve the objectives, DKI will, in the near future, develop a strategy for engaging and developing partnerships with governments, academia, NGOs and as well, maintain the relationships already developed with funders listed above.

For this future Funding Strategy, a high-level listing of potential funding partners may include:

ENGO's:

- World Wildlife Fund – Canada: www.wwf.ca/
- [Wilburforce Foundation: www.wilburforce.org/grants/](http://www.wilburforce.org/grants/)

FEDERAL GOVERNMENT:

Climate Change and Health Adaptation Program for First Nations South of 60°N

www.sac-isc.gc.ca/eng/1536238477403/1536780059794

Canada - Environment and Natural Resources: Aboriginal Fund for Species at Risk

www.canada.ca/en/environment-climate-change/services/environmental-funding/programs/aboriginal-fund-species-risk.html#toc5

NATIVE WOMEN'S ASSOCIATION OF CANADA (NWAC): www.nwac.ca/wp-content/uploads/2015/05/2013-NWAC-Funding-Opportunities- Resource-Guide.pdf

- Body Shop Foundation
thebodyshopfoundation.org/ See also: thebodyshopfoundation.org/issues/
- David and Lucille Packard Foundation
www.packard.org/ See also: www.packard.org/what-we-fund/
- Donner Canadian Foundation Grants
donnerfoundation.org/index.htm See also: donnerfoundation.org/granting.htm
- Mazda Foundation
www.mazdafoundation.org/index.html
See also: www.mazdafoundation.org/Grant_Guidelines.html
- TransCanada Community Investment Fund Grants
transcanada.com/index.html
See also: transcanada.com/community-investment.html
See also: transcanada.com/665.html
- Walter & Duncan Gordon Foundation Funding
gordonfoundation.ca/ See also: gordonfoundation.ca/about-us/foundation
- United Nations Development Programme (UNDP) www.undp.org/content/undp/en/home.html
- UNDP Women's Empowerment Works
www.undp.org/content/undp/en/home/ourwork/womenempowerment/overview.html
- Indigenous Peoples (IFAD) Grants
www.ifad.org/english/indigenous/index.htm

10 Relationships with other First Nations

10.1 Neighbouring First Nations

The neighbouring First Nations which have a portion of their Ancestral Territory in the KIPCA include:

- i. The Tahltan Nation;
- ii. Fort Nelson First Nation (Treaty 8); and
- iii. Acho Dena Koe First Nation.

Kaska has a relationship with the Tahltan Nation and both are members of the 3 Nations Society³⁷ which is a partnership with Tahltan, Kaska, and Tlingit Nations. This has been followed up with letters to the Tahltan Nation leaders informing them of the progress of the KIPCA in January 2019. Kaska are aware the Tahltan Nation has submitted a proposal for an IPCA and further conversations on both are being planned.

Kaska has also met with Treaty 8 leadership in the fall of 2018 to discuss a range of governing matters, including the proposed KIPCA. This has been followed up with letters to the Treaty 8, and specifically, Fort Nelson First Nation leaders informing them of the progress of the KIPCA.

Kaska has informed the Acho Dena Koe First Nation by letter in January 2019 about the KIPCA, and awaiting a response before initiating further discussions.

10.2 Friendship Treaties, Agreements, and Associations with Neighbouring First Nations

In 1997 the Kaska initiated a northern gathering to provide a forum for discussing shared ancestral territories whereby the First Nations who attended agreed on a process for resolving issues in the areas that are shared. This work has been carried forward by the Kaska who have treaties with their southern neighbours the Carrier Sekani Tribal Council and an economic agreement with Tsay Keh First Nation. The Kaska are members of the 3 Nations that includes the Tahltan and the Tlingit who work together on wildlife and social services. We are now in the process of working with Treaty Eight First Nations who we are encouraging to work with the Kaska Dena on Indigenous Protected Areas in their Ancestral Territory that is adjacent to the Kaska Ancestral Territory.

