

SPATSIZI PLATEAU WILDERNESS PARK

BACKGROUND REPORT

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## PREFACE

This report provides a summary of biophysical, cultural, legal and management concerns with respect to Spatsizi Plateau Wilderness Park in northwestern British Columbia. The report focuses on the park area but also provides information for adjacent areas and the northwest region where appropriate.

The purpose of this document is to provide background information which will be used for park planning. It will be used primarily by the Parks and Outdoor Recreation Division but it will also be of interest to other agencies, private organizations and the general public. The report represents a compilation from existing information sources and does not include any new research.

This background document was prepared for the Parks and Outdoor Recreation Divisions Northern B.C. Regional Office at Prince George by four consultants, Don Benn, Ted Harding, Chris Clement and Beth Collins. Numerous sources were consulted as evidenced by the bibliography. Also, a large number of individuals contributed greatly to the project, especially Parks staff at Smithers, Prince George and Victoria.

## 1.0 INTRODUCTION

Spatsizi Plateau Wilderness Park is the second largest provincial park in British Columbia. It comprises 659,650 hectares in a mountainous and high plateau section of northwestern British Columbia in the upper Stikine River area. The park is somewhat larger than Prince Edward Island. With reference to some larger communities it is, by air, 1,000 kilometers north of Vancouver, 300 kilometers north of Smithers and 550 kilometers northwest of Prince George.

The park takes its name from the Spatsizi River which is a major tributary of the Stikine River. Spatsizi is an Indian term for red goat. Apparently, mountain goats may roll in the red coloured soil of the upper slope of Spatsizi Mountain and take on a reddish hue.

Upland terrain in Spatsizi Park varies from rugged mountains with summits at 2,450 meters elevation to large expanses of rolling plateau at 1,500 to 2,000 meters elevation. These upland units have been dissected by several broad river valleys which are tributary to the Stikine River. Unlike many other portions of British Columbia, these broad valleys and the high elevation plateau provide outstanding opportunities for landscape viewing, hiking and wilderness travel.

The area is isolated from the moderating influences of Pacific air masses. Consequently, Spatsizi Park has a relatively dry, cold climate which is reflected in distinctive vegetative patterns. Tree cover is minimal and there are large areas of open meadows both in the valley bottoms and on the plateau terrain. This greatly contributes to the park's scenic qualities. In addition, flora and climate are also major factors supporting the unique association of big game animals in Spatsizi Park.

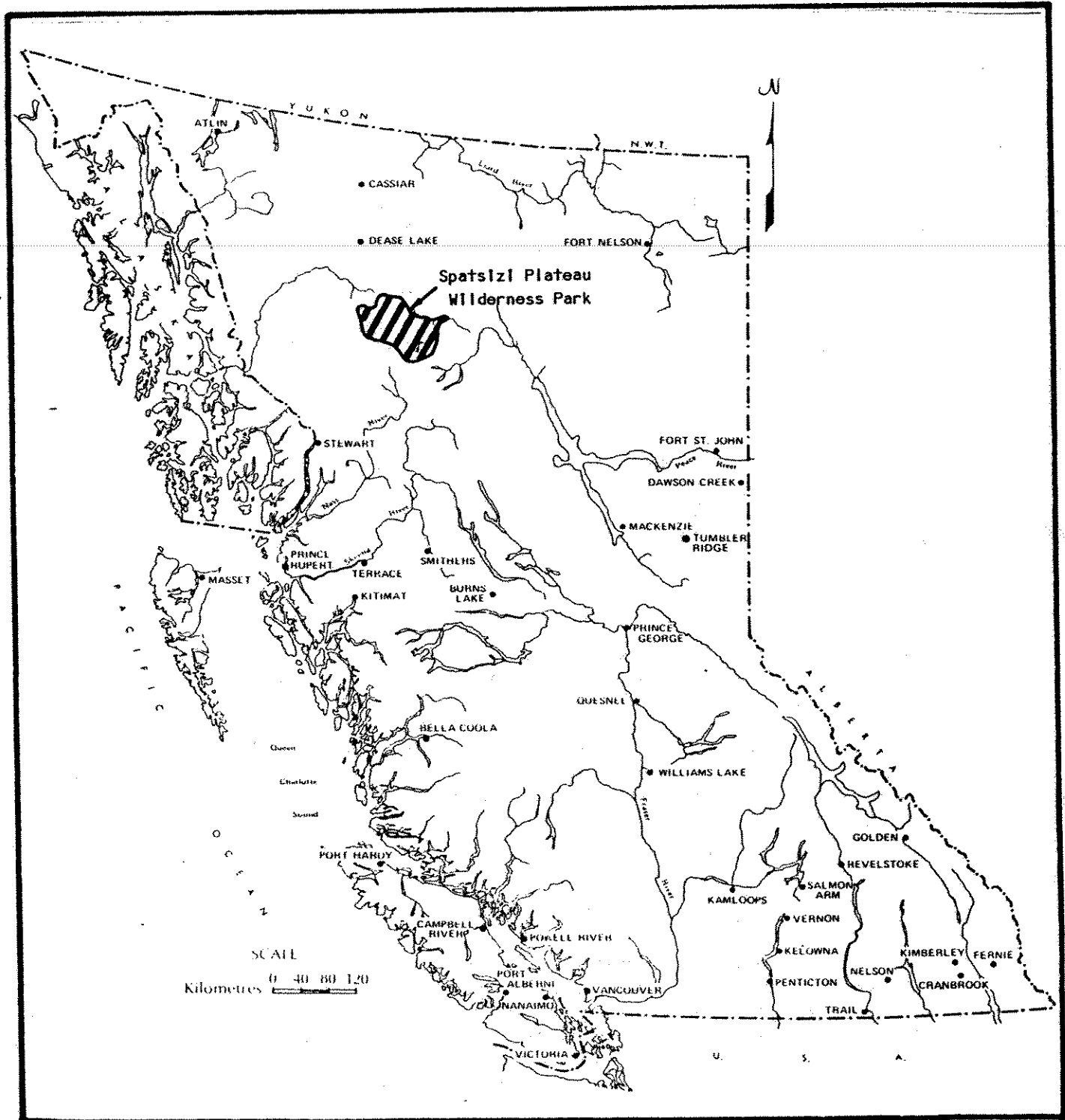


Figure 1.1 LOCATION OF SPATSIZI PLATEAU WILDERNESS PARK

Guided hunting trips have been a major attraction in the upper Stikine area for 50 years. This potential, combined with the wilderness qualities of the Spatsizi is what brought Tommy Walker to Cold Fish Lake in 1948. Here, he established the well known guided hunting business which still operates in the park under its fourth owner. Mr. Walker worked hard towards getting recognition of the wilderness qualities of the Spatsizi area. Through his efforts serious study of the flora and fauna started in the 1960's. This eventually led to the establishment of Spatsizi Plateau Wilderness Park and Gladys Lake Ecological Reserve in 1975.

There has been considerable concern over the issue of hunting in Spatsizi Park. In the past ten years numerous biological studies and wildlife surveys have been conducted in the region and the park now enjoys one of the best researched wildlife resources in the province. In recent years very conservative hunting quotas have been established and most authorities agree that hunting does not pose a threat to the wildlife stocks of the park as long as population levels are monitored and harvest quotas are adjusted accordingly.

In addition to significant wildlife populations, Spatsizi Park is a highly important wilderness area with outstanding visual and recreation features. Recreational use levels have remained low due to the difficult and expensive access for most people and lack of awareness of the outstanding qualities of the park by others. However, Spatsizi Park's excellent river travel, hiking and viewing opportunities are growing in recognition and non-consumptive forms of recreation will likely become a major focus in future management and planning for the park.

Spatsizi Park is surrounded by numerous mineral and coal deposits and there has been considerable mine exploration activity in the region for the past 15 to 20 years. It appears that at least a few of these properties may be developed as mines in the very near

future. Associated with mine development are potential projects for energy requirements, access roads and the establishment of settlement centres - all on the periphery of the park. Mine development potential presently poses one of the most pressing issues facing Spatsizi Park.

