Whitehorse and Southern Lakes Forest Resources Management Plan

2020

Kwanlin Dün First Nation, Ta'an Kwäch'än Council,
Carcross/Tagish First Nation and the Government of Yukon

This Forest Resources Management Plan was prepared by a Joint Planning Committee with representation by Kwanlin Dün First Nation, Ta'an Kwäch'än Council, Carcross/Tagish First Nation and the Government of Yukon, and with the assistance from the Carcross Tagish Renewable Resources Council and the Laberge Renewable Resources Council.

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DEDICATION

Albert James, Shakoon, was a passionate participant in the planning process for the Whitehorse and Southern Lakes Forest Resources Management Plan. He was instrumental in ensuring that traditional knowledge was incorporated into the fabric of the plan. His perfect attendance at planning meetings did not go unnoticed and it is with great respect that the Joint Planning Committee dedicates this document to his memory.

Albert James, Shakoon

As a member of the Carcross/Tagish Renewable Resources Council, Albert was a great teacher and mentor, always taking time to explain the spirit and intent of the Umbrella Final Agreement and traditional ways to fellow council members. He believed that teaching the youth was important, as they are leaders and managers of the future. Albert could be wary of new people involved in planning and negotiations but once he determined that someone was working for the same goal as him, he saw them as an ally.

Albert was passionate about the rights of his people and was committed to the protection of their land, water and animals. He was active in the land claims negotiations using his knowledge of the land, communities and cultural practices. He represented his people on countless boards, committees and planning processes. Albert was known as a brilliant strategist in negotiations and people knew he meant business when he entered a room. He was known to push hard and relentlessly for the rights of his people.


Yukon


CARCROSS/TAGISH
FIRST NATION


KWANLIN DÜN
FIRST NATION


TA'AN
KWÄCHÄN

APPROVAL AND RECOGNITION STATEMENT

Re: Letter of approval and recognition statement for the Whitehorse and Southern Lakes Forest Resources Management Plan

The Whitehorse and Southern Lakes Forest Resources Management Plan provides guidance for the sustainable use of forest resources in the planning area. This plan provides a clear framework and practical guidance for forest managers and planners to protect and integrate ecological, economic, traditional, heritage and other community values.

The Whitehorse and Southern Lakes Forest Resources Management Plan was created over a period of eight years by a Joint Planning Committee made up of delegates from Carcross/Tagish First Nation, Kwanlin Dün First Nation, Ta'an Kwäch'än Council and the Government of Yukon, and with help from the Carcross/Tagish and Laberge Renewable Resources Councils.

The plan meets the criteria for a Forest Resources Management Plan as established in Chapter 17 of the Carcross/Tagish Final Agreement, Chapter 17 of the Kwanlin Dün Final Agreement, Chapter 17 of the Ta'an Kwäch'än Final Agreement, and the *Forest Resources Act*.

In recognition and acknowledgement of the determination, dedication and participation by the planning committee, the Renewable Resources Councils, forest industry stakeholders, the community, and the core working group of our four governments, we the undersigned extend a thank you and hereby approve the Whitehorse and Southern Lakes Forest Resources Management Plan.

Carcross/Tagish First Nation

Ta'an Kwäch'än Council

Kwanlin Dün First Nation

Government of Yukon

EXECUTIVE SUMMARY

The Whitehorse and Southern Lakes Forest Resources Management Plan identifies the wide range of forest values and interests in the region, while also providing a blueprint for the management of these forests. The plan is guided by First Nation Final Agreements, First Nations traditional values and laws and the *Forest Resources Act*, following principles of integrated and sustainable forest management. The plan honours forest resources and supports respectful forest use through education, management and monitoring. It provides the highest level of strategic direction for forest management in the region, while also offering specific guidelines for operational planning. It integrates traditional knowledge, community interests and science to guide forest use for the benefit of current and future generations.

This plan was prepared over eight years by delegates from Kwanlin Dün First Nation, Ta'an Kwäch'än Council, Carcross/Tagish First Nation and the Government of Yukon, with the assistance of the Carcross/Tagish Renewable Resources Council and the Laberge Renewable Resources Council. The plan is based on a variety of resources: the traditional values of the First Nations people of the region; information gathered from community engagement; science; and examples from other models and plans. Traditional values form the plan's foundation and it is from here that the guiding principles are built.

The Whitehorse and Southern Lakes area is located in the headwaters of the Yukon River and includes public and First Nations Settlement Lands within the Traditional Territories of Carcross/Tagish First Nation, Kwanlin Dün First Nation and Ta'an Kwäch'än Council. Other First Nations with a Traditional Territory overlapping the planning boundary include Champagne and Aishihik First Nations, Little Salmon/Carmacks First Nation, Teslin Tlingit Council, and Taku River Tlingit First Nation. The area covers 1,490,261 hectares and includes forests, alpine tundra, subalpine, rivers, lakes, wetlands and rock, as well as communities including the City of Whitehorse and Carcross.

Humans have played a role in shaping the region's forests throughout history. First Nations people have long relied on these forests to survive. During the gold rush, people cut timber along travel corridors for construction and fuel. More recently, decades of fire suppression has significantly affected the natural fire regime.

Today, there are continuous and cumulative pressures affecting the area, primarily because it is home to the majority of Yukon's population and infrastructure. Several factors contribute to the need for this plan including: growing human population density, industrial and residential development, demands for access to fuelwood and increased local economic opportunities, outdoor recreational interests and the risk of large-scale wildfires. These issues must be balanced with interests related to the protection of wetlands and wildlife habitat for caribou, moose, grizzly bear, salmon and freshwater fish, as well as managing the impacts of access and climate change.

Wildfire is a natural and important ecological process in the boreal forest and balancing the potential benefits and risks of wildland fire is a complex task. There are increasing concerns about wildfire risk in the Southern Lakes area driven by a shift to older forests, the effects of climate change and growing community and infrastructure development in the forest.

Wildfire prevention in the Southern Lakes area will require larger-scale fire and fuel management planning and treatments. This may include an assessment of wildfire hazards, reducing forest fuels through stand conversions or fuel breaks, and improved planning and collaboration.

Forest resources planning is further complicated in the area by a complex management regime where public lands are administered by the Government of Yukon, Settlement Lands are administered by Kwanlin Dün First Nation, Ta'an Kwäch'än Council and Carcross/Tagish First Nation, municipal lands are administered by the City of Whitehorse, and a variety of other groups have a mandate, or interest, in forest management.

This plan attempts to provide a balanced approach to addressing these varied interests and challenges. It provides a series of recommendations on:

- forest management zones and activities that may take place in those zones;
- coordinated and proactive consideration of cumulative effects;
- wildlife habitat conservation, enhancement and management;
- supporting a healthy forest through use of responsible forest practices;
- taking an adaptive approach to plan implementation by recognizing that uncertainty and ongoing learning is inherent in natural resources management;
- maintaining current-use activities and protection of heritage resources;
- education and outreach for the public, visitors, forest users, harvesters, planners and managers;
- using timber harvesting to reduce forest fuels and wildland fire risk;
- supporting local and First Nations economic opportunities in forest management;
- developing strong working relationships to improve forest management practices and implementation of plan direction; and
- respectful use of forest resources through salvage of timber from other land use activities, using existing access roads and reforestation.

The Whitehorse and Southern Lakes Forest Resources Management Plan requires approval from Kwanlin Dün First Nation, Ta'an Kwäch'än Council, Carcross/Tagish First Nation and Government of Yukon. Following approval, governments will develop cooperative ways to implement and monitor the plan, including collaboration with the Carcross/Tagish Renewable Resources Council, the Laberge Renewable Resources Council, Champagne and Aishihik First Nations, Taku River Tlingit First Nation, the Yukon Wood Products Association, the public, and other agencies and interest groups that have interests in forest management.

The first priority is to establish an implementation agreement and identify areas for timber harvesting and fuel abatement. Using an adaptive approach to management, as more information becomes available, the parties will work together to modify the direction and management of the forests in the Southern Lakes area as needed.

"[MANAGING FORESTS] IS A COMPLEX ISSUE: EACH INDIVIDUAL SEES DIFFERENT VALUES."

— Feedback from public workshops, 2015

Photo: Lisa Walker

CONTENTS

1

THE NEED AND THE CHALLENGE

The traditional stories of the people of the Southern Lakes area explain how Crow helped to create the world, how the landscape was altered by flooding and glaciation, how Game Mother created the animals of the region, and how she and Beaver Man taught the animals how and where to live. Creation stories describe how patches of trees developed to provide refuge and resources for the survivors of the floods. They teach how we should respect the plants and animals for the sacrifices they make to ensure humankind's survival. They teach how greed and a failure to plan for future generations can have significantly negative consequences. In the past, the Indigenous people of the Southern Lakes area would assess the needs of the forest and would work respectfully to ensure its overall health. Today, there is a need to revive traditional values and laws and incorporate them into how we all interact with the forest. Underlying the development of this plan is an acknowledgement and respect of these traditional stories and their lessons.

– Storytellers: Patsy Henderson and Jimmy Scotty James

Through education, policy and research, we hope that informed and respectful decisions will be made around forest use and practices (for example, timber harvesting; road construction, maintenance and decommissioning; fuel abatement; and silviculture). A plan built around traditional values and teachings will help reduce impacts and maintain the integrity of the innumerable values held in the Southern Lakes forests and will mitigate concerns such as over-harvesting, value destruction and wildfires.

The forest landscape of the Southern Lakes area has been altered in the last century and it continues to endure cumulative pressures. Several factors contribute, including: growing human population in the most densely populated region of Yukon, industrial and residential development, demands for access to fuel wood and local economic opportunities, growing outdoor recreational interests, and the risk of large-scale wildfires and the need to manage forest fuels around communities. These issues must be balanced with interests related to the protection of wetlands and wildlife habitat for caribou, moose, grizzly bear, salmon and freshwater fish, as well as managing the impacts of access and climate change.

"IN THE END, CROW ALWAYS FINDS OUT THAT HE CAN'T BE GREEDY! HE LEARNS THAT PEOPLE MUST SHARE, NOT HOARD; THAT THEY MUST BE GENEROUS, NOT STINGY; THAT THEY MUST BE MODERATE, NOT EXCESSIVE IN THEIR ACTIONS AND PLANS. ALL OF THESE LESSONS ARE QUITE CLEAR IN THE CROW STORIES TOLD TO ME BY THE INDIANS OF SOUTHERN YUKON."

— Catherine McClellan, 2007: 1

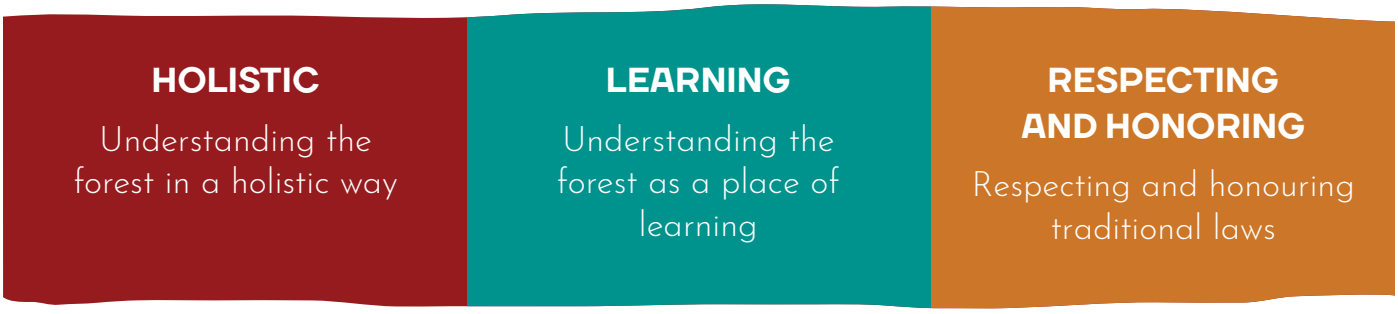
1.1 THE NEED

Forests in the region have experienced change throughout history. The greatest impacts began with the gold rush, with intensive harvesting along the lakes and rivers that were primary travel corridors. Later, clearing for the Alaska Highway, as well as ongoing suppression of natural fire activity changed the region's forests. Timber extracted from these activities was used for construction, residential development and fuel for heating and transportation. In the recent past, there has been low-level harvesting of the region's forests to support small-scale commercial activities and harvesting of fuelwood for home heating. This low level of harvesting combined with fire suppression has left a fuel-laden forest.

Traditional knowledge teaches that a healthy forest can meet all of the needs and support all of the values of its users. In the Southern Lakes area, forests are managed under First Nation Final Agreements and the *Forest Resources Act*. Together, forest managers aim to implement practices that support healthy forests for the benefit of current and future generations.

This plan will work to carefully manage human impacts on the forest while also encouraging and supporting natural processes in the maintenance of a healthy forest. There needs to be an allowance for human use, but these activities should respect and honour the forest through strategic education, management and monitoring. Through an inclusive process, three guiding principles were identified and incorporated throughout the plan (Figure 1).

Figure 1. Guiding principles for the Whitehorse and Southern Lakes Forest Resources Management Plan



A holistic approach to managing the forests emphasizes the whole system and the connections between the individual parts. To understand the forest in a holistic way, we must consider the complete forest ecosystem that includes not only the individual parts, like trees and water, but also other plants and animals (including people) that contribute to the health of the forest. The plan will achieve this through:

- coordinated and proactive consideration of cumulative effects; and
- habitat conservation, protection, enhancement and management.

To respect the forest as a place of learning, we must ensure that opportunities for learning are provided and there is space to adapt from those lessons. The plan will achieve this through:

- taking an adaptive approach to plan implementation;
- maintaining cultural, heritage and educational uses including hunting, fishing, trapping, berry picking, medicinal plant gathering, and firewood harvesting;
- educating the public, recreational users, harvesters, planners and managers; and
- providing and maintaining opportunities for recreation and aesthetic values.

Finally, we must work to respect and honour traditional laws and customary practices through using, implementing and upholding them. The plan will work to honour these laws by:

- further developing and maintaining strong collaborative working relationships to improve forest management practices and plan implementation;
- prioritizing the salvage of timber from other land use activities;
- encouraging the use of existing access and work collaboratively to address unauthorized access;
- applying silviculture (reforestation) treatments;
- supporting local and First Nations economic opportunities in timber harvesting including using timber for milling and other value-added products;
- developing equitable distribution of access to fuelwood and harvesting activities; and
- providing economic opportunities like harvesting timber for milling and other value-added wood products, as well as biomass projects.

Traditional laws and customary practices include, but are not limited to:

- take only what you need;
- give back something for everything you take;
- use everything you take, do not waste;
- communicate and work together to protect the health of the land and water; and
- treat all things with respect.

1.2 THE CHALLENGE

To ensure success of this plan, there are a number of challenges to address.

- **Addressing people's apprehension and resistance to change.** Implementation may require a change from the status quo. Engagement and education will be required to facilitate these changes.
- **Implementation across multiple administrations and lack of strong and consistent management policies across jurisdictional boundaries.** The planning area is made up of public land, First Nations Settlement Lands, First Nations traditional territories, and land within municipal boundaries. Considerable coordination will be required.
- **Consistency with legislation and other plans in the area.** The plan needs to meet the intentions of the Final Agreements and the *Forest Resources Act*. It also must be consistent with local area plans, special management area plans and other management plans. This plan should also inform the development of new resource management plans for the region.
- **Lack of regional land use planning in the Southern Lakes area** and the need to balance resource use with protection and address cumulative effects from land uses such as mining, agriculture, residential development, new roads and access.
- **Managing the forest to reduce the risk of wildfire and provide timber harvesting opportunities for Yukon people** while considering and respecting the many other competing values across the Southern Lakes area.

This plan works to meet these challenges by supporting the maintenance and development of a healthy forest. It is our belief that a healthy forest can provide all of the values important to humans, wildlife, water, land and air. We feel that a plan supporting ecological integrity will also meet the needs of all administrative bodies with interests in the area. For example, there are opportunities to reduce the risk of wildfires through forest management activities that also provide long-term employment.

"THE MOST VALUABLE RESOURCE IN THE FOREST IS KNOWLEDGE. THERE ARE A LOT OF STORIES AND KNOWLEDGE. A LOT OF PLACE NAMES. THERE ARE IMPORTANT MESSAGES IN THE STORIES."

