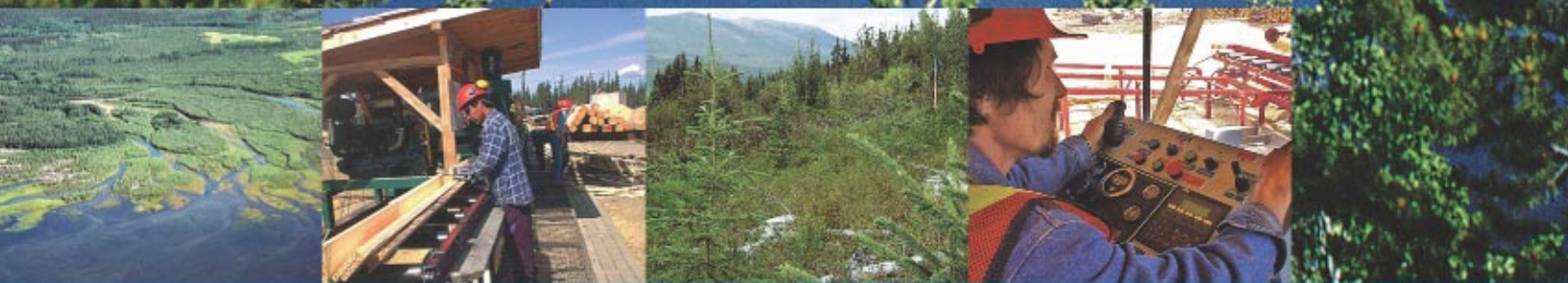


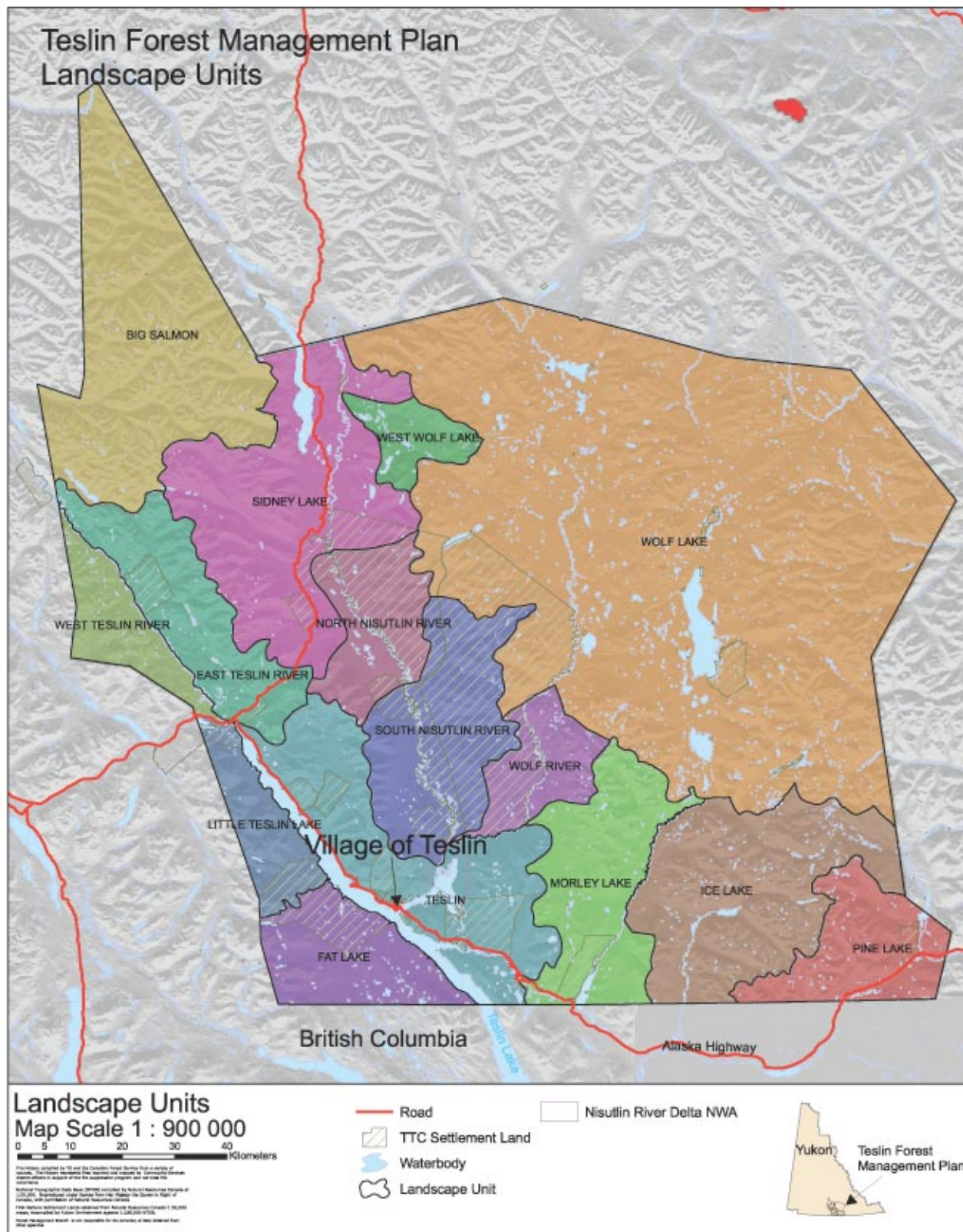
Teslin Strategic Forest Management Plan

Strategic Direction for Sustainable Forest Resource Development



Strategic Forest Management Plan
for the Teslin Tlingit Traditional Territory

MAP 1 - PLANNING AREA



Teslin Strategic Forest Management Plan

Strategic Direction for Sustainable Forest Resource Development



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for the Teslin Tlingit Traditional Territory

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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of the Teslin Strategic Forest Management Plan (SFMP) is to provide a sustainable development strategy for the forests of the Teslin Tlingit Traditional Territory. It is a first step in defining a forest land base to which the plan would apply. This plan is intended to contribute to a sustainable forest-based economy, a key component of regional economic stability, while protecting and integrating ecological, traditional, resource, heritage and other community values. It is also intended to provide a clear framework and practical guidance for forest managers and planners. The SFMP establishes what issues and concerns, values and interests must be addressed as forest resource development moves forward in the region.

In developing the plan, the values and views of the region's residents, the Teslin Tlingit Council (TTC), the Teslin Renewable Resources Council (TRRC), and the Yukon Government (YG), as well as those of stakeholders and Yukon non-governmental organizations, have been considered. Their views and values about forest management, particularly forest harvesting, have been expressed in consultation, community surveys and public meetings over the past several years.

The plan is also intended to identify and address major forest resource-related issues and to develop goals, objectives and indicators regarding these issues. It is also intended to meet and address the definition of "forest resources management plans" in Section 17.5.0 and sub-sections of Section 17.5.0 the TTC Final Agreement.

1.2 THE NEED AND THE CHALLENGE

The plan is a response to an on-going need for forest management in the region. The Teslin area resident survey that resulted in the report entitled *Talking to the People* (Yukon Government, 2000) identified the core values of the people of the region.

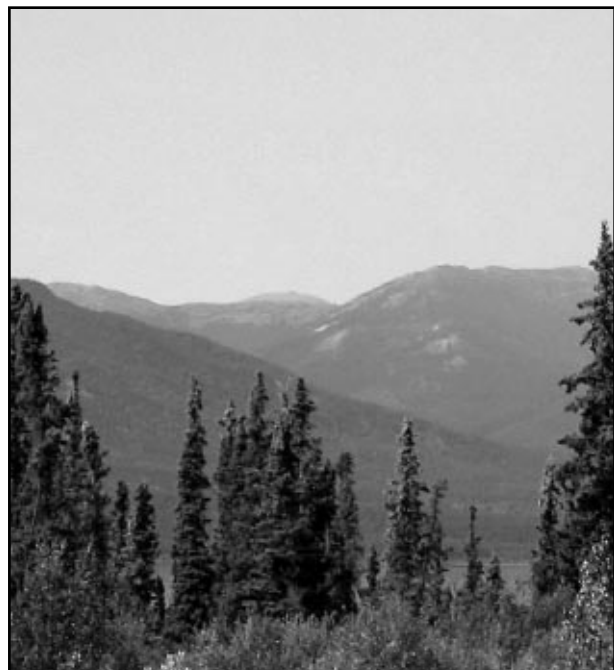
In the TRRC resident survey the concept of 'good' was used to establish not only the starting point for the

analysis but also a base-point for determining core values within the population residing in the Teslin Tlingit Traditional Territory. Four concepts form the consensus core values for residents of the Teslin Tlingit Traditional Territory. These concepts are:

- water
- the land
- the bush, and
- wildlife.

This document also indicated that logging initiatives in the traditional territory generated both strong support and opposition. Residents who viewed 'logging' as close to 'jobs' and 'future generations' also tended to see it as closer to the four core values. Of the survey results, the grouping 'small scale' and 'commercial' indicated that 'logging' is viewed as a commercial activity and a source of employment, but with a preference for controlled and small-scale operations.

There has been some tension in the region about forest harvesting (logging) that this strategic forest management plan can help resolve, so long as the core values are well managed.



Forest management planning has been recognized as both a need and a challenge in the Yukon for some time, as indicated in the report by George Tough (former Deputy Minister of Natural Resources in Ontario) to the Federal Minister of Indian and Northern Affairs in 2002:

“The lack of regional forest management plans [in the Yukon] is particularly troublesome, and those plans must be a priority for forest managers.”

Currently, the Yukon has a limited forest policy and forest legislation base, relying on the *Lands Act* and the associated Yukon Timber Regulations to issue the necessary authorizations for fuelwood and timber harvest. The Department of Energy, Mines and Resources is committed to developing new forest legislation and regulations for the Yukon, and expect to complete this work sometime in 2006 or 2007. A first step in this process was the collaborative discussion paper entitled *A Discussion Paper Towards a Forest Policy Framework for the Yukon*, which was produced by representatives of Government of Yukon, Yukon First Nations and Resource Councils. This document reflects discussions and consultation comparing past forest policy initiatives to the current day situation and is a strong step forward towards a modern made in the Yukon forest legislation.

Once such forest policy, legislation and regulations are in place, the forms of forest tenure will be determined. Tenure is the legal mechanism by which the annual allowable cut (AAC) is formally allocated. Annual allowable cut may be defined as the volume of timber that may be cut yearly. An AAC is an essential consideration in helping to achieve future economic stability in the region. Once an AAC is determined, the types of tenure and timber supply options would be determined. This is normally followed by policy directives that establish the procedures, timeframes and criteria used for eligibility and selection. Tenure systems are usually area or volume-based and issued by either contract or legislation. The SFMP will also help provide direction for the regional land use plan and the timing of its implementation.

1.3 PLANNING REGION AND TIME FRAME

The Teslin SFMP planning region covers those Yukon portions of the Teslin Tlingit (TT) Traditional Territory that do not overlap other First Nations’ traditional territories. The planning region is located in the south-central Yukon Territory. It includes all public lands (territorial) and TTC First Nation settlement lands in the TT Traditional Territory, excluding overlap lands (*Map 1*).

The planning region covers approximately 19,330 square kilometres of land, including forested areas, lakes, rivers, wetlands, rock, and human developments. The SFMP has been developed for all forestland in the study area including settlement lands. This area includes most of the Y04 forest management unit and portions of the Y03, Y05 and Y08 management units. The planning boundary may have to be adjusted and expanded, as Traditional Territory overlap issues are resolved. However, no significant changes to the plan area are expected.

The SFMP is being developed with a 20-year life expectancy. It should be reviewed and updated whenever necessary to accommodate major and unforeseen changes in the forested landscape. Revisions may also be necessary based on the results of monitoring. In order to provide for the long-term sustainability of the region’s forests and the needs of future generations, the planning timeline for some values, such as timber resources, is two forest rotations (200 to 300 years). A forest rotation is defined as one cycle of the predicted number of years between the start of a forest stand and the harvesting of that stand at a specified stage of maturity.

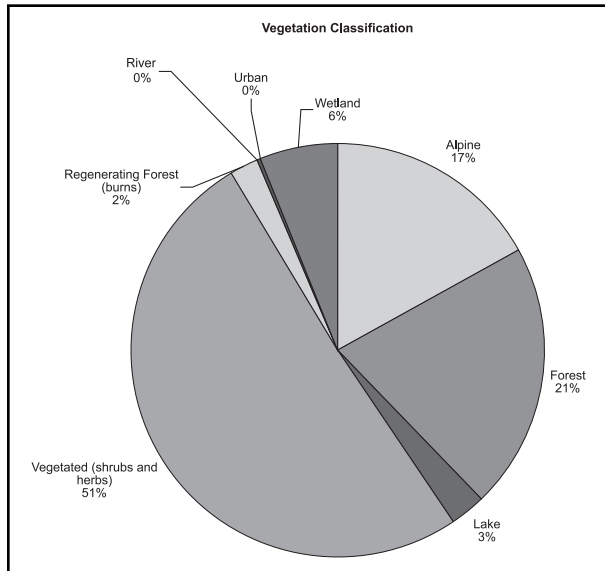
1.4 PLANNING REGION DESCRIPTION

1.4.1 Land

Within the planning region, the bulk of the area (1,000,770 ha) lies within the Yukon Southern Lakes Ecoregion, while a slightly smaller portion (923,250 ha) lies within the Pelly Mountains Ecoregion. A small part (8,900 ha) lies in the Boreal Mountains and Plateaus Ecoregion. The village of Teslin is located within this area, north of the Yukon-British Columbia border along Teslin Lake and adjacent to the Alaska Highway, approximately 184 km southeast of Whitehorse, Y.T.

Figure 1

LAND CLASSIFICATION, TESLIN PLANNING REGION



The region falls entirely within the Yukon River watershed. The three key navigable rivers in the region are the Teslin, Nisutlin and Wolf rivers. There are more than 5,000 lakes, the largest of which is Teslin Lake. Wetlands are common landscape features and cover more area than the lakes and major rivers combined.

1.4.2 Environment

Long narrow lakes, rounded hills and plateaus, and higher mountain ranges characterize the topography of the region. The landforms, surficial geology and soils formed in the region are largely a result of glaciation under the Cordilleran ice sheet over 10,000 years ago. The major lakes and rivers follow the wide valleys carved by the glaciers.

The lowest elevations (650 m) are in the Teslin River and Nisutlin River valleys, in the western portion of the region, and higher elevations (over 2,100 m) are found in the Big Salmon and Sawtooth Ranges of the Pelly Mountains. Glacial deposits at higher elevations consist of a thin layer of broken stone over bedrock; mid-elevations consist of drift incised by surface runoff. Large meltwater lakes formed during deglaciation created beach lines and silt and clay lake bottom sediments, which were overlain by subsequent glacial river deposits of sand and gravel in valley bottoms. Teslin Lake and the Nisutlin River occupy valleys previously containing glacial lakes.

1.4.3 Climate, Soil and Vegetation

The climate is subarctic continental: cold dry winters and warm dry summers. South-easterly winds and highly variable daily and seasonal temperatures characterize the climate of Teslin. Average temperatures in the region vary from -19°C in January to +14°C in July. Teslin is frost-free for approximately 60 days per year, from the end of June to the end of August. Teslin Lake freezes in November or December and is commonly ice-free by mid-June. Average annual precipitation in Teslin, lying in the heart of the St. Elias-Coast Mountains rain shadow, is 343 mm; about two thirds falls as rain, the other third as snow.

Soils in the region are typically composed of silt and clay. Permafrost is rare, because soils are warmer in the dry summer rain shadow of the Coast Mountains.

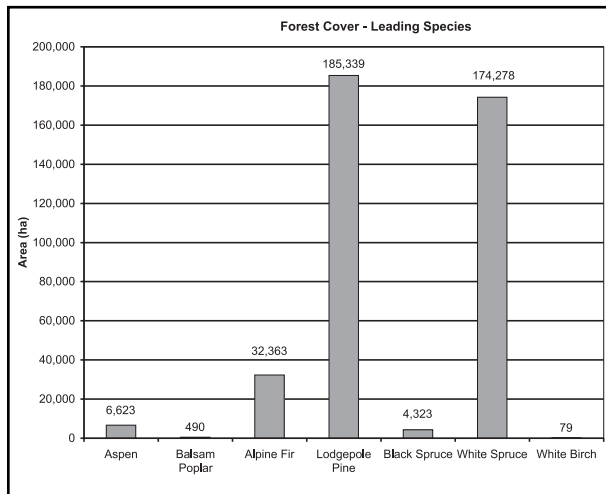
The vegetation of the region is predominantly open coniferous and mixed woodland, reflecting the climate and pattern of forest fires. Shrub birch is common around treeline and in other cool, moist areas. Willows and other shrubs often grow in the region's wetlands or along its streams. Forested and non-forested areas throughout the region provide good sites for cranberries, blueberries, raspberries and strawberries, as well as an abundance of grasses and wildflowers.

At this time it is unclear how climate change will affect Teslin or Yukon forests; across Canada it is thought boreal forest species may shift northward 300 to 500 km and portions of the boreal forest may be replaced by a temperate forest characteristic of southern Ontario or northern United States.

1.4.4 Forests

Lodgepole pine and white spruce are the dominant tree species in the region (*Figure 2* and *Map 2*). Trembling aspen and white spruce are typical on upland sites. Poorly drained sites are frequently vegetated with black spruce, particularly along the Nisutlin River. Balsam poplar and white spruce dominate the alluvial sites. Paper birch is less frequent and does not exist in pure stands.

Figure 2
LEADING SPECIES, TESLIN PLANNING REGION



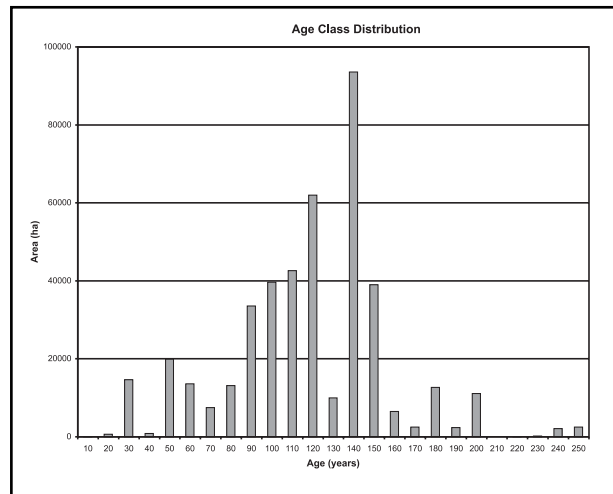
Forest fires are the major influence on forest composition in the region. The relatively small amount of old forest results from the frequent stand replacing wildfires that occur naturally in the area, particularly in the upland, mature conifer forest.

During a forest reconnaissance survey by the Canadian Military, H. L. Holman (1943) noted:

“Because of its climate being drier, this [Teslin Lake and Nisutlin River Watershed] has suffered more from fire than the Liard watershed. The fire of 1870-73 burned even more territory within this watershed than it did on the Liard and in addition a fire in 1917 took a heavy toll of timber stocks. Of the forested land below an elevation of 3500 feet, which would include all stands of merchantable quality, it is estimated that approximately 25% bears timber 25 years old, 60% bears timber 75 years old and 15% bears timber of older age classes, the most important of which would be the 125 to 130 year class. About half of the latter class is of saw timber quality.”

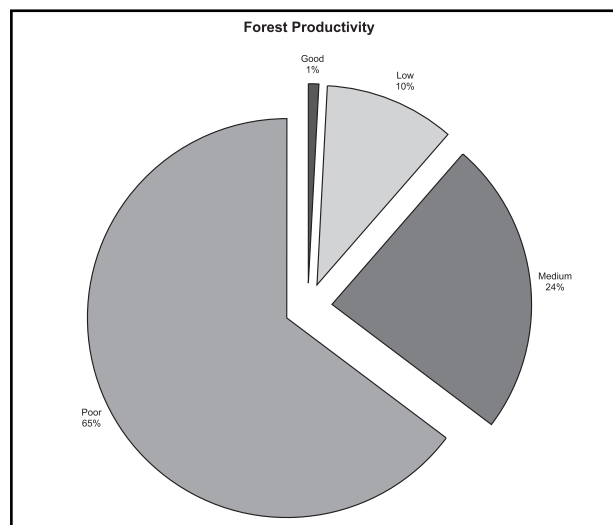
The fire history is reflected in the current age class distribution, with a large proportion of the forest aged between 110 and 150 years (Figure 3).