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## 2.0 GEOGRAPHY AND PHYSIOGRAPHY

Spatsizi Wilderness Park is dominated by two physiographic areas: the Spatsizi Plateau and the Skeena Mountains (Holland, 1976, Figure 2.1). The Spatsizi Plateau is an area of wide, drift-filled (glacial deposition) valleys and open, gently rolling upland surfaces. The plateau area is drained by the Stikine and Spatsizi River systems. The Spatsizi River divides the park into two almost equal areas. Elevations of the plateau in the park range from about 900 meters to 2240 meters at Mount Skady.

To the south and west the Spatsizi Plateau is bordered by the Skeena Mountains. Terrain here is rugged and steep-sloped with narrow sinuous valleys. Major drainage systems are the upper Stikine, upper Spatsizi and tributaries of the Klappan and Little Klappan rivers. Elevations in the mountains range from about 900 meters to 2350 meters at Nation Peak.

Tributaries to the Spatsizi include Kluayetz Creek, Buckinghorse Creek, Dawson River and Ross River. The Spatsizi River itself flows into the Stikine River. Major tributaries to the Stikine are Happy, Chapea, Sanabar, Diamond and Cullivan creeks and the Chukachida River. Major lakes within the park are Cold Fish (the largest), Hotlesklwa, Laslui, Tuaton, Buckinghorse, Ella, Happy, and Chapea.

The park is surrounded by predominantly mountainous terrain. On the northwest edge is the Klastline Plateau and along the entire southwest and south boundary are a continuation of the Skeena Mountains. The Omineca Mountains are found to the east while the Skeena Mountains continue northward of the park.

Table 2.1 Summary of Geological Information for Spatsizi Wilderness Park and Surrounding Area.

GEOLOGIC TIME PERIOD		MAP SYMBOL	ABSOLUTE AGE IN YEARS BEFORE PRESENT	DESCRIPTION OF ROCK (Surficial Material for Rtb and Qs)
ERA	PERIOD			
C E N O Z O I C	Quaternary	Rvb	10,000	basalts, cinder, ash
	Tertiary	Qs		surficial sediments and glacial deposits
		Pliocene	PPvb	12,000,000
	M E S O Z O I C	Eocene	EBP*	60,000,000
Cretaceous & Tertiary		KTgp*		granite porphyry, granophyre, syenite
		Upper Cretaceous Cretaceous and	uKTC*	130,000,000
J U R A S S I C	Jurassic	JKs*		siltstone, greywacke, conglomerate, shale
	Middle Jurassic	mJvb		basalt, pillow lava, tuff, volcaniclast rocks
		Lower and Middle Jurassic	mJqm	
	Lower Jurassic	JT*	165,000,000	conglomerate, grit, greywacke, sandstone, shale
	and Upper Triassic	TJTV*		andesite, basaltic flows
Triassic	Upper Triassic	uTST*		undifferentiated sedimentary and volcanic rocks
	Triassic	Tqm	200,000,000	quartz monzonite

\* units found in the park including the proposed extension

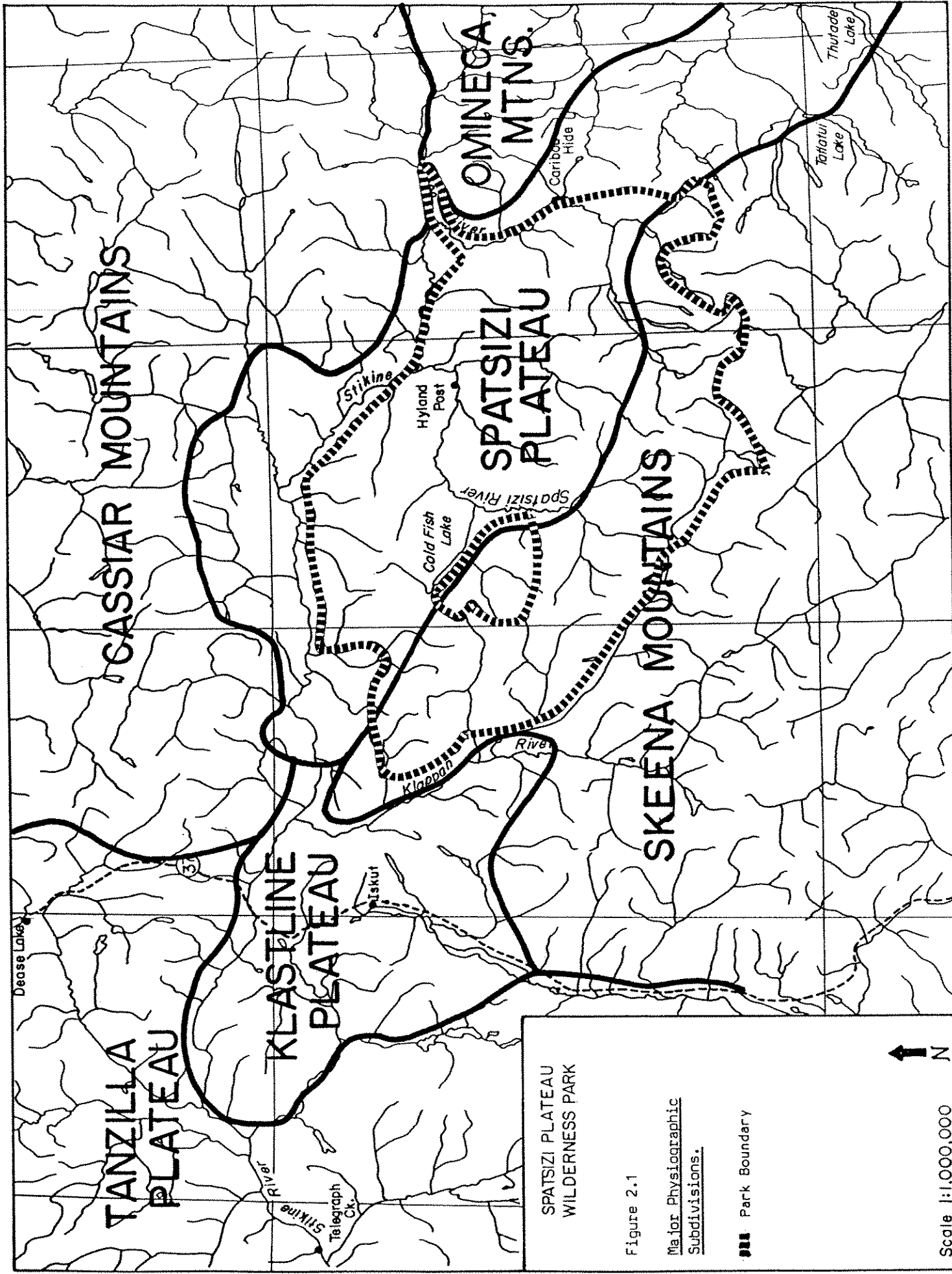


Figure 2.1

Major Physiographic Subdivisions.