— Ann Smith, Kwanlin Dün First Nation Elder

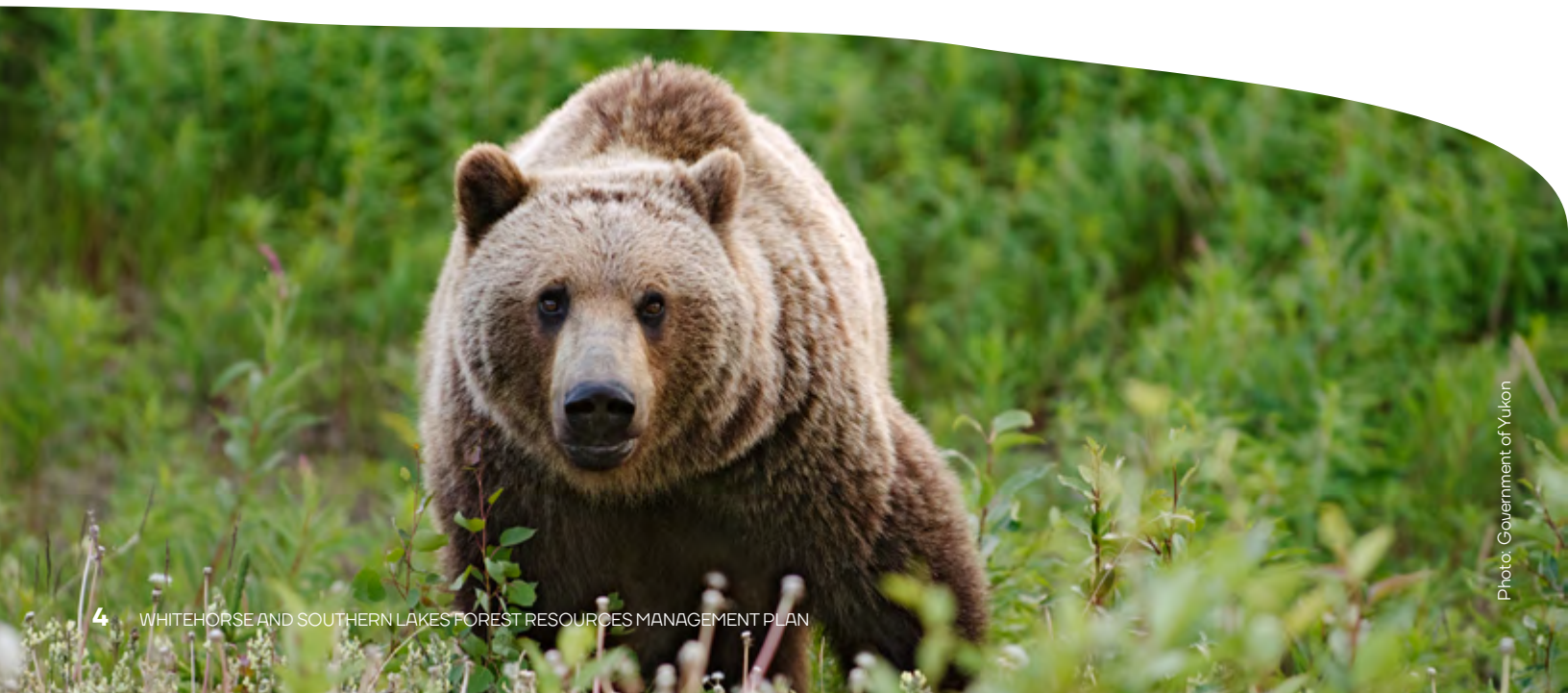


Photo: Government of Yukon

1.3 PURPOSE AND OBLIGATIONS

The purpose of this plan is to provide direction for the support and maintenance of healthy forests in the Whitehorse and Southern Lakes area. This plan provides a high-level, strategic framework for forest managers to protect and integrate ecological, traditional, heritage and other community values when making decisions related to forest use. The plan is guided by Chapter 17 of the Carcross/Tagish First Nation, Kwanlin Dün First Nation, and Ta'an Kwäch'än Council Final Agreements and the *Forest Resources Act*.

First Nation Final Agreements Chapter 17 Principles

When developing Forest Resources Management plans, Government of Yukon and the Yukon First Nations shall take into account the following:

- the principle of sustainable use of forest resources;
- the principle of an integrated and balanced approach to the management and protection of interests in and uses of forest resources in a watershed;
- the principle of integrated forest resources management on Settlement Lands and public land;
- the forest resources harvesting and management customs of Yukon First Nations;
- fish and wildlife harvesting rights and management plans as set out in Chapter 16 (Fish and Wildlife);
- the knowledge and experience both of the Yukon First Nations and scientific communities in forest resources management and use; and
- the principle of implementing the plan on a watershed basis.

Forest Resources Act preamble

- recognizing that the long-term health of Yukon's forests must be maintained and protected for the benefit of current and future generations;
- recognizing that the use of forest resources can play an important role in the economy of Yukon;
- recognizing that Yukon forests play an important role in the social and cultural lives of Yukon residents, and that Yukon First Nations people have a special relationship with these environments; and
- recognizing that the use of forest resources must be planned and undertaken to enhance beneficial socio-economic change while not undermining the ecological and social systems upon which Yukon communities and societies depend.

The plan provides the following direction for forest management in the area:

- identify the key forest values and issues in the planning area;
- identify the potential land base for forest management activities;
- recommend strategic directions for forest values;
- produce a framework of goals, objectives and indicators to monitor the effects of forest management activities on other forest values; and
- provide a blueprint for forest management in the Southern Lakes area that can be used and integrated with other resource development and planning exercises to address cumulative effects and ensure that goals and objectives are achieved over the long term.

The terms of reference for the Joint Planning Committee include guiding principles from the Final Agreements and planning requirements described in the *Forest Resources Act*.

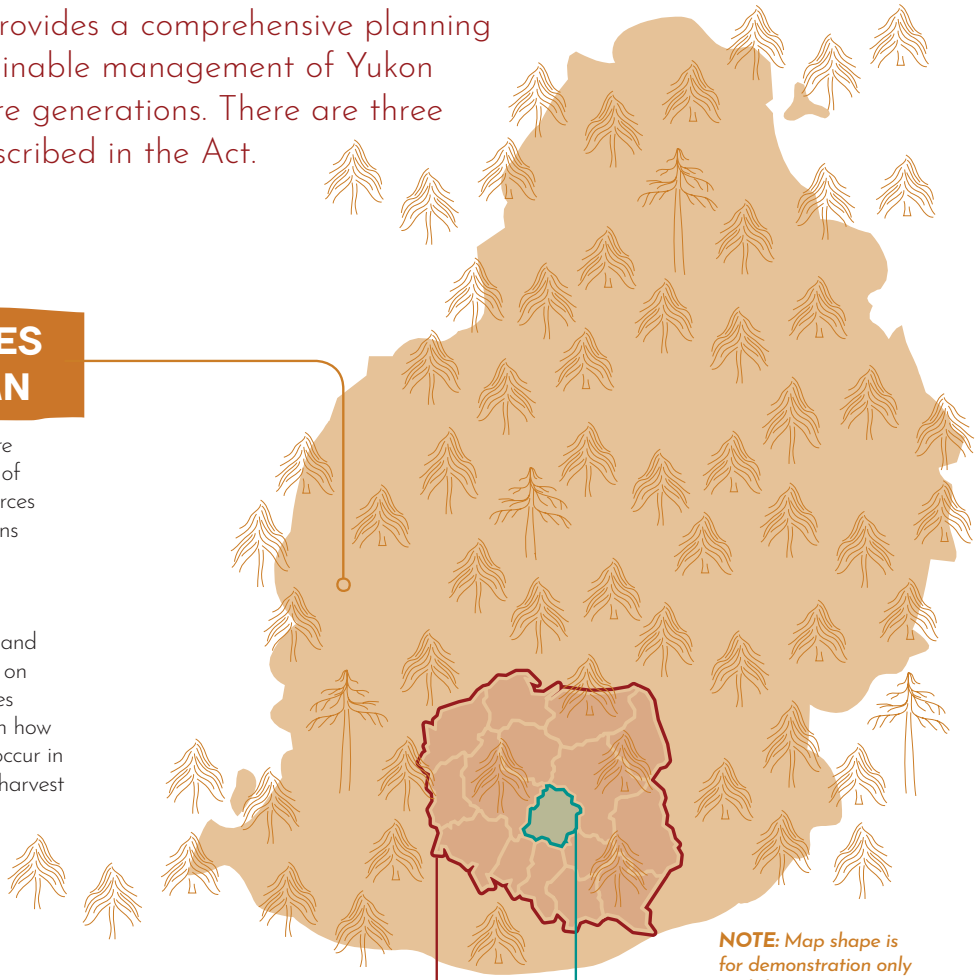
Together, these documents provide a framework based on principles of integrated and sustainable forest management.

There is a hierarchy of legislation, planning and management tools in place to manage forests in the Southern Lakes area. The *Forest Resources Act* contains a suite of planning, tenures, and compliance and enforcement tools to maintain and enhance the health of forests for all current and future generations. All levels of forest planning must consider all existing land and resource plans that apply to the area. The Act also includes a comprehensive consultation and engagement framework to ensure that all consultation, communication and partnerships between the Government of Yukon, First Nations and communities are in place at all levels of forest planning and operations.

Photo: Lisa Walker

Forest resources management planning

The *Forest Resources Act* provides a comprehensive planning regime to support the sustainable management of Yukon forests for current and future generations. There are three levels of forest planning described in the Act.



NOTE: Map shape is for demonstration only and does not represent an actual area

1

FOREST RESOURCES MANAGEMENT PLAN

These are strategic, long-term plans that are created collaboratively by the Government of Yukon, First Nations and Renewable Resources Councils. Forest resources management plans cover very large areas, often greater than 1,000,000 hectares.

These plans identify forest resources values and sensitive areas and provide broad direction on where and why forest management activities should take place. They provide certainty on how forest management and development will occur in the planning area and guidance to timber harvest plans and site plans.

2

TIMBER HARVEST PLAN

These are development plans that identify proposed areas for timber harvesting and contain strategies for reducing or eliminating impacts on other important values.

Created at the landscape or watershed level, these plans range between 500 hectares and 100,000 hectares.

3

SITE PLAN

These are operational plans that identify forest stand-level activities and standards for timber harvesting and reforestation to ensure other important values are protected during harvesting.

These plans are between one hectare and 500 hectares.

1.4 PLANNING CONTEXT

The planning area is located in the headwaters of the Yukon River in the Whitehorse and Southern Lakes area of Yukon and includes public and First Nations Settlement Lands within the Traditional Territories of the Carcross/Tagish First Nation, Kwanlin Dün First Nation and Ta'an Kwäch'än Council (Map 1). Other First Nations with a traditional territory overlapping the planning boundary include Champagne and Aishihik First Nations Little Salmon/Carmacks First Nation, Teslin Tlingit Council and Taku River Tlingit First Nation. The planning area boundary was determined through the Overlap Agreement ratified in 2013.

While the planning boundary overlaps Agay Mene Natural Environment Park, the zoning in this plan does not apply to that area and a park management plan will eventually guide activities in the park.

The plan area covers 1,490,261 hectares, including forests, alpine tundra, subalpine, rivers, lakes, wetlands, rock, and human developments including the City of Whitehorse and the community of Carcross. The plan encourages a holistic view and approach to forest management across the landscape. Any recommendations within the plan are not intended to affect the ability of First Nations to live in the traditional way. We hope that by providing a holistic plan that supports and develops a healthy forest, it will meet the shared needs of forest users within the planning area.

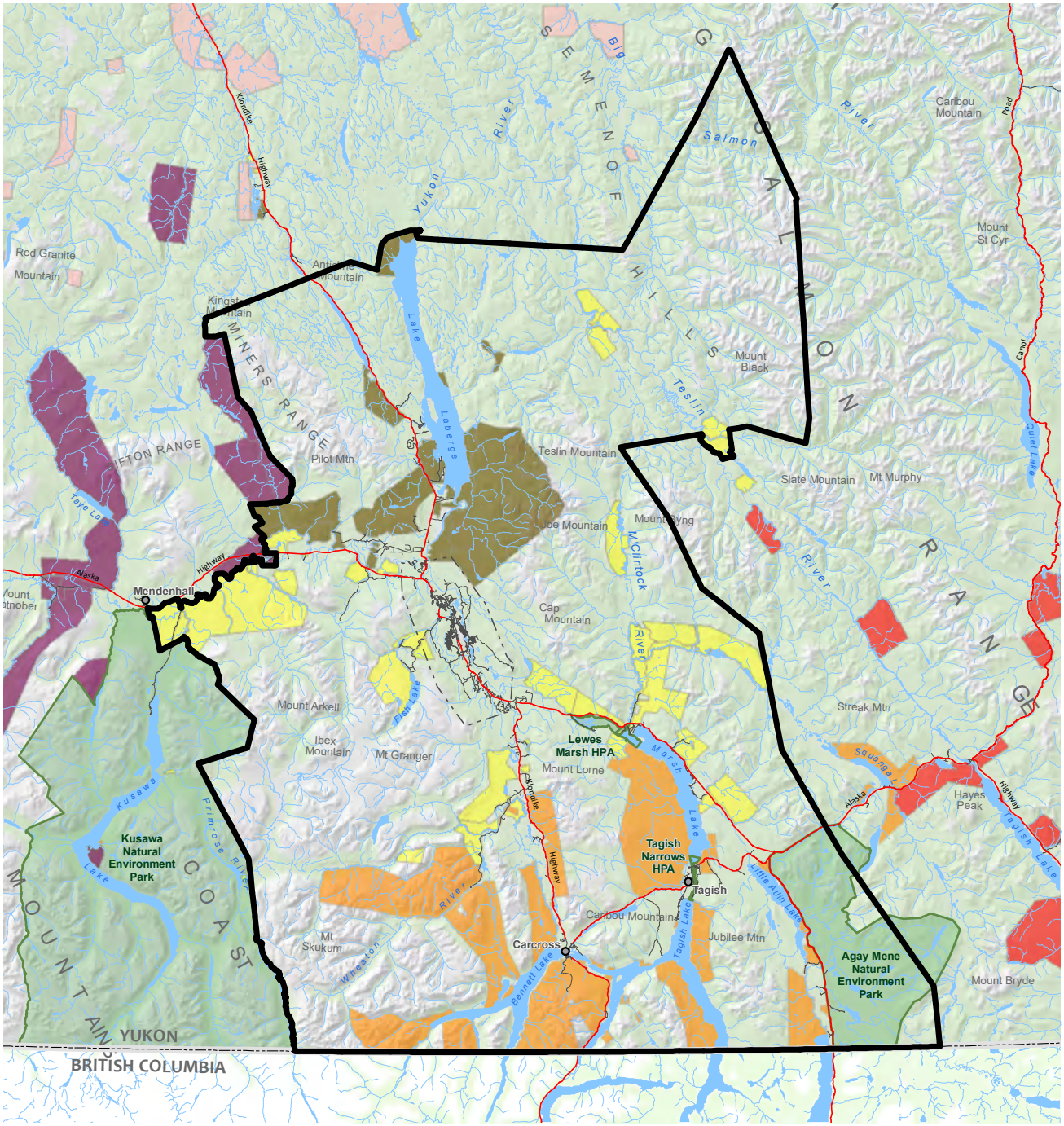
1.5 SUSTAINABLE MANAGEMENT

Sustainable management is defined as managing resources in a way that benefits current and future generations. Sustainable management of forests in the planning area must be environmentally appropriate, socially beneficial and economically viable for present and future generations.

It is important to recognize that the limits and boundaries of what can be considered to be sustainable are constantly shifting as economies, societies and environmental conditions change. In the planning area, timber harvesting is a relatively minor economic activity limited by the slow growth of trees, as well as other forest values, like fish and wildlife habitat, tourism, recreation, protection and First Nations traditional uses. These existing values inform where, when and how much forest harvesting is appropriate.