³⁷ 3nations.org/

11 Stakeholder Engagement

The KIPCA is a large tract of provincial Crown land with a small amount of shared area with other First Nations, fee simple land owners, and tenure holders having an interest in recreation, guide-outfitting, trapping, and mining permits.

A Stakeholder Engagement (SE) Plan is in development to guide the effective engagement with stakeholders throughout the life of the KIPCA in identifying and implementing activities to manage or enhance engagement.

The Plan includes:

- **Identification:** of Stakeholders within KIPCA and those in proximity to KIPCA;
- **Categorization:** of Stakeholders into 4 zones as to priority in terms of power/influence and interest based upon Graphic 1 (below) and in consideration of Stakeholder **Identification**, Mapping and
 - Zone 1: (high) very frequent interactions/impacts;
 - Zone 2: (moderate) frequently have to engage about interactions/impacts; however, impacts are not as significant as Zone 1, but still important;
 - Zone 3: (minor) interactions/impacts are limited in time, or can be restricted to a given phase of activity;
 - Zone 4: (negligible) interactions could occur on incidental or occasional basis, and impacts are either very limited or nonexistent.
- **Mapping of the zones:** a visual tool used in labelling Stakeholders onto a KIPCA map, to illustrate zoning categorization;
- **Regulations and Requirements:** a listing and source of internal and external agencies/organizations;
- **Methodology:** criteria for **Identification** and **Categorization** of stakeholders as follows:
 - Zone 1: (high - in advance of establishment of KIPCA seeking support and partnership)
 - Governments (First Nations, provincial, federal, ministries, municipalities), and ENGOs;
 - Zone 2: (moderate - initial engagement with key users in advance of establishment of KIPCA)
 - Land Users: indigenous people, guide-outfitters, trappers, recreational users;
 - Zone 3: (minor – once KIPCA established to provide information on KIPCA)
 - MPs, MLAs, Ministries, Organizations representing Guide Outfitters, Oil and Gas, Mining, and Wildlife; and
 - Zone 4: (negligible – KIPCA updates)
 - Fee Simple/Tenure Holders: businesses, residents, oil and gas, and mining.