Figure 3
AGE CLASS DISTRIBUTION, TESLIN PLANNING REGION



The forest productivity in the region is for the most part classified as poor and medium (Figure 4). Poor sites are expected to attain heights of 10 to 14 m at 100 years of age and can be found primarily on upland areas. These sites are usually limited by either too much or too little moisture. Medium sites achieve 15 to 19 m at 100 years of age, and are widely distributed in the region. Sites classed as low have limited capability for forest growth, either due to drainage or elevation. The good sites are found along the major rivers on alluvial flood plains. In these areas, nutrients and moisture are abundant and forest growth can reach 30 m.

Figure 4
FOREST PRODUCTIVITY, TESLIN PLANNING REGION



1.4.5 Forest Disturbances

1.4.5.1 Wildfire

Wildland fire (forest fire) is a critical and dominant forest-renewing disturbance process in the Yukon boreal forest. It safeguards the landscape mosaic that in turn constitutes the basis for flora and fauna biodiversity.

The fire regime of the SFMP area is characterized by relatively infrequent, high intensity, forest-renewing crown fires that burn large areas. A 1943 forest reconnaissance survey referenced two major fire events, the first occurring between 1870 and 1873 plus another in 1917 (Holman, 1943). An abundance of mature pine and spruce forest fuels and cyclic events of extreme fire weather drive this pattern of episodic fires.

Characteristic of the boreal forest fire regime, there are many small fires, with the majority of area burned being accounted for by relatively few fires. In the SFMP area, less than 7% of the total number of fires accounts for over 97% of the total area burned.

While high intensity, forest-renewing fires appear to dominate the landscape, there is evidence that portions of the lodgepole pine forest may support more frequent, low intensity, stand maintaining fires. This could be evidence of traditional use of fire by First Nations peoples. Such fires clean up the low brush and dead surface fuels, but are unable to generate sufficient intensity and duration to kill the mature lodgepole pine trees. This is evident in the Teslin Lake Cottage Subdivision. This anomaly to the boreal forest fire regime should be considered in fire and forest management planning.

For the period of 1946 to 2004 there have been 208 fires in the SFMP area that have accounted for approximately 230,960 hectares burned (*Table 1* and *Map 3*). The average number of fires for the SFMP area from 1946 to 2004 is 3.5 per year, with a maximum of 12 fires in 1984 and no recorded fires in four of the last 59 years.

Of the three forested natural disturbance zones in the SFMP area (lowland, upland and subalpine) wildland fire targets the upland, mature conifer forest to the greatest extent, followed by the subalpine. The lowland area is the least impacted by fire.

Table 1

SUMMARY OF FOREST FIRE HISTORY (1946-2004)

Total Area Burned	Average Area Burned per Year	Average Fire Size	Maximum Fire Size
230,860 ha	3,913 ha	1,110 ha	143,237 ha (1950)

Over all, the distribution of human-caused fires to lightning-caused fires is 64% to 34% (*Table 2*). However, while the fires caused by lightning represent only 34% of the total number of fires, they account for almost 82% of the total area burned. The largest single fire recorded in this area was human-caused. This fire, which occurred in 1950, also remains the largest human-caused fire ever recorded in the Yukon, burning a total of 143,238 ha.

Table 2

SUMMARY OF FOREST FIRE HISTORY BY CAUSE (1946-2004)

Fire Cause	Number of Fires	% of Total	Area Burned (ha)	% of Total
Human	133	64%	42,254	18%
Lightning	75	36%	188,606	82%
Total	208	100%	230,860	100%

Missing from the fire history of this area is any First Nation traditional knowledge of the use of fire as a landscape management tool. The deliberate setting of fires was a powerful land management instrument used by First Nation people, but to what extent this was done in this region of the Yukon is unknown. Abnormally high fire cycles are possible evidence of this activity in an area.

Seasonality is an important factor in defining an area's fire regime. The SFMP area can experience forest fire danger rating in the spring in the high to extreme range. Ignitions at this time of year would most likely be human caused. The principal lightning season for this area runs from approximately mid-June to mid-July. It is the lightning caused ignitions in this time period that account for the majority of area burned.

An important measure for examining an area's fire regime is the concept of fire cycle. A fire cycle represents the number of years it would take to burn over the vegetated portion of the SFMP area. At its current rate of fire disturbance, as calculated for the record period of 59 years, it would take 290 years for the total vegetated area of 1,134,001 hectares of the SFMP to be completely recycled. This is considerably less fire disturbance than the projected fire cycle of approximately 100 years for the Central Yukon Plateau Ecoregion to the north.

A general rule of disturbance ecology states that the longer the interval between disturbance events, the greater the magnitude of those events. The fire disturbance history of the SFMP area supports this rule. A projected fire cycle of 290 years translates to an abundance of high fire hazard, mature conifer forest across the landscape. Of great significance to fire management programs is that modern fire suppression technology alone is limited to fires of moderate intensities. It is incapable of excluding the large, high intensity fires from the landscape. There needs to be a clear understanding that it is impossible for fire suppression technology alone to maintain a fire cycle of 290 years.

Fire is a critical ecosystem process and will continue to be a major influence of forest characteristics and function. In areas where fire is excluded from the forest ecosystem, other disturbance processes (e.g. timber harvesting, fire smart, prescribed burning) are useful substitute tools. Timber harvesting is not a replication of forest fires, however timber harvesting practices can strive to emulate fire through patch size, stand structure and seral stage.



1.4.5.2 Other Disturbance Agents

Although no large-scale events have occurred within the planning region other than fire, small disturbance by insect, disease, flooding and windthrow occur throughout. Evidence of seasonal flooding can be seen along the Teslin River, and endemic levels of bark beetle provide large snags along the Nisutlin River.

1.4.5.3 Human Disturbances

Linear disturbances include major highways, secondary roads, two-wheel and four-wheel drive roads, old highways, seismic exploration and cutlines. There are previous cutblocks in the Strawberry Creek and Sidney Creek harvesting areas. There are also many cleared lots and gravel pits. A demonstration forest was established east of Nisutlin Bay and north of the Alaska Highway, in an area that has had some harvesting. During the 1950's and early 1960's, there was a sawmill on the west shore of Nisutlin Bay, a mile or two north of the Alaska Highway. Harvesting was carried out from the 1900's to the 1950's in the Johnson's Crossing area to provide fuelwood for the steamboats. Further information can be found in *A History of Logging in the Yukon Territory 1896-1970* (Northern Design Consultants, 1993).

1.4.6 Fish and Wildlife

1.4.6.1 Mammals

There are at least 13 species of large mammal and over 30 species of small mammals that occupy this region. While there is a broad range of species represented within the region, the Canadian Parks and Wilderness Society (CPAWS) (1999) identifies that the region contains representative populations of at least 47 mammal species, including possibly the only Yukon population of the western jumping mouse.

The region is inhabited by at least five woodland caribou herds although only the Wolf Lake herd is wholly within the planning region. The other herds include the Carcross and Pelly (Quiet Lake) herds and the Atlin herd to the south. A new herd, recently identified as the Swan Lake herd, ranges along the Alaska Highway approximately 70 km east of Teslin. There is currently no data for number and distribution, but they may be included in an inventory in the near future.

The Wolf Lake and Atlin herds of woodland caribou (*Rangifer tarandus caribou*) have estimated populations

of 1,400 and 800, respectively. These herds are of particular interest to the community of Teslin. The winter range of the much-studied Wolf Lake herd is located in the north-central portion of the planning region. It extends from the Nisutlin River valley in the west across the Yukon Plateau and Englishman's Range into the northern Cassiar Mountains east of Wolf Lake. The majority of the winter range of the Atlin herd is in British Columbia. Winter range mapping and monitoring of these herds is ongoing. Human harvest is restricted on the Atlin herd as it is included in the Southern Lakes Caribou Recovery Program. Woodland caribou movements and winter range use are a complex relationship related to snow cover, lichen abundance, predation, direct and indirect disturbances, and forest succession (MacLean, 2004).

The rich riparian river valleys and adjacent subalpine shrub zones support moose populations near the average density for the Yukon of about 180 moose per 1,000 km². Local areas, such as the Teslin Burn, may support higher numbers of moose either seasonally or year round. While recent inventory work in the Teslin Burn indicates that this area no longer supports the abundant moose populations it was once known for, it is still a productive moose range. This change in productivity is partially because succession has moved beyond the early seral stages. In general terms, moose populations often benefit from early seral habitats where a mixture of small openings, aquatic forms and cover provides the most productive moose habitat. Recent discussion and review of the Community Fish and Wildlife Management Plan reaffirmed the community's concerns over moose and the status of moose populations in the traditional territory. Nisutlin, South Canol and Teslin Burn areas will likely continue as important areas to consider over the next few years and iterations of the Fish and Wildlife Plans (R. Florkiewicz, pers. comm.).

Stone sheep and mountain goats are among a number of other wildlife species of concern within the traditional territory.

1.4.6.2 Birds

There are 198 different species of birds reported within the planning region (Sinclair et al., 2003). Of these 166 species are migratory birds, as defined by the *Canada/US Migratory Birds Convention*. Ninety-seven of these species have been confirmed as breeding with-



in the planning region, and another 61 may possibly breed within the region. Thirty-one of the 198 species are year-round residents, though not in all years, or for all individuals of the species. The year-round inhabitants include woodpeckers, spruce grouse, gray jays, ravens, chickadees, magpies, crossbills, redpolls, pine grosbeaks and Bohemian waxwings. The Nisutlin River delta is of importance for southern bird migrations, especially swans, geese, ducks and shorebirds.

Important wetlands and bird habitats have been identified within the planning region. The Nisutlin River Delta National Wildlife Area (NRDNWA) was established for this reason in 1995 (5,488 ha), as part of the Teslin Tlingit Council Final Agreement. There are also important wetlands located along the lower Nisutlin River, Morley Bay and Teslin Lake outlet.

1.4.6.3 Fish

Freshwater fish species found in the region are Arctic grayling, burbot, whitefish, northern pike, least cisco, lake trout, inconnu, Dolly Varden char, slimy sculpin, and longnose sucker. These species are important to the area and to the people of the area. Squanga whitefish and bull trout, the latter found in Shilsky and Daughney Lakes, are listed as threatened under the Species at Risk legislation. The presence of chinook and chum salmon in the region, important to local people, is described in more detail below.

Chinook salmon are relatively abundant and are widely distributed in the Teslin watershed. Chinook spawning takes place in the main stems of large rivers, downstream of lakes, in small tributaries, or in watercourses that combine two of these attributes (i.e. in a main stem downstream of a lake). Although spawning has been documented in 24 watercourses, some tributaries have not been adequately investigated. Several additional spawning streams will almost certainly be added in the future. The upstream extent of spawning in most tributaries is not known. Juvenile chinook salmon rear in their spawning streams and in non-natal (non spawning) tributaries. All streams located downstream of spawning watercourses may be expected to be non-natal rearing streams. The delayed release of surface and ground water in the Teslin watershed allows and maintains the relatively high abundance and wide distribution of both returning adult chinook, and rearing and over-wintering juveniles. A negative effect of the extensive fine-grained glaciolacustrine deposits is that they tend to be unstable and are more susceptible to

erosion. This may result in heavy loadings of sands and silts in chinook salmon spawning and rearing habitats downstream.

Chum salmon are present in the Teslin watershed but are less abundant and have a more constrained distribution. A small concentration of chum spawn every year at Dog Salmon Slough in the Lower Teslin River, and a smaller concentration was once observed near the mouth of the Mary River. Chum have been captured in nets in Teslin Lake and there could be a spawning population located upstream of the lake in either the Nisutlin or the Upper Teslin River. If so, the stock would represent one of the furthest upstream migrating populations of chum salmon in the world. Yukon River fall spawning chum spawn only in areas of discharging groundwater. The groundwater must be low in toxic materials and high in dissolved oxygen to be suitable. The juveniles emerge from the gravel and very quickly start their migration to the ocean. There is no extended freshwater rearing period.

1.4.7 The People

Today, the village of Teslin is the centre of the region with a population of about 450 people. Tourism and traditional subsistence hunting and gathering are important aspects of Teslin life. The citizens of Teslin, both first nation and non-first nation, are linked to the land and water which surrounds them and avidly participate in managing the resources for the benefit of the community. The people are committed to maintaining and developing a healthy community through sustainable development.



The history of Teslin starts during the 18th century, the Coastal Tlingit migrated inland from the southern Alaskan Pacific coast toward the Teslin Lake area to trap for furs, which they used to trade for Russian and European merchandise. The combination of being a nomadic people, and the development of trade and a travel route between the coast and the interior, allowed the Tlingit to continue meeting fur demands when the harvesting of furs became scarce on the coast. With the wealth of other natural resources in the Teslin Lake area, the Tlingit determined that the region was suitable for settlement. The excellent travel routes along water bodies such as Teslin Lake and the Yukon River lead to the establishment of trading posts in the Teslin Lake area. Teslin became a permanent settlement in 1942 with the construction of the Alaska Highway. The Teslin Tlingit Council signed their final land claim agreement on May 29, 1993. The values of the Tlingit culture in combination with the Teslin citizens continue to play a major role in the economic development and identity of the community.

1.4.8 The Economy

There are few commercial resource developments within the region. The key commercial resource activities include two big game outfitting businesses, a fishing lodge on Wolf Lake and seasonal fish guiding operations, trapping, forestry and mining activities. Potential exists for future oil and gas exploration activities.

1.4.8.1 Traditional Activities

Historically, the economy of the region has been resource based. The abundance of fur-bearing animals around the Teslin Lake area was conducive to the development of a prosperous trading enterprise.

The Inland Tlingit have always hunted big game such as moose, caribou, sheep and goat for food purposes, as well as smaller game such as gophers (ground squirrels), rabbit, groundhog (hoary marmot), grouse and ptarmigan. Caribou, a major food source, is hunted in the vicinity of Quiet Lake and Canol Road (McClellan, 2001). Groundhog is another favorite and can be found in abundance on Groundhog Mountain, located up the Nisutlin River valley (McClellan, 2001). The fur trade led to a market for pelts such as grizzly and black bear, beaver, lynx, marten, muskrat, mink, wolf and wolverine. Beaver, whose pelts were used as the standard measure of goods during the peak of the fur trade, are

still found in abundance and trapped with great frequency by the Tlingit and other residents. Other animals, such as porcupines and swans, are killed infrequently, primarily for cultural and ceremonial reasons.

The Teslin Tlingit also rely heavily on the food provided by the fish they catch in Teslin Lake in the winter and summer: trout, inconnu, northern pike, several species of whitefish, Arctic grayling, and lingcod (burbot). Many Tlingit also fish for salmon.

The following berries, still common in the Tlingit diet, are listed in order of consumption frequency: mossberries, high-bush cranberries, low-bush cranberries, soapberries and red currants. Berries are also common medicinal ingredients for Teslin Tlingits. Medicinal berries include soapberry bush (used as a purge, or an emetic), bunchberry (used for tuberculosis), crowberry or juniper berry (used for tuberculosis) and mossberries. The mossberries are used in combination with pine and beaver castors for bad coughing fits, or the stems can be boiled for diarrhea. (McClellan, 2001).

The TTC development arm has acquired businesses related to the natural environment, such as Yukon River Timber Ltd. and Teslin Outfitters Ltd. The latter company's outfitting bookings have been increasing annually due to increased marketing.

Teslin Outfitters Ltd. and Lone Wolf Outfitting are the two primary big game outfitters in the region, but many other wilderness adventure guides operate in the area including some from Whitehorse. The Nisutlin, Teslin and Wolf rivers are particularly important to river trip outfitters. Trapping is also an important activity.

1.4.8.2 Mining, Oil and Gas

Current to 2005, almost all of the placer mining claims are located within the Sidney Creek valley along the Big Salmon Range of the Pelly Mountains. Quartz claims, on the other hand, are distributed throughout the region, with large groupings of claims located along the Wolf River valley, Sidney Creek valley, upper elevations of the Big Salmon Range and the Cassiar Mountains (Dorsey Range), and along the Morley River valley.

A portion of the region has potential for Oil and Gas exploration, however very little oil and gas exploration activities have occurred to date. The Alaska Highway pipeline easement parallels the Alaska Highway through the planning region.

1.4.8.3 Tourism

For the last 50 years, the tourism industry in the Yukon has been based largely along the access created by the Alaska Highway. More recently, however, there have been more non-highway tourism activities in the Yukon, particularly wilderness and adventure tourism. Within the Teslin Lake region, tourism is an important activity in the local economy. The Teslin River valley has become an important venue for international tourists, while the Wolf and Teslin rivers provide a strong tourism base for both local and national visitors. The Nisutlin, Wolf and Teslin rivers are identified as especially important, since these places are where future tourism may occur. A few small resorts are located on the Alaska Highway both north and south of Teslin.

Most of the planning region land base has not had any significant commercial development. Rather, a large proportion of the region is used exclusively for non-commercial resource activities, which include fishing, hunting, snowmobiling, boating, rafting and camping. There are also a few small farms in the region.

1.4.8.4 Commercial Forest Sector

A small amount of logging occurred during World War II when areas across from the Demonstration Forest area were logged. In addition, small patches of harvesting occurred up the Nisutlin near the old Tote Road by the abandoned sawmill. The first round of sizeable forest harvesting in the region took place within the Sidney Creek area during the early to mid 1990's. The Sidney Creek harvest area is located in the northwest portion of the region, west of the South Canol highway. Patch systems were used exclusively in this harvest area. Since harvesting occurred, each cutblock in the Sidney Creek region has been planted with spruce and pine. Closer to the Village of Teslin, harvesting has taken place within or near the Demonstration Forest area. A variety of silvicultural systems have been employed. Many of the cutblocks in the Demonstration Forest have been regenerated with white spruce seedlings.

Yukon River Timber Ltd. has been in operation since 1999. This company produces a variety of value-added lumber products from trees harvested in the region. Products include milled house logs, tongue and groove flooring, paneling, and handcrafted log homes. There are also a number of small locally owned wood shops.

The forest sector in Yukon and Teslin is in its infancy. The large hurdle facing investment is the uncertainty in accessing the forest resource. It is hoped the SFMP will contribute to the investment climate and expansion of the forest sector.

1.4.8.5 Other Economic Sectors

The economic activity generated by government and service businesses in Teslin is not insignificant. Increasingly, as public infrastructure improves, opportunities for the people of Teslin to work in their community will increase. This will add to economic, social and cultural stability. Younger generations will be able to find long-term employment in resource and service sectors.

1.4.9 Special Places

There are several land designations in the region that require individual attention in terms of forest management planning. Specifically, government land dispositions, settlement lands, a National Wildlife Area and important wetlands have been flagged for consideration in the SFMP. Ongoing work under the Teslin Fish and Wildlife Management Plan and the Land Use Plan may result in other special places being identified. These may require consideration under the SFMP.

1.4.9.1 Nisutlin River Delta National Wildlife Area

Located on the Nisutlin River delta and bay, this is the only National Wildlife Area in the entire Yukon Territory. It was established in accordance with the TTC Final Agreement. Management coordination is conducted by the TRRC in full consultation with the Canadian Wildlife Service (CWS), Yukon Government and TTC, following a management plan prepared jointly by TRRC and CWS.

The Nisutlin Delta was designated as a National Wildlife Area because it is a major waterfowl staging area on the Pacific flyway. It annually attracts approximately 2,000 trumpeter and tundra swans, 2,000 Canada geese and 6,000 ducks, as well as hundreds of shorebirds, on migration. In addition to waterfowl, the delta provides a key food source for fish and important habitat for moose and other fur-bearing species.

1.4.9.2 Important Wetlands

The Yukon Wetlands Technical Committee has identified three important wetlands in the region: Lower Nisutlin River and Delta, Teslin Lake Outlet, and Morley Bay.

1.4.9.3 Yukon Heritage and Archaeological Sites

The history of human occupation in the Teslin region likely began soon after the end of the last glaciation, approximately 9,000 years ago. Knowledge of the archaeological record is based on only limited surveys which have focused principally on the major water bodies of the region: Teslin Lake, Nisutlin River, Little Teslin Lake, Fat Lake and Morley River.

Based on these surveys, about 200 archaeological sites are documented in the Teslin region to date. Habitation sites of the early prehistoric period may be associated with meltwater channels or abandoned terraces and shorelines related to the more elevated lake and river levels, which were a feature of the early post-glacial landscape. The prehistoric cultures identified in the archaeological record are similar to those identified throughout southern and central Yukon.

Land use patterns of this Middle Prehistoric period begin to resemble those known from the ethnographic record. Certainly by this time, and very likely earlier, the extensive networks of regional trade and exchange, which are well documented in the ethnographic and early historic records, were established. In the archaeological record, exotic stone was an important item of trade. Obsidian from Mount Edziza in the Stikine River area, and from Hoodoo Mountain in the southwest Yukon, can be found in sites in the Teslin area.