The forest resources management planning process informs future work to determine a sustainable level of harvest. It does this by using a timber supply analysis and annual allowable cut decisions under the *Forest Resources Act*. Ultimately, environmental constraints determine how much pressure we can place on forests and not compromise their role in a functioning natural ecosystem. It is important the plan is adaptable to the variability of the economy, society and the environment. Being aware of the interactions among these three levels of sustainability is essential to managing forest use for the long term.

Map 1. Settlement Lands in the Whitehorse and Southern Lakes Forest Resources Management Plan



Whitehorse and Southern Lakes Forest Resources Management Plan

Settlement Lands

April 17, 2019

- FRMP Boundary
- City of Whitehorse
- Parks and Protected Areas

The planning boundary also includes areas of Taku River Tlingit First Nation's Asserted Traditional Territory

First Nations Settlement Lands

- Carcross/Tagish First Nation
- Kwanlin Dün First Nation
- Ta'an Kwäch'än Council
- Teslin Tlingit Council
- Champagne and Aishihik First Nations
- Little Salmon/Carmacks First Nation

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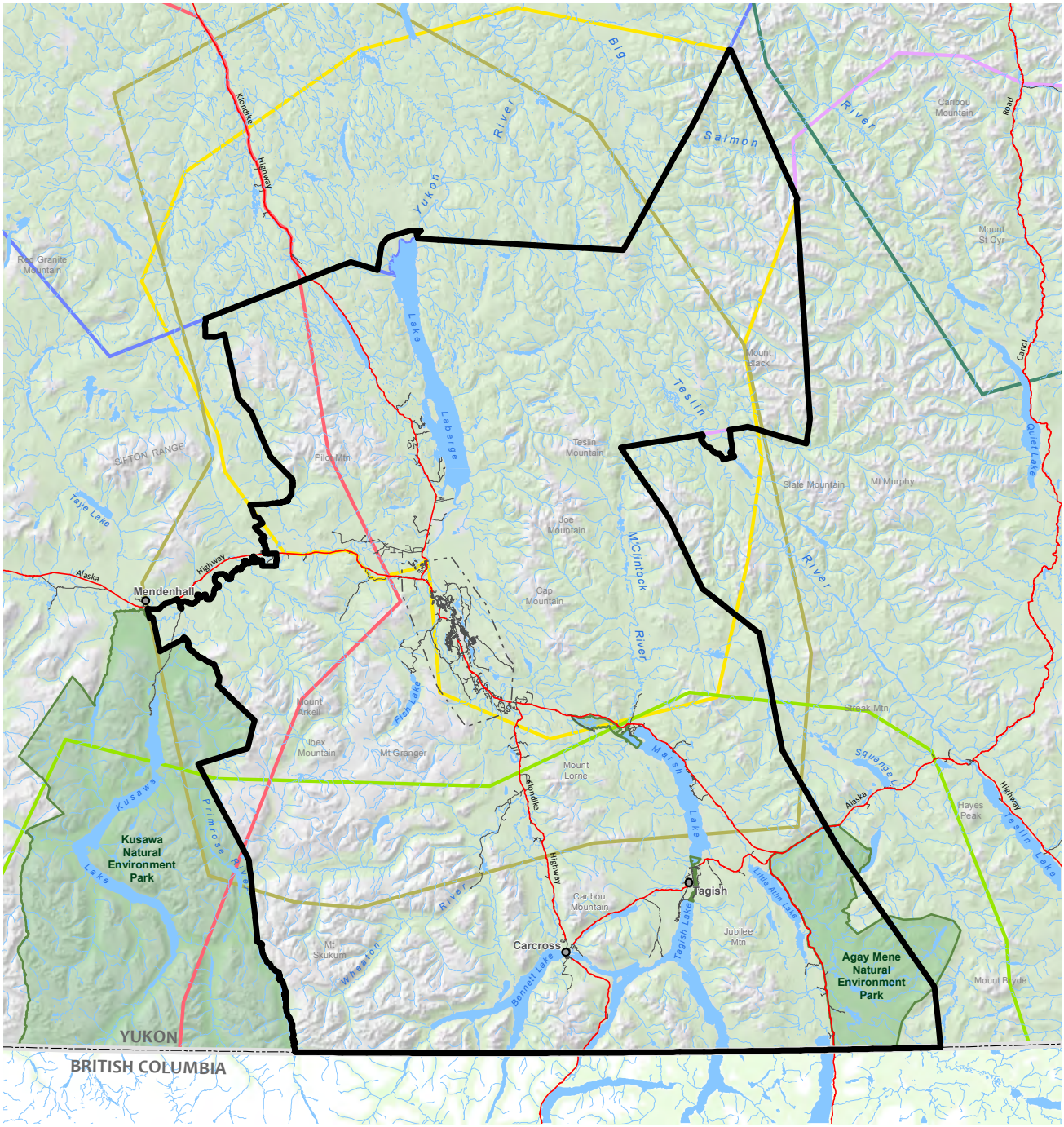
Map 2. First Nations Traditional Territories in the Whitehorse and Southern Lakes Forest Resources Management Plan



Whitehorse and Southern Lakes Forest Resources Management Plan

First Nation Traditional Territories

June 13, 2019

- FRMP Boundary
- City of Whitehorse
- Parks and Protected Areas

The planning boundary also includes areas of Taku River Tlingit First Nation's asserted traditional territory

- Carcross/Tagish First Nation
- Champagne and Aishihik First Nations
- Kaska First Nations
- Kwanlin Dün First Nation
- Little Salmon/Carmacks First Nation
- Ta'an Kwäch'än Council
- Teslin Tlingit Council

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1.6 VISION, PRINCIPLES AND PROCESS

Maintain a functioning forest ecosystem that incorporates holistic values and provides opportunities for adaptable forest management

The Joint Planning Committee created this vision based on the holistic view that many living things use the forest. The committee recognized that the forest is highly valued by people and so they considered the importance of the entire forest ecosystem including plants, water, wildlife and ecological processes. This plan is a living document; it reflects the current understanding of what the forest needs to be healthy and acknowledges that those needs may change over time. This adaptability is essential as our understanding of ecological integrity grows with new information about what does and does not work for the area. A forest is in a perpetual cycle of decay and regrowth, continually adapting to impacts, including climate change. The vision is to have the plan reflect that cycle and allow for adaptability. Goals and objectives can be adjusted, allowing for new issues and interests to be addressed as they emerge.

Appendix A provides a detailed outline of the steps in the planning process. Planning began in 2009 with the terms of reference signed by Carcross/Tagish First Nation, Kwanlin Dün First Nation, Ta'an Kwäch'än Council and the Government of Yukon. The Joint Planning Committee was formed in December 2012.

The Renewable Resources Councils were part of the planning team, assisting in developing the contents of the plan and engaging the public. The committee was assisted by a secretariat, technical writers and independent facilitators.

The committee met regularly and developed the plan by consensus. Through a series of meetings and workshops, information was gathered from the public, interest groups, industry, overlapping First Nations and the Yukon Wood Products Association. The Joint Planning Committee considered the values of the forest alongside the interests of area residents, their respective governments, special-interest groups and stakeholders. The plan strives to reflect all these values as they were communicated to us.

The Joint Planning Committee completed a traditional knowledge study by interviewing knowledge holders from First Nations. The resulting information was used to create the plan's guiding principles and to ensure that traditional knowledge was woven into the fabric of the plan.

The Joint Planning Committee recommended the plan to governments on May 10, 2019. Consultation on the plan was initiated, as per section 8, subsection 4 of the *Forest Resources Act*. The consultation included an online survey, open houses, stakeholder engagement, First Nations consultation, and Renewable Resources Council consultation.

The plan will be regularly reviewed and updated in order to adapt to new information. This review will be based on a holistic understanding of the forest and include multiple variables. The governments, together with the Renewable Resources Councils, will discuss the need to review and update the plan as required. The plan should be reviewed no later than 10 years after implementation. More frequent revisions may be scheduled based on results of ongoing monitoring or completion of regional land use planning.

1.7 CONSISTENCY WITH OTHER PLANNING

This plan was completed before regional land use planning occurred in the Southern Lakes area as set out in Chapter 11 of First Nation Final Agreements. Regional land use plans make recommendations about all uses of land, water and other renewable and non-renewable resources. Such a plan is designed to resolve broad land and resource conflicts and provide certainty that all the social, cultural, economic and environmental values are considered when a land use decision is made. There is a need for regional planning to provide guidance for the management and use of land and natural resources, including forest resources, in the region.

Section 17.6.1 of First Nation Final Agreements states that forest resources management plans and forest fire management plans shall be consistent with any approved regional land use plans. The *Forest Resources Act* gives the ability to amend the plan to make it consistent with any future regional land use plan. Many people told us that a regional land use plan is needed in the area, and it should be the foundation on which to build a forest resources management plan. We also heard that the biggest threat to the sustainability of forests and wildlife is disturbance from intensive land use and development. Although this plan cannot offer planning for other resource sectors, it should serve as a guiding document and acknowledge cumulative effects in the development of thresholds and standards for forest management.

Until the completion of a regional land use plan, local area plans provide guidance on resource use around communities where they exist. All timber harvesting will be guided by the forest resources management plan and local area plans. When a regional land use plan is completed these plans may need to be amended.

One of the guiding principles of this plan is to consider the forest holistically so that the plan will coordinate with all other plans including a future regional land use plan. To better integrate with a regional land use plan, the terms of reference for this plan indicate it must be consistent with other land and resource plans which have been subject to public review and are approved for the area. To address this requirement, the following summary (Table 1) lists plans or planning processes that were considered during planning. Lower-level forest plans (timber harvest plans and site plans) must aim to be consistent with higher-level plans as they become available. Thus, the forest resources management plan is a valuable resource to inform other plans on forest values and users. Any new or amended plans for the region should be informed by, and be consistent with, the Forest Resources Management Plan.

Photo: John Meikle

Table 1. Other legislation, land use plans and management plans in or adjoining the planning area that were considered by the Joint Planning Committee

TYPE OF PLAN OR AUTHORITY	LOCATION	INTERACTION WITH THIS PLAN
First Nation Final Agreements	Within planning area	Under Chapter 17 of First Nation Final Agreements, First Nations own, manage, allocate and protect resources on Settlement Land. Chapter 17 also addresses forest resources harvesting, the role of Renewable Resources Councils in forest management, forest planning, forest health, forest resources protection, access and economic opportunities.
Self-government Agreements	Within planning area	Self-government agreements define First Nations laws and decision-making powers and outline the ability of a First Nation to assume responsibility for delivering a program or service. This relates specifically to the ability of a First Nation to manage, allocate and protect forest resources on Settlement Land.
Forest Resources Act	Within planning area	Successor resources legislation emanating from the direction in the Devolution Transfer Agreement and First Nation Final Agreements. The legislation that guides forest resources management in Yukon.
Timber harvest plans	Within planning area	Six existing timber harvest plans in the region are for the Fox Lake Burn, Lubbock Valley, Marsh Lake and Lewes Marsh areas.
Agay Mene Natural Environment Park	Southeast corner of planning area	Agay Mene Territorial Park is identified as a Natural Environment Park under Chapter 10 of the Carcross/Tagish First Nation Final Agreement. This area is important for fish and wildlife and their habitats, traditional use, fishing and other recreation. When management planning is complete, the area will be designated under the *Parks and Land Certainty Act*.
Habitat protection areas	North of Marsh Lake and Tagish River	There are two habitat protection areas within the planning area. The Lewes Marsh Habitat Protection Area is identified in the Carcross/Tagish, Ta'an and Kwanlin Dün Final Agreements. The Tagish River Habitat Protection Area is identified in the Carcross/Tagish Final Agreement. These areas are important for migratory birds in spring and other values. Tagish River is an important traditional gathering place and important for caribou migration. When management planning is complete, the areas will be designated under the *Wildlife Act*.

Table 1 continued

TYPE OF PLAN OR AUTHORITY	LOCATION	INTERACTION WITH THIS PLAN
Regional assessment of wildlife in the Yukon Southern Lakes area	Within planning area	Habitat recommendations developed by the Southern Lakes Wildlife Coordinating Committee following the mandate established in Schedules B and E, respectively, of Chapter 16 of the Kwanlin Dün First Nation and Carcross/Tagish First Nation Final Agreements. Recommendations are for all wildlife species in the region, including woodland caribou and moose.
Atlin Taku Land Use Plan/Wóoshtin Wudidaa	British Columbia/ Yukon border and to the south	Strategic land use plan for the Atlin Taku developed through collaborative government-to-government process involving the Taku River Tlingit First Nation and British Columbia. Contains information related to land use zones, forest retention areas, parks, commercial forest harvest areas.
City of Whitehorse	Within planning area	Fuel abatement projects; permitted fuelwood harvesting within city limits; parks planning.
Local area plans and area development regulations	Lorne Mountain, Carcross, Golden Horn, Hotsprings Road, Deep Creek, Ibex Valley and draft Marsh Lake, Tagish, Fox Lake	Collaborative plans developed in unincorporated communities with First Nations, the Government of Yukon and communities. Include policies and maps that designate different areas for different uses, including forest management. The broad policies and land use designations are implemented through area development (zoning) regulations that provide more detail on what can or cannot occur in each zone.

2

THE PLANNING AREA

Most of the planning area falls within the upper headwaters of the Yukon River. Major watercourses include the Teslin River and the upper Yukon River. Several smaller tributaries of the Yukon River include the Takhini (Nakhu Chu — *crossing with raft*), Wheaton, Watson and M'Clintock (Gyu Chua — *king salmon river*) rivers. Wetlands and large lakes cover about 10 percent of the area including Bennett Lake, Tagish Lake, Marsh Lake (Takwadadha — *where the sand washed up onto the shore*) and Lake Laberge (Tàa'an Män — *People of the Lake*). Table 2 describes the traditional place names for the lakes in the region. Significant wetlands are found at Shallow Bay (Män Tl'ät), along the M'Clintock River and the Yukon River below Marsh Lake. These headwaters hydrate the region, providing life to plants, animals and people. It is at these headwaters where Game Mother's story takes place. From the mountain peaks in the Southern Lakes area (Montana, Grey Ridge, Caribou and Nares mountains), Game Mother strung sinew and hide. It was here she gave birth to the animals and taught them how they would live with, and provide for, humans. It was here she taught them where and how to live.

– Storytellers: Patsy Henderson and Jimmy Scotty James

The topography consists of dissected plateaus, rolling hills and broad valleys occupied by lakes and rivers. Much of the terrain lies between 1,000 and 1,500 metres in elevation and all the major rivers as well as Lake Laberge lie below 760 metres. The highest peak is Mount Arkell at 2,377 metres. Other peaks over 2,000 metres are Joe Mountain, Mount Lorne, Mount Byng and Pilot Mountain.

Most of the large lakes and rivers flow southeast to northwest or south to north. This pattern reflects the northwest-trending faults and folds in bedrock. During de-glaciation, large volumes of meltwater were dammed in some valleys and formed large glacial lakes. Beach lines, lake bottom sediments and many modern lakes can now be found in these valleys. In the Takhini River and Tagish River valleys, Glacial Lake Champagne deposited up to 75 metres of silt and clay. Deposits can contain massive ice bodies and are prone to landslides and thermokarst degradation when disturbed either by river erosion, forest fires or other changes in surface soil conditions. There are traditional stories that describe these landscapes. Asuya (Beaver Man or Smart Man) went with Crow to follow Wolverine's tracks, then they went up a mountain to look around. They saw a great big slide alongside the mountain (Ta'an Kwäch'än Council, 1990).

— Storyteller: Annie Ned

The area lies on the leeward side of the Coastal Mountains and has a dry subarctic climate. About one third of the 200 to 325 millimetres of annual precipitation falls as summer rain. Snow cover is present between October and April, lasting a month longer in higher terrain. The mean annual temperature is -1 °C in the southeast and -4 °C in the northwest. Mean temperatures are five degrees warmer in higher terrain due to air inversion. The mean July temperature ranges from 12 °C to 14 °C. The mean January temperature ranges from -21 °C to -25 °C. Winds are common in southeast- to northwest-oriented valleys due to storms originating in the Gulf of Alaska. Many traditional place names in the region reflect the wind activity. The traditional Tagish and Tlingit names for Caribou Mountain are Metaat'le Shech'ee and Yaadewduwanul, both translated as "wind blowing on the forehead" or "blowing against the face." Similarly, the valley between Tagish and Carcross was traditionally called Shash zeitigi (Tagish) or xoots leitook (Tlingit), which are translated as "grizzly bear throat" or "bear windpipe" as the sound of the wind rushing through the valley is reminiscent of the mighty grizzly's voice. Windy Arm on Tagish Lake was traditionally called Tsei Zhefe Mene, or "howling rock lake."