Park Boundary

Scale 1:1,000,000



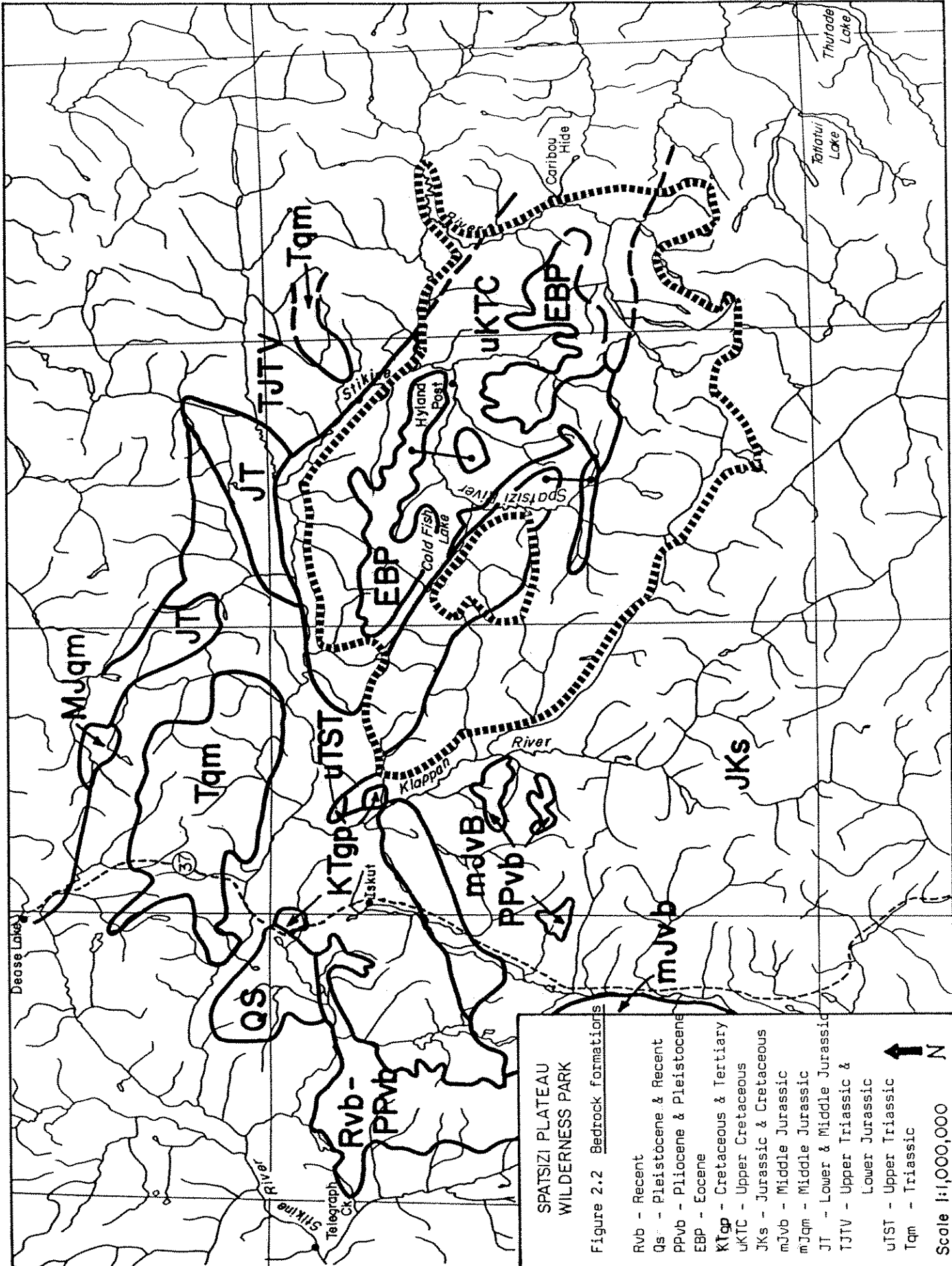
## 2.1 Bedrock Geology

The Spatsizi Plateau is almost entirely underlain by sandstone, shale and conglomerate rocks which are between 60 and 120 million years old (Table 2.1 and Figure 2.2). This area underwent relatively simple uplifting without folding, resulting in the gently sloping alpine environments. In the northern part of the plateau, along the Stikine River, bedrock is composed of andesite, basalt, and undifferentiated sedimentary and volcanic material between 165 and 200 million years old (Souther et al., 1979).

In the Skeena Mountains to the southwest much of the park lies within a belt of 130 million year old siltstone, greywacke, conglomerate, shale and coal. The Klappan and Groundhog coal deposits are located in this geological rock unit. The northeast flank of the Eaglenest Range is composed of older sedimentary materials which are approximately 180 million years in age. Rock structure throughout the Skeena Mountains is very complicated because it is heavily uplifted and folded. Due to the weak structure and erodibility of these folded sedimentary mountains, rock slides and failures are a common occurrence (Eisbacher, 1971).

## 2.2 Surficial Material

During the last glaciation the entire area of Spatsizi Park was covered with ice to a depth of about 2100 meters (Holland, 1976). Today, there are only small, remnant ice fields mainly found around Mount Will. Till deposits cover much of the park. This is material consisting of fine particles and partially rounded rocks which were ground up beneath the blanket of glaciers. The till covers most of the plateau areas and fills the major valleys throughout the region, (Lacelle, 1985b).



**SPATSIZI PLATEAU  
WILDERNESS PARK**

Figure 2.2 Bedrock formations

Rvb - Recent  
 Qs - Pleistocene & Recent  
 PPvb - Pliocene & Pleistocene  
 EBP - Eocene  
 KTgp - Cretaceous & Tertiary  
 uKTC - Upper Cretaceous  
 JKs - Jurassic & Cretaceous  
 mJvb - Middle Jurassic  
 mJqm - Middle Jurassic  
 JT - Lower & Middle Jurassic  
 TJTV - Upper Triassic & Lower Jurassic  
 uTST - Upper Triassic  
 Tqm - Triassic

Scale 1:1,000,000

↑ N

Relatively coarse-textured sediments are common along valley floors and the lower slopes. As glaciers melted the meltwaters washed and sorted the till materials into deposits of sands and gravels. In places, old rivers which flowed under ice resulted in the deposition of eskers. These are distinctive landforms of long, sinuous ridges of sand and gravel. Good examples are found along the Ross River, Upper Stikine River and Chapea Creek valleys.

At the lowest elevations, recent water deposits and active floodplains are common along streams and rivers. Also found at these locations are extensive organic sediments of accumulated vegetative matter of various depths.

Colluvial deposits dominate within the steeper mountainous areas and in the Skeena Mountains portion of the park. These are coarse-textured, angular materials which have moved downslope under the influence of gravity. Avalanche tracks and talus cones are often associated with the steepest slopes. In the narrower mountain valleys meltwater and water-deposited materials have limited distribution and tills are only common to gentle slope shoulders and cirque basins. At the highest elevations, rock outcrops and serrated ridges predominate.

For more information on surficial materials and terrain hazards see the 1:250,000 maps by Lacelle (1985a and 1985b).

### 2.3 Soils

Soil development processes are related to length of growing season, temperature variation, precipitation, parent material and

soil texture. Much of the park area is influenced by cold, dry, boreal climate with a short growing season, extremely cold winters and low precipitation. Soil-forming processes are effectively retarded and soil development is limited. Alpine soils often have a significant "sod" surface layer, high in organic matter from decomposed grass roots. Climate related processes such as frost-churning, solifluction, (movement of saturated soil) and nivation (hollows formed by repetitive, enduring snow accumulation) are common. At lower elevations, soil development is better defined with movement of minerals (iron and aluminum for example) downward from the ground's surface.

In the Skeena Mountains climate is generally wetter and warmer, being transitional between the coastal and boreal influences. As a result, the leaching of minerals and fine soil particles is more pronounced and soil surface layers are often orange or reddish.

Throughout the park area floodplain soils typically exhibit accumulation patterns from repeated inundation. Organic soils are poorly decomposed because of consistently cold temperatures.

Since soils are an important component of habitats they are summarized by Table 4.1 in Section 4.0.

## 3.0 CLIMATE

### 3.1 Overview

The two main factors affecting climate in the park are its northern latitude and the rain-shadow conditions surrounding it. Compared to areas to the south, the upper Stikine area is somewhat drier and colder with significantly less solar radiation.

Spatsizi Park is located between the high Coast Mountains to the west and the Rocky Mountains and Cassiar Mountains to the east. Although Spatsizi Park is only 150 km from a Pacific coast climate where there is 2400 mm annual precipitation the Coast Ranges create a major barrier resulting in removal of much of the moisture from the air. Consequently, the park is in a rain-shadow with only 500 mm annual precipitation (Hogg, 1979). To the east, the Rocky Mountains and Cassiar Ranges are not as massive as the Coast Ranges and continental air masses from the Alberta Plateau more commonly penetrate into the Spatsizi area (Hogg 1979).

Another climate gradient affecting the park is an element of drier conditions found to the northwest which is very representative of the climate in the Yukon (Environment, 1978). Annual precipitation in this zone is as low as 283 mm at Atlin, increasing to about 400 mm near the northern park boundary. Annual precipitation at Dease Lake is 394 mm (Environment, 1978, Chilton, 1981).

In the lower Stikine Valley snow accumulations are relatively low, being similar to those found in the central interior at Williams Lake (152.5 cm). Snowfall accumulations are somewhat greater with increasing elevations away from the valley bottoms (Environment, 1978, Chilton, 1981).