About 1,250 years ago, a massive volcanic eruption blanketed much of southern and central Yukon in volcanic ash. The ash is still visible in the modern day ground surface, and marks the beginning of the Late Prehistoric period in the archaeological record. Considerable environmental impact and movements of human populations appear associated with this event. A number of technological innovations occur in the material culture of the post-ash cultures, including adoption of bow and arrow (and abandonment of spear throwing technology), simple metallurgy in the working of native copper, a fluorescence of bone and antler work, and stone boiling as a new culinary technique.

One of the most significant events in early historic period in the Teslin region was the intensification of the coast-interior trade in the early 19th century. This was in response to the virtual extinction of the sea otter and increasing demand for furs to supply Russian and European markets. Economic rewards were sufficient to induce another population movement, which saw a number of Coast Tlingit family groups move into the interior, to obtain the furs directly. At this time, the Inland Tlingit in the Teslin region were ideally positioned to act as middlemen in the profitable trade with the Upper Pelly River, Kaska, Tagish, and other interior groups.

The heavily used Taku River and the Stikine-Teslin aboriginal trading trails, which converged at the south end of Teslin Lake, subsequently became routes used by stampedeers traveling to the Cassiar (1870) and Klondike (1898) gold rushes. Semi-permanent camps or villages appear on the maps of this period and include a camp at the mouth of Nisutlin Bay, where the community of Teslin stands today. This is the location of the first trading post in the Teslin region, established between 1903 and 1910.

The construction of the Alaska Highway and Canol Road and pipeline by the American military during the World War II, heralded the beginning of the modern era in the Teslin region. Historic sites and features relating to this event can still be seen in places along the Alaska Highway and the Canol Road.



2.0 PRINCIPLES FOR FOREST MANAGEMENT

This plan recognizes and supports the following vision as a guide to forest management in the planning region:

“Our vision is for a fully functioning forest ecosystem that benefits all living things, while providing environmental, economic, social and cultural benefits for present and future generations.”

VISION STATEMENTS

A set of vision statements were developed for this SFMP that encompass the dominant values and goals of the people in the region. These vision statements guide the strategic directions for the plan.

- The SFMP will recommend resource development and incorporate the protection of traditional, ecological, resource, heritage, and other important values associated with the forested land base.
- The SFMP will be developed based on the principles of sustainable forest management and ecosystem management.
- The SFMP will contribute to security, reliability and sustainability of forest-based investment and development.
- The SFMP will provide the strategies and guidelines

for the management and conservation of the forest ecosystem while providing economic benefits and opportunities for present and future generations.

- The decision-making process used to develop the SFMP is driven by the values and the goals obtained during previous and current community consultations.
- First Nation traditional knowledge and values will be utilized and incorporated with other baseline data sets in the planning process.

Ecosystem refers to the web of life. It is a dynamic web of people, plants, animals and other organisms, together with the non-living elements of the environment, functioning as an interdependent system.

There are three basic tests for forest management plans, if they are to succeed. The tests use the example of a three-legged stool: if one leg is missing, the stool falls over. The three tests are: is the forest use ecologically sustainable? Are the range of forest uses and actions socially acceptable? Are the forest uses economically viable – can they be financially supported? If the answer to all three questions is “yes” – the possible forest management actions probably meet the test of sustainability.



3.0 FOREST PLANNING PROCESS

3.1 LEGISLATIVE CONTEXT

The TTC Final Agreement, in addition to establishing the basis for forest management planning in the region, establishes the rights and lands that TT citizens retain throughout the traditional territory.

Effective May 29, 1993, the authority and responsibility for forest planning and management, including the approval of forest management plans rests with the First Nation on settlement lands (pursuant to Section 17.5.2 of the TTC Final Agreement). The same responsibility for public lands rests with the Forest Management Branch of the Yukon Government (pursuant to Section 17.5.1 of the TTC Final Agreement, the Devolution Transfer Agreement and the *Territorial Lands (Yukon) Act*).

The TRRC under the TTC Final Agreement (Section 17.4.0) is also assigned responsibilities for forest management planning in the traditional territory.

Key legislation, regulations and policies affecting forest management and planning in the TT Traditional Territory include:

- *Territorial Lands (Yukon) Act*
- Yukon Timber Regulation
- *Yukon Wildlife Act* and Regulations
- *Fisheries Act*
- *Environment Act*
- (INAC) Timber Harvest Planning and Operating Guidebook (1999)
- *Yukon Historic Resources Act*
- *TTC Settlement Land and Resources Act*
- *TTC Fish and Wildlife Act*
- TTC Strategic Plan
- Teslin Fish and Wildlife Management Plan
- Regional Land Use Planning Commission
- Yukon Salmon Committee recommendation, guidelines, and regulations
- *Yukon Environmental and Socio-economic Assessment Act*
- *Species At Risk Act*

In the spring of 2003 the Yukon Government began the preparation of a forest policy framework to guide the development of the Yukon's first comprehensive forest legislation.

3.2 PLANNING FRAMEWORK

Setting up sustainable forest management in the planning region will take time. It will require several distinct planning stages that gradually narrow the decisions and direction from the general goals through basic landscape level arrangements down to specific harvest block location and design.



Stage 1 – Strategic Forest Management Planning is a first and important step that sets out what issues and concerns, values and interests must be addressed, as forest planning moves forward through subsequent stages to more integrated and detailed planning for forest resource development in the planning region. It represents a set of directions, based on a general consensus between governments (Yukon and TTC) and people within the Traditional Territory. That in turn will guide forest planners and managers with respect to how they should approach future resource development and subsequent planning. It establishes the public benchmarks against which forest planning and management in the planning region should be evaluated in the years to come.

The SFMP is being developed jointly for both public and TT settlement lands, which are each managed with their own specific resource objectives. The resource objectives for settlement lands are different than for public lands. The objective is to manage R-blocks with the intent of maintaining and protecting traditional values, sites and land uses. This will influence the type of silvicultural application and may require additional measures, such as creating reserve or exclusion zones around important traditional sites. The next closely linked stages following the SFMP are:

Stage 2 – Integrated Landscape Planning that will include the identification of broad areas available or not for forest development, and strategies for reducing or eliminating significant negative effects on other resources and values. A Timber Supply Analysis (TSA) is done at this time. TSA inputs such as forest inventory, growth and yield data, regeneration, and other forest management assumptions and design criteria, typically form the primary technical information used in the analysis. This is followed by a determination of the Annual Allowable Cut (AAC) for the planning region.

Stage 3 – Harvest Development Planning that designs the general harvest activities consistent with the outcomes of landscape planning (e.g. main road location, harvest block location).

Stage 4 – Site Planning that field checks and engineers harvest block boundaries, landings, volumes and exact road locations, consistent with the higher level plans.

These are shown in sequence in the diagram and described in detail in the tables that follow (*Figure 5* and *Table 3*).

Figure 5

FOREST MANAGEMENT PLANNING STAGES

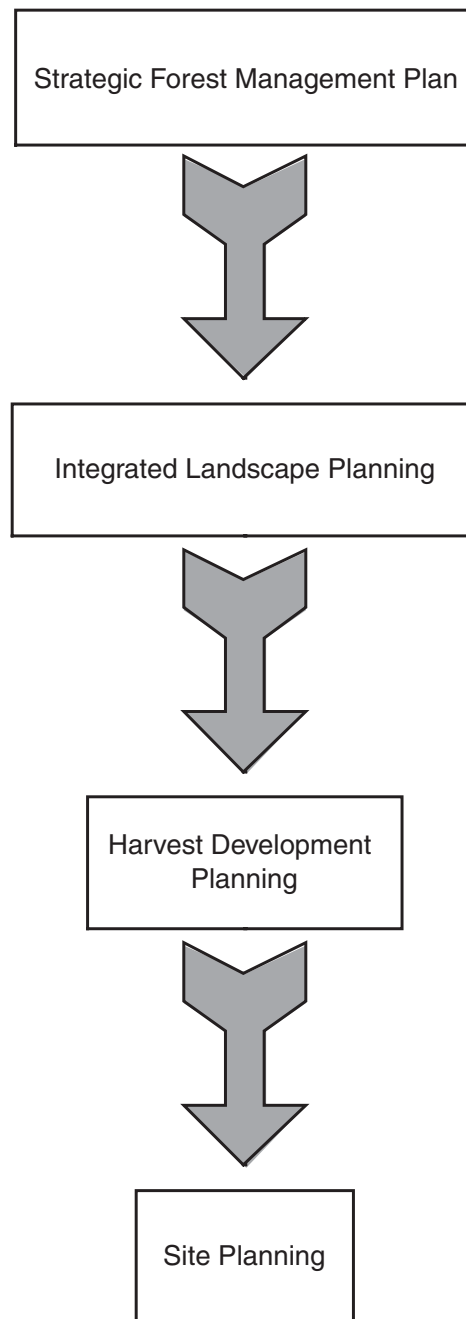


Table 3

FOREST MANAGEMENT PLANNING CONTENTS

STAGE OF PLANNING	CONTENTS	PREPARED BY
<p>1. STRATEGIC FOREST MANAGEMENT PLANNING:</p> <p>Regional Application</p>	<ul style="list-style-type: none"> • Statement of social, economic, environmental and cultural community values and related strategic directions. • General principles, goals and objectives for forest management in the TT Traditional Territory planning region and strategic directions. • Delineates 15 landscape units (or planning areas) in the planning region. • Incorporates strategic directions from other plans affecting forest resources (e.g. wildlife management plans, etc.). 	<p>TRRC and forest management planning team in consultation with government agencies, the community and other affected public interests.</p> <p>Recommended by TRRC to TTC and YG.</p>
<p>2. INTEGRATED LANDSCAPE PLANNING:</p> <p>Watershed/ Planning Unit Application</p>	<ul style="list-style-type: none"> • Comparative evaluations of resource and resource use assessments (e.g. fish and wildlife habitat, wildlife movement corridors, traditional camps, trapping, outfitting, agricultural, recreational and timber harvest areas, etc.). • Detailed technical analysis of the resources and resource values within the planning region. • Incorporation of other land and resource plans and guidelines (e.g. wildlife, habitat, special areas, agriculture, etc.). • Zoning of landscape units (Regional Land Use Designation), includes potential areas for forest development planning areas. • Consistent with Teslin Strategic Forest Management Plan. • Creation of the Timber Supply Analysis • Determination of the Annual Allowable Cut 	<p>TTC, territorial and federal government resource managers, technicians and planners and contracted technical assistance. Consultation with TRRC, stakeholder groups and general public.</p> <p>Reviewed and recommendations provided by TRRC to TTC and YG.</p>

Table 3 continued

FOREST MANAGEMENT PLANNING CONTENTS

STAGE OF PLANNING	CONTENTS	PREPARED BY
<p>3. HARVEST DEVELOPMENT PLANNING:</p> <p>Sub-watershed/ Core-Zone Application</p>	<ul style="list-style-type: none"> • Forest engineering to identify main access location and general harvest design. • Mitigation within identified timber harvest areas consistent with criteria and principles of landscape and strategic planning. • Location of proposed cutblocks with a harvest schedule and volumes. • Location and class of roads with stream crossings. • Strategies to address engineering development, riparian areas, wildlife areas, viewscapes, silviculture and protection issues and areas. • Strategies to address cultural values, traditional users, trappers, outfitters and other resources users. • Access management • Review and reporting criteria. • Previous harvesting history. • Consistent with Teslin Strategic Forest Management Plan and Integrated Landscape Plan. • Heritage potential mapping. 	<p>Depending on the size and form of the permit or tenure: responsible federal, territorial and TTC agencies and/or permit or tenure holder in consultation with other forest users.</p> <p>Plan review by public and TRRC and recommendations provided by TRRC to TTC and YG.</p> <p>Plan monitoring and review by TTC and territorial forest managers.</p>
<p>4. SITE PLANNING:</p> <p>Harvest Area Application</p>	<ul style="list-style-type: none"> • Identifies specific proposed harvesting and operational design and activities for the coming year (e.g. exact road/landing/ harvest area location, refined volume estimates, equipment, stream crossing methods). • Description of project activities must be consistent with harvest development plan. • Plan is used by regulators to set terms and conditions of individual permits and for compliance and enforcement purposes. • Heritage impact assessment may be required. 	<p>Operator or client in consultation with territorial and TTC forest managers and regulators.</p> <p>Plan monitoring and review by TTC and YG forest managers.</p>

3.3 PLANNING PROCESS

3.3.1 Chronology of Key Steps

July, 1998	Teslin RRC consideration of DIAND's Nisutlin Timber Supply Analysis
October, 1998	Establishment of Forest Management Steering Group
November, 1998	Forestry Steering Group makes recommendations to TRRC
January, 1999	TRRC and TTC meet to discuss Timber Supply Analysis
January, 1999	DIAND draft Forest MOU discussed with TRRC
March, 1999 to January, 2000	Meetings to discuss values Teslin area people hold in relation to land and resources
April, 1999	Meeting between DIAND and TRRC to discuss Y-05 Resource Report
August, 1999	Public meeting on THA document
March, 2000	MOU signatories' meeting to create a SFMP for the TT Traditional Territory
March, 2000	Publication of <i>Talking to the People</i>
October, 2000	Open House on the Teslin Forest Management Plan
July, 2002	Workshop on SFMP
August, 2002	Workshop on SFMP
December, 2002	Workshop on SFMP
June, 2003	Public review of SFMP documents
Early, 2004	Workshop on SFMP
Fall, 2004	Discussion by Planning Team of a comprehensive SFMP document
April, 2005	Discussion by Planning Team of comprehensive SFMP document
Oct, 2005	Publication of draft comprehensive SFMP document
Nov, 2005	Public open house and presentation of plan in Teslin
April, 2006	TRRC Recommended plan to Governments

3.3.2 Participation in Strategic Forest Management Planning

Approval Bodies

The approval bodies for the SFMP are the Yukon Government on public lands and the TTC on settlement lands. They make final decisions to approve and implement the plan on their respective lands that is recommended by the TRRC (Chapter 17.5 of the TTC Final Agreement).

Planning Team

The Planning Team consists of representatives of the TRRC, the Yukon Government's Department of Energy Mines and Resources, and the TTC. These representatives coordinate their respective agency's participation in the development of the plan. The TRRC performs the lead coordinating role in the development of the plan.

Community Participation

The TRRC facilitates public participation in the planning process by sponsoring open houses and information meetings, developing information materials, carrying out community surveys, and providing formal opportunities for public consultation on forest management planning and the plan.



4.0 STRATEGIC DIRECTIONS FROM PLANNING AND LEGISLATIVE INITIATIVES

Strategic directions are found in this section as well as in Section 7.0 Strategic Directions from Key Issues, and Section 8.0 Strategic Directions and Plan Implementation, Monitoring and Review.

Following the signing of the TTC Final Agreement in 1993, a number of planning activities related to wildlife, land and resources management took place, including passage of resource legislation by the TTC. All of these will have a bearing on forest management planning in the region. Principles, goals and recommendations set out or derived from these activities and pieces of legislation will help guide and direct the development of forest management plans in the planning region.

The strategic considerations and directions for forest management in the planning region that are outlined in this section come from these planning and legislative initiatives.

4.1 TESLIN TLINGIT COUNCIL FINAL AGREEMENT

Strategic Considerations:

Through this land claims agreement, the TTC retains aboriginal rights, titles, and its interests with respect to settlement lands. The objectives of the agreement were:



- To recognize the importance of protecting a way of life based on economic and spiritual relationship with the land;
- To encourage and protect cultural distinctiveness and social well-being; and
- To enhance the ability of the Teslin Tlingit to participate in all aspects of the Yukon economy.

Section 17.5.0 of the TTC Final Agreement provides for development of a forest resources management plan for the TT Traditional Territory. The SFMP has considered the following sections during its development:

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

- 17.5.5.1 The principle of sustainable use of Forest Resources;
- 17.5.5.2 The principle of an integrated and balanced approach to the management and protection of interest in and uses of Forest Resources in a watershed;
- 17.5.5.3 The principle of integrated Forest Resources Management on Settlement Land and non-Settlement Land;
- 17.5.5.4 The Forest Resource harvesting and management customs of Yukon Indian People;
- 17.5.5.5 Fish and Wildlife Harvesting rights and management plans as set out in Chapter 16 Fish and Wildlife;
- 17.5.5.6 The knowledge and experience both of the Yukon Indian People and scientific communities in Forest Resources Management and use; and
- 17.5.5.7 The principle of implementing the plan on a watershed basis.

Strategic Directions:

1. Future forest management plans will be consistent with the terms of the TTC Final Agreement.

4.2 LAND USE PLANNING IN THE TESLIN TLINGIT TRADITIONAL TERRITORY

Strategic Considerations:

Under Chapter 11 of the TTC Final Agreement, the First Nation and the federal and Yukon governments are committed to creating a Regional Land Use Plan for the Teslin Planning Region. The mandate of this commission is to develop a recommended Land Use Plan for the region. This plan is directed by Chapter 11 of the TTC Final Agreement.

Section 11.2.1.2 of the TTC Final Agreement speaks to planning processes.

Any regional land use planning process in the Yukon shall be linked to all other land and water planning and management process established by governments minimizing where practical any overlap or redundancy between the land use planning process and those other planning processes.

Strategic Direction:

2. The principles, goals, objectives and directions of the SFMP shall provide the basic guidelines for forest management and forest resources development in the region (Sections 11.4.5.8 and 17.6.1, TTC Final Agreement) consistent with the general goals and principles of the Teslin Regional Land Use Plan (when it is completed and accepted).

4.3 NISUTLIN RIVER DELTA NATIONAL WILDLIFE AREA

Strategic Considerations:

The TTC Final Agreement established a National Wildlife Area (NWA) under the *Canada Wildlife Act* in the Nisutlin River bay and delta.

Section 7.8 of the NRDNWA Management Plan speaks to the issue of transboundary impacts of activities outside the Wildlife Area on species that cross the border of the Wildlife Area. Section 7.9 of the plan addresses the issue of a “no-development buffer extending outward for 1 km from the NRDNWA boundary.”

Appendix A: Schedule A – Nisutlin River Delta National Wildlife Area provides in Section 5.0 Forest Resources that the Teslin Tlingit shall have the right to harvest forest resources in the Area for traditional purposes.

The NWA is the only Special Management Area in the TT Traditional Territory. Under the Teslin Fish and Wildlife Management Plan ongoing work may, result in other Special Management Areas being identified that may require consideration under the SFMP.



Strategic Directions:

3. The goals and objectives of the management plan for the Nisutlin River Delta National Wildlife Area and areas in the region that require special management will be considered in implementing the SFMP. Of particular note are the following:
 - The provision for Teslin Tlingit to continue traditional practices with respect to forest resource use must be respected.
 - The provision in the Wildlife Area Management Plan for management of transboundary fish and wildlife species must be considered with respect to forest habitat outside of the Wildlife Area that is used by cross-border species.

4.4 PRIORITIES OF THE TESLIN TLINGIT COUNCIL

Strategic Considerations:

The 25-year Strategic Plan (1995) developed by the TTC to implement their final land claims and self-government agreements includes the following priorities that are particularly relevant to the SFMP:

- Achieving economic self-sufficiency by creating a viable economic base;
- Conserving the wildlife and habitat in the traditional territory for the well-being of our future generations; and
- To cooperatively continue to preserve and develop the social, economic, political and cultural well-being of the Teslin Tlingit citizens.



The TTC supports sustainable development of their traditional territory resources to promote the continuation of traditional land-based activities, while at the same time supporting non-traditional economic activity through the careful use of non-renewable resources. Resources are the key to improving the TT citizen's traditional, social and economic way-of-life.

Strategic Directions:

4. Future forest management planning shall incorporate the principle of sustainability and the imperative of balancing traditional use and forest development activities.
5. Future forest management planning shall consider approaches to forest management planning, and development that contribute to the self-reliance of the Teslin Tlingit citizens.

4.5 PRIORITIES OF THE YUKON GOVERNMENT IN REGARDS TO FOREST MANAGEMENT

Responsibility for management of natural resources was devolved to Department of Energy Mines and Resources on April 1, 2003. Some of the department's initiatives provide guidance to forest management and are designed to contribute to a better quality of life for Yukoners by:

- Responsible management of Yukon's natural resources.
- Promoting investment in and responsible development of natural resources.
- Providing strategic leadership on natural resource policy and planning to benefit Yukoners.

The Forest Management Branch of EMR is the regulatory agency responsible for management of forest resources on public land.