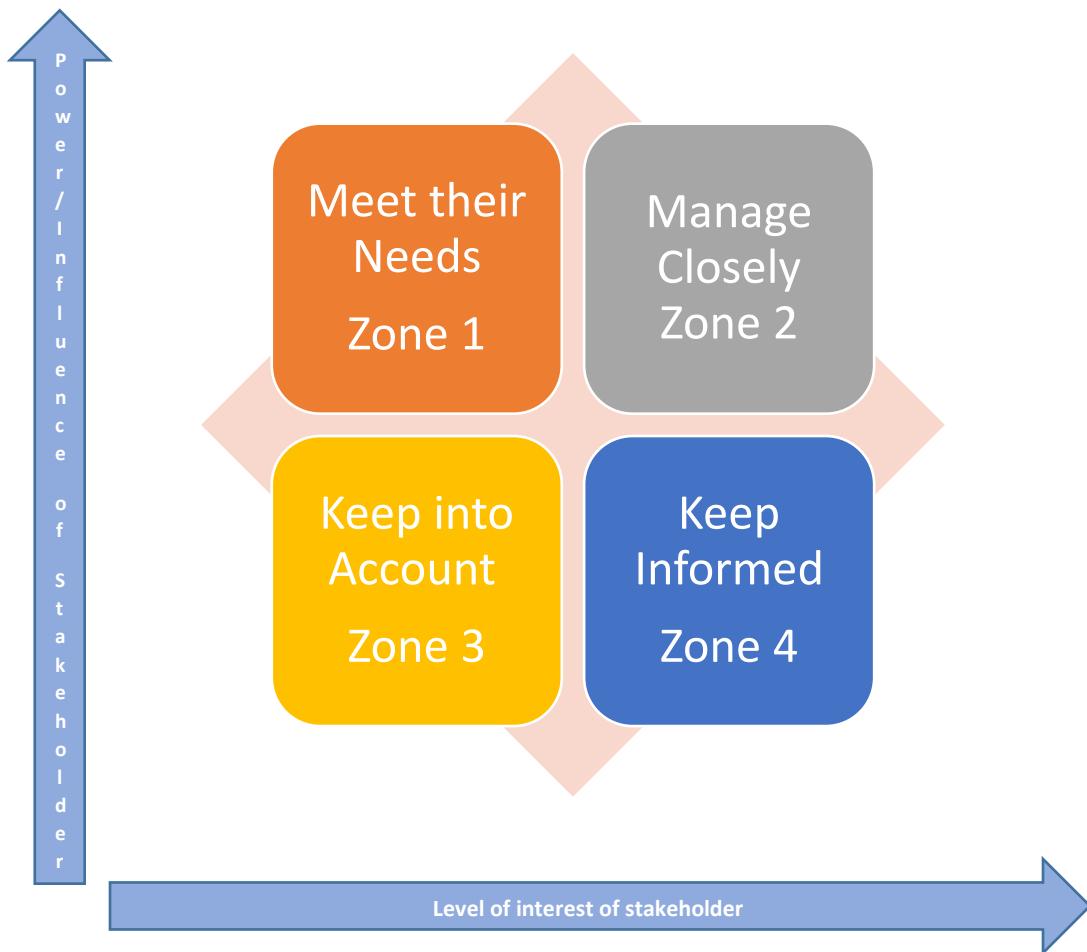


Figure 1. Stakeholder engagement methodology for establishment of the KIPCA.

- **SE Matrix:** a table including: **Identification**, **Categorization**, and **Regulations/Requirements** relevant to Stakeholders which is relied upon in the defining/modification to **Methodology** and in the development of **Strategies**.
- **Strategies:** to be developed throughout each phase of the KIPCA toward achieving - establishment, implementation and monitoring of the KIPCA, and will include the following:
 - *Stakeholder*;
 - *Zone*;
 - *Areas of Power/Influence*;
 - *Project Phase*;
 - *SE Manager*: individual responsible;
 - *Engagement Approach*: consult, inform, notify;
 - *Frequency*: very, frequent, less, and occasional; and
 - *Method of Engagement*: face-to-face, emails, newsletters, website, and other means.
- **Timetable:** developed for each phase of the KIPCA, in alignment with **Strategies** development and will include the identification of **Resource and Responsibilities**.
- **Grievance Management:** a process that sets out how grievances are received, responded to, and recorded, to demonstrate accountability.
- **Monitoring and Reporting:** as required by regulatory and funding agencies, and in updates to Stakeholders; and will include **Grievance Management** outcomes.

- **Costs:** associated to implementation and management of the SE Plan.
- **Document Templates** that support the above activities included as Annexes to the SE Plan.

12 Awareness Campaign

The Dena Kayeh Institute, in collaboration with its Partners (WWF, DUC, CPAWS, IBCC) initiated discussions with a Campaign Organizer – Capulet Communications of Burnaby, BC – in February 2019. Capulet is developing an outline for review and roll-out pending approval of DKI's Proposal to Challenge Fund, in support of the federal government's Target 1 mandate - to protect 17% of Canada's terrestrial and inland waters.

The initial discussion focussed on the following:

Project Overview:

- history and story of the Kaska in relation to the KIPCA;
- size, context, and graphical demonstration of importance of the KIPCA to the public within and outside of the KIPCA, governments, and the Kaska Dena;
- purpose for seeking protection and conservation of the KIPCA;
- messaging to date and with whom, and plans for engagement with identified Stakeholders;
- impacts to KIPCA and how KIPCA will be monitored; and
- goals and objectives of Campaign and Engagement.

Stepping Back View:

DKI in advancing the effort to establish the KIPCA is built upon the vision for the ancestral lands – Kaska to govern and manage its ancestral lands – and in that, recognition of the Kaska Dena rights and title to the ancestral lands and the protection of the core area of cultural values of the Kaska Dena.