The area encompasses diverse landscapes of the forested boreal cordillera ecozone including four ecoregions: Yukon Southern Lakes, Yukon–Stikine Highlands, Boreal Mountains and Plateaus and Pelly Mountains (Appendix B). These ecoregions have many unique characteristics.

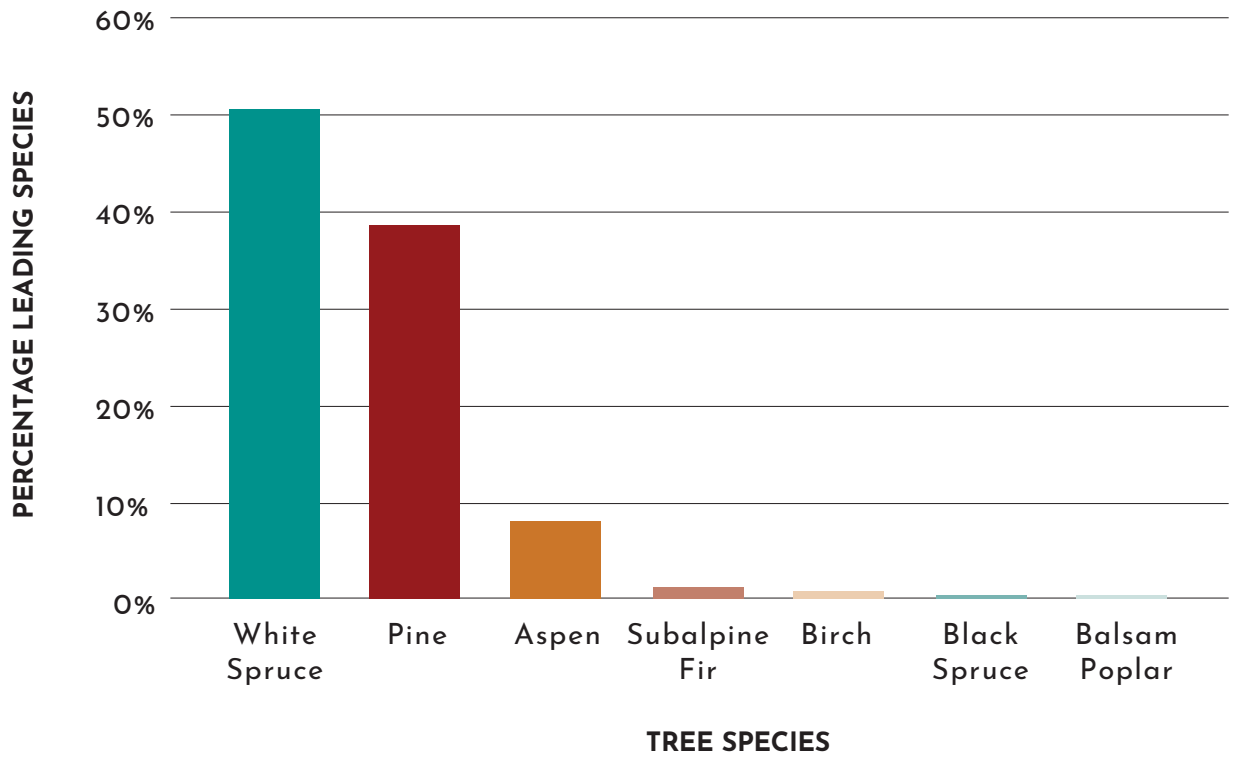
*Table 2. Traditional place names (*unofficial) related to fish*

MODERN PLACE NAME	SOUTHERN TUTCHONE	TLINGIT	TAGISH
Fish Lake	Lu Zel* *Skimming fat of the fish*		
Pike Slough	Chamia* *Where you set fish net*		
M'Clintock	Gyu Chua* *King Salmon Creek*		
Lake Laberge	Tàa"an Mä		
Fox Lake	Kwätan'aya Dhal		
Little Fox Lake	Tà'òla Män		
Big Salmon River	Gyu Shaw Chu* *Big Salmon water*	T'à Tlèn Hîni *Big Salmon River*	
Chooutla Creek*		Keshuwaa Héeni *Grayling Creek*	T'ase Mbet* *Grayling Creek*
Squanga Lake		Dasgwaanga Áayi *Grayling Lake*	Deswaage mene* *Whitefish Lake*
Squanga Creek		Dasgwaanga Héeni *Little Pygmy Whitefish Creek*	Desgwaage Too'e* *Whitefish Creek*
Little Atlin Creek		Óon Héeni *Round Whitefish Creek*	Oona Too'e* *Round Whitefish Creek*
Chooutla Lake*		Keshuwaa Áayi *Grayling Lake*	Kwachoo Mene* *Grayling Lake*
Nares Lake		Taasleiyí Áayi *Pike Lake*	Taasleyi Mene* *Pike Lake*
Little Atlin Lake		Xáat Tlein Áayi *Big Fish Lake*	Luu Cho Mene* *Big Fish Lake*

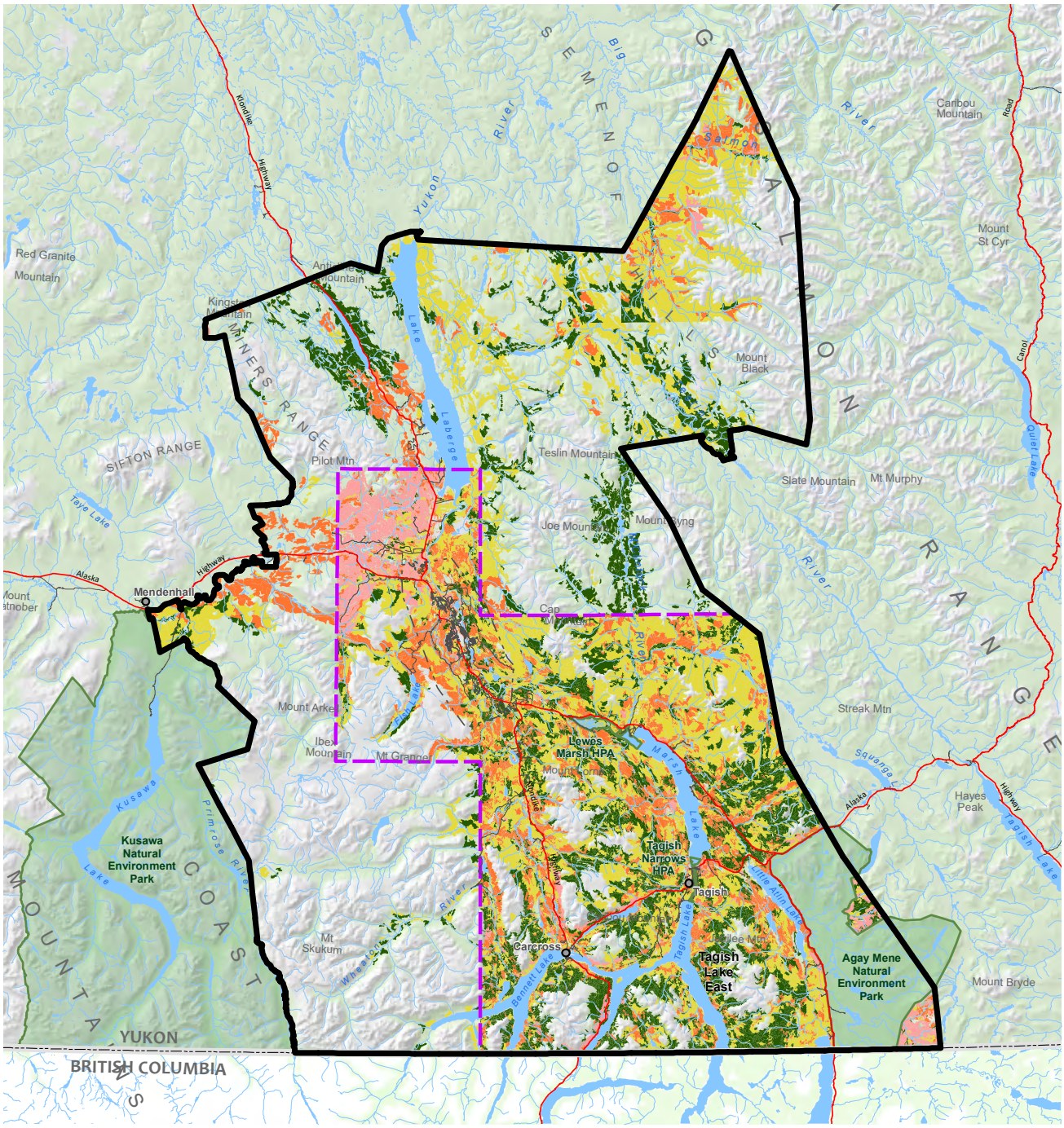
2.1 FORESTS

The forest is mainly open coniferous and mixed woodlands (Yukon vegetation inventory). In order of prevalence, the three most common tree species are white spruce, lodgepole pine and aspen. White spruce is found on floodplains and in areas that have not burned in the last 100 years or so. Mixed forests are found in abundance where glacial deposits have left coarser soils and moraines. In open areas with dry soils, there is a high cover of aspen and lodgepole pine. Gravel river terraces are dominated by open pine and spruce forest with Cladina lichen and feather moss dominating the forest floor ground cover. Subalpine fir, shrub willow and birch vegetate the subalpine zone.

Figure 2. Percent leading tree species within the Whitehorse and Southern Lakes planning area



Map 3. Yukon vegetation inventory



2.1.1 Traditional forest use

Since time immemorial, First Nations people in the headwaters of the Yukon River have relied on the forests to survive. They built trails, boats, homes and camps; they harvested wood to construct tools; and they relied on the forest to provide them with medicines and fuel for heating and cooking. Healthy forests are essential for trapping, hunting and plant gathering. First Nations people respected the gifts that the forests provided, and the traditional laws and values required them to give back in thanks. Traditionally, fuelwood was gathered from standing dead trees, mature trees were used to build shelters, and trees used by other forest dwellers were left alone (for example, nests, bear markings and dens). Resources including food, medicine and materials for tools were gathered in a way that would not exhaust any one area. First Nations planned and selectively harvested forests. They would select and rim trees so the tree selected would be "standing dead" within one to three years. Fire was respected, and occasionally used on a small scale to encourage habitat growth and to clear areas for camps (Glave 1892). As trade with the coast increased, so did the importance of trapping. This resulted in some changes in forest use; however, the traditional values were still respected and resources were gathered in a way that left the forest healthy.

The gold rush of 1898 brought a wave of prospectors who were not familiar with the traditional laws and values of the area. Large amounts of timber were cut to meet their needs. They used the wood to construct the railway from Skagway to Whitehorse, fuel steamboats, build boats, build and heat homes, and construct mines near Carcross and Whitehorse. The Timber Regulations from that time show an emphasis on production, rather than sustainability. The forests were simply used to meet the needs of the large influx of people and sustainability was not often considered. Since that time, the forests of the Southern Lakes area have started to grow back and mature.

"A HEALTHY FOREST IS ONE THAT IS UTILIZED BY ANIMALS. THE FOREST IS NO GOOD IF YOU DON'T HAVE ANY ANIMALS OR ANYTHING IN IT. THEY IN TURN ADD TO IT. THEY GO AND LEAVE STUFF IN THERE AND LET EVERYTHING GROW. IT KEEPS THAT CYCLE GOING. EVERYTHING IS PART OF THE HABITAT, AND IF YOU TAKE AWAY THE HABITAT THEN EVERYTHING KINDA STOPS."

— Carcross/Tagish First Nation Elder

2.1.2 Current forest use

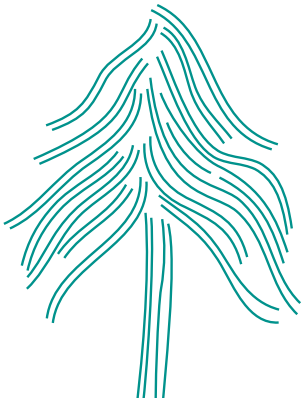
Today, primary use of forest resources in the Southern Lakes area is for fuelwood harvested from standing dead and down timber. Yukoners can cut 25 cubic metres of fuelwood from designated areas to heat their homes each year. The remaining fuelwood is cut in timber harvest plan areas by commercial operators. Following the 1998 fire around Fox Lake, new timber harvest plans were created to allow for the commercial harvest of fuelwood. Some people who live in Whitehorse also travel to Haines Junction to harvest fuelwood. As available wood declines in these areas new sources of fuelwood will be needed. Approximately 1,400 cubic metres of fuelwood are harvested annually in the region.

A small amount of green wood is harvested in the area. The annual limit for harvesting living, green trees is 10,000 cubic metres of coniferous and 2,000 cubic metres of deciduous. In 2017–18, six hundred cubic metres of green wood were harvested from three timber harvest plan areas (Marsh Lake, Sawmill Creek/Lewes Marsh, and Lubbock Valley). Three small sawmills processed this wood to produce dimensional lumber and specialty wood products for local markets. Although there is a high demand for lumber for residential and commercial construction, very little of this lumber comes from Yukon. This is because of the low price of imported lumber and the grading requirements to meet the building code.

As the market and technology of bioenergy boilers continues to develop, we anticipate a growing demand for biomass in the area. Biomass harvest will be regulated using sustainable management practices.

More recently there have been discussions in the community about the need to harvest forests to reduce the risk of wildfires. A primary goal of the plan is to use timber harvesting to return the forests to a mix of young age classes thus reducing the risk of wildfires.

The Joint Planning Committee believes a healthy forest can continue to sustain a small-scale industry that provides timber for local markets, fuelwood and long-term employment while maintaining traditional First Nations uses, other forest values and the personal use of timber.



2.1.3 Forest health

When asked how to describe a healthy forest, few Knowledge Holders even mentioned the trees. Rather, they emphasized the point that health was found in a diversity of values including animals big and small, plants, water, as well as the trees. Forest health should be considered holistically to better reflect the connections between all its components.

The Government of Yukon monitors factors such as insect outbreaks, pathogens and other stressors like flooding, drought and wind damage on the trees, as well as the northward spread of mountain pine beetle towards the Yukon border with British Columbia.

Within the planning region, the 2009 and 2014 forest health surveys indicate that the four most common agents affecting trees are: the large aspen tortrix, tree mortality due to drought, flooding events and porcupine. None of these were found to be at high or epidemic levels.

Insects and disease, like fire, are part of natural processes that help to establish a forest mosaic. In addition, dead and dying or sick trees can provide important habitat for focal species.

In 2014, the spruce bark beetle and spruce engraver were found at localized sites. Balsam bark beetle was found in low levels in subalpine fir. The pine engraver and lodgepole pine beetle were also found at low levels. The large aspen tortrix has been on the decline after two decades of high numbers. The last forest health survey for the region was completed in 2019. Forest health surveys are completed on a five-year basis.

2.1.4 Forest fire

Wildfire is the most significant natural disturbance affecting Yukon forests. Traditional knowledge and science tell us that wildfire is a natural phenomenon within the area. Traditionally, fire was respected and used carefully. Fire is an important element of forest health in the boreal forest; it creates opportunities for regrowth and encourages habitat change. In the boreal forest under natural conditions, older forests (over 130 years) are limited because wildfires continually burn the mature trees, leaving a patchwork of young, middle-age and old trees.

As a result of long-term fire suppression, the fire history of the area has been altered, leaving extensive stands of old forests (Map 3).

The age class distribution shows the predominant age range extends from 91 to over 130 years, with the average age calculated in 2018 to be 117 years. Currently wildland fire management in Yukon is undertaken on a priority basis with the level of protection decreasing away from communities, rural residences, roads and other human values. The Government of Yukon FireSmart program supports community safety by decreasing the fuel load and reducing the threat of wildfires around populated areas.