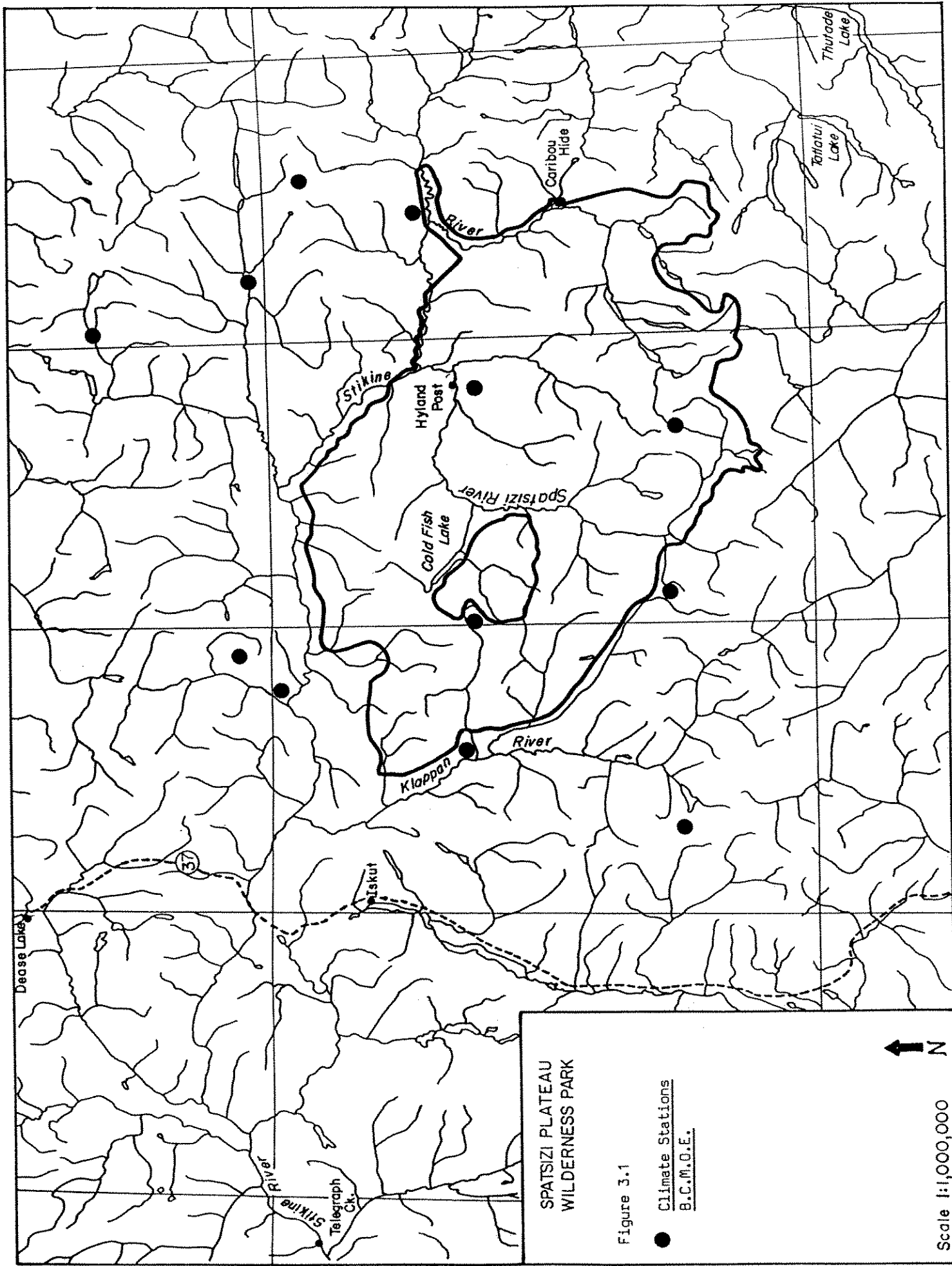
Mean January temperatures are about five degrees Celsius colder than the central Interior of B.C. Mean July temperatures are similar to central B.C. but about five degrees Celsius cooler than the southern interior of B.C. (Environment, 1978).

Runoff is primarily controlled by snow melt as opposed to rain events which have little major effect, (Hogg, 1979). Sediment load and stream turbidity are generally similar to those found in the Fraser drainage. Rivers and lakes freeze in early December and ice break-up is between mid-May and early June (Environment, 1978). As well, the park area is in the discontinuous, scattered perma-frost zone (Environment, 1978).

### 3.2 Climate within Spatsizi Park

Climate stations were established throughout the park between 1979 and 1983 by the B.C. Ministry of Environment. The locations of the climate stations are found in Figure 3.1 and a summary of the climatic variation within the park is provided in Tables 3.1, 3.2, 3.3 and 3.4.

Within Spatsizi Park there are two distinct climatic zones, the Spatsizi Plateau and the Skeena-Cassiar Mountains (Figure 2.1). B.C. Ministry of Environment data show that the plateau has less rain and half the amount of precipitation as snow than is found in the mountain zone. The plateau has less than 70 cm seasonal accumulation of snow compared to 80 to 150 cm in the mountains (Tables 3.1 and 3.2). Temperature comparisons show that the plateau is two to three degrees warmer in the summer and four to five degrees colder in the winter (Tables 3.4 and 3.5).



SPATSIZI PLATEAU  
WILDERNESS PARK

Figure 3.1

- Climate Stations  
B.C.M.O.E.



Scale 1:1,000,000

Table 3.1 General Precipitation Conditions in Spatsizi Park comparing Spatsizi Plateau to the Cassiar/Skeena Mountains (Source: B.C. Ministry of Environment )

	<u>Plateau</u>	<u>Mountains</u>
Mean Total Precipitation (mm) (Oct. 1 to June 27) (snow)	171 mm	251 mm
Maximum Snow Depth (cm)	less 70 cm	80 to 150 cm
Mean Total Precipitation (mm) (June 28 to Sept. 30) (rain)	204 mm	261 mm

Table 3.2 Mean Monthly Precipitation from April to September in Spatsizi Park comparing the Spatsizi Plateau to the Cassiar/Skeena Mountains (Source B.C. Ministry of Environment).

	April	May	June	July	August	September
Spatsizi Plateau	8.5	16.5	30.5	39.5	37.0	32.0
Cassiar/Skeena Mts.	14.0	26.7	49.8	63.0	60.2	53.2

The precipitation gradient between the Plateau and Mountains is very sharp but in all areas it does not follow the exact boundaries of the two landform units, i.e. at some edges of the plateau rainfall is similar to that in the mountains.



Table 3.3 Comparison of Temperatures Between the Spatsizi Plateau and the Cassiar/Skeena Mountains (Source: B.C. Ministry of Environment)

	<u>Spatsizi Plateau</u>	<u>Cassiar/Skeena Mountains</u>
Coldest Temperature (January)	-29 C to -31 C	-18 C to -25 C
Mean Temperature (January)	-20 C to -21 C	-14 C to -17 C
Warmest Temperatures (July)	23 C to 26 C	19 C to 22 C
Mean Temperatures (July)	10 C to 12 C	8 C to 10 C

Table 3.4 Mean Temperatures from May to September Comparing Spatsizi Plateau to the Cassiar/Skeena Mountains (Source: B.C. Ministry of Environment).

<u>Zone</u>		May	June	July	August	September
Spatsizi Plateau	Mean Maximum	12.5 C	17.5 C	19.3 C	18.0 C	12.8 C
	Mean	2.3 C	9.3 C	11.5 C	10.6 C	6.1 C
	Mean Minimum	-2.7 C	1.5 C	3.9 C	3.2 C	-0.5 C
Cassiar/Skeena Mts.	Mean Maximum	10.1 C	14.2 C	16.9 C	14.8 C	10.0 C
	Mean	4.3 C	7.9 C	9.6 C	8.8 C	5.2 C
	Mean Minimum	-1.4 C	2.0 C	3.2 C	3.2 C	.4 C

Mean Maximum Temperatures from October to April are under 7 C in both zones.

The differences in precipitation are mainly attributed to the rain-shadow effect of the Coast Mountains compounded by the elevation differences of the mountains and plateau. Temperature differences, particularly in the winter, are due to the cold Arctic air lying in the valley bottoms while the warmer coastal air is found above the Arctic air in the mountains. (B. Marsh, pers. comm.).

In general, the period of lowest precipitation is April and May. June, July and August are the wettest months of the year and during this period total precipitation per month is about 40 mm. Weather through this summer period usually consists of cloudy and drizzly conditions. The longest period without rain from June through August is about 2 weeks (J. Pojar, pers. comm.).