Strategic Direction

6. Secure a forest land base, to be managed in a responsible fashion, from which we can expect a sustainable supply of wood in order to foster development of a local forest-based economy that will return positive benefits to the people of Teslin, and the Yukon.

4.6 TESLIN TLINGIT COUNCIL *SETTLEMENT LAND AND RESOURCES ACT*

Strategic Considerations:

The Teslin Tlingit Council *Settlement Land and Resources Act* governs the uses of lands and resources on Settlement Lands. The key purposes of the act are:

- To manage all Settlement Lands and associated resources for all Teslin Tlingit citizens, including future generations;
- To establish a comprehensive and integrated decision making process that considers the importance of environmental, social, cultural and heritage values that protect and conserve Settlement Lands and associated resources;
- To utilize the knowledge and experience of the Teslin Tlingit citizens in decision-making; and
- To protect and maintain the culture, tradition, health, and lifestyle of Teslin Tlingit citizens.

Strategic Directions:

7. Forest management planning shall be based on an integrated and sustainable approach to forest resource use and development.
8. Forest management planning shall pursue strategies to enhance the objective of the Teslin Tlingit Council *Settlement Land and Resources Act* on settlement lands.
9. Access and use provisions of the Teslin Tlingit Council *Settlement Land and Resources Act* shall be respected by the forest management planning process.

4.7 TESLIN TLINGIT COUNCIL *FISH AND WILDLIFE ACT*

Strategic Considerations:

The TTC *Fish and Wildlife Act* was enacted to ensure comprehensive conservation and management of fish, wildlife and habitat on settlement lands within the TT Traditional Territory. The act deals with habitat protection, as well as resource utilization and access issues. Furthermore, the TRRC is responsible for making recommendations on all matters relating to the conservation of renewable resources and the quality of the environment, including all issues regarding fish and wildlife.

Strategic Direction:

10. Future forest management planning on settlement lands shall respect the provisions of the TTC *Fish and Wildlife Act*, with particular attention being paid to habitat management.

4.8 TESLIN REGIONAL TOURISM PLAN

Strategic Considerations:

The Teslin Regional Tourism Plan (Yukon Territorial Government, 1993) identified that the tourism sector in the Teslin region was still in early development. For the most part, tourism activities in the Teslin region are based on summer opportunities and are carried out in the river valleys of the Teslin, Nisutlin, Wolf and Big Salmon rivers. No formal winter tourism events or packages are presently being marketed to attract visitors to the region. Need for support to enhance the current tourism developments was identified during community consultations.

Strategic Direction:

11. Forest management planning shall consider approaches and measures to enhance the development of the region's tourism industry, related local benefits, and seek compatible solutions to overlapping forest land uses.



4.9 TESLIN INTEGRATED FISH AND WILDLIFE MANAGEMENT PLAN

Strategic Considerations:

Integrated Fish and Wildlife Management Planning is a community-based cooperative system in which concerns are addressed through a partnership between the Yukon Government, TTC and TRRC. It was formalized through a Memorandum of Understanding (MOU) which sets out the responsibilities of each partner (Yukon Government, 2002).

Integrated Fish and Wildlife Management Plans address issues presented by the community. The plan presents scientific and community (local and traditional) knowledge about the issues. It addresses the issues through a logical reduction from “Concerns” to “Solutions” to “Action.” Actions are assigned to partners in the plan on an annual basis for a four-year term. The information gathered regarding fish and wildlife, in and around the TT Traditional Territory, assists in providing a greater understanding of the local issues and community concerns. This understanding acts as a guiding tool for designs for, and implementation of, land uses.

Strategic Direction:

12. Where possible, seek to integrate concerns, solutions and actions of the Teslin Fish and Wildlife Management Plan into forest management planning.

Other strategic directions with respect to fish and wildlife are addressed in Section 7.0 Strategic Directions from Key Issues.

4.10 YUKON SALMON COMMITTEE

Strategic Considerations:

The Yukon Salmon Committee (YSC) is a public advisory body that is established under Chapter 16 of the UFA. The YSC works towards the preservation and enhancement of the Yukon’s salmon stocks. The YSC is responsible for making recommendations to the Minister of Fisheries and Oceans and to Yukon First Nations on all matters that are related to salmon in the Yukon.

The main goal of the YSC is to preserve salmon stocks in the Yukon, and therefore maintain the role of salmon within the Yukon’s ecosystems, economies and lifestyles. Specific principles and regulations have been identified to help ensure the conservation of salmon stocks in the Yukon.

Strategic Direction:

13. The regulations established to ensure the conservation of salmon stocks will be respected.



4.11 SPECIES AT RISK, SPECIAL CONCERN OR LISTED UNDER THE YUKON WILDLIFE ACT

The following species, found in the Teslin region, are either listed by Committee on the Status of Endangered Wildlife in Canada (COSEWIC), the *Species at Risk Act* (SARA) or protected by the *Yukon Wildlife Act*.

Species considered by COSEWIC are grouped into three categories:

Endangered: A species facing imminent extirpation or extinction.

Threatened: A species likely to become endangered if limiting factors are not reversed.

Special Concern: A species with characteristics that make it particularly sensitive to human activities or natural events.

Strategic Direction:

14. Forest management planning shall review recovery and action plans for SARA listed species for guidance on management in the TT Traditional Territory.
15. Forest management planning shall review COSEWIC status reports and species assessments for guidance on management of species of special concern in the TT Traditional Territory.
16. Forest Management planning shall review *Yukon Wildlife Act* for rational and guidance on management of species with Specially Protected Status in the TT Traditional Territory.

Table 4

WILDLIFE IN THE TESLIN FOREST MANAGEMENT PLANNING REGION IDENTIFIED UNDER FEDERAL SPECIES AT RISK ACT (SARA), COSEWIC LISTED, OR THE YUKON WILDLIFE ACT

SPECIES	STATUS	SOURCE
Peregrine falcon <i>anatum subspecies</i>	Threatened (few in number) – Specially Protected	SARA (2000), COSEWIC (2004) <i>Yukon Wildlife Act</i>
Grizzly bear	Special Concern in Canada – Stable population in SFMP Region	COSEWIC (2004)
Short-eared owl	Special Concern in Canada	COSEWIC (2004)
Peregrine falcon <i>tundrias subspecies</i>	Special Concern in Canada	COSEWIC (2004)
Wolverine	Special Concern – Stable population in SFMP Region	COSEWIC (2004)
Squanga whitefish	Special Concern	COSEWIC (2004)
Woodland caribou	Special Concern – Stable population in SFMP region. Species Management	SARA (2000) COSEWIC (2004)
Mule deer	Specially Protected	<i>Yukon Wildlife Act</i>
Cougar	Specially Protected (rare)	<i>Yukon Wildlife Act</i>
Trumpeter swan	Specially Protected	<i>Yukon Wildlife Act</i>

4.12 COMMUNITY CORE VALUES

Strategic Considerations:

Forestry operations have the potential to create tension between the desire for economic development and the concern for the maintenance of traditional culture and values. The SFMP emphasizes the preservation of cultural values and traditions. It is for this reason that over recent years the TTC, with the TRRC, Yukon Government, and private industry have conducted various workshops and surveys to gain a clearer understanding of the environmental, cultural and traditional concerns of the Teslin community.

Residents' perspectives on the issues of concern revealed the core values of the Teslin Tlingit people and the community. The values identified are:

- Water (maintenance of watershed and water quality),
- The land (maintenance of ecosystems functions),
- The bush (management and harvesting of the forest in a sustainable manner),
- Wildlife, and
- Traditional activities, including:
 - Cultural
 - Hunting
 - Fishing
 - Gathering, and
 - Future generations and its relationship with employment.

The surveys not only identified the community's core values, but also helped to find out the community's preferences of harvest sites and methods.

Strategic Directions:

17. Manage the bush, the water, the land and wildlife in order to ensure traditional values and activities including culture, hunting fishing and gathering remain available for future generations.
18. Ensure information about impacted areas is available to the community following forest management activities. This includes information on the status of access roads after harvest, restoration programs of harvested sites, and pre- and post-harvesting activities.

4.13 DRAFT TESLIN FOREST MANAGEMENT PLAN, VOLUMES 1 AND 2

The draft documents, Teslin Forest Management Plan Volume 1 (Strategic Direction for Forest Resource Development) and Volume 2 (Regional Forest Landscape Plan) were prepared by OLSON + OLSON Planning and Design Consultants Inc. (2002), under contract to the TTC. These draft documents go a long way in addressing the issues that will need to be resolved next, during the Integrated Landscape Planning stage.

During this next stage, a number of timber supply scenarios will be analyzed. The OLSON + OLSON work included a preliminary timber supply analysis which indicated a timber supply of 118,000 m³ per year (following the preferred harvesting approach). After net downs for uncertainty and risk, the timber supply was reduced to 36,000 m³ per year with potential to be raised to 45,000 m³ per year once uncertainties due to activity levels in the landscape units are resolved.

The current harvest ceiling on public lands for Forest Management Unit Y04 (which includes the majority of the SFMP planning region) is 25,000 m³ per year. The harvest ceiling will remain until another harvest ceiling or AAC is determined.

Strategic Direction:

19. The OLSON + OLSON draft documents should be used as an information source for Integrated Landscape Planning and Harvest Development Planning.



5.0 FOREST MANAGEMENT GOALS, OBJECTIVES AND INDICATORS

Goals of Forest Management in the TT Traditional Territory

The Forest Management goals in this SFMP address the fundamental areas of sustainable forest management in the TT Traditional Territory. There are five:

- A. Conserve biological diversity
- B. Maintain forest ecosystem health and productivity
- C. Conserve and maintain soil and water resources
- D. Maintain and enhance multiple socio-economic benefits
- E. Maintain and enhance community sustainability

The order of the list of goals is not meant to reflect their relative values. This plan accepts the broad range of values that have been expressed and attempts to balance the sometimes-competing views of how the forest should be managed and used.

This challenge is not unique to this plan. There is a desire within the region to use forest management activities to maintain or enhance, where possible, the value and benefits of forest resources and uses, such as watersheds and fisheries, wilderness tourism and small-scale commercial timber operations in which local people can participate. This plan, according to its principles and through each of the goals, objectives and indicators, establishes a direction and conditions for regional forest management to meet these challenges.

Together, these goals are consistent with the criteria (goals) of sustainable forest management defined nationally – by the Canadian Council of Forest Ministers – and internationally through the Montreal Process. The goals of the SFMP differ somewhat from national and international criteria of sustainable forest management in that they have been refined to reflect local circumstances, values and needs.

Objectives of Forest Management in the TT Traditional Territory

A number of objectives are given for each of the six goals. Objectives are specific and attainable achievements that describe how the SFMP will accomplish its goals. Objectives are also measurable in that the progress that is made in implementing the plan can be compared against the plan objectives. Indicators are “signs” or “markers” that determine whether progress is being made or not on achieving an objective.

Indicators of Sustainable Forest Management in the TT Traditional Territory

The Canadian Council of Forest Ministers (CCFM) Framework of Criteria and Indicators document (2004) says this about criteria (expressed as goals in this SFMP) and indicators:

“[they] provide a science-based framework to define and measure Canada’s [or a region’s] progress in the sustainable management of its forests. The criteria [goals] represent forest values that Canadians [Teslin region residents, in this case] want to enhance or sustain, while the indicators identify potential scientific factors to assess the state of the forests and measure progress over time.”

Indicators are another means of demonstrating what a community values and the “signs” it checks to determine the health of its economy, forests, wildlife, culture and so on. Indicators are commonly used to answer the question, “are we achieving the goals and objectives of our plan?” They provide a practical means for testing progress towards forest management goals and objectives against specific local expectations and a broad range of values. Indicators generally apply at the strategic level – in other words, across the entire TT Traditional Territory.

Local indicators allow forest managers and the general public in a region to see more clearly, albeit selectively, where progress is being made and where improvements are necessary. Importantly, they tell managers how their efforts will be judged, and how impacts from forestry and other activities will be evaluated. In this way, they

are a critical part of monitoring programs and, if supported by good information – both scientific observations and traditional and local descriptive observations – can provide an early indication of where changes may be required in forest management. In this way, they are a key tool in adaptive forest management.

Indicators should be:

- **Meaningful** – they should relate clearly to a particular objective, and provide significant information about the values embodied by the objective.
- **Measurable** – they should be based on available or easily obtainable measurements that can be consistently repeated over time to observe trends.
- **Cost effective** – it should be financially and practically feasible to collect data to report on the indicator.
- **Understandable** – not only to forest managers but also to the public, especially since public interests are integral to this plan.
- **Connected to forestry** – they should be responsible to forest management actions and practices.
- **Attributable** – ideally, it should be possible to attribute (show cause and effect) trends that may be observed in the indicator over time and explain why trends are being observed.

The following indicators are proposed at this time, and will be put in place over the next few years as the plan is implemented. Those indicators with an asterisk (*) beside them may be easier to develop in the near-term because they have established methodologies and/or data is readily available.

The first step in reporting on the indicators will be to compile an *Initial Status Report*. The purpose of this document will be to report on the status of the indica-



tors prior to implementation of the forest management plan. This report will serve as the baseline against which all future monitoring reports will be compared. Indicator reporting will be guided by adaptive management, but will also depend on financial and personnel resources.

The indicators of sustainable forest management in the TT Traditional Territory are essentially shaped by the goals and objectives that reflect the values and concerns of the people living in the region. They are selective and can be added to or changed as needed.

5.1 GOAL A: CONSERVE BIOLOGICAL DIVERSITY

The first goal of the SFMP is the conservation of biological diversity. The Canadian Council of Forest Ministers (CCFM, 2000) defines biological diversity as the “variability among living organisms and the ecological complexes of which they are a part.” Conservation of biological diversity commonly includes management, protection or preservation of ecosystems by ensuring their viability, resiliency and sustainability. This SFMP identifies three objectives for biodiversity conservation: conserve ecosystem diversity, species diversity, and genetic diversity.

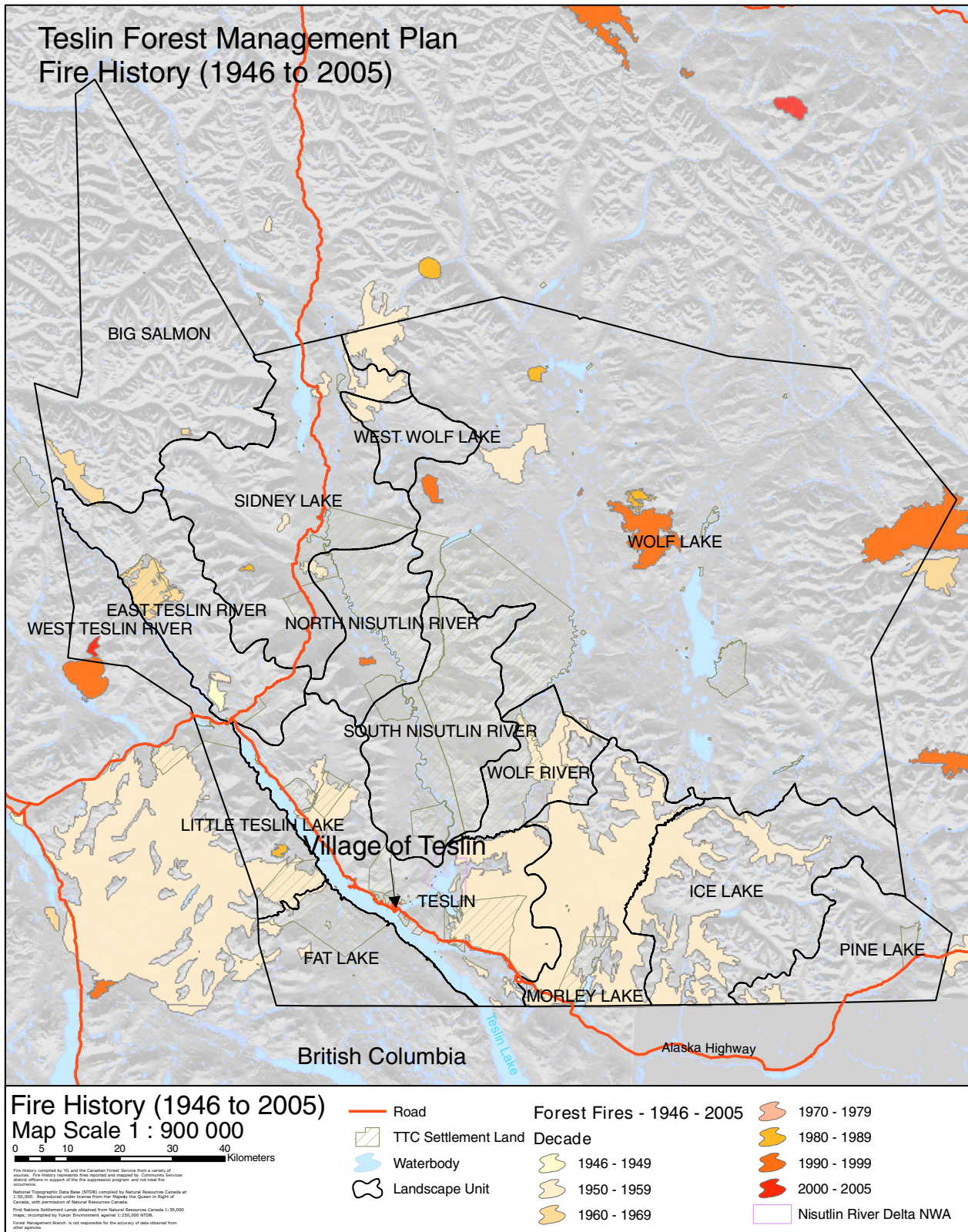
5.1.1 Objective 1.1 – Conserve Ecosystem Diversity

Ecosystem diversity is the relative amounts and proportions of different ecosystems, and is one aspect of biological diversity. Ecosystem diversity is measured by examining forest habitat, including wetlands, and forest dynamics. Habitat quantity and diversity is often directly related to species diversity, although habitat quantity is not always a good indicator of the status of individual species.