The lowland forests in the Whitehorse and Southern Lakes region are at risk of burning due to human-caused ignitions, and less so by lightning. The growing population in the region has increased both the likelihood of fires and the potential impact these wildfires can have on people, property and forest values. In order to reduce the risk of wildfires, a coordinated effort for fuel abatement planning and management is required. This need may compete with interests for protection of wildlife habitat, aesthetic and recreational values, and economic opportunities. To achieve a balance, community involvement will be essential to successfully design projects.

2.2 FISH AND WILDLIFE

The area is important to many species of fish and wildlife. A detailed assessment of all wildlife in the region is described in the Regional Assessment of Wildlife in the Yukon Southern Lakes Area (Southern Lakes Wildlife Coordinating Committee, 2012). As well, the area contains several species of special concern listed under the federal *Species At Risk Act*. Future timber harvest plans need to assess the most recent list to ensure potential impacts can be addressed. The following species and species groups are particularly important to people in the area.

2.2.1 Woodland caribou

When Game Mother gave birth to the animals, she taught them where to live and what to eat. She also taught them that they should not be mean and that people will eat them. She taught caribou to leave their antlers and use them only in the rutting season. She also taught them to eat moss (McClellan, 2007). The people who lived with caribou respected their sacrifice and followed traditional laws to maintain their reciprocal relationship.

– Storytellers: Patsy Henderson and Jimmy Scotty James

The forest provides caribou with shelter, shallow snow cover, and access to lichens for food. They, in turn, are prey for other wildlife such as wolves, bears, foxes, eagles, and wolverines. The alpine and subalpine summer range and forested winter range are important seasonal habitats. Ground lichen is a high value winter food and undisturbed access to it is important to the survival of the herds. Landscape connectivity is also important for caribou to move between seasonal ranges. As caribou habitat is impacted and lost through development, caribou will move to where they can find food, shelter and the protection they need to survive.

The Carcross, Ibex, Laberge and Atlin woodland caribou herds range within the planning area. Historical accounts describe mountainsides "moving" with caribou as huge herds of the animals migrated across their peaks.

Caribou were hunted commercially to feed the growing population of the territory – with peaks during the Klondike Gold Rush and during the building of the Alaska Highway. Caribou hunting in the area continued until the 1980s.

Since that time, portions of the lowland winter caribou range and travel corridors have been impacted by roads, subdivisions and other development. By the early 1990s, the Carcross herd declined to fewer than 400 animals. Concerns around the health of the herd led to the formation of several community-based, collaborative efforts focused on caribou recovery including the Southern Lakes Caribou Steering Committee, the Southern Lakes Wildlife Coordinating Committee and most recently a planning process to address herd, population and habitat management. The Carcross herd was last surveyed in 2008 where it was estimated at 775 animals. Calf recruitment surveys since the last survey indicate a stable-to-slowly growing population.

In addition, the Northern Mountain population of woodland caribou are listed as a species of special concern under the federal *Species at Risk Act*. A federal management plan for this population was developed with considerable leadership by Yukon representatives.

A study was initiated in 2014 to identify forest harvesting practices that would minimize negative impacts on terrestrial lichens in the winter range of the Carcross caribou herd. This is a long-term study and the results will assist with the development of best management practices and mitigations during planning and project assessments in caribou habitat (University of Northern British Columbia, 2018).

2.2.2 Moose

Moose was born with Grizzly teeth. Animal Mother called him back and took the teeth out and showed him to eat willow. She also taught Moose to lick salt. As Moose crossed Game Mother's trampoline, he fell through, such was his size and majesty (McClellan, 2007). Moose are found throughout the area from the subalpine to the forested valleys. Like caribou, moose are an important part of a subsistence lifestyle of First Nations people and Yukon residents, and are important for wildlife viewing. As the availability of caribou decreased, hunters turned to moose. Population surveys and local knowledge suggest that moose in the area have declined over the last 50 years and the population is now considered low density.

– Storytellers: Patsy Henderson and Jimmy Scotty James

Moose require various habitat types including wetland areas for calving and summer feeding, subalpine areas for fall rutting and early winter forage, riparian areas with forest cover and nearby shrubs to browse on during winter. Forest disturbances including fire, timber harvesting and insect outbreaks can create habitat for moose by replacing old mature forests with shrubs, creating browse. Fire suppression has limited the natural renewal of shrubs normally available after a forest fire.

2.2.3 Grizzly bear

Game Mother tried to call Grizzly back and take his teeth, as she had done with Moose, but Grizzly said he was going to keep his teeth. She allowed that but reminded him to not be mean to people and that he came from people.

The grizzly bear is an important species in the Southern Lakes area and are important for wildlife viewing. Grizzly bears are sometimes called an umbrella species because management that conserves grizzly bears is often beneficial to many species in the area. There is a strong respect for grizzly bears and an interest in maintaining grizzly bears in the area. Their diets are mostly made up of plants, but they also prey on ungulate populations and migrating salmon when they are available. Grizzly bears can have very large home ranges and are considered habitat generalists. During spring, summer and fall they move to different habitats for food to prepare them to survive winter denning. The Government of Yukon recently completed a study to estimate the size and trend of the Southern Lakes grizzly bear population. The study provided a new estimate for the number of bears in the study area and provided direction for future work (Government of Yukon, 2017).

The Government of Yukon and the Yukon Fish and Wildlife Management Board are currently working on a grizzly bear conservation plan. Minimizing human–grizzly bear conflicts and considering grizzly bear habitat needs in environmental assessments and planning are important considerations of forest management in Yukon.

2.2.4 Salmon and freshwater fish

Resident freshwater fish species in the area include lake trout, Arctic grayling, northern pike, burbot, lake whitefish, round whitefish, broad whitefish, pygmy whitefish, least cisco, inconnu, rainbow trout, slimy sculpin, lake chub and longnose sucker. Chinook and chum salmon also use waters in the area, with adult salmon using larger tributaries to migrate from the Pacific Ocean to natal streams in summer and fall. Juvenile salmon use smaller streams for rearing and overwintering before migrating down the Yukon River to the Bering Sea.
The traditional names of the creeks and rivers of the area reflect the important relationship that people had with the various species of fish available in the area. The information in Table 2 (unofficial place names) was gathered during the planning process from Knowledge Holders. Future reference to additional traditional place names can be accessed through the Indigenous land use plan. The connection goes well beyond place names, as many heritage sites and villages are closely associated with recognized fishing places.

Chinook salmon are very important ecologically, culturally and socially within the planning area. Salmon serve as a mechanism to transport and return nutrients from the ocean to aquatic and terrestrial ecosystems and habitats thousands of kilometres from the ocean. Salmon not only serve as an important food source for bears, wolves, eagles and many other predators and organisms but also enrich forests and other terrestrial and aquatic systems. Research has shown that the strength of historic spawning salmon runs can be measured through growth increments in riparian trees. Areas of special significance for salmon spawning and rearing, as well as First Nations subsistence harvesting include the M'Clintock and Mitchie Creek drainage at the north end of Marsh Lake and the Takhini River system below Kusawa Lake. Suitable salmon spawning habitat with significant warm overwinter groundwater flows is very special and limited in a harsh climate like Yukon. These unique drainages need special management to ensure the conservation of their values.

The lakes, rivers and creeks in this area have been impacted by human activities and development since the gold rush and by construction of the Yukon River dam. They continue to be highly accessible, and are highly frequented fishing locations in Yukon. Rivers, streams, and creeks are important parts of a healthy forest and it is important to protect them to maintain forest health. Forest management standards and guidelines have been developed to mitigate the risks associated with forest management activities including disturbances to riparian areas and associated changes to water quality.

2.3 THE PEOPLE

The planning area is located mostly within the Traditional Territories of the Kwanlin Dün First Nation, Ta'an Kwäch'än Council, Champagne and Aishihik First Nations, Taku River Tlingit First Nation and Carcross/Tagish First Nation. The Ta'an Kwäch'än Council, Kwanlin Dün First Nation, Champagne and Aishihik First Nations and Carcross/Tagish First Nation are self-governing First Nations under Chapter 24 of the Umbrella Final Agreement. The Ta'an Kwäch'än Council, Kwanlin Dün First Nation and Carcross/Tagish First Nation have Settlement Lands within the planning area. The Taku River Tlingit First Nation is based in Atlin, BC and asserts Traditional Territory in Yukon.

The First Nations people of the area speak variants within the Athabaskan and Tlingit language families. A variety of dialects of Southern Tutchone, Tagish and Tlingit are spoken in the area. Traditionally, it was common for people to speak multiple languages to facilitate trade and relationships with their neighbours.

The First Nations of the planning area have successfully lived with the land, water, plants and wildlife in the area by following traditional laws and customary practices.

The First Nations share their traditional territories with other residents who choose to make the Southern Lakes area their home. The majority of Yukon residents live within the planning area where the population estimate in 2017 was 30,693.[1] Agriculture, forest harvesting, fishing and hunting constitute 0.2 percent of Yukon's gross domestic product. The growth rate of these industries has been increasing since 2015 (Yukon Bureau of Statistics, 2017).

Tourism plays an important role in Yukon. More than half a million visitors travel to or through the territory each year, with the majority of visitors travelling within the Southern Lakes area. Many visitors camp in the area, enjoy the scenery and wildlife, and participate in a variety of commercial and self-guided activities that take them into the forests, including hiking, biking, canoeing, camping and more (Government of Yukon, 2018).

The planning area is comprised of five land administrators: public lands administered by the Government of Yukon; Settlement Lands administered by Kwanlin Dün First Nation, Ta'an Kwäch'än Council and Carcross/Tagish First Nation; and municipal lands administered by the City of Whitehorse (Map 1).

[1] Planning area population estimate based on Yukon Bureau of Statistics 2017 population report for Carcross, Tagish and Whitehorse area.

Photo: John Meikle

2.4 IMPACTS AND EFFECTS

To better develop a forest resources management plan for the forests, an understanding of the impacts and effects on the forest is required. This includes past, present and potential future effects. Beyond the impacts caused by population growth mentioned above, there continue to be impacts through increased access into remote forested areas, impacts from climate change and impacts caused by the cumulative effects of developments. It is also important to recognize the contribution of effective forest management to reducing the carbon footprint of society through carbon sequestration and using biomass energy to displace carbon intensive fossil fuels.

2.4.1 Access and linear corridor management

There is a relatively dense network of highways, roads and trails in the area compared to other parts of Yukon. People use public highways and roads, forest resources roads, and trails to access forest resources. These access routes can affect wildlife and their habitat throughout the area and have been identified as a primary issue in conservation. A variety of vehicles are used on these access routes including all-terrain vehicles and snowmobiles, transport vehicles, passenger vehicles and logging equipment.

Access routes intended for one activity are commonly converted into a network of roads and trails used for other activities and persist beyond their initial, intended use. Roads that were poorly engineered, built or maintained and their lasting impacts are one of the concerns the committee heard through community engagement. Further unwanted extensions of the road and trails network can occur when authorized access routes are used as jumping-off points for extending the reach of existing trails by hunters and other users of off-road vehicles. Sometimes trails are illegally extended into the forest in search of standing dead timber and there are places where these trails have encroached on First Nations Settlement Land.

To mitigate the impacts of forest resources roads, the *Forest Resources Act* provides tools and enforcement measures to ensure authorization and appropriate standards are in place. Planning, tenures, compliance and enforcement tools are available to manage and monitor forest resources roads constructed for the purposes of accessing forest resources. Decommissioning is required for forest resources roads and is identified through timber harvest planning. Standards and guidelines for forest resources roads provide a description of management tools and decommissioning requirements. Carefully planned and controlled access can reduce the negative effects of creating unwanted or illegal road use. All forest resources roads require signage and must adhere to disturbance standards; and many forest resources roads are gated depending on the community interests in the area.

2.4.2 Climate change

Changes to Yukon's climate are expected to be complex and may have substantial impacts on forests across Yukon. According to the Yukon Climate Change Indicators and Key Findings report (Streicker, 2016), the trend of warming weather that Yukon has been experiencing is expected to continue. Along with warmer temperatures, climate variability is expected to increase including fluctuations in precipitation and extreme weather events. Evapotranspiration is also expected to increase, which could mean drier conditions depending on precipitation levels. Longer shoulder seasons are predicted, possibly leading to longer growing seasons. The melting of glaciers, sea ice and permafrost is expected to continue. Predictions also include increased disturbance events (such as fire and flooding) and changes to forest composition.

These dramatic changes to climate conditions are predicted to have a number of effects on ecosystems and species in the area. People have already noticed and experienced the effects of these changes. It is expected that changes to wildlife habitat and species' ranges will continue and the likelihood of non-native species moving into the area is high. Wildfire events are predicted to increase in frequency and severity, due to variability in precipitation, higher temperatures, increased winds and longer fire seasons. It is also predicted that after a fire, stand conversions to aspen parkland will occur due to the inhibition of spruce regeneration by climate conditions. Climate conditions that lead to tree stress and warmer winters may lead to increased vulnerability to forest insects and diseases.

Responsible use of forests can contribute to reduction of carbon dioxide emissions as productive forests sequester carbon. Sustainable forest management contributes to mitigating climate change and reducing the reliance on fossil fuels. Monitoring and research will help increase our understanding of the boreal forest's response to climate change. Ongoing research and monitoring will help increase our understanding of climate change risks, and will give forest managers a better understanding of how forests may adapt to a changing climate.

2.4.3 Cumulative effects

Cumulative effects describe the impacts on the environment that are caused by the combined results of past, current and anticipated future human activities. There are already strong pressures on forest ecosystems in the area from current and anticipated future activities including roads, gravel pits, subdivision developments, agriculture, industrial activities, mining and recreation; therefore, any new forest harvesting must be carefully planned. To allow for continued use of the forest and in consideration of cumulative effects, the zones in this plan allow for more forest activities closer to communities, and progressively less forest activities further away from existing settlements. Any consideration of cumulative effects must consider and account for all land uses. A holistic view of the land requires that other activities be considered and proactive steps be taken to consider cumulative effects during timber harvest planning and other forest resources harvesting (for example, fire breaks and guards during suppression activities).

In the planning area, wildlife habitats are already under stress from rapidly increasing human development. Forests have had their natural fire cycle disrupted which has resulted in aging, spruce and pine-dominated forests caused by long-term fire suppression. As a result, trappers, hunters, fishers and recreationalists may directly experience the effects of any new land developments. During timber harvest planning, other pressures in the area will be considered. As well, timber is a valuable public resource and the salvage and use of timber should be considered with any project (for example, land clearings for subdivisions or agriculture) that involves the removal of trees.

Photo: Government of Yukon

3

STRATEGIC DIRECTIONS

The values identified in the planning process form the guiding principles of this plan. These values are based on the traditional values of the First Nations people of the area, information gathered from community engagement, available scientific information, and examples from other models and plans. These values include: adaptability, education, traditional use, heritage, trapping, community wildfire protection, tree use, recreation, biodiversity, connectivity, forest health and wildlife. To observe the guiding principles, one can adopt the following strategic directions (Table 3).

"YOU NEED TO TAKE EVERYTHING INTO CONSIDERATION. WE USED TO LOOK AFTER EVERYTHING LIKE THAT. A LOT OF WOOD AVAILABLE, BUT YOU WOULDN'T DISTURB IT BECAUSE IT IS USED BY ALL THE ANIMALS. YOU ONLY USE IT IF YOU NEED IT, SO IT'S ALWAYS THERE IN TIMES OF NEED."