Spring break-up on most of the lakes occurs by mid-June. Cold Fish Lake has been known to break up on or around June 10<sup>th</sup> most years (Walker, 1976). Runoff in the streams within the park starts in May, peaks during June and July and by September the flows are at, or near, the yearly average (Environment 1985a).

Stream temperatures are never very warm with the maximum temperatures reaching only 10 to 13 degrees Celsius by mid-August (Environment, 1977). Lake water temperatures are similar, rarely exceeding 12 to 13 degrees Celsius at the surface (Osmond-Jones et al, 1977).

### 3.3 Influence of Climate

The rain-shadow effect clearly removes Spatsizi from Coastal influences and gives it a northern continental climate creating

the boreal biogeoclimatic zones. The low amounts of accumulated snow in the upper Stikine area provide for good over-wintering for Stone's sheep, woodland caribou, mountain goats and moose. The generally cold temperatures of streams and lakes combined with the late break-up in late May or June results in slow growth and limited production of fish.

## 4.0 FLORA

The flora of Spatsizi Wilderness Park is diverse and visually striking in response to variations of climate and landscape patterns. The area has been relatively well researched botanically. In 1959, Szczawinski conducted a reconnaissance vegetation survey for the Provincial Museum in the vicinity of Cold Fish Lake. Welsh and Rigby (1971) from Brigham Young University gathered botanical information from northern British Columbia which included the Spatsizi. The most extensive studies were published by Pojar (1986) based on work for the Ecological Reserves unit in 1975. He sampled 325 reconnaissance vegetation plots in Gladys Lake Ecological Reserve and identified 370 species of vascular plants in the reserve alone. Given the additional variation in lowlands and the Skeena Mountains, the total number of plant species is probably in excess of 500. Recent work was conducted by Utzig *et al.* (1982) and Clement and Vold (1985). Clement in conjunction with the Ministry of Environment surveyed vegetation over the entire Spatsizi map sheet (104 H) and collected approximately 120 vascular plants.

### 4.1 Biogeoclimatic Zones

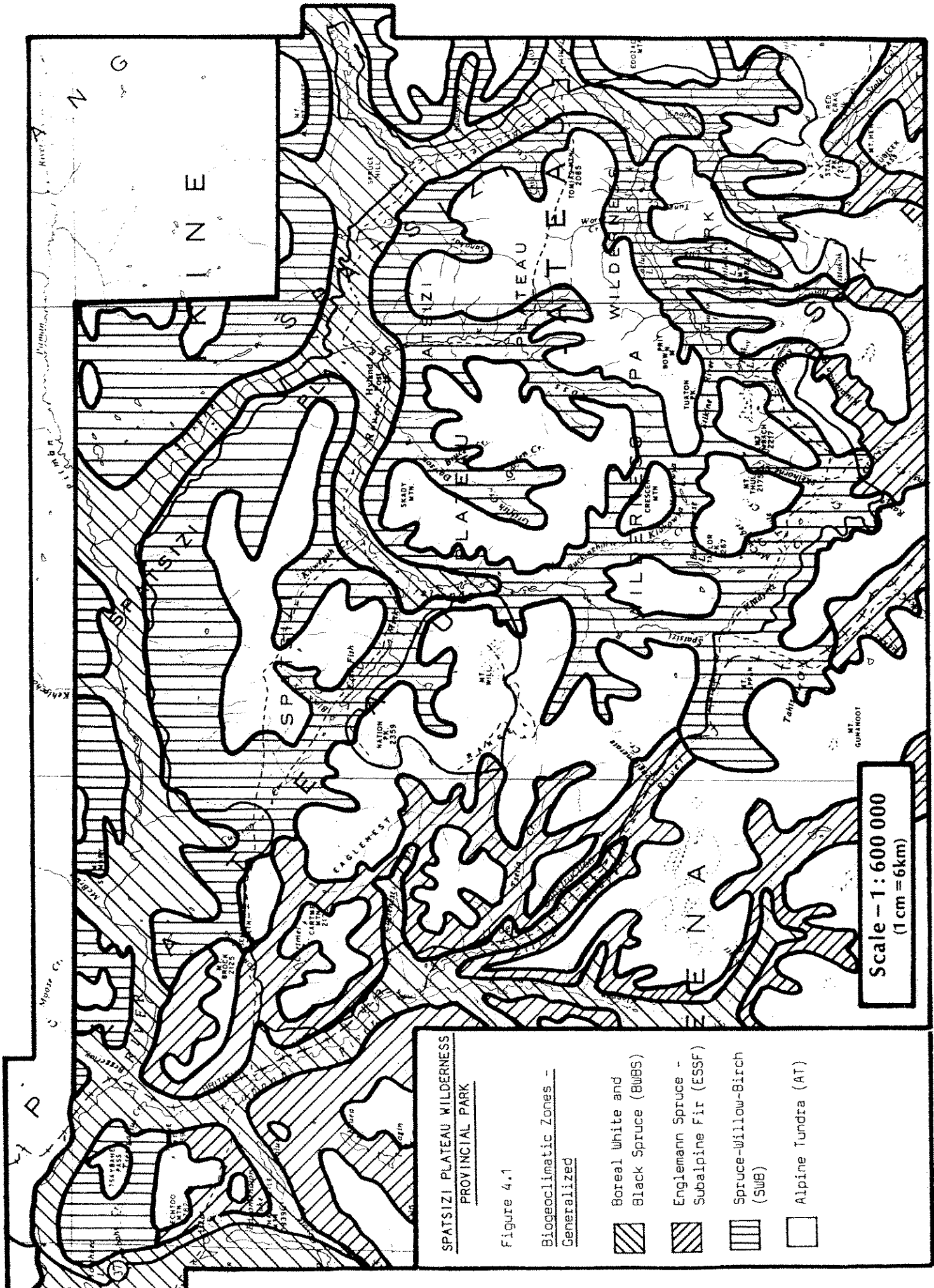
Biogeoclimatic Zones are landscape areas which, in response to variation in regional climate, develop characteristic types of vegetation. Zones present in the park are Boreal White and Black Spruce, Engelmann Spruce-Subalpine Fir, Spruce-Willow-Birch and Alpine Tundra (see Figure 4.1). Since there is no subzone variation within the park they are not described. Pojar *et al.* (1982) provides detailed information on biogeoclimatic zones and subzones.

The Boreal White and Black Spruce Zone (BWBS) occurs below 1220 meters in the Eaglenest, Spatsizi and Stikine valleys and is characterized by climax forests of white spruce. Canopy coverage is usually less than 50% and significant amounts of willow and glandular birch are often present. (Common plant names are after Taylor and MacBryde, 1977).

The Engelmann Spruce-Subalpine Fir Zone (ESSF) has a limited occurrence in the far western part of the park, confined to the Little Klappan, Tsetia, Eaglenest and McEwan drainages between 1220 meters and 1430 meters elevation. Paradoxically, Engelmann spruce is replaced by white spruce at this latitude and climax forests are dominated by subalpine fir in response to cold, snowy conditions. Also characteristic of this zone is the prevalence of avalanche tracks with a matted cover of Sitka mountain alder.

The Spruce-Willow-Birch Zone (SWB) between 1220 and 1525 meters elevation is typical of northern British Columbia with its harsh climate and probably best epitomizes the vegetation of Spatsizi Park comprising nearly 40% of its area. Developed in response to cold-air inversions in the high, wide valleys are large areas dominated by glandular birch, willow, Altai fescue and lichens. Thin bands of stunted subalpine fir on valley slopes form a stark contrast with a mosaic of shrubs and grassland below. This zone occupies the Ross, and Dawson, Upper Stikine drainages and associated tributaries.





The Alpine Tundra Zone (AT) varies in elevation from above 1430 meters in the west and above 1525 meters in the east. Here, the short growing season, extremes of temperature, desiccating wind and long snow durations inhibit the establishment of significant tree cover. At the lowest elevations glandular birch and subalpine fir form scrub thickets. The dominant vegetation form is Altai fescue tundra. On the Spatsizi Plateau rolling tundra dominates the landscape. Also prominent throughout the Zone are dwarf shrubs, low sedges and lichens.