From an environmental perspective – the KIPCA is the largest intact area of any wilderness area in B.C., and as such is a caribou stronghold, has the greatest diversity of ungulate and predator species, and intact watersheds. Species data within the KIPCA is limited and needs further investigation to accurately reflect species requiring protection.

Barriers/Challenges to Campaign:

- Identification of Audiences and the levers, such as reconciliation, conservation, and what would the public would want to hear.
- Why governments wouldn't support this initiative?
- Conservation Economy in comparison to resource extraction economy.
- Who will the opposition voices be?
- Prioritization of challenges and development of a strategy.
- Development of a Campaign Design that is directed by messaging and clarifies the use of campaign tools: of note from the discussions was the description of the Area, and the selection of pictures that reflected the description:

There's a real sense of magic – the fishing is unbelievable, and the pristine condition and remoteness of the Area that is intersected only by foot trails – of people and wildlife – that have and continue to travel the land. You're left feeling like you just walked into the past and you leave

with an understanding of the importance for leaving places like this untouched by the outside world for the appreciation of all.

- Key Dates and Milestones - high level.

13 Conclusions and Recommendations

It is our view, the proposed KIPCA boundaries, conservation analysis, and supporting documents meets the goals, principles, and objectives of the Canada Nature Fund Target 1 Challenge as set out by Environment and Climate Change Canada. The KIPCA is a 3.9 million hectares contiguous area within the core of the Kaska Ancestral Territory in British Columbia and has been designed in such a manner to minimize adverse effects to resource development while maximizing the ecological and cultural benefits. In addition, the KIPCA has been delineated in a fashion to maximize the cultural and commercial tourism and recreation opportunities for the Kaska Dena. Finally, by seeking a provincial conservancy designation with Section 35 rights being included provides for the joint management approach for the KIPCA with all interested Nations and governments with a broader spectrum of cultural, social, ecological and economic outcomes.

It is with this view; the following are provided as recommendations for the designation and implementation of the KIPCA:

- i. After reviewing and negotiating final boundaries with the provincial government, designate the area as a conservancy under provincial legislation;
- ii. The inclusion of the conservancy in the schedule to the *Protected Areas of British Columbia Act* will include clauses with the identification Section 35 rights applicable to all affected Nations;
- iii. Within 3 years of the legal designation, a management plan with joint decision powers will be empowered and until the time the management plan is empowered all decisions will be made jointly and by consent with the Kaska;
- iv. The governance of the KIPCA will be delivered jointly by Kaska and BC governments and the operations and monitoring will be conducted by the DKI and DNY Guardians with provincial representatives and other conservation partners.

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Appendix 1: Kaska Dena Place Names

Table 5. Kaska Dena place names

Name	Kaska Name
Kechika River	Tah dazih
Turnagain Lake	Gha-Cho teh
Turnagain River	Gah cho
Dease Lake	Tine ah
Goodhope Lake	Kidizah
Dease River	Tu cho
Finlay River	Tu The
Kechika River	Tahdazeh'
Liard River	Tahghah' Tueh
Muskwa River	Muskwaha
Tetza River	Chebe
Lower Post	D'aelyu'
McDame	Duna Za
Horseranch Range	Neh Ah
Hyland River	Agedze Tue
Fox River	Nakaza Tueh
Sifton Pass	Dadadeh
Kwadacha River(White River)	Kwadata
Akie River	Mach'a
Smith River	Tsah ah'gan tawehah
Red River	Tsieh Tueh
Crooked Lake	Kahla gah'
Cry Lake	Nahsagh
Graveyard Lake	Adhanei
Aeroplane Lake	mahkehnadehli
Obo Lake	Dachwa Munah
Spinel Lake	Kodaghta
Rainbow Lakes	Cho'-zih
Fox Lake	Nakaza Munah
Neloil Lake	Ehda Meta
Major Heart River	Tsihe Tu
Gataga Lake	Denatesila
Beaver River	Tsah Tueh
Toad River	Tah'leh Tueh
Frances Lake	Tu CHO (Big Water)
Pelly Banks	Tu' \$}dlni Koa Guse'an (house where rivers flow together)

Simpson Lake	Tse Zul Mane
Watson Lake	Tet'egeluge (up the hill fish Lake)
Rancheria River	Tu Nenesldn (water goes underground)
Liard River Big Eddy	Tu Tlenedl (big Eddy)- large oxbow on liard river where rancheria flows in the liard.