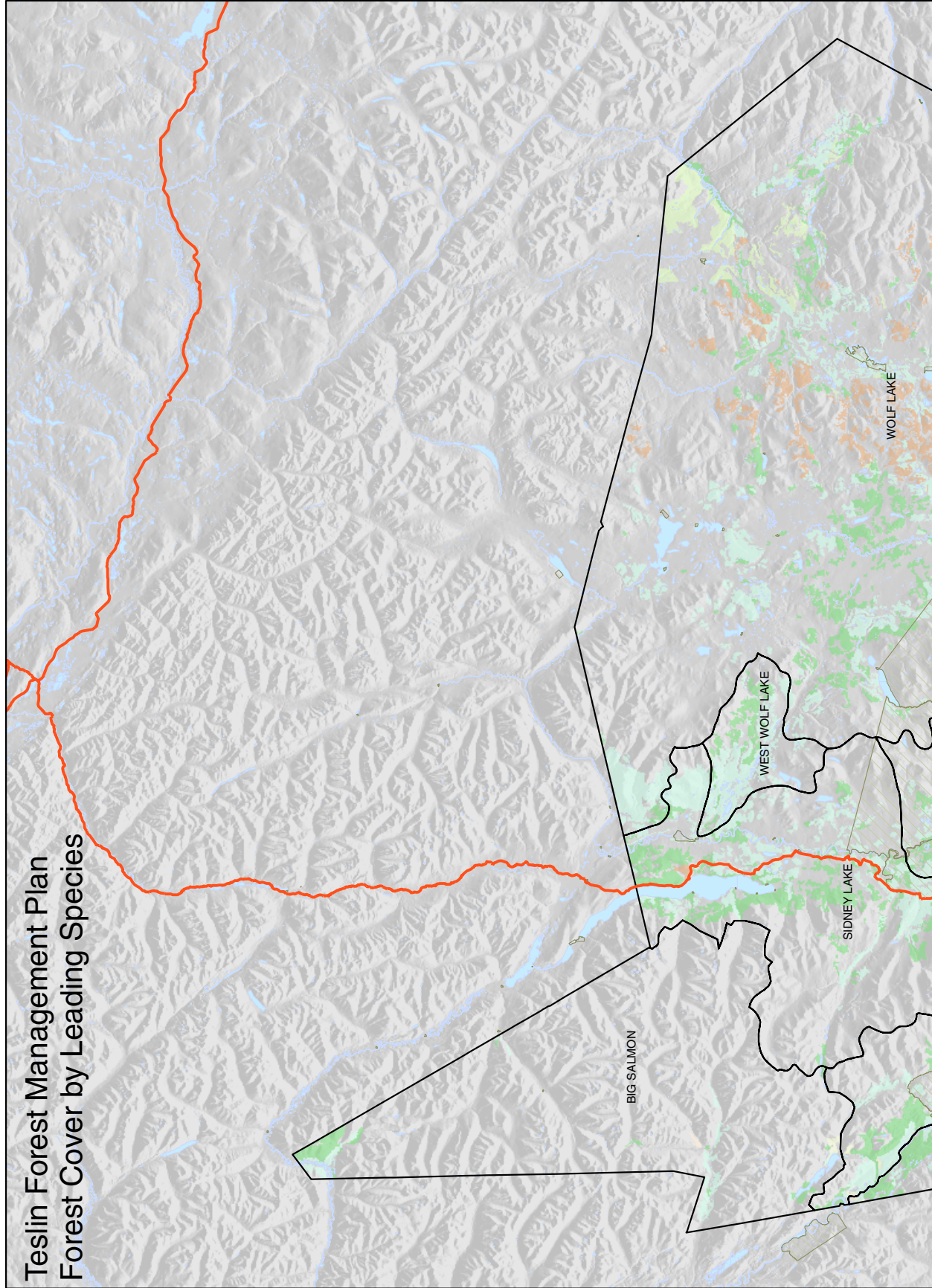
Indicators:

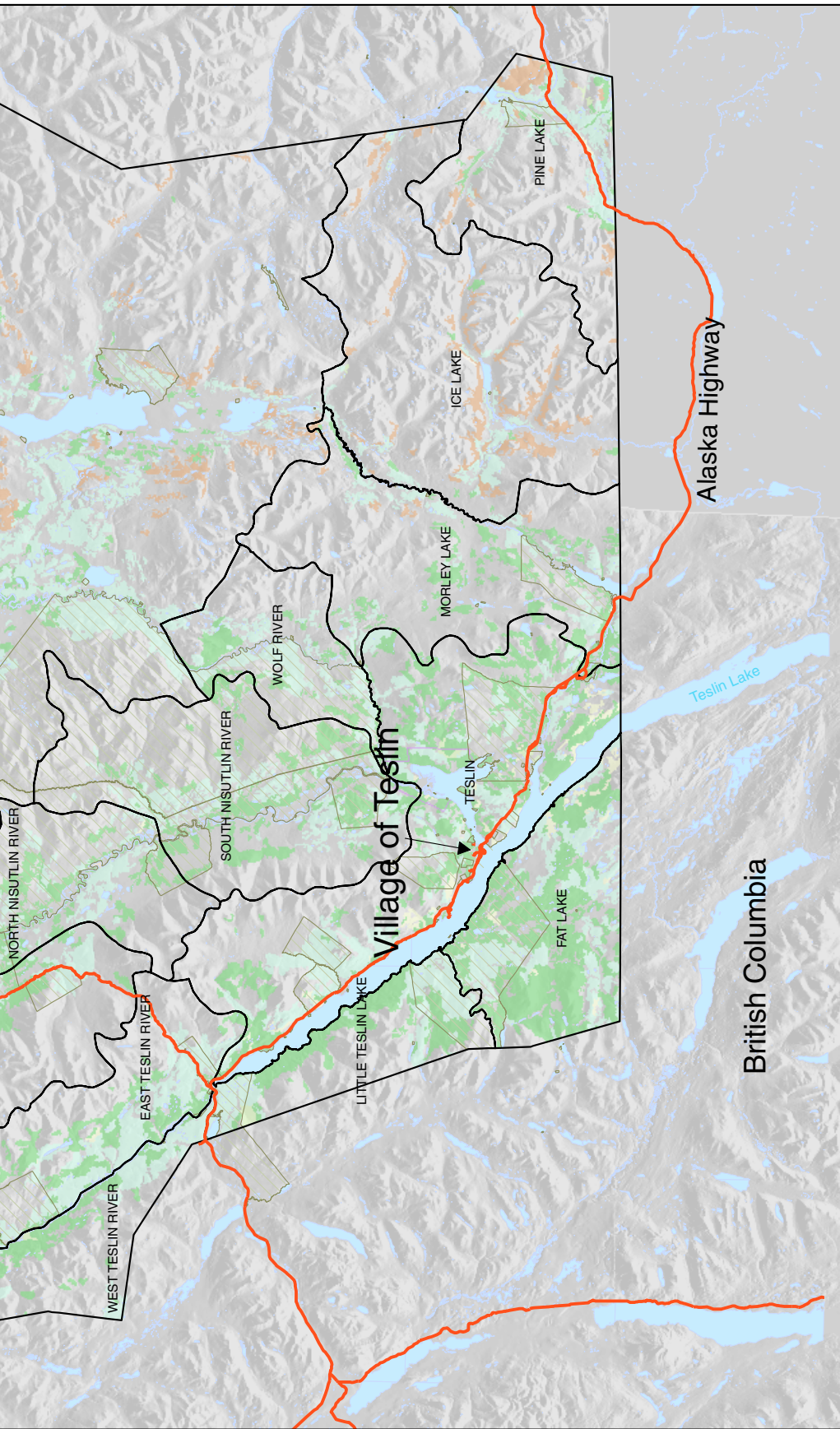
- Area of forest, by type and age class, and wetlands in each ecoregion*
- Area of forest, by type and age class, and wetlands in protected areas in each ecoregion*
- Extent and diversity of key ecosystem features
- Level of protection of unique places
- Status of unique or distinctive habitats

MAP 2 - TESLIN AREA FIRE HISTORY



MAP 3 – TESLIN AREA FOREST COVER BY LEADING SPECIES





Forest Cover by Leading Species

Map Scale 1 : 700 000



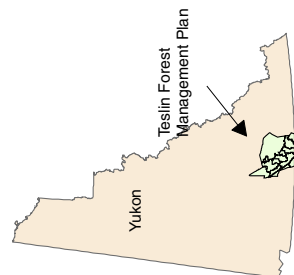
Fire History compiled by YG and the Canadian Forest Service from a variety of sources including fire logs, fire scar analysis, and fire district officers in support of the fire suppression program and not total fire occurrence.

National Topographic Data Base (NTDB) compiled by Natural Resources Canada at 1:50,000. Reproduced under license from Her Majesty the Queen in Right of Canada, with permission of Natural Resources Canada.

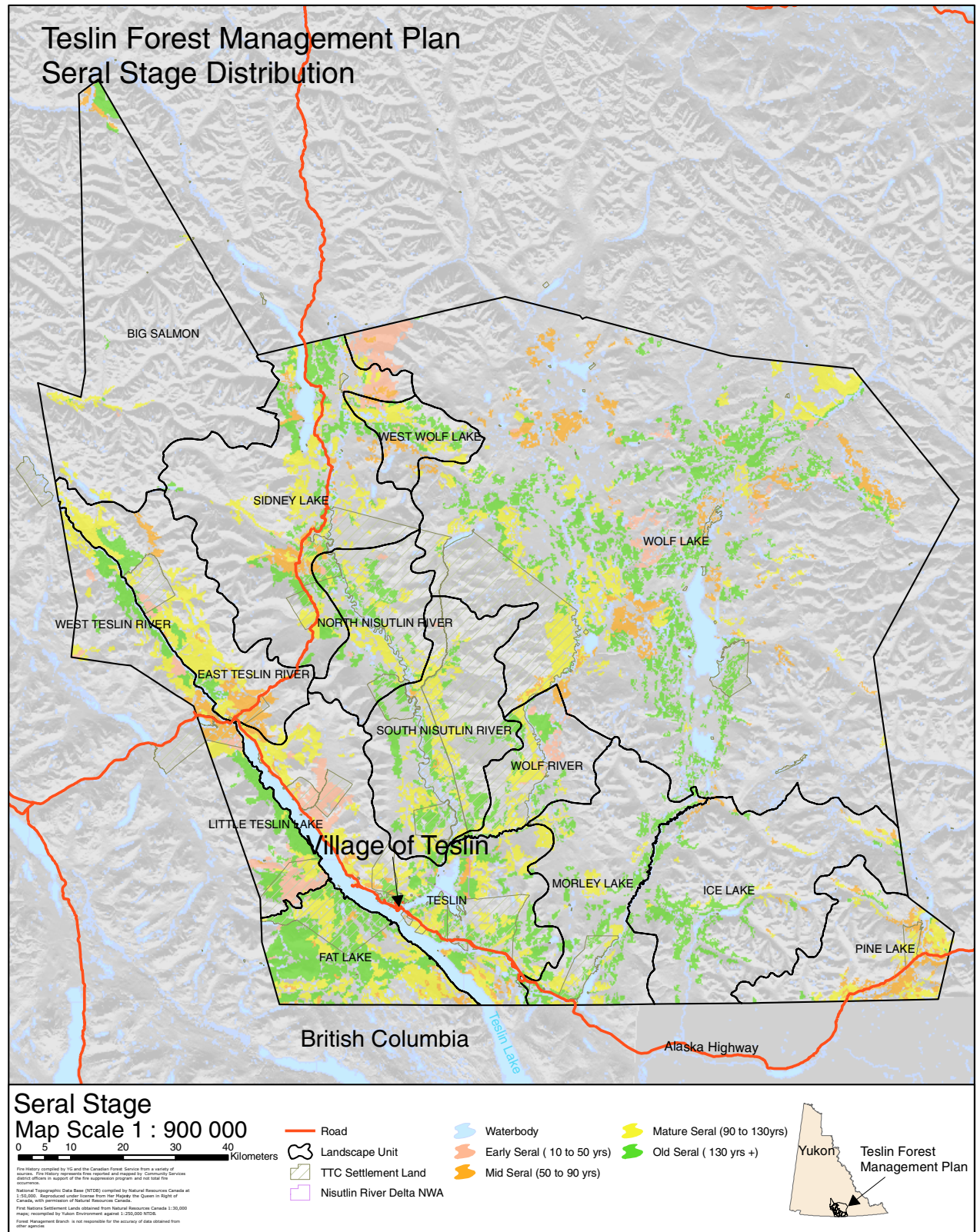
First Nations Settlement Lands obtained from Natural Resources Canada, 1:30,000 maps, recompiled by Yukon Environment against 1:250,000 NTDB.

Yukon Forest Management Branch is not responsible for the accuracy of data obtained from other agencies.

- White Spruce
- Lodgepole Pine
- Alpine Fir
- Black Spruce
- Balsam Poplar
- Trembling Aspen
- White Birch
- Nisutlin River Delta NWA
- Landscape Unit
- TTC Settlement Land
- Waterbody
- Road



MAP 4 – TESLIN AREA FOREST COVER BY SERAL STAGE DISTRIBUTION



5.1.2 Objective 1.2 – Conserve Species Diversity

Species diversity is defined as the number, variety, population and distribution of species found within an ecosystem. Population levels are used to directly measure the status of a species. In addition to species-at-risk, there are many species whose populations and habitats we monitor because they are of economic or cultural importance or they are perceived to fill key ecological role or indicate conditions for other species. The current range of species in relation to historic range is measured because it provides important information about possible conservation threat or recovery.

Indicators:

- Level of abundance and diversity of selected forest-associated species*
- Distribution of selected forest-associated species
- The status of forest-associated species at risk*
- Status of suitable habitats for forest-associated species at risk

5.1.3 Objective 1.3 – Conserve Genetic Diversity

Genetic diversity is the variation in genetic make-up among organisms and within specific species types. A reservoir of genetic diversity within and among tree species should be maintained to help ensure that the species retain the capacity to adapt to change, thereby sustaining their productive capacity and level of resilience.

Indicators:

- Genetic diversity of reforestation seed lots
- Status of *in situ* and *ex situ* conservation programs for native tree species within each ecozone
- Regeneration method*

5.2 GOAL B: MAINTAIN FOREST ECOSYSTEM HEALTH AND PRODUCTIVITY

Maintaining forest ecosystem health and productivity in the TT Traditional Territory is the second goal of this SFMP. This goal is important since the sustainable development of forest resources is dependent upon

normal functioning, or health and productivity, of the ecosystem over the long term (CCFM, 20003).

Healthy forests are more resilient to change and disturbance, and are more likely to provide continuous new growth. The health and productivity of a forest is also an indication of the overall condition of the ecosystem. This SFMP identifies three objectives for meeting this goal: to maintain and enhance ecosystem condition and productivity, to support the ecosystem's ability to maintain natural processes, and to maintain and enhance ecosystem resilience.

5.2.1 Objective 2.1 – Maintain and Enhance Ecosystem Condition and Productivity

Ecosystem condition and productivity relate to the health, vitality and rates of biological production in forest ecosystems. While most disturbance and stress events are essential to the normal functioning of boreal forest ecosystems, some may overwhelm the resilience of an ecosystem, altering ecosystem processes or affecting forest health. Long-term forest land conversion, biotic and abiotic factors that affect forest health is monitored to give an indication of disturbance and stress, which may negatively or positively affect forest condition over time. Total growing stock is monitored to give an indication of the balance of forest productivity and disturbances. Successful regeneration post-harvest is monitored to assess the effect of human efforts to assist the forest to recover from disturbance.

Indicators:

- Amount of change in area of forest, by type and age class*
- Total growing stock of merchantable and non-merchantable tree species*
- Incidence of forest health concerns, including biotic (e.g. insect and disease outbreaks) and abiotic (e.g. windthrow, drought stress)
- Proportion of timber harvest area successfully regenerated*

5.2.2 Objective 2.2 – Support the Ecosystem’s Ability to Maintain Natural Processes

Natural processes involve the natural cycles of death and renewal. Guarding natural processes is important, as they are essential to the long-term function of forest ecosystem processes. To support the ecosystem’s ability to maintain natural processes it is necessary to accommodate natural disturbance events within the *Natural Range of Variation (NRV)* while accounting for other values and implementing management strategies that maintain natural processes. Invasive species are monitored because they provide an indication of the risk of ecosystem dysfunction for native species, because some invasive species compete with, interbreed with, or displace native species. Woody debris in harvested areas is monitored because of the important ecological role it plays in sustaining long-term soil productivity and providing wildlife habitat. Forest ecosystem carbon is monitored because of its important relationship to climate change.

Indicators:

- Area and severity of disturbance by disturbance type as compared to NRV
- Distribution of forest fire patch size, age class distribution, and area and severity of forest fires
- Number of invasive, exotic forest-associated species
- Woody debris in harvested areas
- Net change in forest ecosystem carbon

5.2.3 Objective 2.3 – Maintain and Enhance Ecosystem Resilience

Ecosystem resilience is defined as the ability of an ecosystem to recover from a disturbance event and maintain its integrity and production levels. The change in the productive forest land base, the extent and diversity of key ecosystem features, road density, and the level of landscape fragmentation and connectedness and the status of areas of suitable habitat for wildlife movement corridors are monitored to ensure that a landscape remains productive over time and provides a continuous cycle of resources.

Indicators:

- Change in productive forest land base over time*
- Extent and diversity of key ecosystem features (wetlands, permafrost and floodplains)
- Road density*
- Level of landscape fragmentation and connectedness*
- Status of areas of suitable habitat for existing and potential wildlife movement corridors, considering factors such as connectivity, fragmentation and habitat quality



5.3 GOAL C: CONSERVE AND MAINTAIN SOIL AND WATER RESOURCES

Conserving and maintaining soil and water resources is the third goal of this SFMP. This goal is essential to sustain the functioning and productive capacity of forest ecosystems. The construction of roads and other forestry practices have the potential to impact soil and water resources in a number of ways, including soil erosion and compaction, siltation of aquatic habitats, flooding, and increased water temperatures. Successful regeneration of harvested areas is important to maintain soil moisture and nutrient levels, minimize soil erosion and potential stream siltation, and to minimize disruption in stream flow rates. This SFMP identifies two objectives for meeting this goal: to conserve and maintain soil resources, and to conserve and maintain water resources.

5.3.1 Objective 3.1 – Conserve and Maintain Soil Resources

Soil conservation is important because soils are the living substrate that supports forest growth. They are also essential to providing for a continuously resilient ecosystem. It is therefore necessary to protect sensitive soils, and maintain soil productivity. The amount of harvested area with significant soil disturbance, the rate of compliance with soil disturbance standards, the percentage of forest area having permanent road construction, the percentage of forest development that takes place in unstable terrain, and the percentage of harvesting operations that take place in the winter vs. summer is monitored to assess the impact of harvesting activities on the soil resource. The change in productive forest land base over time provides an indication of the cumulative impact of forest disturbances on soil resources.

Indicators:

- Amount of harvested area with significant soil disturbance, including compaction, displacement, erosion, loss of organic matter, etc.
- Rate of compliance with locally applicable soil disturbance standards
- Percentage of forested area having permanent road construction*
- Percentage of forest development that takes place in stable, potentially unstable and unstable terrain

- Percentage of winter vs. summer harvesting operations
- Change in productive forest land base over time*

5.3.2 Objective 3.2 – Conserve and Maintain Water Resources

Water conservation is important to sustain potable water supplies for humans and wildlife, to sustain important ecosystem features such as wetlands, and to provide suitable aquatic environments for many plant and animal species. The percentage of forest managed primarily for water protection, the rate of compliance with locally applicable road construction, stream crossing and riparian zone management standards, current water quality/quantity conditions compared with stream-specific historic information and values, and the proportion of watersheds with substantial stand-replacing disturbance in the last 20 years is monitored to assess the impact of forest disturbances on water resources.

Indicators:

- Percentage of forest managed primarily for water protection (e.g. riparian buffers)*
- Rate of compliance with locally applicable road construction, stream crossing and riparian zone management standards
- Current water quality/quantity conditions (flow, temperature, turbidity etc.) compared with stream-specific historic information and values
- Proportion of watersheds with substantial stand-replacing disturbance in the last 20 years*



5.4 GOAL D: MAINTAIN AND ENHANCE MULTIPLE SOCIO-ECONOMIC BENEFITS

Maintaining and enhancing multiple economic and social benefits from the forest is the fourth goal of this SFMP. Forest ecosystems provide commercial benefits – including timber and non-timber forest products, water, and tourism – and non-commercial benefits – including wildlife, recreation, aesthetics, wilderness values, environmental functions, and spiritual benefits. This goal encompasses the wide range of goods and services provided by forest ecosystems that benefit social and economic systems. This SFMP identifies two objectives for meeting this goal: to enable and encourage sustainable economic benefits from timber resources and to maintain and enhance social and economic benefits from non-timber resources.

5.4.1 Objective 4.1 – Maintain and Enhance Sustainable Social and Economic Benefits from Timber Resources

The SFMP will work to enhance the forest's contribution to the local economy by enabling and encouraging sustainable economic benefits from the region's forest resources. Forestry can contribute to the local econo-



my, and opportunities exist for the creation of numerous commercial ventures that could potentially increase employment levels the level of investment in local businesses which in turn has benefits to local society. While the plan encourages the extraction of timber for commercial purposes, the intent is to harvest within the forest's productive capacity. Productive capacity is the ability of the forest to provide timber benefits to society, while conserving the resource to ensure a similar level of benefits in the future, and can be used to define an annual allowable harvest level.

The number of people employed in forest-based activities, job satisfaction of forest-based workers the proportion of area commercially harvested relative to the land base available for timber production, and the number of locally owned operations monitored to provide an indication of the social and economic benefits derived from timber resources. Forest area by timber tenure is monitored to provide an indication of the distribution of economic benefits from the forest. The annual harvest of timber forest products relative to the level of harvest deemed to be sustainable is monitored to provide an indication of the sustainability of the economic benefits derived from the forest.

Indicators:

- Number of people employed in forest-based activities*
- Job satisfaction of forest-based workers
- Proportion of area commercially harvested relative to the land base available for timber production*
- Number of locally owned operations*
- Forest area by timber tenure*
- Annual harvest of timber products relative to the level of harvest deemed to be sustainable*

5.4.2 Objective 4.2 – Maintain and Enhance Social, Cultural and Economic Benefits from Non-Timber Resources

This SFMP will also work to sustain social and economic benefits from non-timber forest resources. Non-timber resources include non-timber forest products such as meat, fish, fur products, berries and medicinal products; tourism; recreation; hunting and fishing; and visual quality.