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Figure 4.1

Biogeoclimatic Zones -  
Generalized

-  Boreal White and Black Spruce (BWBS)
-  Englemann Spruce - Subalpine Fir (ESSF)
-  Spruce-Willow-Birch (SWB)
-  Alpine Tundra (AT)

Scale - 1:600 000  
(1 cm = 6km)

## 4.2 Habitats

Habitats are the various vegetation components within biogeoclimatic zones characterized by dominant plant species occurring within a range of landscape positions. Different positions of the landscape exhibit variation in surficial material and soil development. See Table 4.1 for a summary of habitats.

In the Boreal White and Black Spruce Zone (BWBS) dominant habitats are Mesic white spruce-moss Habitat (Common plants: white spruce, Canadian bunchberry, heart-leaved arnica and mosses) and Moist white spruce-Labrador tea Habitat (common plants: white spruce, willow, Labrador tea, mosses). (Vegetation and soil information is from Clement and Vold, 1985). In this zone, floodplains are usually wide with Moist white spruce-floodplain Habitat present in a range of age classes. Often associated with floodplains are wetlands dominated by willows and sedges. Dry lodgepole pine and Dry trembling aspen Habitats have a limited occurrence.

Slopes in the Englemann Spruce-Subalpine Fir Zone (ESSF) are characterized by Mesic subalpine fir-moss Habitat in upper and middle slope positions (common plants: subalpine fir, creeping raspberry and mosses) and Moist subalpine fir-shrub Habitat in lower slope positions (common plants: subalpine fir, willow, common lady fern, Sitka burnet). Also prevalent are avalanche tracks which are often clogged with dense Sitka mountain alder and herbs such as common cow-parsonip, Sitka valerian and arrow-leaved ragwort. Wetlands are dominated by willows and sedges. Having a minor distribution are Moist krummholz-meadow Habitat and Dry subalpine fir-crowberry Habitat.

As indicated previously, the Spruce-Willow-Birch Zone (SWB) is extensive within the park. Consequently, valleys are predominantly covered with Dry glandular birch-lichen and

Table 4.1 Summary of Habitats in the Spatsizi Wilderness Park

Biogeoclimatic Zone	Habitat Name (1)	Dominate Soils (2)
<u>BWBS</u> Boreal White and Black Spruce	Mesic white spruce-moss Moist white spruce - Labrador tea Moist white spruce - floodplain Wetland  Dry lodgepole pine Dry trembling aspen	Brunisols Luvisols Regosols Organics Gleysols  Brunisols Brunisols
<u>ESSF</u> Engelmann Spruce - Subalpine Fir	Mesic subalpine fir - moss  Moist subalpine fir - shrub  Moist avalanche track Wetlands  Moist krummholz - meadow Dry subalpine fir - crowberry	Brunisols Podzols Brunisols Graysols Regosols Organics Gleysols Podzols Brunisols
<u>SWB</u> Spruce-Willow-Birch	Dry glandular birch - lichen Mesic/moist glandular birch - willow Mesic white spruce - subalpine fir  Wetland  Moist white spruce - moss  Mesic Altai fescue Mesic/moist krummholz - meadow Moist avalanche chute Dry trembling aspen - grass	Brunisols Brunisols Podzols Brunisols Organics Gleysols Podzols Gleysols Brunisols Podzols Regosols Brunisols
<u>AT</u> Alpine Tundra	Mesic Altai fescue Dry lichen Rock non-vegetated Moist sedge - moss  Mesic/moist scrub subalpine fir-glandular birch	Brunisols Regosols No soil development Brunisols Graysols Brunisols

1. The term mesic means average moisture conditions, as opposed to dry or moist.
2. Regosol - lacking soil development, Brunisol - minimal leaching of minerals, Podzol - moderate leaching of minerals including iron and aluminum, Luvisol - leaching of fine soil particles and minerals, Gleysol - soils formed under saturated conditions, Organics - soils composed of accumulated plant matter, in varying stages of decomposition.



Mesic/moist glandular birch-willow Habitats. Dry glandular birch-lichen Habitat occupies gravelly ridges, terraces and knolls where common plants are glandular birch, mountain cranberry, Altai fescue and lichens. Valley bottom areas having average to moist soil conditions are dominated by Mesic/moist glandular-willow Habitat where common plants include glandular birch, willow, Altai fescue, crowberry and mosses. The band of low trees on slopes is typically Mesic white spruce-subalpine fir Habitat (common plants include subalpine fir and mosses). Wetlands dominated by willows, sedges, bluejoint small reed grass and mosses form a significant component of valley floor vegetation. Habitats appearing in small amounts are Moist white spruce-moss, Mesic Altai fescue, Mesic/moist krummholtz-meadow, Moist avalanche chute and Dry trembling aspen Habitats.

The Alpine Tundra Zone (AT) is characterized by extensive areas of Mesic Altai fescue Habitat. Although grass-dominated, a large number of other plant species are common including dwarf willows, small awned sedge, boreal mugwort, moss campion, Arctic blue grass, white mountain-avens, showy Jacob's ladder, mountain monkshood and lichens. The Dry lichen Habitat is also a significant unit of the alpine. Occupying exposed, high, windswept ridges, lichens often cover more than 30% of the ground. Unvegetated rock areas are common at high elevations with sparse lichen and moss cover. The Moist sedge-moss Habitat occupies seepage slopes, depressions and drainageways. A thick, turfy moss layer is often present; dwarf willows, sedges and marsh marigold are common. At low elevations of the alpine Mesic/moist scrub subalpine fir-glandular birch Habitat forms impenetrable thickets.

Complete habitat descriptions are contained in Clement and Vold (1985). A detailed discussion of plant community types within the Gladys Lake Ecological Reserve is provided by Pojar (1986)

#### 4.3 Vegetation Sensitivity

Certain types of vegetation or habitats are more sensitive to foot traffic than others. In Spatsizi Park most of the dry habitats are relatively fragile. In the Spruce-Willow-Birch Zone the Dry glandular birch-lichen and Dry trembling aspen Habitats are relatively sensitive to over-use. Especially sensitive are the south and west-facing slopes. Most other habitats in this zone are relatively tolerant of use. For example, the Mesic/moist glandular birch-willow Habitat will exhibit strong resilience to use because of the durability and growth form of the dominant plant species.

In the alpine the Mesic altai fescue, Dry lichen and Moist sedge-moss Habitats are all relatively sensitive to use. The Dry lichen Habitat is most vulnerable. Many plants in the alpine environment are small and limited in occurrence. Concentrations of foot traffic should be diverted away from sensitive alpine areas. Non-vegetated rock and Mesic/moist scrub subalpine fir-glandular birch Habitats are relatively tolerant to heavy use.

In the Boreal White and Black Spruce and Engelmann Spruce-Subalpine Fir Zones (BWBS) dry habitats are prone to destruction through over-use.

#### 4.4 Fire Ecology

Historically, fire has been the greatest physical influence on the distribution and development of the majority of vegetation in northern British Columbia (Parminter, 1983). Mixed stands of white spruce and subalpine fir in the Engelmann Spruce-Subalpine Fir Zone (ESSF) are probably a result of fire history. As time progresses without fire events, forested areas move towards a

climax of subalpine fir because of its shade tolerance. Recovery after fire is slow; climax stands may not develop for 400 years (Parminter, 1983).

Post-fire vegetation in the Boreal White and Black Spruce Zone is characteristically dominated by a continuous herb and/or shrub layer. Glandular birch and willow, when dominant, may persist for many years. Lodgepole pine, with its ability to reproduce after fire is a common seral species. Balsam poplar and trembling aspen also perform seral roles. Climax forests of white spruce may be produced after 130 years (Parminter, 1983).

The mosaic of shrub and forested vegetation in the Spruce-Willow-Birch Zone (SWB) is a result of site conditions and fire history. Lodgepole pine may persist, especially on dry sites, developing into all-aged self-perpetuating stands. Shrub landscapes of glandular birch and willow have developed in response to repeated burning. In the absence of fire these sites may resume development of forests, although lack of suitable seedbed sites would effectively retard the process. The large size of glandular birch areas also limits forest establishment due to a lack of a seed source. White spruce, if established following a fire, may attain climax status within 150 years (Parminter 1983). Pure subalpine fir stands show relatively little sign of fire history. At higher elevations subalpine fir is very abundant and it occupies a variety of topographic zones. Consequently, when subalpine fir forests are burnt they readily re-establish themselves (Parminter, 1983).