Appendix 2: Indicator Summaries

Table 6. Guide Outfitter Concessions in KIPCA

Certificate Holder	Guide	Guide Certificate Number
BLACK, Shane	BLACK, Shane	601064
CARY, Darwin	CARY, Darwin	700482
CASE, Danny	Licensed Guide Unknown	701163
DANIELSON, Michael	DANIELSON, Michael	601056
GLEESON, Luke	GLEESON, Luke	701176
		701193
GUNSON, Jason	GHUNSON, Jason	701256
KISELBACH, Craig	KISELBACH, Craig	701261
MCAULEY, Jordy	MCAULEY, Jordy	701139
MILLER, Blair	MILLER, Blair	701262
MILLER, George	VINCE, Thomas G.	701260
MUELLER, Frank	Licensed Guide Unknown	701250
OESTREICH, Devlin	OESTREICH, Devlin	601040
OLSEN, James	Licensed Guide Unknown	701251
ORIGONI, Maria	ORIGONI, Maria	601070
ROE, Dustin	ROE, Dustin	601112
SCHIPPmann, Chris	SCHIPPmann, Chris	701208
SIMPSON, Frank	SIMPSON, Frank	700651
THOMPSON, Quinten	THOMPSON, Quinten	701215
WARREN, Lori	WARREN, Lori	701231

DENETIAH CORRIDOR PROTECTED AREA

DENETIAH PARK
DUNE ZA KEYIH PARK [A.K.A. FROG-GATAGA PARK]
DUNE ZA KEYIH PROTECTED AREA
FINLAY - RUSSEL PROTECTED AREA
FINLAY RUSSEL PARK
HORNELINE CREEK PARK
KWADACHA WILDERNESS PARK
MUNCHO LAKE PARK
NE'ĀH CONSERVANCY
NORTHERN ROCKY MOUNTAINS PARK
NORTHERN ROCKY MOUNTAINS PROTECTED AREA
PITMAN RIVER PROTECTED AREA
STONE MOUNTAIN PARK

Table 7 Trapline Concessions in KIPCA

Trapline Number
TR0623T010
TR0623T009
TR0623T007
TR0623T013
TR0624T005
TR0623T003
TR0624T004
TR0623T002
TR0623T012
TR0623T011
TR0623T001
TR0623T014
TR0620T001
TR0741T006
TR0741T007
TR0740T006
TR0740T005
TR0741T004
TR0741T005
TR0753T004
TR0752T009
TR0752T008
TR0751T010
TR0753T001
TR0753T003

Trapline Number
TR0753T002
TR0753T005
TR0751T007
TR0754T003
TR0752T006
TR0752T003
TR0751T009
TR0751T008
TR0754T002
TR0752T007
TR0754T007
TR0752T002
TR0751T006
TR0751T005
TR0752T004
TR0751T004
TR0750T003
TR0751T011
TR0750T002
TR0751T001
TR0752T001
TR0751T003
TR0751T002