The value of timber and non-timber forest products, volume of fur harvested, number of active concessions,

total revenue generated by tourism businesses in the region, and hunter/angling effort are monitored to provide an indication of the economic benefits of non-timber forest resources. The annual harvest non-timber forest products relative to the level of harvest deemed to be sustainable, and the availability of certain non-commercial forest products close to the Village of Teslin is monitored to provide an indication of the sustainability of the economic benefits derived from the forest. The status of important traditional use areas, the level of participation in traditional use activities, land and resource base available for selected recreational activities, the level of participation in selected recreational activities, the status of identified cultural and historic sites, and the percentage of valued viewscapes that have been cut or significantly affected by natural disturbances are monitored to provide an indication of social and cultural benefits derived from non-timber resources

Indicators:

- Value of timber and non-timber forest products including fuelwood, wood for snowshoe frames, meat, fish, fur, berries, medicinal products, etc.
- Volume of fur harvested*
- Number of active concessions*
- Total revenue generated by tourism businesses in the region*
- Hunter/angling effort surveys*
- Annual harvest of non-timber forest products including fuelwood, wood for snowshoe frames, meat, fish, fur, berries, medicinal products, etc. relative to the level of harvest deemed to be sustainable
- Availability of certain non-commercial forest products, such as fuelwood, wood for snowshoe frames, berries etc., close to the Village of Teslin
- Status of important traditional use areas
- Level of participation in traditional use activities
- Land and resource base available for selected recreational activities (e.g. hunting, fishing, angling, back-country travel, etc.)
- Level of activity (participation) in selected recreational activities
- Status of identified cultural and historic sites*
- Percentage of valued viewscapes that have been cut or significantly affected by natural disturbances (fire, insects, storms)*

5.5 GOAL E: MAINTAIN AND ENHANCE COMMUNITY SUSTAINABILITY

The goal of developing forest resources to meet societal needs was deemed fundamental to the development of the SFMP since the best interests of the present and future society need to be accounted for in the development of a regional planning strategy. The specific elements and their components are those shared in the region. The two key elements associated with Goal 5.0 are First Nations and Forest Community.

5.5.1 Objective 5.1 – Respect the Rights and Strengthen the Traditional Use of Forest Resources by Teslin Tlingit Citizens

The SFMP will recognize and protect the Teslin Tlingit way of life based on their economic and spiritual relationship with the land as provided for in the TTC Final Agreement. In addition, it encourages and protects the cultural distinctiveness and social well-being of the Teslin Tlingit. The majority of the components of this element were developed in previous public consultations, workshops and interviews held with the Teslin Tlingit people. They are: traditional value, economic development, capacity building, and commercial fish and wildlife.

Traditional value is included for the protection and preservation of the First Nation peoples’ rights and traditional ways, providing a strong platform for a prosperous and continued cultural way of life. Traditional knowledge gained by the Aboriginal people provides a unique perspective on the use, protection and conservation of natural resources. To accomplish this, the SFMP will provide for protection of cultural resources; protect the core traditional values (water, land, bush, and wildlife) for future generations while balancing the need for economic development; integrate traditional knowledge in planning and implementation; and develop cross-culture knowledge and understanding.

Economic development is similar to that described in Objective 4.1. However, in this case, attention has been exclusively directed towards First Nations people in the TT Traditional Territory. The intent of First Nations economic development is to provide a land base to support local forest products manufacturing facilities.

Capacity building is a key area of concern for present and future generations of Teslin Tlingit people. The SFMP will lead to enhanced involvement of First

Nations members in economic development opportunities; and provide a framework that identifies the core components of a First Nations forest management program for Settlement Lands.

Commercial fish and wildlife, while similar to that component of Objective 4.2, is specifically directed towards the First Nations' populations in the TT Traditional Territory. The SFMP is intended to maintain habitat for commercial fish and wildlife species.

Indicators:

- Status of known heritage sites and number of known archaeological sites*
- Status of known traditional use sites, area with potential traditional use values, and area of land available for traditional and commercial use (hunting trapping, gathering, fishing, berry picking, etc.)
- Satisfaction of review bodies
- Degree of participation in the decision-making process
- Degree of participation in the implementation of decisions
- Education and training programs, extent of participation in cross-cultural activities
- Degree of participation in the SFMP decision-making process via the TRRC
- Extent of First Nations participation in the forest

products manufacturing sector

- Degree of involvement of First Nations members in the work force, and education, training and human resources programs
- Information about the developed framework for a First Nations forest management program
- Availability of habitat for economically important fish and wildlife species

5.5.2 Objective 5.2 – Forest Community

Forest community includes First Nation and non-First Nation populations who live within the Teslin community and throughout the entire traditional territory. The key component of this element is community values, which requires both social and economic sustainability. During public workshops and interviews the expressed desire was for the SFMP to incorporate the community's use of the natural environment; ensure that the forest ecosystem provides for multiple uses; and enhance contribution to local economy.

Indicators:

- Diversity of use of the natural environment by local community;
- Amount and extent of the land base that provides for multiple uses; and
- Employment opportunities related to forest-based activities, and sales and markets.



6.0 FOREST PLANNING AREAS

Forest planning areas are necessary to provide for manageable units, reflecting the different landscape features, forest cover types, and values associated with them. For the purposes of this SFMP the term Landscape Unit has been applied to such forest planning areas.

6.1 LANDSCAPE UNITS

Landscape Units (LUs) have been selected to provide relatively homogeneous areas in terms of underlying physiographic conditions, common issues, as well as a likely response to management. The region was stratified into 15 different LUs using physiographic boundaries, such as watershed sub-basin boundaries and forest productivity, existing access routes and overall management concerns that varied throughout the region. *Map 1* identifies the 15 LUs that were created in the planning region. These units will be fundamental to more detailed planning and analysis as development and operational plans are prepared.

The Teslin community ranked each individual LU for what was perceived to be the acceptable level of forestry activity/development within the unit (Table 6). Three rankings were provided — low, medium and high levels of forestry activity. These rankings were derived from community-identified resource values for each LU and the corresponding potential for resource conflict within the unit. For example, LUs with sensitive landscapes were considered to have a high potential for being adversely affected by timber harvesting and therefore were assigned a low activity level ranking. These low-ranked LUs will require a higher level of mitigation to protect resource values than LUs with

higher activity rankings. It should be noted that such mitigation required to protect these values have not been identified through the SFMP, but will be determined during the next phases of planning.

Key concerns for each LU were identified during the SFMP public consultations and Planning Team meetings. The Teslin, Morley, West Teslin River, South Nisutlin River, East Teslin River, Wolf River and Wolf Lake LUs were identified as the most important for First Nation cultural values. These have the same high rating for traditional values. While the major resource concerns for each LU have been recorded in Table 6, it is the intention that integrated landscape planning will more specifically locate areas of important values and concerns. The Teslin LU accounts for the large majority of heritage and archaeological sites with 69 sites. The North Nisutlin River and South Nisutlin River LUs also contain a significant number of heritage and archaeological sites.

A strategic designation system is considered a fundamental component of any sustainable regional economic development or conservation strategy, and is a key component of an integrated resource management framework. For the SFMP a Forest Resource Use Designation (FRUD) system was developed to be applied to the LUs.

Map 4 and *Table 6* display summaries of FRUD for the Teslin planning region.

While the Landscape Units identified in this SFMP were developed before the preparation of the zoning, the three strategic forest land use zones can be applied to and within the LUs. These recommended strategic



forest use zones are:

- 1) Non-Contributing Forest Zone (NCFZ),
- 2) Forest Resource Management Zone (FRMZ), and,
- 3) Community Forest Development Zone (CFDZ).

Zoning is required to identify the forest landbase which contributes to long term forest use. For example, the Forest Resource Management Zone may be further divided into General, Conservation and Forest Resource Management Areas. Forest Resource Management Areas would be used to identify

locations within the FRMZ that have forest resource potential and forest development interests. The proposed FRUD system provides direct guidance to forest management planning activities.

The strategic forest use zonation designations are described in *Table 5*. The following designations are not to be interpreted with regard to other sectors, or land uses. The following zonations are based upon community meetings pertaining to forestry management ONLY. These zonations provide strategic direction to forest managers on how the community envisions the development of the LUs with respect to forest values, potential activity and development.

Table 5.

DESCRIPTION OF STRATEGIC FOREST LAND USE ZONE

STRATEGIC FOREST USE ZONE	REGIONAL FOREST USE DESIGNATION	STRATEGIC OVERVIEW
Non-Contributing Forest Zone (NCFZ)	Temporary Deferred Area (10 years)	<ul style="list-style-type: none"> • Forest Management areas with a high conservation focus. • Large amount of uncertainty in regards to forest economics and regional land use planning. • Conservation of identified wildlife, habitat or cultural values. • More detailed planning would be required. These LU's contain numerous forest resource values of high importance. • Contributes to coarse filter and fine filter objectives. • Temporary deferral, no commercial forest activity, only in circumstance for insect or fire mitigation, or as habitat treatment. Access through LUs maybe necessary. Personal use harvesting would be acceptable forest land use.
Forest Resource Management Zone (FRMZ)	Forest Conservation Management Area	<ul style="list-style-type: none"> • Forest management areas with a higher conservation focus • General forest management activities with area specific/special management guidelines for identified wildlife, habitat and cultural-recreational values, contributes to forest land base. An example would be wildlife key habitat.
	General Forest Management Area	<ul style="list-style-type: none"> • Areas without an identified forest resource development or forest resource development focus. • General forest management uses regulated by applicable agencies • Specific management objectives for bio-diversity, wildlife. • Contributes to forest land base. An example would be zones not scheduled for development.
	Forest Resource Management Area	<ul style="list-style-type: none"> • Areas with forest resource management focus. • Areas with high forest economic value. • Priority areas for harvest development planning.
Community Forest Development Zone (CFDZ)	Local Forest Planning Area (may contain FRM Zone)	<ul style="list-style-type: none"> • Community development areas (e.g. Teslin Cottage Lots, agriculture development, rural residential). • Considered as local forest use/community forest.
	Municipal Area	<ul style="list-style-type: none"> • Municipal boundaries, under municipal planning. Not contributing to forest use.

Table 6.

SUMMARY OF LANDSCAPE UNITS

LU NAME	COMMUNITY RANKED ACTIVITY LEVELS	RECOMMENDED TIME FRAME FOR ACTIVITY SEQUENCING	LU KEY CONCERNS	FRUD
Little Teslin	Medium	Short-term	<ul style="list-style-type: none"> Slopes on the west side of Teslin Lake are highly visible from the highway, lake and residential areas. Mule deer habitat; eastern edge of Carcross caribou herd range. A visual landscape harvest layout will be required that blends into the natural landscape. 	FRMZ
Fat Lake	Medium	Medium-term	<ul style="list-style-type: none"> Core caribou winter range for the Atlin herd is highly likely. Important moose winter and seasonal range. Habitat inventory, analysis and modeling are required in the short-term to develop guidelines for harvesting before commencement of operation. 	FRMZ
Teslin	Medium	Short-term	<ul style="list-style-type: none"> Harvest layout shall address the range of multiple values that occur in the area. Multiple values include highly visual areas and moose and sheep habitat. Traditional sites are important and must be identified and buffered prior to harvesting. Nisutlin River Delta NWA in planning area. Strawberry Creek harvest area and Demonstration Forest area within this zone. 	FRMZ and CDZ
Morley	Medium	Short-term	<ul style="list-style-type: none"> High recreational use and protection of scenic values require an aesthetic layout that blends into the surrounding topography. Moose summer and late winter habitat; aquatic and terrestrial furbearers (beaver and marten). Numerous traditional sites must also be protected. 	FRMZ
Pine Lake	High	Medium-term	<ul style="list-style-type: none"> This contains specific ecologically sensitive areas. Substantial lichen resources in Daughney Lake area. Conservation management area will be identified within the zone. High value public recreation area. These areas require identification and minimal disturbance from harvesting activities followed by prompt reclamation. 	FRMZ
West Teslin River	Medium	Medium-term	<ul style="list-style-type: none"> Traditional sites and recreational use of the Teslin River are important. Traditional sites must be identified and buffered before harvest. Riparian zone is high quality moose range in summer, possibly in winter. A visual landscape harvest layout will be required that blends into the natural landscape. 	FRMZ

Table 6, continued

SUMMARY OF LANDSCAPE UNITS

LU NAME	COMMUNITY RANKED ACTIVITY LEVELS	RECOMMENDED TIME FRAME FOR ACTIVITY SEQUENCING	LU KEY CONCERNS	FRUD
Sidney Lake	High	Short-term	<ul style="list-style-type: none"> • Contains sensitive areas that have unstable slopes. • Require identification of sensitive areas before harvesting and mitigation by avoidance or by the careful application of harvest practices. 	FRMZ
Ice Lake	Low	Long-term	<ul style="list-style-type: none"> • Limited merchantable timber and difficult access in this area. • An evaluation of the economics of harvesting of this area is necessary along with consideration of sensitive terrain features. 	FRMZ
Wolf River	Low	Long-term	<ul style="list-style-type: none"> • Contains some of the most important wildlife habitat values in the area. • Very high concentrations of moose are located along Wolf River. • Very high value area for moose calving • Caribou are also important in the river valley. • High value recreation area. 	FRMZ
South Nisutlin River	Low	Long-term	<ul style="list-style-type: none"> • This area contains high value moose habitat and is also important for traditional values. • High value recreation area. 	ECPZ
East Teslin River	High	Short-term	<ul style="list-style-type: none"> • This area is currently accessible and is important for recreation activity. • Riparian zone is high quality moose range in summer, possibly in winter. • Standard harvesting practises that account for aesthetics are required. • The area also contains important traditional sites that will require identification, location and mitigation before harvesting. 	FRMZ
West Wolf Lake	Low	Medium-term	<ul style="list-style-type: none"> • Core caribou winter range for the Wolf Lake herd is not well defined. • Habitat inventory, analysis and modeling are required to develop guidelines for harvesting before commencement of operations. • The timber in this area has high value. 	FRMZ
Wolf Lake	Low	Medium-term	<ul style="list-style-type: none"> • This area contains the bulk of the core caribou winter range for the Wolf Lake herd. • Habitat inventory, analysis and modeling are required to develop guidelines for harvesting before commencement of operations. • The area also contains important traditional sites. 	ECPZ

Table 6, continued

SUMMARY OF LANDSCAPE UNITS

LU NAME	COMMUNITY RANKED ACTIVITY LEVELS	RECOMMENDED TIME FRAME FOR ACTIVITY SEQUENCING	LU KEY CONCERNS	FRUD
Big Salmon	N/A	N/A	<ul style="list-style-type: none"> This area contains no significant timber resources and is therefore excluded from the commercial timberland base. 	FRMZ
North Nisutlin River	High	Short-term	<ul style="list-style-type: none"> This area is accessible from Canol Road. It is important for tourism and recreation activity. Visual management will be required that blends harvest design into the natural environment. The area also contains important traditional sites that will require identification, location and mitigation before harvesting. 	FRMZ

Table 6 Legend

LU: Landscape Units

FRUD: Forest Resource Use Designation

FRMZ: Forest Resource Management Zone

NCFZ: Non-Contributing Forest Zone

CFDZ: Community Forest Development Zone

7.0 STRATEGIC DIRECTIONS FROM KEY ISSUES

7.1 DIVERSIFY LOCAL ECONOMY

Establish investment climate through sustainable development of forest resources.

7.1.1 Forest Sector Development

Establishing a sustainable forest-based economy is a strategic component to regional economic stability. A forest sector will not appear over night in the Teslin planning region, however investment is likely to occur if several factors are considered. These factors are the identification of a forest land base, community support, and long-term access to forest resources.

Strategic Directions:

20. The SFMP shall help establish certainty for investment in the forest sector.
21. The plan supports stable and secure access to forest resources as a foundation to a healthy forest industry.
22. The plan supports diversity as a community economic strategy, and supports tenure allocation procedures that provide opportunity to a variety of industry applications.

7.2 BIODIVERSITY

Coarse filter management of biodiversity assumes most species will be addressed by managing forest activity in a way that reflects the natural disturbance pattern, seral stage, timing and distribution of harvest, landscape connectivity and riparian management under which indigenous species have persisted. Biodiversity on the landscape can be managed by following landscape biodiversity elements and strategies. The following sections draw from Dease-Liard Sustainable Resource Management Plan (Ministry of Sustainable Resource Management, BC Government, 2004).

7.2.1 Natural Disturbance Pattern

The fundamental philosophy behind this approach is that within ecosystems, organisms are well suited to

surviving, and even thriving, within the bounds of naturally occurring disturbance variability. In the Yukon, for example, this means that forest ecosystems that are characterized by frequent, stand replacing fires are also characterized by plant and animal species that have adapted to this regime. The philosophy is that if human use is shaped within the pattern of natural disturbance, potential impacts and risk on biodiversity and forest ecosystem integrity will be minimized.

Strategic Direction:

23. Management should try to reflect natural disturbance regimes or, understand the consequences of deviating from the patterns created by natural disturbances.

7.2.2 Seral Stage Distribution

Setting seral stage objectives provides limits of acceptable change to forest age distribution on the landscape. Identifying strategies for seral stage objectives will help ensure adequate amount of mature and old forest remains within the planning region. Targets for early, mature and old seral stages are based on natural seral stage distributions or landscape unit objectives. It is important to remember that areas not available for harvest contribute to achieving these targets.

Strategic Directions:

24. Manage seral stage targets for early seral and mature-old forest.
25. Manage seral stage targets separately for alluvial sites, in order that the age classes are not disproportionately altered.

7.2.3 Timing and Distribution of Harvesting

The planning region forest landscape has evidence of large and small fire events. The large events occur less frequently but account for the majority of forest renewal. This type of disturbance fosters large contiguous stands where interior forest conditions occur. Replicating larger disturbances minimizes the need for entering other landscape units. The philosophy is basi-

cally aggregate the disturbance. The use of natural systems as a model for creating disturbance, reduces fragmentation, land use conflict, access issues, and in time creates large interior forest similar to the previous forest. There are numerous reasons to create larger disturbances instead of a checkerboard of smaller ones.

Strategic Directions:

- 26. Utilize a variety of opening sizes consistent with the principle of ecosystem-based management.
- 27. Consider concentrating logging in some areas, and leaving other areas undeveloped (reduces land use conflict caused by road access and human caused disturbance).

7.2.4 Landscape Connectivity

Landscape connectivity refers to the ability of a landscape to facilitate or impede movement. Different species utilize habitat in different ways throughout the landscape, depending on their habitat preference and ability to adapt to disturbance, either human or natural. Some species require continuous forest for movement, while others travel through large openings created by disturbance more easily. Landscapes are often broken by natural features such as fires, mountains, and riparian features. Often riparian features provide useful landscape and site level corridors.

Strategic Direction:

- 28. Utilize natural disturbance pattern and landscape features to manage connectivity across the landscape.

7.2.5 Riparian Management

The planning region has abundant water features and systems that provide habitat for fish, wildlife and biodiversity. These features are important for movement of nutrients, water, plant and animals. Of special interest in the planning region are three main navigable river systems and two lakes that require management to conserve riparian habitat, traditional uses, and visual quality. Where harvesting occurs near these rivers and lakes, it needs to be well planned and integrated with the many other uses and processes which the rivers and lakes support.

Strategic Directions:

- 29. Access management strategies should minimize environmental impacts to riparian habitats, wetlands and wetland complexes, lakes, rivers and river floodplains.
- 30. Currently the THPOG (DIAND 1999) riparian buffers are suggested, however deviation can and should occur when stand and site characteristics prescribe alternative management.

7.3 WILDLIFE OF CONCERN

The wise management of wildlife and wildlife habitats is among the most important issues in the region. The following are not a comprehensive list of wildlife, but is intended to provide objectives for the focal or priority species. However, these coarse filter approaches com-



bined with biodiversity objectives will manage habitat for many species not identified within these sections. Future planning (development and site planning) will identify more specific habitat and management considerations for other forest species whose habitat needs are not addressed at the coarse filter scale.

Natural Disturbance Emulation and Habitat Management

“ Habitats created through forest harvesting instead of natural processes such as wildfire can never completely duplicate those that occur naturally, and we have no assurances that they are optimal for any species. Nevertheless, we know that natural habitats prevailing until the modern era were at least adequate for all the species left for us to manage today, so maintaining the closest possible similarity between wild and managed landscapes is an inherently conservative approach.”
(Philip J. Burton Sustainable Forest Management Network 2003)

7.3.1 Woodland Caribou

For woodland caribou, particularly the Wolf Lake and the Atlin herds, the identification and protection of core winter range are primary concerns of wildlife managers. These ranges in the planning region are largely without roads and receive only small amounts of human activity. Northern woodland caribou herds, now classified as a species of special concern, have not done well as human activity levels in the winter range



have increased. The emerging forest management challenge is to maintain the integrity of the key winter habitat and thus ensure the long-term survival of these herds. Core winter range is the area of highest density use by caribou during the late winter period. Habitat features include concentrations of lower elevation lodgepole pine with high terrestrial lichen concentration and glaciofluvial soils in association with black spruce sedge fen bogs or wetlands. Core areas in combination with other variables are most critical to winter survival and long-term population persistence.