— Ta'an Kwäch'än Council Elder

Photo: Lisa Walker

Table 3. Guiding principles and strategic directions in the Whitehorse and Southern Lakes Forest Resources Management Plan

GUIDING PRINCIPLE	STRATEGIC DIRECTIONS
Understanding the forest in a holistic way	Take a holistic view of the land to coordinate development. Mitigate cumulative effects during timber harvest planning and other forest resources harvesting (for example, fire breaks and guards during suppression activities).
	Protect important wildlife habitat throughout the landscape through mitigation of impacts, implementation of standards and guidelines, connectivity among key habitats, development of new tools (for example, ecosystem and habitat suitability mapping) and collaborative monitoring. Collaborative monitoring includes working together in the development of harvesting areas and conducting inspections during harvest to ensure harvesters are operating within the terms of their authorization.
	Use available tools such as selective harvesting, prescribed burning and others to return the landscape to a more natural age distribution and mosaic of forest types, contributing to healthy forests.
	Use forest management practices to reduce impacts on wildlife such as seasonal restrictions, avoiding denning and calving areas, and authorizing stop-work conditions when caribou are seen in key winter habitat.
	Use forest management practices including silviculture, seasonal restrictions, buffers and retention patches to protect, promote, maintain and enhance important forest attributes such as berry patches, medicinal plants, caribou lichen, water quality and heritage resources.
Understanding the forest as a place of learning	Evaluate the need for a review or amendment (First Nations governments and the Government of Yukon) 10 years after implementation.
	Amend the plan as needed upon approval of a regional land use plan where consistency is required and as identified by the governments (First Nations governments and the Government of Yukon).
	Other natural resources planning and management should be consistent with the forest values and direction for forest management that is described in this plan.
	Increase the understanding of forest users, planners, managers and harvesters about trapping, traditional knowledge and subsistence use of forest resources.
	Increase the understanding of people who interact with the forest about the wildlife habitat requirements and potential impacts and benefits of forest harvesting on habitat attributes.
	Increase the understanding of people who interact with the forest on respectful use of forests including the legal framework, enforcement across administrative boundaries and the contribution of healthy forests to Yukoners' well-being.
	Develop an information campaign to increase the understanding and appreciation of forest users on their potential impacts to forest health and traditional use of forest resources.
	Increase the understanding of students and youth of the value of using traditional knowledge in forest resources management.

Table 3. Guiding principles and strategic directions in the Whitehorse and Southern Lakes Forest Resources Management Plan

GUIDING PRINCIPLE	STRATEGIC DIRECTIONS
Respecting and honouring traditional laws	Further develop the working relationship between the plan participants (governments and Renewable Resources Councils) and establish a team to lead implementation including fuel abatement planning, timber harvest planning and undertaking a timber supply analysis.
	The parties will support the development of community wildfire protection plans as an immediate priority. The primary objective of these plans will be to manage forest fuels to mitigate for loss of life, provide safe egress for residents, and protection of property and values in the event of wildland fire near communities. Parties include the Government of Yukon, First Nations governments, Renewable Resources Councils and communities (including the City of Whitehorse and Local Advisory Councils).
	Ensure traditional knowledge is incorporated into future implementation work including fuel abatement planning, timber harvest planning and undertaking a timber supply analysis.
	Improve working relationships and coordination compliance and enforcement of forest use activities and establish a working group to develop a monitoring program.
	Prioritize harvesting of dead timber for fuelwood, and small-scale, local opportunities for biomass and other wood products.
	Encourage local harvest of fuelwood to reduce transportation distances and to provide fuelwood to residents in their communities, including City of Whitehorse.
	Prioritize the salvage of timber from land use projects such as fuel abatement, FireSmart activities, and other projects to make wood available for personal use and for potential commercial use.
	Prioritize timber harvesting near communities to reduce the risk of wildfire for protection of life and property.
	Only develop timber harvest plans in important caribou habitat where it is necessary for reduction of forest fuels, management of forest insects and disease, or research.
	Conduct silviculture treatments and monitoring to give back what is taken after forest harvesting.
	Use existing access wherever possible and disperse personal fuelwood across the region in appropriate zones.
	Coordinate future access management planning across administrations and users.

3.1 LANDSCAPE UNITS AND FOREST MANAGEMENT ZONES

The planning area was divided into 17 landscape units using watershed basin boundaries. Agay Mene Natural Environment Park was not included in the zoning. Since water brings life to all things, it made sense to use watershed boundaries to guide the plan. To assist with identifying appropriate zoning for each landscape unit, the Joint Planning Committee reviewed each unit and scored it, based on general consensus, on values such as timber, current use, access, forest fire risk, moose and caribou. Each landscape unit was given a zone designation for suitable forest management and activities. Zonation identifies those landscape units that would be available or unavailable for future timber harvest planning and personal fuelwood harvesting. Landscape units in the lowland forests around Whitehorse are ranked highest priority for forest management and future timber harvest planning, primarily based on forest fire risk.

Three forest management zones were designated for the Southern Lakes region including: zone 1, zone 2 and zone 3 (Figures 3 and 4). These zones were based on conditions for how, when and where harvesting of timber will be allowed across the landscape. Each First Nation government is responsible for managing forests on their Settlement Lands. The zoning represents an integrated forest management framework across administrative boundaries, but does not impact First Nations Aboriginal and treaty rights under the Final Agreements and the *Forest Resources Act*. Fuel management activities for the purpose of protecting communities, structures, cultural values and critical infrastructure should be promoted regardless of zone.

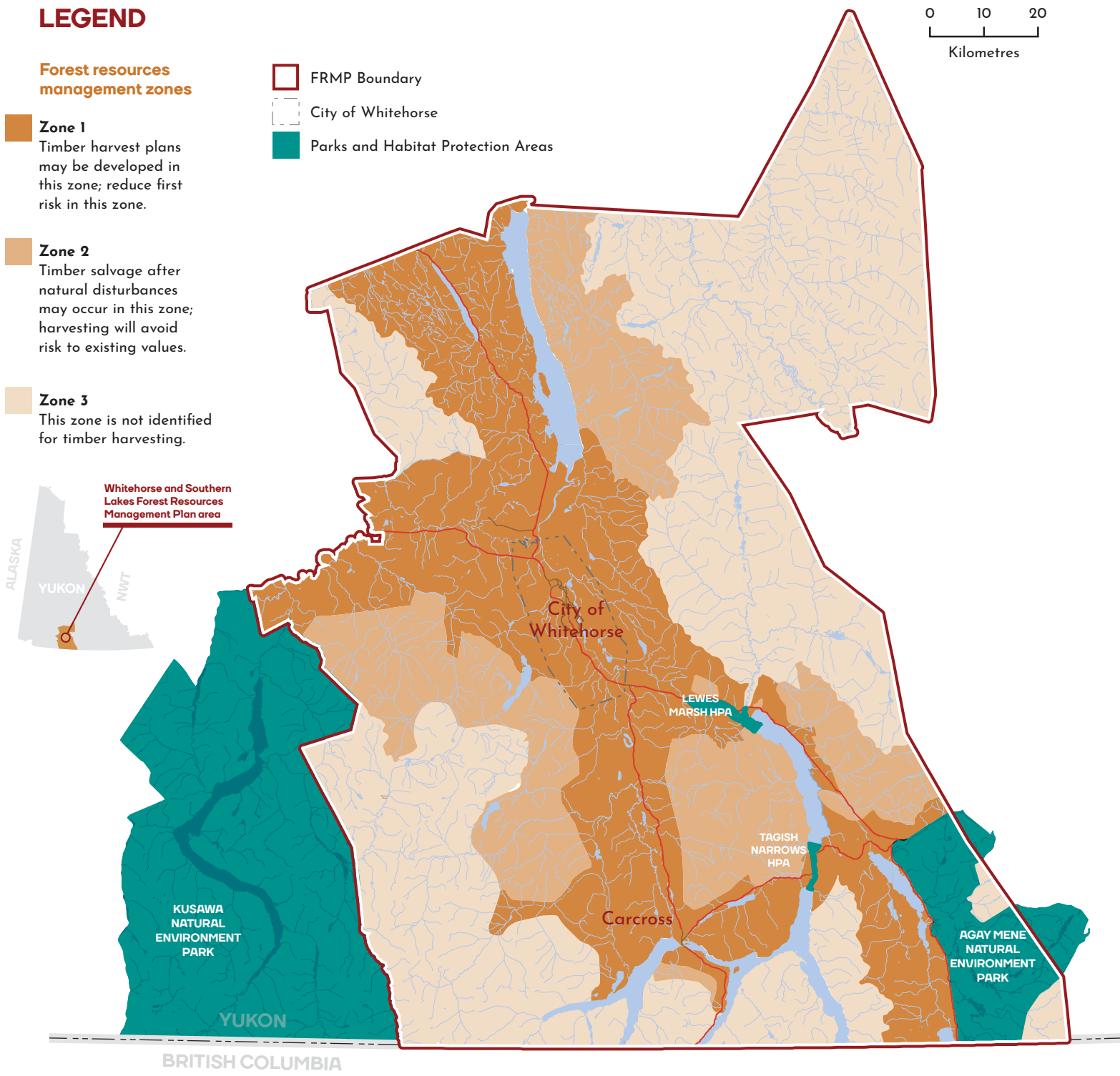
The rationale used to determine zoning can be found in Appendix C.

"THERE ARE A NUMBER OF BENEFITS ASSOCIATED WITH UTILIZING FORESTS FOR ENERGY: JOB CREATION, REDUCING FOSSIL FUEL IMPORTS, CARBON NEUTRAL FUEL AND FOREST FIRE HAZARD REDUCTION."

— Yukon Wood Products Association, 2014

Forest resources management zones

within the Whitehorse and Southern Lakes Forest Resources Management Plan (FRMP)



ZONE 1

Timber harvest plans may be developed in this zone and will be primarily aimed at reducing fire risk through community and landscape-level fuel abatement, community forests, commercial licences, and research. Personal use fuelwood areas may also be developed in this zone. The priority in this zone is to protect existing values through timber harvesting and other forest management activities.

Special considerations are required for timber harvest plans in important wildlife habitats or cultural areas. Timber harvesting which protects or enhances important wildlife habitat features will be prioritized.

Timber harvest plans must be designed to have a small impact on current and future wildlife and vegetation values and human uses.

Timber harvest plans are to consider direction from other plans including regional land use plans, local area plans, special management area plans, community plans and fish and wildlife management plans.

As this zone includes the City of Whitehorse, timber harvesting within the city boundaries should incorporate the following conditions.

- Timber harvest plans and personal fuelwood areas must be designed to reduce or mitigate negative impacts on current and future wildlife values and human uses.
- Harvesting should primarily be aimed at reducing fire risk near communities, research, restricted personal use and salvage from land use disturbance.
- Forest harvesting guidelines set out in the City of Whitehorse Official Community Plan, Parks Plans and bylaws must be followed.
- Harvesting may be considered if natural forest disturbance or change in land use makes salvage timber available.

ZONE 2

Timber salvaging could happen in this zone following natural disturbances, including wildland fire, flooding, insects or disease. Fuel management may occur to protect values.

Just over one-third of the planning area is designated as the provisional zone, where land is suitable for forest management under some conditions. This zone includes semi-remote wilderness, areas with limited pre-existing access, and areas with wildlife, tourism and cultural values.

Timber harvest planning will be based on the presence of a natural disturbance or other land use activity and evaluated case by case. Harvesting will have more restrictions to avoid risk to existing values. Community wildfire protection may occur in this zone to protect values.

ZONE 3

This zone is not identified for timber harvesting or operations for the next 10 years, with three exceptions.

- Where existing activities occur, including traditional use, Aboriginal rights and title, trapping, commercial wilderness lodges, outfitters and personal fuelwood harvest.
- For harvesting salvage wood on any future land-use disturbances (for example, mining roads or mine sites) or other allowances under legislation (for example, incidental harvest, First Nations traditional use, or emergency purposes).
- While allowing natural ecological process to occur is the priority in this zone, there may be circumstances where the protection of values from wildfire through fuel management activities is required.

This zone is not intended for the construction of new access to salvage fire-killed trees or dead timber due to forest insects or other diseases.

Nearly half of the land base is in zone 3, where forest harvesting is not available until determined otherwise through a plan review and amendment. This zone includes remote wilderness, areas with limited or no existing access, and areas with high wildlife, tourism and cultural values.

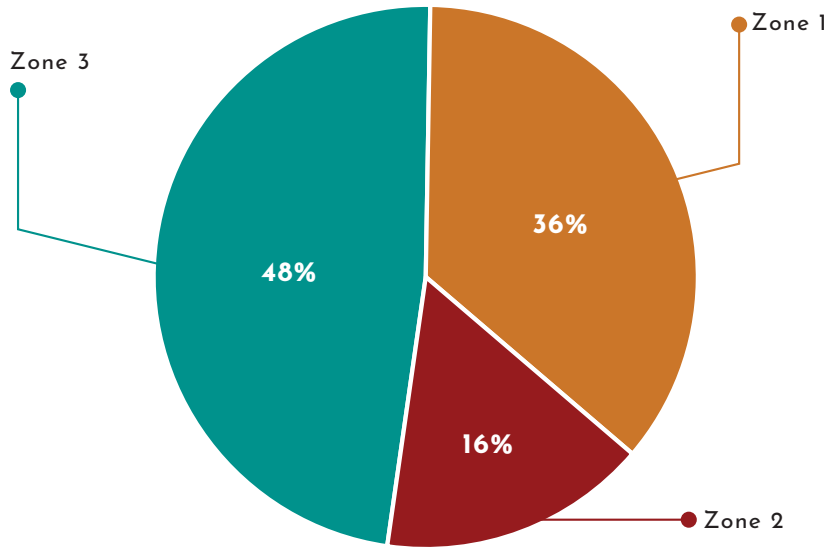


Figure 3. Percent of land occupied by the three forest management zones within the Whitehorse and Southern Lakes planning area

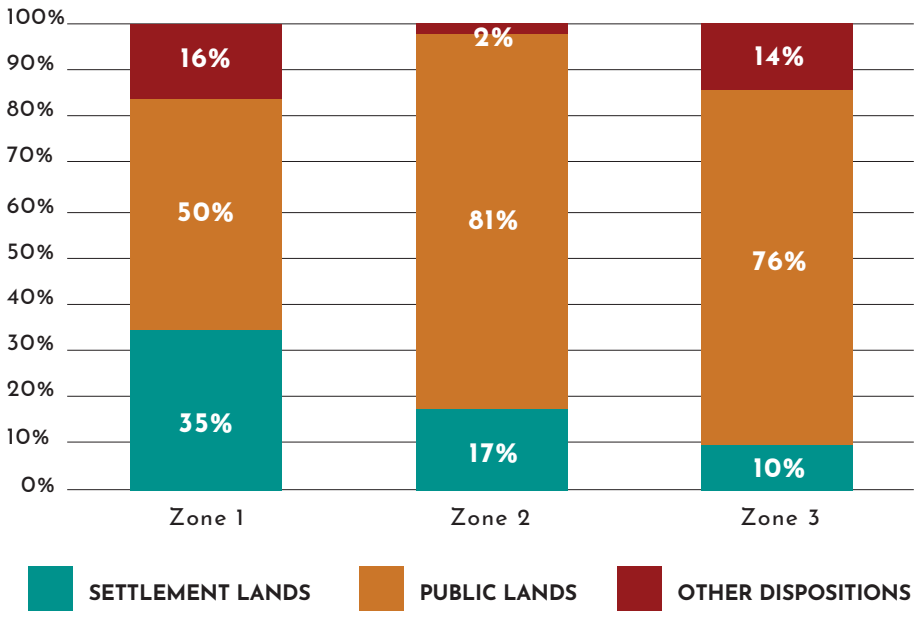


Figure 4. Percent of land designation within the three forest management zones in the Whitehorse and Southern Lakes planning area

3.2 GUIDING PRINCIPLES, GOALS AND INDICATORS

The Joint Planning Committee identified a number of indicators to evaluate whether the guiding principles are being followed and strategic goals are being met.

This plan establishes indicators based on scientific, traditional and local knowledge. Indicators help us monitor the status and changes of different forest values. Indicators are also a useful tool to tell us more about the successes of management and can serve as early warning signs of challenges that require attention. All governments will contribute to monitoring efforts.

To be effective, indicators should be:

- meaningful – relate to specific goals and inform the values of that objective
- measurable – based on available or easily obtainable data that can be repeatedly measured
- cost effective – data collection is financially and practically feasible
- understandable – easily understood by forest managers and the public
- connected to forest management – relate to forest management actions and practices
- attributable – attribute cause and effect to forest management actions

The indicators developed for this plan are to be applied at the landscape level, across the entire planning area, including Settlement Lands where applicable.

Table 4 illustrates the three guiding principles, its corresponding goals and the indicators that may be used to ensure the plan's guiding principles and strategic directions are being met. An important part of plan implementation will be finalizing both the list of indicators and a schedule for monitoring and reporting.