No information is available for fire ecology in the Alpine Tundra Zone. Alpine areas subjected to burns likely suffer little effect. Observed sites near the park appear to be relatively untouched by fires burning up-slope from lower elevations.

## 5.0 FAUNA

Spatsizi Plateau Wilderness Park has an international reputation based on the quality and quantity of the wildlife present in the park. This is what originally drew attention to the area and was the main reason why a park was created. As wilderness areas and big game populations dwindle throughout the World the value of these wildlife resources will only increase.

### 5.1 Species Present

The presence of big game species is what originally interested Tommy Walker in the upper Stikine in 1948 when he was looking for a wilderness area for big game guiding. As the park has been developed it has become evident that it also has a wide variety of birds and non-game mammals.

There are nine species of fish present in Spatsizi Park: Dolly Varden Char, mountain whitefish, rainbow trout, Arctic grayling, lake trout, burbot, long nose sucker, prickly sculpin, and three spine stickleback, (Osmond-Jones, 1977). Of these only one species, the Arctic grayling is considered a northern species (Scott and Crossman, 1973). The major species not present in the park are the Pacific salmon which are only present in the Stikine River below the Grand Canyon of the Stikine. Rainbow trout, Arctic grayling and Dolly Varden char are the main game fish. Generally, the species present in the park are representative of fresh water species of the central interior of British Columbia.

Amphibians are limited to only two species, the northwestern toad (Bufo boreas) and the north wood frog (Rana sylvatica) and no

reptiles are present (PORD, 1982). The limited occurrence of reptiles and amphibians is due to the cold, dry continental climate that controls the park's environment where there is not enough moisture and heat available for these animals to effectively grow and reproduce.

Birds are particularly abundant with over 140 species identified in the park. The species present in the park represent birds found in coastal and continental areas as well birds representative of alpine, wetland and grassland habitats. For a more complete description of the birds present in the park see the Wildlife and Fisheries Inventory of Spatsizi and Tatlatui Provincial Parks British Columbia (Osmond-Jones et al. 1977).

Only three shrews and one species of bat are found in Spatsizi Park and once again this is a function of the harsh climate (Banfield, 1974).

Over 17 species of rodents are found in the park which represent a typical mix of the species found throughout the central interior of B.C. Within this group, several northern species are found including the Arctic ground squirrel (Spermophilus undulatus), northern or tundra red-backed vole (Clethrionomys rutilus) and the brown lemming (Lemmus sibiricus) (Banfield, 1974).

Thirteen species occur which represent most of the carnivores found in central B.C. This includes wolves and most of the important fur-bearing species such as marten, fisher, mink, weasel, wolverine, otter and lynx, and, although not a carnivore, the beaver (Banfield, 1974). These animals provide the resource base for commercial trapping in the park.

A complete list of all animals found in the park is found in the Appendices.

## 5.2 Big Game Species

The big game species found in Spatsizi Park include American moose (Alces alces), woodland caribou (Rangifer tarandus caribou), mountain goat (Oreamos americanus), Stone's sheep (Ovis dalli stonei), mule deer (Odocoileus hemionus), grizzly bear (Ursus arctos) and black bear (Ursus americanus).

Several aspects concerning big game in Spatsizi Park make the populations unique. One is that many other areas exist where these species can be seen, but only in Spatsizi Park, or, in areas close to the park, can this mix of species be seen together. Key to this mixture is the Stone's sheep which in Spatsizi Park, is close to the southern extremity of its range. In addition, the woodland caribou herd is one of the largest found in the province, containing 15% of the provincial caribou population (Jones, 1986).

### 5.2.1 Woodland Caribou (Rangifer tarandus caribou)

Caribou (reindeer) are found across North America and most of Eurasia bordering the Arctic Ocean. However, many of the Eurasian herds have been domesticated and wild herds are only present in the mountains of southern Norway and in the Soviet Union (Banfield, 1974).

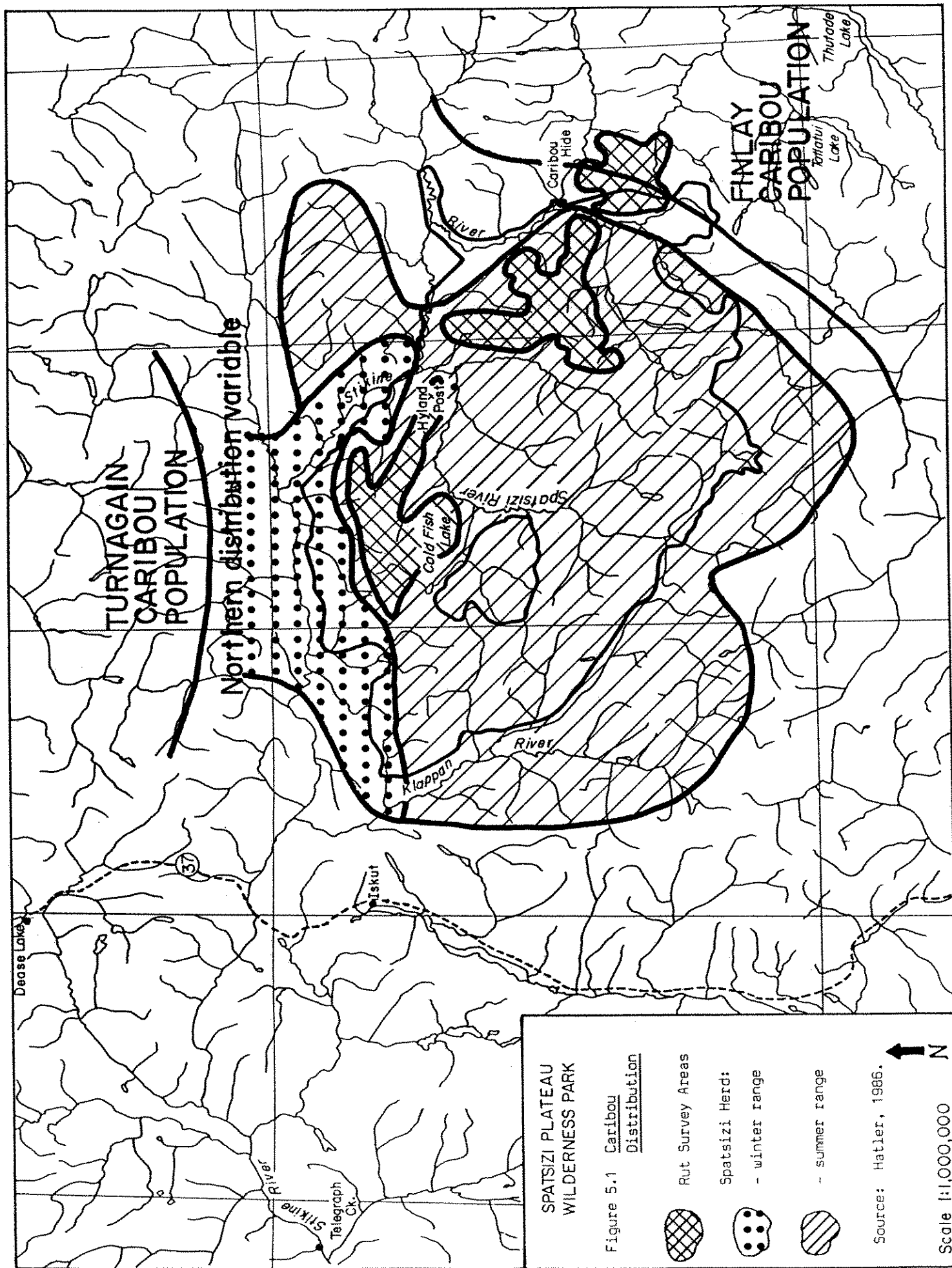
Woodland caribou are found across Canada and throughout the Yukon, Northwest Territories and in northern Alberta and Saskatchewan. In British Columbia, continuous distribution of caribou occurs as far south as the Skeena drainage. Caribou are found even further south but only in specific, geographically isolated populations (Banfield, 1974). Although the Spatsizi caribou herd tends to concentrate within the park boundaries, mixing between herds to the north and south does occur (Hatler, 1986). The population for caribou in the park for 1985 and 1986 was estimated at 1,600 animals (Jones, 1986).