Strategic Directions:

31. Maintain the quality of core caribou winter range habitats by deferring harvesting timber within the critical core caribou winter range for the period of this plan. Harvesting may be necessary for access or essential control of insect infestations, wildfire or diseases.
32. Maintain the structural and functional integrity of critical caribou habitats within the extended caribou winter range. Defer harvesting in selected habitats (lichen concentrations, glaciofluvial soils with black spruce sedge fen bogs or wetlands), for the period of this plan. Harvesting may be necessary for access or essential control of insect infestations, wildfire or diseases.

7.3.2 Moose

Moose are associated with riparian habitats, especially floodplains and large wetlands. Generally, areas with a mosaic of habitat types are best for moose, including openings for browse and forested cover that provides security and snow interception in winter. Critical habitats are late winter and calving ranges. In general, logged landscapes see increases in moose populations.

For moose, the most significant risks are increased access within moose ranges that may either change the natural balance between local populations and predators or increase the rate of adult mortality through hunting pressure. Key winter ranges for moose in the region are largely without roads and have only few human created linear corridors.

Winter range and calving areas are a matrix of:

- Open canopied mixed coniferous/cottonwood, pine or spruce leading stands
- A mixture of early and mature seral forest classes

- Lakes, wetlands and riparian features
- Burns and young seral forest
- Primarily lower elevations

Strategic Considerations:

Major shifts in forest cover and landscape connectivity can result in loss of snow interception or security cover, increasing energy required to move through winter snows. Carefully planned logging of winter habitat areas can help manage early seral forest, providing forest renewal, and increasing habitat diversity and forage.

Increase in roads can increase direct mortality from concentrated hunting efforts, increased predator/prey interactions, vehicle collisions etc.

Strategic Directions:

33. Manage timber harvesting in critical moose winter and calving areas to provide important attributes of moose key winter and calving habitat (forage, snow interception, visual screening).
34. Aggregate timber harvesting in time and space.
35. Harvest of critical key winter habitat of cover and forage should be avoided in winter. Development planning should be used to identify these important areas.

7.3.3 Grizzly Bear

Habitat fragmentation by human activity is perhaps the greatest threat to grizzly bear populations. The density of roads has been demonstrated to be one of the key factors that reduces the suitability of habitats for grizzly bears. Access can influence bear populations through either increasing bear mortality or displacement of bears from important habitats into lower quality but safer habitats. This can in turn influence the productivity and recruitment of bears.

Strategic Direction:

36. Access management is needed in development of planning areas. Harvest blocks should be aggregated and widely distributed forest activities should be discouraged. The maintenance of habitat and landscape connectivity will help maintain grizzly bear movement. Areas without roads should be preserved in critical key grizzly bear habitats (refer to strategic directions 26 and 27).

7.3.4 Marten

Marten are likely the single-most economically important furbearer in the Teslin area. They are also important forest carnivores. Numerous factors influence marten abundance, such as local and landscape population trends, small mammal abundance, forest habitat, natural and unnatural mortality, etc. Combinations of several factors usually influence marten populations. Generally, management of forests to favour marten requires that structurally diverse forest stands remain available to marten or are harvested in a way that allows prey species to return quickly. There has been wide representation of what is good marten habitat, including old forest, burns and marshes.

Strategic Direction:

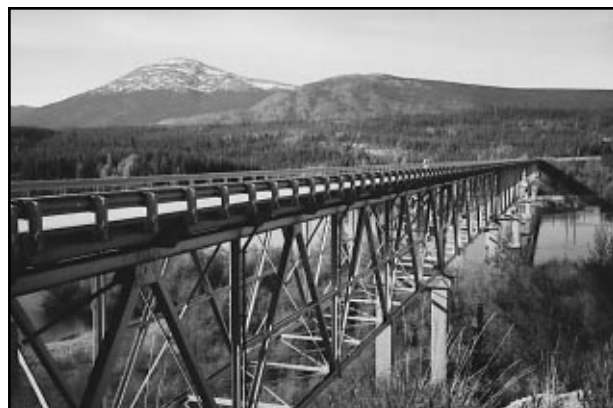
37. In high marten value areas forest management should focus on maintaining important characteristics of marten habitat such as forest structural attributes and mature and old forest. Characteristics of older, more structurally complex forests should be maintained in these areas, using natural disturbance patterns to minimize fragmentation and provide forest interior conditions.

7.3.5 Beaver

Beaver are generally abundant in wetland and riparian communities. Management for beaver must ensure the habitats used for denning, and shrub communities used as forage, remain intact. Practices that may alter wetland communities or create new access for trapping into wetland communities can result in increased mortality.

Strategic Direction:

38. Appropriate buffers on wetlands will help protect beaver habitat.



7.3.6 Salmon and Squanga Whitefish

The Big Salmon, Teslin, Nisutlin, Wolf and Morley rivers provide important fish habitat, and support a range of freshwater fish and salmon species. Chinook salmon are relatively abundant and are widely distributed in the Teslin watershed. It is the most common salmon species recorded in the region and represents an important traditional food source for the First Nation people. Chum salmon are present in the Teslin watershed but are less abundant and have a more constrained distribution.

The Squanga whitefish, found in the planning region, has been designated a species of special concern (COSEWIC, 2004).

Strategic Directions:

39. Maintain riparian habitat through buffers.
40. Ensure road construction and harvesting activities do not impact water bodies.

7.3.7 Forest Birds

Forest birds can be divided into three broad categories; those that prefer interior forest, those that prefer early seral forest, and edge specialist. Forest management often increases the amount of edge, and

early seral forest habitat. Therefore bird species that prefer edge and early seral forest within managed forests often do well. Alternatively, interior forest species require more detailed management. Biodiversity objectives will provide coarse filter management of interior forest species, however nesting and home range use require site level planning.

Note: There is currently legal uncertainty surrounding incidental take of migratory birds and their nests under the *Migratory Birds Convention Act* (MBCA). Although the development and implementation of a Strategic Forest Management Plan is an important step in conserving populations of migratory birds, operators and proponents should practice due diligence in order to protect themselves from enforcement under the MBCA and *Migratory Birds Regulations* (MBR).

Strategic Direction:

41. Development planning should use a variety of cut block sizes and retention to provide habitat for interior forest, early seral and edge specialist.
42. Manage seral stage, forest connectivity and timing of harvest to minimize conflict with breeding and nesting times. (operating windows, seasonal shut-downs).



7.4 VISUAL QUALITY MANAGEMENT

The Teslin visual landscape consists of large vistas of mountains, hills, forested valleys, lakes and rivers. The visual landscape is considered a major issue for resource development in the region. Seeking understanding and cooperation with tourism operators and outfitters to manage the visual resource will require compromise. Constructive dialogue to identify visual values and areas of compatibility will help reduce conflict.

The visual landscape has the capability of providing economic return and social benefits, and, in certain locations, outweighs the benefits of timber harvest. The land base has unique visual characteristics providing opportunity to manage visual quality and timber harvest by utilizing natural breaks in the forest canopy, vegetation changes, and natural disturbances. Visual management requires identification of foreground, middleground and background views.

Strategic Directions:

43. Integrate visual resource management into planning along major rivers and lakes, highway corridors (Alaska Highway), community and areas that are undisturbed. The Teslin, Wolf and Nisutlin river corridors and Teslin and Quiet lakes require visual management and integration of other land uses and wildlife values.



7.5 YUKON HERITAGE AND ARCHAEOLOGICAL SITES

The preservation and maintenance of Teslin Tlingit artifacts is important to the Teslin community and Yukon whether the artifacts are stored in a museum or are remnants now part of the natural environment. Respect for tradition and culture is reflected through the preservation of the land where ancestors once walked, hunted and camped. Management and protection of archaeological and historic resources on non-settlement land under the *Historic Resources Act* is the responsibility of Yukon Government.

Pressures on historical and archaeological sites causing destruction or deterioration are natural causes and human activities. Natural causes can be the effects of aging, climate stress, decay and erosion. Human activities such as timber harvesting are also a cause for concern. Failure to identify cultural heritage sites or to recognize their significance is a major limiting factor in their conservation.

Strategic Directions:

44. Future forest management plans will adhere to the regulations in the *Yukon Historic Resources Act*.
45. Archeological potential mapping is required for development planning areas. In areas where forest development overlaps with archeological resources, an archeological impact assessment may be needed.

7.6 UNCOMMON VEGETATION TYPES

An analysis of the forest inventory demonstrated that pure deciduous and deciduous-dominated stands are not represented across the landscape. These stands which are in low abundance in the planning region, are not a unique forest ecosystem component in the Yukon. Deciduous species (aspen and birch) are adapted to disturbance, and are primary successional species that establish aggressively after disturbance. The low deciduous composition in the forest is attributed to an aging forest; aspen and birch are not a long-lived species and have died out before the pine and spruce. Forest management and natural disturbances will establish early seral forests on the landscape, and the composition of deciduous species will increase. Old forests represent characteristics of older seral stages which will require management to ensure continued representation.

There are no known plant species of special concern in the region, nor unique areas of vegetation other than as indicated above.

Strategic Direction:

46. Wherever possible, forest management should not substantially modify vegetation patterns. Management should ensure that regeneration techniques and harvest patch sizes are consistent with natural conditions in the various disturbance zones. In some instances, deciduous species should be considered suitable for regeneration, to add diversity.

7.7 TESLIN LOCAL PLANNING AREA

A Teslin Local Planning Area is envisioned as providing a local timber supply within a 20 to 30 km radius of the community. The goals are as follows:



1. To provide a domestic, non-commercial timber supply for residential users
2. To provide for operation research and education in forestry as required for implementing the Forest Management Plan
3. To assist with fire prevention around the community
4. To provide for small-scale commercial timber operations that are compatible with the goals noted above.

Strategic Directions:

47. It is recommended that a Local Planning Area be developed under the guidance of TTC and Yukon Government, with input from TRRC, for use by Teslin community residents (identification of potential area within Integrated Landscape Planning).
48. That a quantity of timber (10,000 m³ to 15,000m³) for community use be made available for permits up to 200 m³ per year near the community of Teslin. Areas to consider are Strawberry Creek, Demonstration Forest or stands surrounding the community where forest fire hazard reduction and timber values are overlapping.

7.8 POTENTIAL FOR CONFLICT AND INTEGRATION BETWEEN FOREST MANAGEMENT AND OTHER LAND USES

The potential exists for land use conflict and integration between forest management activities and other land uses and values such as tourism and recreation, visual quality, trapping and outfitting.

During the SFMP public consultations, members of the community identified that the tourism potential and recreational use along the Nisutlin, Teslin and Wolf rivers should be considered when developing the forest management plan. The objective is to maintain the integrity of the riparian systems and the natural character adjacent to these major rivers.

Aesthetic values in areas with high visual resources are to be maintained. The landscape visual quality of the Teslin region is outstanding in both its composition and the extent of untouched beauty. Certain areas

within the region have low ability to absorb human caused disturbances. The visual absorption capacity (the ability of the area to absorb human interventions without damaging the visual integrity) of much of the area is low. Harvesting that mimics natural disturbance patterns would have less visual impact and therefore be absorbed more readily.

Outfitting is and will continue to be an important part of the local economy. Outfitters in the area utilize much of the region including the area between Teslin and Wolf lakes, as well as much of the higher country to the northwest and northeast of Teslin. Harvesting activities and access can have both positive and negative effects on outfitting and tourism.

The community consultation process resulted in the identification of a series of environmental, man-made, and cultural and historic features, as having key regional resource values, which required protection from harvesting activities. The Yukon Timber Harvesting Planning and Operating Guidebook (Indian and Northern Affairs Canada and Government of Yukon, 1999) provided general riparian guidelines for the design of reserve and exclusion zones or riparian buffers in the Yukon. Buffer widths may be modified to reflect strategic directions.

Strategic Directions:

49. Manage river valleys which have high recreation, resource and traditional use values. In some areas forest management activities will not be compatible with recreation and traditional use values. In these areas of non-compatible uses, a no-harvest buffer may be established in the immediate river margin.
50. During the operational planning phases a series of different silviculture systems and cutblock layout designs can be considered that simulate natural forest openings, and blend into the landscape, and reduce the visual impacts.
51. Forest management plans should consider the interests of the outfitting industry, particularly on the visual resource.

7.9 ACCESS AND ACCESS MANAGEMENT

The primary objective of access management is to minimize environmental issues while providing access to forest resources. Access can be both positive and negative depending on the user. Improperly built or poorly engineered roads can be the single largest environmental impact associated with harvesting operations, especially at water crossings. Roads built to access natural resources often persist long past their intended purpose causing other land use issues to arise.

Specifically regarding forest management,

Strategic Directions:

52. Access management to be incorporated into Development Planning. The primary objective is to minimize environmental issues while providing access to forest resources. Also consider strategic directions relating to access, 29, 36, and 40.
53. Where feasible, consider integrating access with other forest land users (i.e. mining sector, tourism)
54. Consider available methods of access control and management to minimize indirect negative impacts (e.g. gates, hunting restrictions).

7.10 LARGE LINEAR DISTURBANCES AND OTHER LAND-RELATED ACTIVITIES

Several projects and developments are ongoing in the Teslin region. The Alaska Highway Pipeline has an easement running on the east side of Teslin Lake, also agriculture applications, road building, mining, powerline construction and gravel pits are a few of the land clearing activities which require timber removal. Depending on the size of the clearing these activities have the potential to produce large quantities of timber in a short period of time. If and when the pipeline is developed it is expected to move very quickly through the Yukon.

Strategic Direction:

55. When possible identify and provide opportunity to salvage timber from land clearing as early as possible to facilitate utilization of the timber.

8.0 STRATEGIC DIRECTIONS AND PLAN IMPLEMENTATION, MONITORING AND REVIEW

The SFMP is a government approved plan – approved by the governments of the TTC and Yukon.

The plan is a working document that will be implemented by all relevant government departments and agencies through their management and regulatory activities. In the case of the Yukon Forest Management Branch and the TTC, it will also be implemented through the integrated landscape level, harvest development and site (operational) plans. Forest resource development plans and permits will take guidance from the forest management principles, goals, objectives and strategic directions described in this plan, as well as review by federal and territorial government agencies. The priorities identified for LUs in the SFMP will also guide future forest management planning and forest resource development.

The plan is also a dynamic document that must be responsive to a changing environment and changing needs and values. It will require monitoring, and periodic review and revisions.

8.1 ROLES AND RESPONSIBILITIES

8.1.1 Planning Team

The Planning Team consists of the representatives of the plan approval bodies (TTC and Yukon Government (represented by the Forest Management Branch), and the TRRC. The group's responsibilities for carrying out the plan are:

a) Plan Implementation

- Coordinate and ensure implementation.
- Review and provide recommendations on proposed amendments.
- Request input and review from federal and territorial agencies on recommended amendments.
- Establish arrangements for participation by the general public and federal and territorial agencies in future planning.

*** If high or very low levels of activity are occurring on the landbase the frequency of reporting may need to be adjusted.*

b) Plan Monitoring, Amendment and Review

- The planning team shall consider periodic amendments to selected plan objectives and strategies. These amendments will be based on changing circumstances, conditions and feedback.

8.1.2 Forest Management Branch and TTC

The FMB and the TTC are responsible for the following activities:

a) Plan Implementation

- Jointly prepare a bi-annual** report on plan implementation and status of forest management.
- Review existing, more detailed forest plans (e.g. resource reports) to ensure consistency with this plan.
- Distribute copies of the plan to licensed resource users, lands and resource management staff, stakeholders and interested public.
- Continue to work together on forest management and forest management planning on a government-to-government basis.

b) Plan Monitoring, Amendment and Review

- Facilitate the development of an effective and practical monitoring program.
- Collect and compile indicator information, revise the indicators as necessary and raise issues that need to be addressed.
- Prepare a monitoring report that will review and compile indicator information and assess how well the plan is meeting its objectives.
- The monitoring report shall indicate how the objectives and strategies in the SFMP are being met through specific forest management activities, subsequent planning processes and forest resource development plans and permits.

- In consultation with the TRRC, determine the need for, and timing of, a comprehensive review of the plan.

8.1.3 Teslin Renewable Resource Council

The TRRC is responsible for the following activities:

a) Plan Implementation

- Facilitate a bi-annual** public meeting in Teslin to present monitoring report (prepared by the FMB and TTC).
- Facilitate effective consultation of forest plans and information sharing throughout the planning region.

b) Plan Monitoring, Amendment and Review

- At the bi-annual public meeting in Teslin, facilitate the presentation of the results of the monitoring program (prepared by FMB and TTC).
- Recommend revisions to the plan to the FMB and TTC.

8.1.4 Yukon Public

It is recognized that the public, local residents and TT citizens, in partnership with TRRC, TTC and Yukon Department of Energy, Mines and Resources, are important contributors to the effective implementation and monitoring of the plan.

8.2 DIRECTION FOR PLANNING AREA DEVELOPMENT

The SFMP establishes what issues and concerns, values and interests must be addressed as forest resource development moves forward in the region. The next three planning stages narrow the decisions and direction from the general goals and objectives of this plan to focus on priority planning areas and candidate harvest sites.

The next planning stages following from this plan are:

Stage 2 – Integrated Landscape Planning that will include the confirmation of the identified Landscape Units as broad areas available (or not) for forest development and strategies for reducing or

eliminating significant negative effects on other resources and values. Under YESAA regulations it may be possible to conduct an environmental and socio-economic assessment of timber harvesting activities at the planning stage. The details of this process are still being developed. This planning level will include developing a Teslin local planning area.

Stage 3 – Harvest Development Planning that designs the general harvest activities consistent with the outcome of landscape planning (e.g. main road location, harvest block location).

Stage 4 – Site Planning that field checks and engineers harvest block boundaries, landings, volumes and exact road locations consistent with the higher level plans (harvest development planning, integrated landscape planning, and the strategic forest management plan).

Plans are to be developed by the appropriate agencies consistent with this plan and will provide an opportunity for public review. Planning stages, while distinct, are closely linked, and each stage will be completed. The resulting plan(s) may, in some instances, consolidate several planning stages.



** If high or very low levels of activity are occurring on the landbase the frequency of reporting may need to be adjusted.

8.3 FURTHER ASPECTS OF IMPLEMENTATION

Implementation of the SFMP will also involve the following steps:

- Determination and allocation of the annual allowable cut (AAC)
- Selection and distribution of tenure
- Development and execution of an adaptive management framework
- Integration with other planning processes that impact timber supply

8.4 ADAPTIVE MANAGEMENT STRATEGY

Forest ecosystems are complex and dynamic and our ability to predict how they will respond to management actions is limited, therefore an adaptive management framework is proposed.

The ability to predict how forest ecosystems respond to management actions is especially limited in the southern Yukon where forest harvesting activities and ecosystem response research has been fairly limited compared to other jurisdictions in Canada. Formal and informal research has been undertaken by the Forest Management Branch (formerly DIAND Forest Resources) to determine ecosystem responses to specific management. The research results have led to the development of forest harvesting guidelines and standards for the southern Yukon. These provide a framework for best managing the Yukon forested environment based on the knowledge gained so far. However, there are knowledge gaps and, therefore, uncertainties on how to best manage forests in the southern Yukon.

Rather than produce a static forest management plan with concrete directions for management actions, which have been derived based on ecosystem response information gained so far, it is far more useful to implement a plan that incorporates an adaptive management strategy. Therefore, management actions will be modified and revised in response to new information received.

Essentially, adaptive management is a formal approach to learn from the responses of existing forest management actions, determine how to best improve

current approaches, and therefore, improve overall management practices (Forest Practices Branch, BC Ministry of Forests, 1999).

A detailed description and framework for adaptive forest management is provided in the document titled *An Introductory Guide to Adaptive Management* (Forest Practices Branch, BC Ministry of Forests, 1999). The guide provides an overview on adaptive management and describes the six-step framework recommended for applying adaptive forest management.

Step 1: Assessing the Problem – includes defining the management concern, identify measurable objectives (indicators), forecast responses to management actions.

Step 2: Designing the Management Plan – includes both the management plan and a monitoring program to address gaps identified in Step 1.

Step 3: Implement the Management Plan – implementing the plan.

Step 4: Monitor – use indicators identified in Step 1 to test forecasts.

Step 5: Evaluate – compare responses measured in Step 4 with forecasts identified in Step 1.

Step 6: Adjust – adjust management actions, ecosystem objects, etc. to accommodate results evaluated in Step 5.

Repeat Process – as new understandings, problems or forest management questions arise.