Table 8. BC Species Explorer Search Results

Scientific Name	English Name	BC List	SARA	BGC
<i>Salvelinus confluentus</i>	Bull Trout	Blue	1-SC (Mar 2019)	BWBS; SWB
<i>Asio flammeus</i>	Short-eared Owl	Blue	1-SC (Jul 2012)	BG;BWBS;CDF;CWH ;ICH;IDF;MS;PP;SBP S;SBS;SWB
<i>Bos bison athabascae</i>	Wood Bison	Red	1-T (Jun 2003)	BWBS
<i>Cardellina canadensis</i>	Canada Warbler	Blue	1-T (Feb 2010)	BWBS;CDF;CWH
<i>Contopus cooperi</i>	Olive-sided Flycatcher	Blue	1-T (Feb 2010)	BWBS;CDF;CWH;ES SF;ICH;IDF;MH;MS; PP;SBPS;SBS;SWB
<i>Euphagus carolinus</i>	Rusty Blackbird	Blue	1-SC (Mar 2009)	BG;BWBS;CDF;CWH ;ESSF;MS;PP;SBPS;S BS;SWB
<i>Falco peregrinus anatum</i>	Peregrine Falcon, <i>anatum</i> subspecies	Red	1-SC (Jun 2012)	BG;BWBS;CDF;CWH ;IDF;MS;PP;SBS
<i>Gulo gulo luscus</i>	Wolverine, <i>luscus</i> subspecies	Blue	1-SC (Jun 2018)	BAFA;BWBS;CMA;C WH;ESSF;ICH;IDF;IMA;MH;MS;SBPS;S BS;SWB
<i>Haplodontium macrocarpum</i>	Porsild's bryum	Red	1-T (Feb 2011)	SWBmk;SWBmks
<i>Hirundo rustica</i>	Barn Swallow	Blue	1-T (Nov 2017)	BAFA;BG;BWBS;CDF ;CWH;ESSF;ICH;IDF;IMA;MH;MS;PP;SBP S;SBS;SWB
<i>Myotis septentrionalis</i>	Northern Myotis	Blue	1-E (Dec 2014)	BWBS;ICH;MH;SBS
<i>Ochotona collaris</i>	Collared Pika	Blue	1-SC	BAFA;CMA;ESSF;SW B
<i>Oncorhynchus clarkii lewisi</i>	Cutthroat Trout, <i>lewisi</i> subspecies	Blue	1-SC (Feb 2010)	BWBS;ESSF;ICH;IDF; MS;SBS
<i>Physella wrighti</i>	Hotwater Physa	Red	1-E (Jun 2003)	BWBS
<i>Rangifer tarandus pop. 14</i>	Caribou (boreal population)	Red	1-T (Jun 2003)	BWBS
<i>Rangifer tarandus pop. 15</i>	Caribou (northern mountain population)	Blue	1-SC (Jan 2005)	BWBS;ESSF;MH;SBS
<i>Ursus arctos</i>	Grizzly Bear	Blue	1-SC (Jun 2018)	BAFA;BWBS;CMA;C WH;ESSF;ICH;IDF;IMA;MH;MS;SBPS;S BS;SWB

Search Summary

Time

Performed

Sun Feb 24 17:31:33 PST 2019

Results 17 records.

Search Criteria Animals OR Plants OR Fungi (Lichens and Mushrooms) OR Ecosystem Realm-Groups: Flood Group (F) OR Forest OR Grassland Group (G) OR Hydrogenic Group (H) OR Rock Group (R) OR Subalpine Shrub Group (S) OR Mineral Wetland Group OR Peatland Group OR Estuarine Realm OR Alpine Group (A) OR Beach Group (B)

AND BC Conservation Status:Red (Extirpated, Endangered, or Threatened) OR Blue (Special Concern)

AND SARA Schedule 1 Status:True

AND Forest Districts:Fort Nelson Forest District (DFN),Mackenzie Forest District (DMK),Skeena Stikine Forest District - Cassiar (DSS_C) (Restricted to Red, Blue, and Legally designated species)

Sort Order:Scientific Name Ascending

Notes 1. Citation: B.C. Conservation Data Centre. 2019. BC Species and Ecosystems Explorer. B.C. Minist. of Environ. Victoria, B.C. Available:

a100.gov.bc.ca/pub/eswp/ (accessed Feb 24, 2019).