Photo: Government of Yukon

Table 4. Guiding principles, goals and indicators for the Whitehorse and Southern Lakes Forest Resources Management Plan

GUIDING PRINCIPLE	GOAL	INDICATOR
Maintain the ecological integrity of the forest through a holistic understanding	Coordinated and proactive consideration of cumulative effects	• Number of participation opportunities for coordinating different views, values and projects. • Public meetings, surveys, YESAA projects, and others (for example, notifications and comment periods). • Number of opportunities for salvage.
	Habitat conservation, protection, enhancement and management Maintain and enhance caribou winter habitat	• Percentage of age class distribution targeting a natural mosaic to meet habitat requirements for focal species (for example, moose, caribou and marten). • Traditional knowledge, Yukon vegetation inventory, permanent sample plots, habitat suitability index and other spatial measurements.
		• Application of seasonal restrictions to meet identified values. • Conservation of soils, habitat, recreation and heritage features. • Implementation of seasonal restrictions compared to identified values.
		• The amount of timber harvesting that is occurring within caribou winter habitat. • Long-term monitoring such as: the Lewes Marsh variable retention harvesting study and other research data, ground based monitoring, habitat suitability index, range assessments, and traditional knowledge.
		• Landscape-level connectivity measurement for focal species (for example, moose, caribou, marten, etc.). • Local, scientific and traditional knowledge.
	Support a healthy forest through use of responsible forest practices	• Average buffer widths and size of retention patches in harvesting areas. • Spatial measurements per landscape unit.
		• Area burned and number of ignitions, area harvested and regenerated in burns, State of the Environment report, Wildland Fire data and traditional knowledge.
Ensure opportunities for learning from the forest	Take an adaptive approach to plan implementation	• Achievement of 10-year check-in on the need to review or amend the plan. • Number of times plan has been assessed for review.
	Maintenance of current use activities and protection of heritage resources	• Number of heritage assessments completed. • Overview and impact assessments completed in harvesting areas. • Traditional knowledge and data from heritage departments (First Nations and the Government of Yukon).

GUIDING PRINCIPLE	GOAL	INDICATOR
	Educate the public, youth, students, forest users, harvesters, planners and managers	• Number of events and materials created for increasing education, understanding and awareness. • Feedback received. • Survey of information produced and assessment of audience awareness.
	Support local and First Nations economic opportunities in forest management	• Number of cross-cultural forest management training opportunities offered in the region. • Number of local operators employed in forest management-based activities in the region. • Contracting data, government program and census data. • Amount of timber harvested. • Number of local wood products produced. • Percentage of local wood products supplying local markets. • Hectares of designated personal use areas per capita. • Hectares of forest management projects managed by the community (for example, community forests).
	Maintain strong working relationships to improve forest management and plan implementation	• Collaborative and cross-cultural monitoring, compliance and enforcement of forest management activities. • Number of inspections and offences. • Traditional knowledge, government monitoring and enforcement data.
	Prioritize the salvage of timber from other land use activities	• Volume of wood made available to salvage from other land uses (for example, gravel pits, new subdivisions, agriculture, fuel abatement etc.).
Respecting and honouring traditional laws	Demonstrate the respectful use of forest resources by using existing access and silviculture treatments	• Area of access constructed, decommissioned and managed (for example, number of forest resources roads). • Traditional knowledge, linear disturbance mapping and spatial data. • Number, location and area of silviculture monitoring and treatments. • Contracts and government projects.
	Protect community values through timber harvesting for forest fuel risk reduction	• Area, location and number (new and maintained) of fuel abatement projects designed to protect communities. • Area cleared for fuel abatement including selective harvesting and stand conversions; harvesting data (forest tenures database).

4

PLAN IMPLEMENTATION

4.1 IMPLEMENTATION

By approving the plan, the parties commit to a variety of responsibilities to integrate the management of forests in a coordinated, respectful way across various administration boundaries. In developing strategic directions, the Joint Planning Committee recognized that recommendations need to be consistent, cost-effective and considerate of the decision-making roles of First Nations governments on Settlement Lands and the Government of Yukon on public land. Accessing available traditional and scientific knowledge is a crucial component of implementation.

The first priority for implementation is to establish an implementation agreement where priorities and commitments are identified by the parties. Prioritizing areas for timber harvesting and fuel abatement should be identified as an initial requirement. This should be done on a larger scale and will require community engagement.

Adaptability is an important component of this plan. Implementation will contain a commitment for all parties to prioritize the development of a collaborative working group as the first priority upon plan approval. Implementation partners must work together to achieve the goal of identifying where harvesting should occur. The governments, together with the Renewable Resources Councils, will discuss the need to review and update the plan as required, and within 10 years following implementation.

The intention of the plan is that the area will continue to function as a healthy forest ecosystem protecting wildlife habitat, providing certainty for existing traditional, recreational and economic values of forests, and reducing fire risk around communities. Timber harvest plans and permits will be guided by the plan's principles, goals and strategic directions.

4.1.1 Monitoring

The monitoring program will guide how often indicators will be reviewed and identify who is responsible for gathering the information. Furthermore, the monitoring program should identify acceptable rates of change for the indicators. The initial status report will serve as the baseline against which future conditions will be compared. This report is intended to be completed within five years from the approval date of the plan. Indicator reports summarize the results of ongoing monitoring efforts. They will serve as a method of communicating the successes and challenges of implementing the plan. Indicator reports should be provided every five years.

The intention of this plan is to allow it to change and evolve over time. As such, we recognize that the list of indicators may not be comprehensive and indicators may change, particularly if values change over time. Indicators may also change if they fail to accurately measure impacts to the identified values. Any change to the plan would require collaboration between the parties.

4.2 ROLES AND RESPONSIBILITIES

4.2.1 Steering committee and implementation team

The role of the Joint Planning Committee ends with the recommendation of the plan. This plan can be reviewed as required, and consideration for reviews will be informed by the data collected on the indicators outlined earlier (Table 8). The dynamic nature of forest change will require participants to consider changes to the plan from time to time. Immediately after the plan is approved, a steering committee and implementation team should be established, with representation from all parties, to develop a terms of reference and work plans, meeting schedules, a communication plan, and priorities for monitoring indicators and reporting of results.

4.2.2 Yukon and First Nations governments

The Government of Yukon, Kwanlin Dün First Nation, Ta'an Kwäch'än Council and Carcross/Tagish First Nation are responsible for working towards and supporting an integrated framework on their lands with respect to forest management.

Responsibilities include:

Implementing plan priorities

- Coordinate and implement the following activities as soon as possible:
  - an effective fuel abatement strategy to reduce the risk of forest fires in communities;
  - collaborative and cross-cultural monitoring, compliance and enforcement of forestry activities;
  - education for forest users about forest management issues in the region; and
  - use of traditional and scientific information in the development of timber harvest planning areas.

Plan monitoring, review and amendment

- Upon plan approval, establish a monitoring program and begin collecting indicator information.
- Establish an implementation team and working groups with Renewable Resources Councils.
- Complete initial status report of indicators and revise monitoring methods to meet objectives of the plan.
- Discuss the need to review and update the plan as required, and within 10 years of implementation.

4.2.3 Renewable Resources Councils

The Carcross/Tagish Renewable Resources Council and Laberge Renewable Resources Council may make recommendations to the governments with respect to forest management in their Traditional Territory, as described in Chapter 17 of the First Nation Final Agreements including:

- the coordination of forest resources management;
- the need for, and content of, inventories and management plans;
- polices, programs and legislation which affect forest resources;
- the allocation and use of forest resources for commercial purposes;
- employment opportunities and training requirements;
- forest health; and
- other matters related to the protection and management of forest resources.

4.3 PLAN REVIEW

Forest ecosystems are dynamic and the plan anticipates that unexpected disturbances including forest fire, insect infestations and forest health issues or flooding will change the forest structure over time.

The priority is to make best use of available timber through coordination and consideration of cumulative effects. Harvesting in new areas is secondary to utilizing timber from fuel abatement projects, salvage of timber from land use, and other situations of incidental harvest.

As more information about climate change becomes available, appropriate changes in the direction and management of the forest should be made. Predictions of increasing aridity are a special concern, elevating the potential risk of catastrophic fire events.

Forest management should adapt to changes in the status of wildlife populations and their habitats, especially woodland caribou that rely on lichen in mature forest stands. Habitat models should be informed by traditional and scientific knowledge to best understand land use by wildlife in the planning area.

Forest planning should adapt to new technology, and adjustments should be made to timber harvest plans based on new information. Updating management practices will depend on an effective adaptive management strategy that monitors responses of sensitive indicators to forest change.

"[THE] FOREST IS CONTINUALLY CHANGING…LOTS OF COMPLEXITY. COMMUNITY SAFETY AND WILDLIFE IS IMPORTANT."

— Feedback from public workshop, 2015

Photo: John Meikle

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6 GLOSSARY OF TERMS[2]

Adaptive management: A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management practices on a continuing basis to ensure that management objectives are being met.

Annual allowable cut (AAC): The amount of timber that is permitted to be cut annually from a particular area. AAC is used as the basis for regulating harvest levels to ensure a sustainable supply of timber.

Biodiversity: The variety, distribution and abundance of different plants, animals and micro-organisms, the ecological functions and processes they perform and the genetic diversity they contain at a local, landscape or regional level of analysis.

Boreal forest: The most extensive of the three main forest zones in the world. The boreal forest is the northern circumpolar forest zone and is characterized by winters that always have snow and where summers are short. This coniferous, tundra forest type consists primarily of black and white spruce, balsam fir and larch interspersed with broadleaf trees, usually birch and aspen.

Climate change: An alteration in measured quantities (for example, precipitation, temperature, radiation, wind and cloudiness) within the climate system that departs significantly from previous average conditions and is seen to endure, bringing about corresponding changes in ecosystems and socioeconomic activity.

Composition: The proportion of each tree species in a stand expressed as a percentage of the total number, crown closure, basal area or volume of all tree species in the stand.

Ecoregion: A part of an ecozone characterized by distinctive regional ecological factors, including climate, physical geography, vegetation, soil, water, fauna and land use.

Ecosystem: A dynamic system of plants, animals and other organisms, together with the non-living components of the environment, functioning as an interdependent unit.

Ecozone: An area of the Earth's surface that is representative of a broad-scale ecological unit characterized by particular abiotic (non-living) and biotic (living) factors.

Forest cover: Forest stands or cover types consisting of a plant community made up of trees and other woody vegetation, growing more or less closely together.

Forest management: The practical application of scientific, economic and social principles to the administration and working of a forest for specified objectives. Particularly, that branch of forestry concerned with the overall administrative, economic, legal and social aspects and with the essentially scientific and technical aspects, especially silviculture, protection and forest regulation.

Fuelwood: Trees used for the production of firewood logs or other wood fuel.

Fuel management: The planned manipulation and/or reduction of living or dead forest fuels for forest management and other land use objectives (for example, hazard reduction, silvicultural purposes, wildlife habitat improvement) by prescribed fire; mechanical, chemical, or biological means; and/or changing stand structure and species composition. (Definition from Canadian Interagency Forest Fire Centre glossary)

Habitat: The environment in which a population or individual lives; includes not only the place where a species is found, but also the particular characteristics of the place (for example, climate or the availability of suitable food and shelter) that make it especially well-suited to meet the life-cycle needs of that species.

Indigenous land use plan: A land use plan collaboratively developed by Carcross/Tagish First Nation, the Ta'an Kwäch'än Council and the Kwanlin Dün First Nation that will guide future endeavours in regards to land and water on their Traditional Territories.

Natural disturbance: Natural events that cause tree or forest renewal, e.g. due to fire, flooding, insect or disease attack. Natural disturbance regimes are a description of the dominant natural disturbance agents occurring in a large area such as a watershed or ecoregion.

[2] *source:* State of Canada's Forests: 2001–2002, *selected and modified, unless otherwise noted*

Public land: Public land that is managed by the territorial government.

Regeneration: The continuous renewal of a forest stand. Natural regeneration occurs by natural seeding, sprouting, suckering or layering seeds may be deposited by wind, birds or mammals. Artificial regeneration involves direct seeding or planting.

Riparian area: Vegetated areas adjacent to watercourses or a water body that directly contributes to fish habitat by providing shade, cover and food production areas.

Settlement Land: Settlement Land is owned and managed by a First Nation and is identified in each First Nation's Final Agreement.

Silviculture: Harvesting methods and silviculture operations including seed collecting, site preparation, artificial and natural regeneration, brushing, spacing and stand tending, and other operations that are for the purpose of establishing a free-growing crop of trees of a commercially valuable species.

Stand: A community of trees possessing sufficient uniformity in composition, age, arrangement or condition to be distinguishable from the forest or other growth on adjoining areas, thus forming a silvicultural or management entity.

Stand structure: Stand structure is the physical arrangement or pattern of organization within the forest stand.

Subsistence: (a) the use of edible fish or wildlife products by a Yukon First Nation person for sustenance and for food for traditional ceremonial purposes including potlatches; and (b) the use by a Yukon First Nation person of non-edible by-products of harvests under (a) for such domestic purposes as clothing, shelter or medicine, and for domestic, spiritual and cultural purposes; but (c) except for traditional production of handicrafts and implements by a Yukon First Nation person, does not include commercial uses of edible fish or wildlife products or non-edible by-products.

Sustainable forest management: Management that maintains or enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social and cultural opportunities for present and future generations.

Timber harvesting: The practice of felling and/or removing trees from an area.

Thermokarst: A land-surface configuration that results from the melting of ground ice in a region underlain by permafrost. In areas that have appreciable amounts of ice, small pits, valleys and hummocks are formed when the ice melts and the ground settles unevenly.

Traditional Territory: The geographic area claimed to have been traditionally used and occupied in the past by each of the 14 Yukon First Nations. Some areas were used by more than one First Nation, and these areas are called "overlap" areas.

Understory: Trees growing under the main forest canopy.

Vegetation inventory: A survey of a forest area to determine such data as area, condition, timber, volume and species for a specific purpose, such as planning, purchasing, evaluating, managing or harvesting.

Watershed: An area of land that collects and discharges water into a single main stream through a series of smaller tributaries.

Wetland: An area where the soils are water-saturated for a sufficient length of time that excess water and resulting low oxygen levels are principle determinants of vegetation and soil development. A wetland is a swamp, marsh, bog or similar area that supports natural vegetation that is distinct for adjacent areas. Wetlands may or may not be treed.

7 APPENDICES

Completion of the

Whitehorse and Southern Lakes Forest Resources Management Plan

ESTABLISHING THE JOINT PLANNING COMMITTEE AND THE PLANNING AREA

NOVEMBER 2004

Locations for forest harvesting were discussed in a meeting between the Government of Yukon, Carcross/Tagish and Kwanlin Dün First Nations, Ta'an Kwäch'än Council, and Lake Laberge Renewable Resources Council. Requests were made to complete comprehensive forest planning.

NOVEMBER 2007

Developing a forest plan is proposed by the Minister of Energy, Mines and Resources.

APRIL 2008–FEBRUARY 2009

Terms of Reference are developed and signed for a Whitehorse and Southern Lakes Forest Resources Management Plan.

1.

2.

TRADITIONAL KNOWLEDGE

APRIL 2017

The committee applies for funding through the Natural Resources Canada Indigenous Forestry Initiative to conduct a traditional knowledge study to inform the plan.

JULY 2017

Funding is awarded and a traditional knowledge study focused on forest use in the area is completed.

FEBRUARY 2018

The plan is updated to weave traditional knowledge into the fabric of the plan.

APRIL 2018

Public meetings are held in Whitehorse where the updated plan and traditional knowledge study results are presented.

4.

Appendix A. Schedule of Events

LANDSCAPE UNITS AND FOREST ZONES

DECEMBER 2010

Initial meeting of the Joint Planning Committee.

DECEMBER 2012

Regular committee meetings commence and work begins.

JUNE 2014

Key issues are identified during six public open houses hosted by the Joint Planning Committee and a First Nations meeting hosted by Carcross/Tagish First Nation.

MARCH 2015

Five workshops on key issues take place with the public, stakeholders, and First Nations. 25–45 people attend each workshop and a summary document is written.

JULY 2015

A two-day committee workshop where forest values are assigned to landscape units. Forest zones and landscape units are confirmed and the committee begins drafting a table of contents, forest zones descriptions, and other sections of the plan.

A DRAFT RECOMMENDED PLAN

SEPTEMBER 2015

Meetings take place with the City of Whitehorse, Yukon Fish and Wildlife Management Board, Yukon Wood Products Association, Renewable Resource Councils and Local Area Councils.