8.4.1 Adapting to Large Land Base Changes

Wildfire is the agent primarily responsible for unpredictable large land base changes in the southern Yukon. These changes can impact the timber supply and non-timber values. An adaptive management strategy should include a monitoring program to assess the effects of wildfire on timber supply.

8.5 INTEGRATION WITH REGIONAL LAND USE PLANNING

Regional land use plans make recommendations for the use of land, water and other renewable and non-renewable resources. This planning is necessary to resolve land use and resource conflicts within the region. The plans ensure that use of lands and resources is consistent with social, cultural, economic and environmental values. The plans will build upon the traditional knowledge and experience of the residents of each region.

The Teslin Land Use Planning process is currently not active. If and when the process becomes active the planning region could include the SFMP area and perhaps the larger Dakh Ka region. The land use plan will comply with the TTC Final Agreement and Self-Government Agreements and will address environmental, social and economic issues. It is imperative that the two plans be integrated and coordinated to ensure land uses for timber harvesting and other resources are accounted for. The land use plan will examine resource values and uses other than forestry, in greater detail. The land use planning process may affect the available land base and access development.

A land use plan will evaluate and develop guidelines for integrating land uses. This will include understanding the land and its uses and making land management decisions. Uses may include mining, tourism, recreation, hunting, trapping, fishing, agriculture, energy production, communication, protected areas and parks.

The plan can specify rules or conditions for land use. It also can provide ways for the plan to be followed, such as the use of permits, licenses or a review process. Integration of these guidelines, rules or conditions together with forest management and timber harvest planning will be required to ensure that the desired future forest landscape conditions maintain multiple values.

8.6 STRATEGIC DIRECTION AND PRIORITIES FOR PLAN IMPLEMENTATION

In consideration of the Landscape Unit information (Section 7.0, above), the following forest management planning priorities and activities are generally recommended:

Strategic Directions:

56. Focus forest planning on Pine Lake, Teslin, Sidney Lake, East Teslin River and North Nisutlin River LUs.
57. Establish a strategy for the implementation of forest plans in Pine Lake, Teslin, Sidney Lake, East Teslin River and North Nisutlin River LUs, consistent with the identified stages for lower level planning, that identifies:
 - Integrated resource management values and management strategies to accommodate the values
 - Zonation of harvest and exclusion areas
 - Silviculture strategy
 - Suitable tree species and treatments
 - Meet timber and non-timber values
 - Long-term resource capacity and future productive use
 - Activities; forest practices – values to be incorporated into landscape and site-level treatments (e.g. visual quality, cultural heritage, habitat, recreation and tourism opportunities and regeneration strategies); harvest design and prescription
 - Maximization of post-harvest benefits (e.g. recreation trails, traditional use opportunities, hunting and trapping opportunities, habitat conservation and restoration, etc.)
58. Refer lower level planning priorities and activities to the TRRC for review.
59. Forest harvesting tenure holders in good standing when the plan is approved, and affected by the plan, shall be accommodated for the period covered by their license or tenure.
60. It is recommended that in the implementation of the Teslin Strategic Forest Management Plan, an adaptive forest management strategy be adopted that follows the general framework identified in Section 8.4.

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GLOSSARY OF FOREST TERMS

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

Access management planning: Specific to the roading required to access the harvest planning area, and between harvest blocks within the area, and includes maintenance and deactivation.

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.

Allowable annual 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.

Area regenerating: Includes areas that have been harvested recently (less than 10 years ago), and areas depleted by such natural disturbances as fire, insects and disease, where the stand does not meet stocking standards.

Available timber: Timber which is available for harvest after due recognition of constraints to protect the environment and other forest uses. (see operable timber)

Basic 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.

Biodiversity (biological diversity): 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. (Others are tropical and temperate forest zones). The boreal forest is the northern circumpolar forest zone and 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.

Clearcutting (clearcut): A even-aged forest management silviculture method that involves the complete felling and removal of a stand of trees producing a fully exposed micro-climate for the development of a new even-aged stand.

Climate change: An alteration in measured quantities (e.g., 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.

Coarse filter approach: A broad approach to maintaining biodiversity through the conservation of land areas and representative habitats with the assumption that the needs of most of the associated species, communities and ecological processes will be met at the large-scale. (see fine filter approach)

Coarse woody debris (CWD): Sound and rotting logs, branches and stumps that provide habitat for plants, animals and insects and a source of nutrients for soil development. The type and size of material designated as CWD varies among classification systems.

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

Commercial forest: Forest land that is able to grow commercial timber within an acceptable time frame and is designated for such a purpose.

Critical habitat (from the federal *Species at Risk Act*): Specific areas within the geographic area occupied by a federally listed species on which physical and biological features are found that are essential to the conservation of the species. In conservation biology – part or all of an ecosystem occupied by wildlife species that is recognized as essential for the maintenance and long-term survival of the population.

Development plan: A specific plan outlining harvesting, road construction, protection, and silviculture activities over the short term (often five years) in accordance with the approved forest management plan.

Ecodistrict: A part of an ecoregion characterized by distinctive geologic, soil, water, fauna and land use.

Ecological land classification: A process of delineating and classifying ecologically distinctive areas based on geologic, landform, soil, vegetative, climatic, wildlife, water and human factors. This holistic approach to land classification can be applied incrementally, from site-specific ecosystems to very broad ecosystems. This system provides for seven levels of generalization: ecozones, ecoprovinces, ecoregions, ecodistricts, ecosections, ecosites and ecoelements.

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.

Ecosystem integrity: The quality of a natural unmanaged or managed ecosystem in which the natural ecological processes sustain the function, composition and structure of the system.

Ecosystem management: The use of an ecological approach to achieve productive resource management by blending social, physical, economic and biological needs and values to provide healthy ecosystems.

Ecotourism: A type of tourism that focuses on nature-related experiences (e.g., backcountry travel).

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.

Edge habitat: A loosely defined type of habitat that occurs at the boundary between two different habitat types. Typically, edge habitats share characteristics with both adjacent habitat types and have particular transitional characteristics that are important to wildlife.

Endangered species: Any species of plant or animal defined through the *Species at Risk Act* as being in danger of extinction throughout all or a significant portion of its range in the Federal registry.

Fine filter approach: An approach to maintaining biodiversity that is directed toward particular habitats or individual species that might fall through the coarse filter. These habitats may be critical in some way, and the species threatened or endangered.

Forest: An ecosystem characterized by a more or less dense and continuous tree cover, often consisting of stands varying in composition, structure, age class and associated processes, and commonly including meadows, streams fish and wildlife.

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 cover map: A map showing relatively homogeneous forest stands or cover types, produced from the interpretation of aerial photos and information collected in field surveys. Commonly includes information on species, age class, height class, site and stocking level.

Forest ecology: The relationships between forest organisms and their environment.

Forest Ecosystem Network (FEN): A planned landscape zone that serves to maintain or restore the natural connectivity within a landscape unit.

Forest land: Land primarily intended for growing, or currently supporting, forest. It includes land not now forested (e.g. clear-cut lands and northern lands that are forested but not intended for any commercial forestry use) and plantations.

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.

Forestry practices: Any activity that is carried out on forest land to facilitate the use of forest resources, including, but not limited to, timber harvesting, road construction, silviculture, grazing, recreation, pest control and wildfire suppression.

Forest regions classification: A process of delineating large geographic areas according to landform and climate, associated with broad variations in overall forest composition.

Forest type: A group of forest areas or stands whose similar composition (species, age, height and density) differentiates it from other such groups.

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

Fragmentation: The process of transforming large continuous forest patches into one or more smaller patches surrounded by disturbed areas. This occurs naturally through such agents as fire, landslides, windthrow and insect attack. In managed forest, timber harvesting and related activities have been the dominant disturbance agents.

Geographic Information System (GIS): An organized collection of computer hardware, software and geographic data designed for capturing, storing, updating, manipulating, analyzing and displaying all forms of geographically referenced information.

Global warming: The rise in temperature of the Earth's atmosphere due to the greenhouse effect (the retention of the sun's energy by the atmosphere due to the build-up of CO₂ and other gases that are the by-product of industrial activities).

Green tree retention: Harvesting that retains live trees of a specific species and size on the area to be cut to achieve a site-specific objective.

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 (e.g., climate or the availability of suitable food and shelter) that make it especially well suited to meet the life-cycle needs of that species.

Habitat management: Management of the forest to create environments that provide habitats (food, shelter) to meet the needs of particular organisms.

Harvesting: The practice of felling and removing trees or the removal of dead or damaged trees from an area.

Harvesting method: The mix of felling, bucking and yarding systems used in logging a stand of timber.

Harvest mitigation: In areas where logging can occur, the harvest mitigation provides direction on where and how the logging should be carried out, based on the identified values. Values can range from landscape to site-specific interests, such as private lands.

Harvest pattern: The spatial distribution of cutblocks and reserve areas across the forested landscape.

Harvesting or site prescription: Detailed plan on how, when and where timber will be harvested from an area.

Harvest schedule: A document listing the stands to be harvested by year or period, usually showing types and intensities of harvests for each stand, as well as a timetable for regenerating currently non-productive areas.

Harvesting system: The mix of felling, bucking and yarding systems used in logging a stand of timber.

Healthy ecosystem: An ecosystem in which structure and functions allow the maintenance of biodiversity, biotic integrity and ecological processes over time.

Integrated resource management: A holistic approach to resource management that entails the management of two or more resources (e.g. water, soil, timber, pasture, wildlife and recreation) and that integrates the values of the community into the design of policies or projects to use and sustain these resources in perpetuity.

Inventory (forest): 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.

Keystone species: A species that plays an important ecological role in determining the overall structure and dynamic relationships within a biotic community. A keystone species presence is essential to the integrity and stability of a particular ecosystem.

Landscape: Areas of land that are distinguished by differences in landforms, vegetation, land use and aesthetic characteristics.

Management ignited prescribed fire: A means of controlling forest diseases, insects and excessive buildup of trees, and managing vegetation and habitat through the scheduling of burns around weather, fuel loads, season and ability to control fire. This type of management has currently not been used in Yukon.

Management plan: A detailed plan for a forested area. It contains inventory and other resource data. (see forest management)

Merchantable timber: A tree or stand that has attained sufficient size, quality and/or volume to make it suitable for harvesting.

Multiple forest use: A system of resource use where the forest resources in a given land unit serve more than one user.

Natural disturbance: Natural events that cause tree or forest renewal, i.e. 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.

Natural disturbance regimes: The historic patterns (frequency and extent) of fire, insects, wind, landslides and other natural processes in an area.

Natural regeneration: The renewal of a forest stand by natural seeding, sprouting, suckering or layering seeds may be deposited by wind, birds or mammals.

Net down: A zoning of the harvest planning area that helps to describe where logging can and cannot occur.

Non-commercial tree species: A tree species for which there is currently no market.

Non-forest land: Land not primarily intended for growing or supporting a forest.

Non-timber resource value: A value within the forest other than timber that includes, but is not limited to, biological diversity, fisheries, wildlife, minerals, water quality and quantity, recreation and tourism, cultural and heritage values and wilderness and aesthetic values.

Old-growth forest: Old growth is a forest that contains live and dead trees of various sizes, species, composition, and age class structure. Old-growth forests, as part of a slowly changing but dynamic ecosystem, include climax forests but not sub-climax or mid-seral forests. The age and structure of old growth varies significantly by forest type and from one biogeoclimatic zone to another.

Operability: The ease of operations determined by the complexity and sensitivity of the site conditions (slope, soil, timber, volumes, harvesting equipment, etc.) and the degree of disturbance expected.

Operable forest: That portion of the production forest that, under current market conditions, can be harvested at a profit.

Operable land: All lands that are not considered inoperable lands.

Operable timber: Available timber that can be economically logged with present harvesting methods after consideration of access, timber quality and market price.

Over-mature: Tree or stand that has passed the age of maturity where the rate of growth has diminished and the trees are weakened.

Patch cutting: The removal of all of the trees in a stand. The same as clearcutting, except that the area involved is smaller.

Partial cutting: Tree removal other than in a clearcut silviculture system; includes seed tree, variable retention, shelterwood and selection systems.

Pest: An organism capable of causing material damage. Forest pests include insects, tree diseases and noxious fungi.

Protected area: An area protected by legislation, regulation or land use policy to control the level of human occupancy or activities. Categories of protected areas include protected landscapes, national parks, multiple use management areas and nature (wildlife) reserves.

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

Reforestation: The re-establishment of trees on denuded forest land by natural or artificial means, such as planting and seeding.

Regeneration: The continuous renewal of a forest stand. Natural regeneration occurs gradually with seeds from adjacent stands or with seeds brought in by wind, birds or animals. Artificial regeneration involves direct seeding or planting.

Retention harvesting: A silvicultural system designed to retain individual trees or groups of trees to maintain structural diversity over the area of the cutblock.

Riparian forest: At a large scale, it is the band of forest that has a significant influence on a stream ecosystem or is significantly affected by the stream. At a smaller scale, it is the forest at the immediate water's edge, where some specialized plants and animals form a distinct community.

Riparian zone / Buffer zone / Buffer strip: A strip of land maintained along a stream, lake, road, recreation site or different vegetative zone to mitigate the impacts of actions on adjacent lands, to enhance aesthetic values or as a best management practice.

Rotation: The planned number of years between the formation or regeneration of a crop or stand and its final cutting at a specified stage or maturity.

Selection cutting: Annual or periodic cutting of trees in a stand in which the trees vary markedly in age. The objective is to recover the yield and maintain an uneven-aged stand structure, while creating the conditions necessary for tree growth and seedling establishment. Differs from selective cutting, in which the most valuable trees are harvested without regard for the condition of the residual stand.

Silviculture: The theory and practice of controlling the establishment, composition, growth and quality of forest stands.

Single tree selection: The selection of individual trees for harvesting.

Silvicultural prescription: Provides direction on block size and harvesting methods within the planning area. The prescription also identifies site limitations and reforestation planning.

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.

Even-aged stands: Stands in which the ages of most trees are within 20 years of each other or is comprised of no more than two age classes.

Mixed-wood stands: Stands containing both deciduous and coniferous species.

Uneven-aged stands: Stands in which the most of the trees differ by more than 20 years or is comprised of more than two age classes.

Stand height: Tree height is estimated for the leading tree species in the canopy based upon an average of dominant and co-dominant tree heights.

Stand age: Stand age is the average age of the dominant and co-dominant trees for the leading species.

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

Single-storied: An even-aged stand that exhibits a more or less uniform canopy height.

Two-storied: A stand with two distinct, homogeneous layers, each with at least 10 per cent crown closure, between which there is a height difference of at least 10 metres.

Complex: A stand characterized by trees of many ages or sizes occurring singly or in groups. Tree species are usually shade tolerant.

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.

Thinning: A treatment that reduces tree density and competition between trees in a stand. Thinning concentrates growth on fewer, high-quality trees, provides periodic income and generally enhances

Understory: Trees growing under the main forest canopy.

Value-added product / Value-added production: Adding value to a product by further processing it. Examples of value-added wood products include joinery stock, windows, doors, kitchen cabinets, flooring and mouldings. Value-added pulp and paper products include such items as packaging, diapers, coated papers, tissue, business papers and stationery and other consumer paper products.

Vulnerable species: A species that is considered at risk because it exists in low numbers or in restricted ranges, due to loss of habitat or other factors.

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. Shrub scars are included as wetlands. Shrub scars occur primarily in broad depressions and low-lying areas where forest development is limited by cold, periodically saturated soils.

LIST OF ACRONYMS

AAC Annual Allowable Cut

BC MOF British Columbia Ministry of Forests

CCFM Canadian Council of Forest Ministers

CFDZ Community Forest Development Zone

COSEWIC Committee on the Status of Endangered Wildlife in Canada

CPAWS Canadian Parks and Wilderness Society

CWS Canadian Wildlife Service

DIAND Department of Indian Affairs and Northern Development

FMB Forest Management Branch

FMP Forest Management Plan

FRUD Strategic Forest Use Designation System

INAC Indian and Northern Affairs Canada

IFRMZ Integrated Forest Resource Management Zone

LU Landscape Unit

MBCA *Migratory Birds Convention Act*

MBR Migratory Birds Regulations

MOU Memorandum of Understanding

NRDNWA Nisutlin River Delta National Wildlife

Area
NRV Natural Range of Variation

NWA National Wildlife Area

SFMP Strategic Forest Management Plan

THA Timber Harvest Agreement

THPOG Timber Harvesting Planning and Operating Guidebook

TRRC Teslin Renewable Resources Council

TSA Timber Supply Analysis

TTC Teslin Tlingit Council

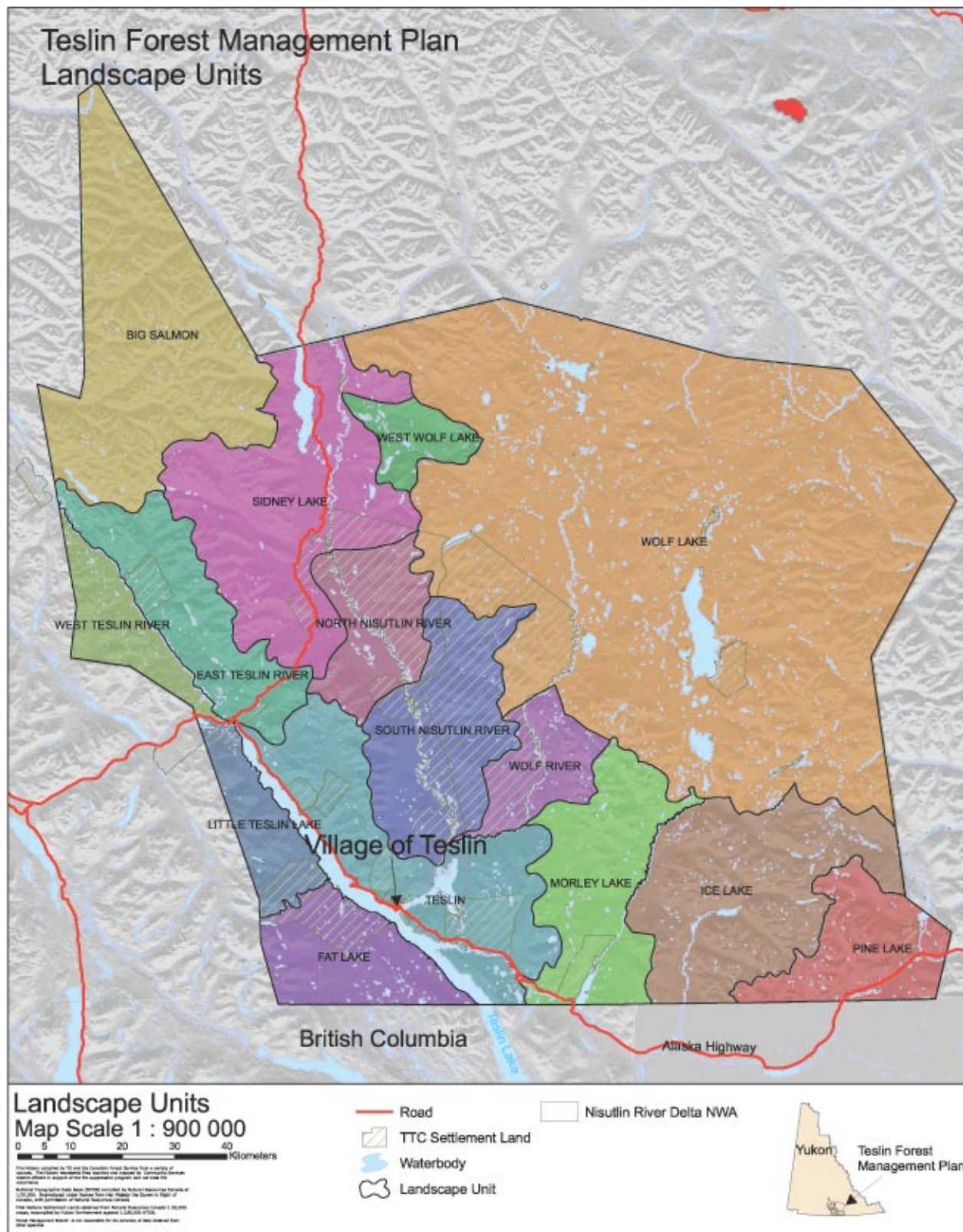
TT Traditional Territory

YESSA *Yukon Environmental and Socio-economic Assessment Act*

YG Yukon Government

YSC Yukon Salmon Committee

MAP 1 - PLANNING AREA



Planning Team Contact Information

If you would like more information regarding the *Teslin Tlingit Traditional Territory Strategic Forest Management Plan*, please contact:

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