NOVEMBER 2015

Community and traditional knowledge is gathered during a workshop with Carcross/Tagish First Nation.

FEBRUARY 2016

Comments are received on the vision, forest zones and strategic directions through five public meetings.

MAY 2016

A draft plan is created based on input received.

FINAL REVIEW AND IMPLEMENTATION

MAY 2018 – MAY 2019

Final review of the draft plan by the committee and governments.

MAY 2019

The committee recommends the plan to governments.

JUNE 2019

The *Forest Resources Act* consultation process with the public and First Nations with traditional territories that overlap with the planning area begins.

NOVEMBER 2019

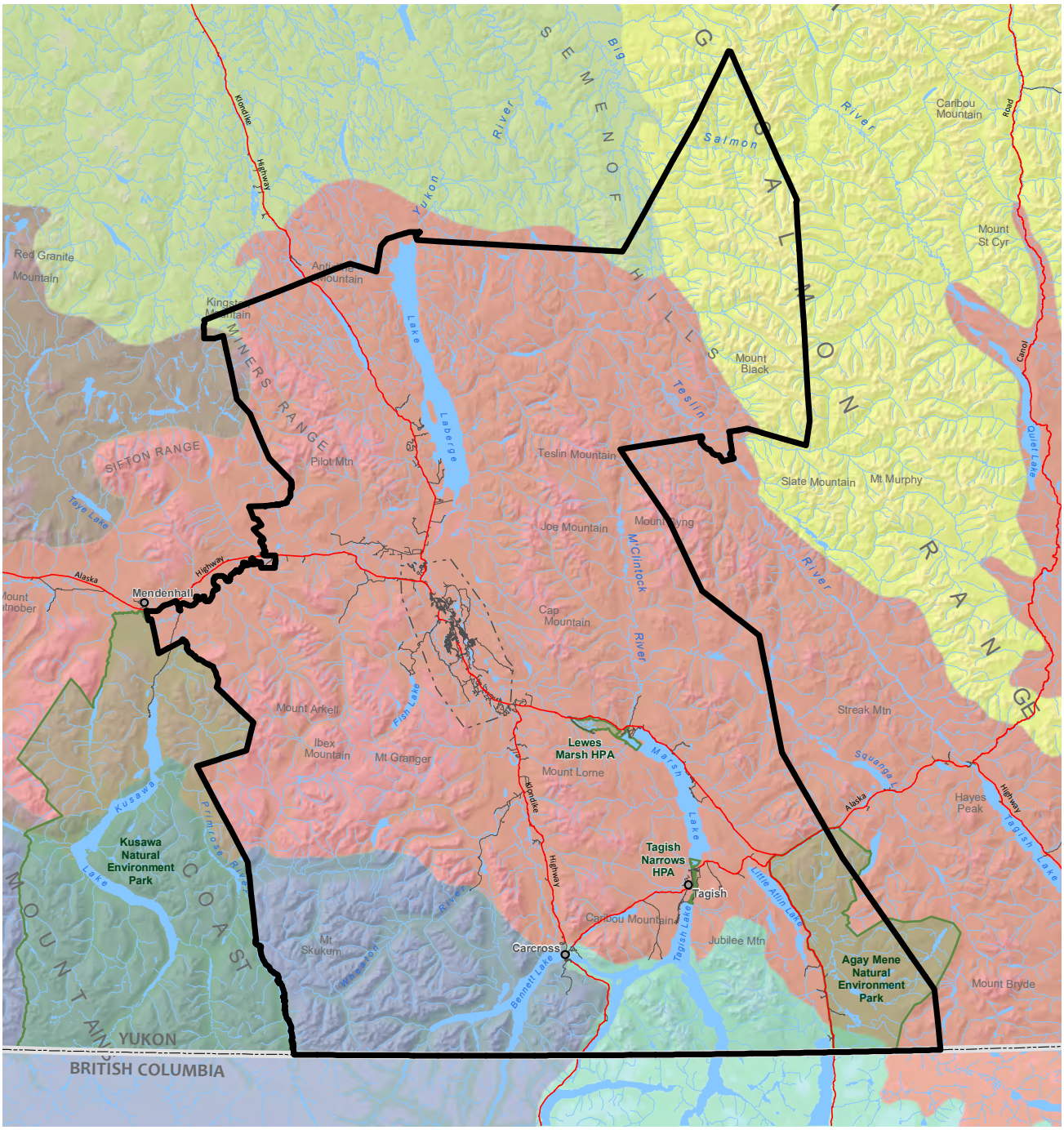
Update the plan based on consultation.

FEBRUARY 2020

Plan approval.

Appendix B. Ecoregions

Map 4. Ecoregions of the Whitehorse Southern Lakes planning area



Whitehorse and Southern Lakes Forest Resources Management Plan

Ecoregions

April 17, 2019

FRMP Boundary
City of Whitehorse
Parks and Protected Areas

Ecoregions

- Boreal Mountains and Plateaus
- Pelly Mountains
- Ruby Ranges
- Yukon Plateau-Central
- Yukon Southern Lakes
- Yukon-Stikine Highlands

1:1,000,000

North American Datum 1983
Yukon Albers

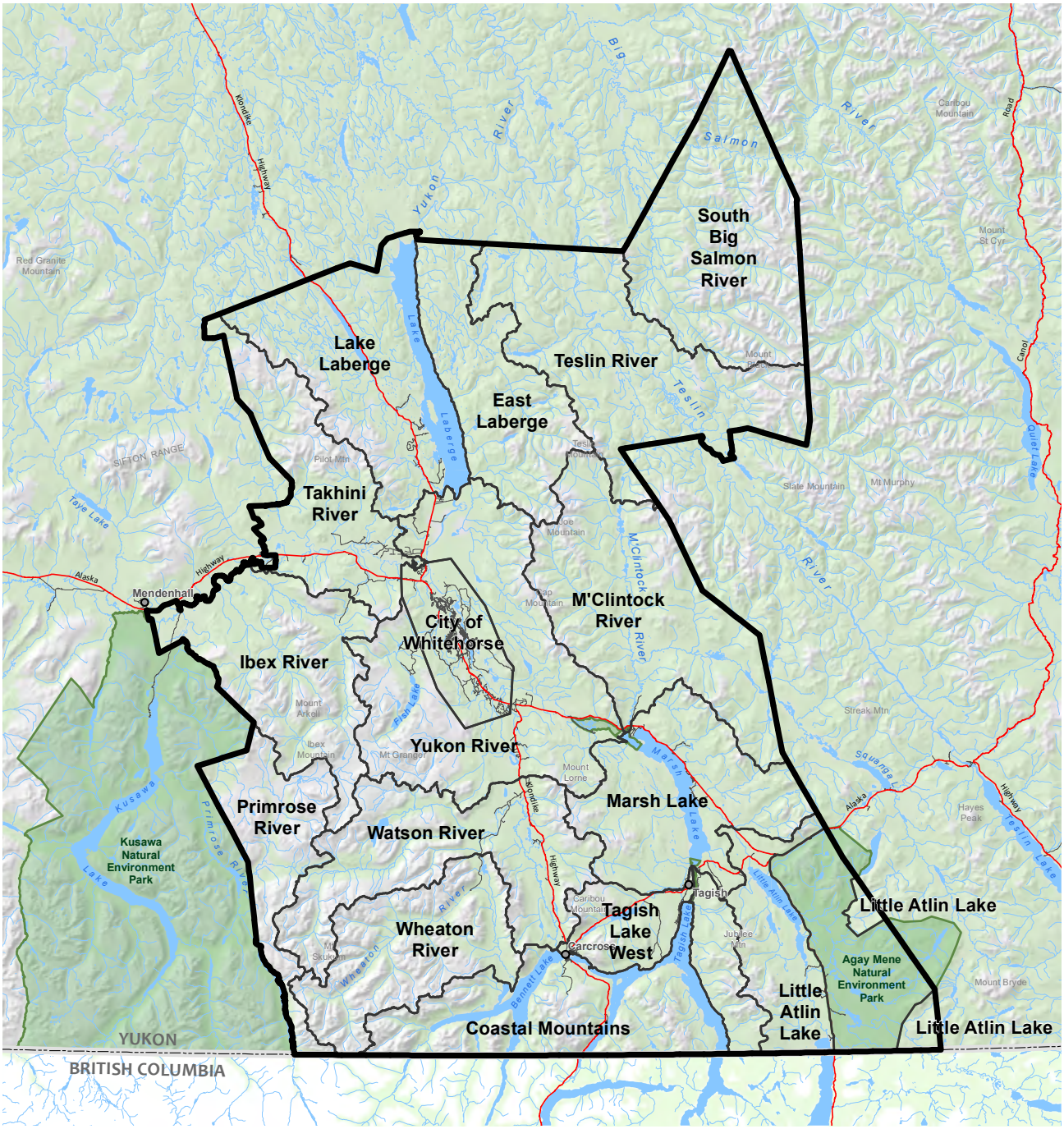
0 10 20
Kilometres

Yukon

ECOREGION	TERRAIN	ELEVATION (M ASL)	PRECIPITATION (MEAN ANNUAL MILLIMETRES)	SOILS	VEGETATION
Yukon Southern Lakes	Divided plateaus, rolling hills, mountains.	600–1500	225–300	Eutric brunisols on sandy loam. Rolling morainal to steep colluvial material. Cryosolic soils in poorly drained areas and north-facing slopes. Permafrost sporadic and discontinuous.	Open white spruce and lodgepole pine. South-facing grasslands. Alpine fir, white spruce, and lodgepole pine above 1200 m asl. Shrub willow and dwarf birch in subalpine.
Pelly Mountains	High elevation with high relief.	600–2400	500–650	Plateau soils sandy loam eutric brunisols. Turbic cryosolic soils in alpine areas and some poorly drained sites. Permafrost occurs regularly in the alpine zone and is variably distributed at lower elevations.	Lowland and subalpine forest. Lichens, dwarf birch and willow in subalpine.
Yukon–Stikine Highlands	Rugged mountain ranges with high relief.	400–2700	300–500	Brunisolic to regosolic with some cryosolic soils in alpine. Subalpine and boreal typically dystric and eutric brunisols. Discontinuous and sporadic permafrost.	Alpine tundra with heather, dwarf birch, willow, grass and lichen. Alpine fir, white spruce, and Englemann spruce in the subalpine. Black and white spruce in the boreal.
Boreal Mountains and Plateaus	Rugged mountains, alpine tundra at upper elevations, subalpine and open woodlands at lower elevations.	600–1700	225–300	Mainly Orthic Turbic Cryosols. Permafrost common near surface. Mountain slopes have orthic, eutric and dystric brunisols under conifers.	Subalpine open stands of stunted white spruce and occasional alpine fir; willow, dwarf birch, and Labrador tea.

Appendix C. Landscape Units

Map 5. Rationale of zonation by landscape unit in the Whitehorse and Southern Lakes Forest Resources Management Plan



LANDSCAPE UNIT	PLANNING PRIORITY	WILDLAND FIRE MANAGEMENT ZONATION	KEY VALUES AND CONCERNS	FOREST MANAGEMENT ZONE
South Big Salmon River	Low	Low	Good moose habitat Remote location with few existing roads No current forest harvesting activity Salmon spawning and rearing streams and habitat values Freshwater fish and aquatic and furbearer values	Zone 3
Primrose River	Low	Low	Few-to-no existing roads Largely mountainous areas that are not suitable for forest harvesting High value early winter moose range Caribou summer and winter range	Zone 3
Teslin River	Low	Low	Remote location with few existing roads No current forest harvesting activities Good moose habitat Salmon bearing streams Kwanlin Dün First Nations Settlement Lands Salmon spawning and rearing streams and habitat values Freshwater fish and aquatic and furbearer values	Zone 3
Coast Mountains	Low	Low, Medium, and High depending on location	Mainly mountainous areas that are not suitable for forest harvesting Some roads/trails near highways Previous harvesting at Windy Arm along the highway Includes part of the community of Carcross which is a high concern for forest fire Includes C/TFN Settlement Lands Freshwater fish and aquatic values	Zone 3, Zone 1 or Zone 2 near highways and Carcross
Ibex River	Medium	Medium and Low	Few existing roads except in the northern portion of the unit Large areas of non-vegetated and mountainous areas that are not suitable for forest harvesting Existing personal use fuelwood areas Rural residential properties KDFN Settlement Lands Salmon rearing streams Freshwater fish and aquatic values	Zone 1; Zone 2 in north portion of unit, Zone 3 in southern tip

LANDSCAPE UNIT	PLANNING PRIORITY	WILDLAND FIRE MANAGEMENT ZONATION	KEY VALUES AND CONCERNS	FOREST MANAGEMENT ZONE
East Laberge	Medium	Medium and High	Moose/caribou summer and winter range TKC Settlement Lands Salmon rearing streams Freshwater fish and aquatic values	Zone 1, Zone 2 in southwest corner
McClintock River	Medium	Low	Historic and current salmon spawning and rearing habitats Caribou winter range Few existing roads and trails High biodiversity values Key traditional use area of KDFN Settlement Lands	Zone 3, Zone 1 at south tip
Fox Lake	Medium	Medium and High	Potential range for 40 Mile caribou herd Existing roads and trails Existing personal use fuelwood areas Residential area TKC Settlement Lands Salmon spawning and rearing streams Freshwater fish and aquatic and furbearer values	Zone 1
Little Atlin Lake	Medium	High	Caribou winter range Existing personal use fuelwood and commercial harvesting areas Existing roads and trails west of Atlin Road C/TFN and KDFN Settlement Lands Freshwater fish and aquatic and furbearer values	Zone 1
Takhini River	Medium	Medium and High	Salmon spawning and rearing habitats Potential range for 40 Mile caribou herd Existing roads and trails Existing personal use fuelwood areas KDFN and TKC Settlement Lands Residential area Freshwater fish and aquatic and furbearer values	Zone 1, Zone 3
Wheaton River	Medium	Low and Medium	Existing roads to western portion of unit C/TFN Settlement Lands Eastern portion (non-contributing area) is mostly large areas of non-vegetated and mountainous areas that are not suitable for forest harvesting Freshwater fish and aquatic and furbearer values	Zone 3, Zone 1 and Zone 2 in western portion

LANDSCAPE UNIT	PLANNING PRIORITY	WILDLAND FIRE MANAGEMENT ZONATION	KEY VALUES AND CONCERNS	FOREST MANAGEMENT ZONE
Tagish Lake East	Medium	Low, Medium and High	Caribou winter range Few-to-no existing roads or trails to most of the unit Mainly mountainous areas that are not suitable for forest harvesting east of Taku Arm Freshwater fish and aquatic values	Zone 3, Zone 1 along Tagish Narrows and Tagish Road
Watson River	High	High	Good opportunities for forest harvesting Existing roads and trails Good moose habitat C/TFN and KDFN Settlement Lands Existing personal use fuelwood areas Rural residences Freshwater fish and aquatic and furbearer values	Zone 3 west, Zone 1 middle, Zone 2 along highway and residences
City of Whitehorse	High	High	Existing personal use fuelwood areas High concern for fire risk High population density and property values Under municipal planning jurisdiction Salmon spawning and rearing habitat Freshwater fish and aquatic and furbearer values	Zone 1
Tagish Lake West	High	High	Caribou winter range Existing roads and trails Existing personal use fuelwood areas Existing property values (Tagish and Carcross) within boundary Freshwater fish and aquatic values	Zone 1
Marsh Lake	High	High	Salmon spawning and rearing habitats Caribou winter range Moose habitat KDFN and C/TFN Settlement Lands Existing personal use fuelwood and commercial harvesting areas Existing roads and trails Concerns around enforcement and illegal harvest Freshwater fish and aquatic and furbearer values	Zone 1, Zone 2, Zone 3
Yukon River	High	High	Salmon spawning and rearing habitats Highest density population in Yukon TKC and KDFN Settlement Lands High concern for fire risk Existing personal use fuelwood areas Many existing roads and trails Freshwater fish and aquatic and furbearer values	Zone 2, Zone 1 and Zone 3 south and west of Fish Lake

Yukon

CARCROSS/TAGISH
FIRST NATION

KWANLIN DÜN
FIRST NATION

TA'AN
KWÄCH'ÄN