#### 5.2.1.1 Caribou Habitat

Caribou in the Spatsizi area feed on ground vegetation, in particular lichen during the winter period as well as horse tails, sedges and twigs of willow and birch throughout the year (Banfield, 1974). Hence, the key to the presence of caribou in Spatsizi Park is the depth and hardness of snow (VanDrimmelen, pers. comm.). The caribou must be able to paw through the snow to forage and the low snowfall and cold, dry climate on Spatsizi Plateau permits successful forage throughout the winter. Hatler (1986) notes that during high snowfall years the caribou move around much more indicating difficulty in obtaining forage. Hatler, (pers. comm.) also notes that caribou calf survival is dependant on dry conditions during calving in early June. However, as was pointed out in Section 3.0, June is one of the wettest periods of the year.

#### 5.2.1.2 Caribou Distribution in the Park

As previously stated, the main caribou herd remains in the park for most of the year (see Figure 5.1). Mainly, the herd winters to the north in the Stikine Valley (and the slopes to the north). In late June and July the caribou move back and spread throughout the park singly or in small groups (Osmond-Jones et al. 1977). Hatler





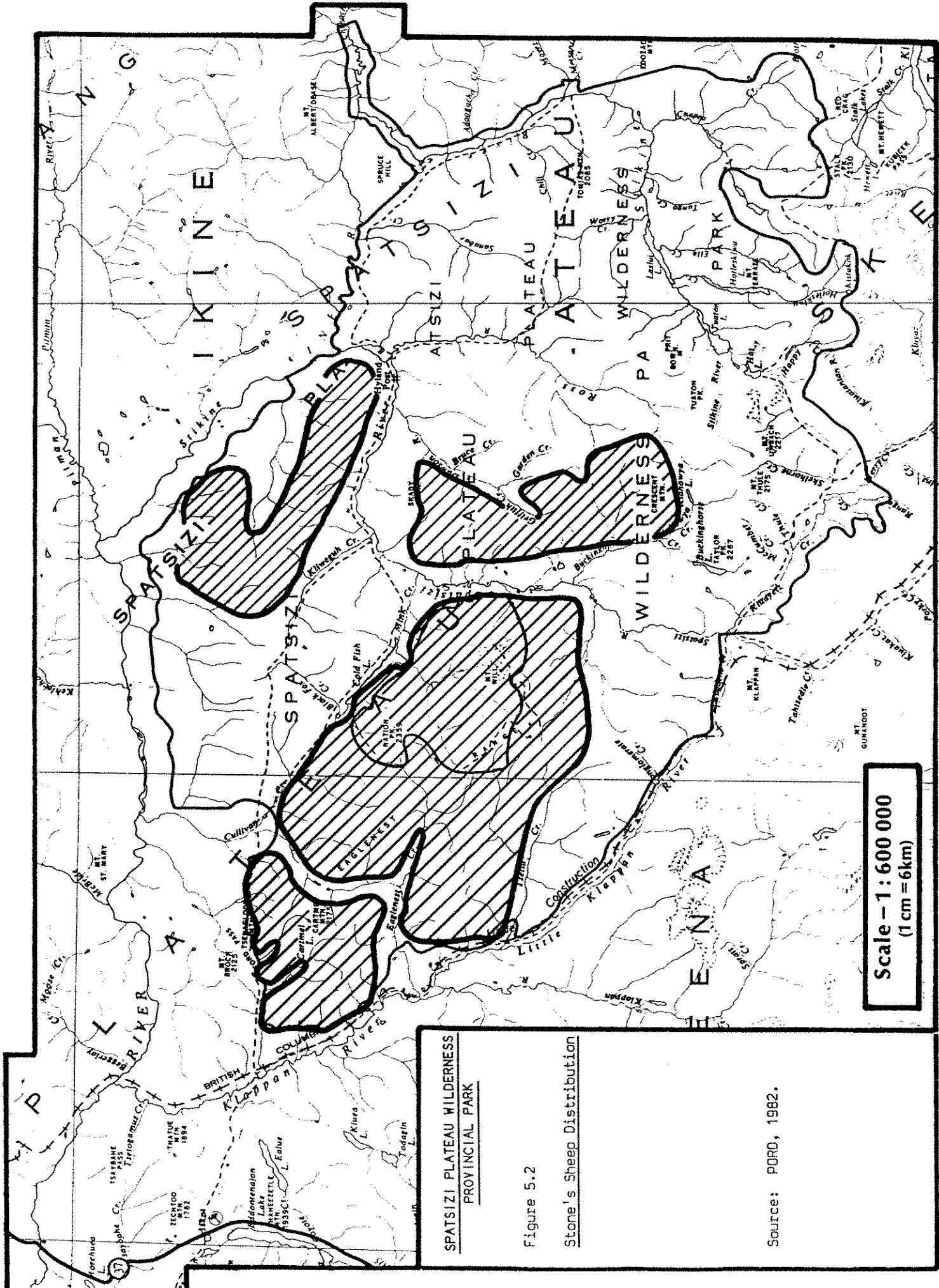
(Osmond-Jones et al. 1977). Hatler (pers. comm.) believes that the population in the park is one distinct herd. However, on the summer range there is evidence of population segregation between the north and south ends of the park. By mid-September the animals start to prepare for the rut and many of the animals move into three distinct areas for the rutting period (Figure 5.1). Radio-tagging studies have shown however that rutting takes place throughout the park not just in these three areas (Hatler, pers. comm.). After the rut, the caribou then slowly move back toward the wintering area in the Stikine River bottom.

Radio-collar studies (Hatler, 1986) also show that mixing does occur with other caribou populations to the north and south of the park. It has been shown that some of the animals that summer in the southern park winter with the Finlay population to the south. In the north, some animals from the Turnagain population over winter in the Stikine River area with the Spatsizi herd.

The chief predators of caribou in the park are wolves and grizzly bears and in the case of wolves it has been suggested in the past that wolf numbers may have to be controlled in order to protect the caribou populations (Bergerud and Butler, 1978).

#### 5.2.2 Stone's Sheep (Ovis dalli stonei)

Stone's sheep is one of two races of the dall sheep, which are found only in North America in Alaska, the Yukon and northern British Columbia. Stone's sheep are the more southerly race, mainly found in British Columbia with the dall sheep (Ovis dalli dalli) the more northerly race found only in the extreme northwestern corner of the province. The northerly race is creamy white in colour while the Stone's sheep is slaty brown. Stone's sheep is also distinguished from the dall sheep by its larger size (Banfield, 1974). Spatsizi Park contains a significant portion of the Stone's sheep population found in British Columbia



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Figure 5.2

Stone's Sheep Distribution

Source: PORD, 1982.

Scale - 1:600 000  
(1 cm = 6km)

(Van Drimmelen, pers. comm.). Population estimates for Stone's sheep in the park range from 400 to 600 animals and at present the PORD conservatively estimates the population to be 485.

#### 5.2.2.1 Stone's Sheep Habitat

Similar to the woodland caribou, Stone's sheep are ground foragers and require low snow depths and dry snow conditions in order to dig for forage. The most important food items include grasses and sedges and during the winter they will eat the tips of low lying shrubs (Banfield, 1974). Hence, the Spatsizi climate and vegetation is ideally suited for this species. In summer the sheep occupy the alpine tundra slopes of mountains while in the winter they descend to the lower, drier south-facing slopes. In heavy-snow winters they suffer population losses (Banfield, 1974).

#### 5.2.2.2 Stone's Sheep Distribution in the Park

The Stone's sheep are found in the three mountain ranges surrounding Cold Fish Lake. (Figure 5.2) (PORD, 1986). Winter migrations generally entail short distances into low snowfall, south-facing slopes. The Spatsizi Stone's sheep population is actually a small extension of large populations in the Kechika Ranges of the Cassiar Mountains.

#### 5.2.3 Mountain Goats (Oreamnos americanus)

Mountain goats are a western North American species found from southeast Alaska to Oregon. In British Columbia, a population is

found throughout the southern Rockies and along the mainland coast. In northern British Columbia goats are present in all mountain ranges from the Pacific coast to the east slope of the Rocky Mountains (Banfield, 1974).

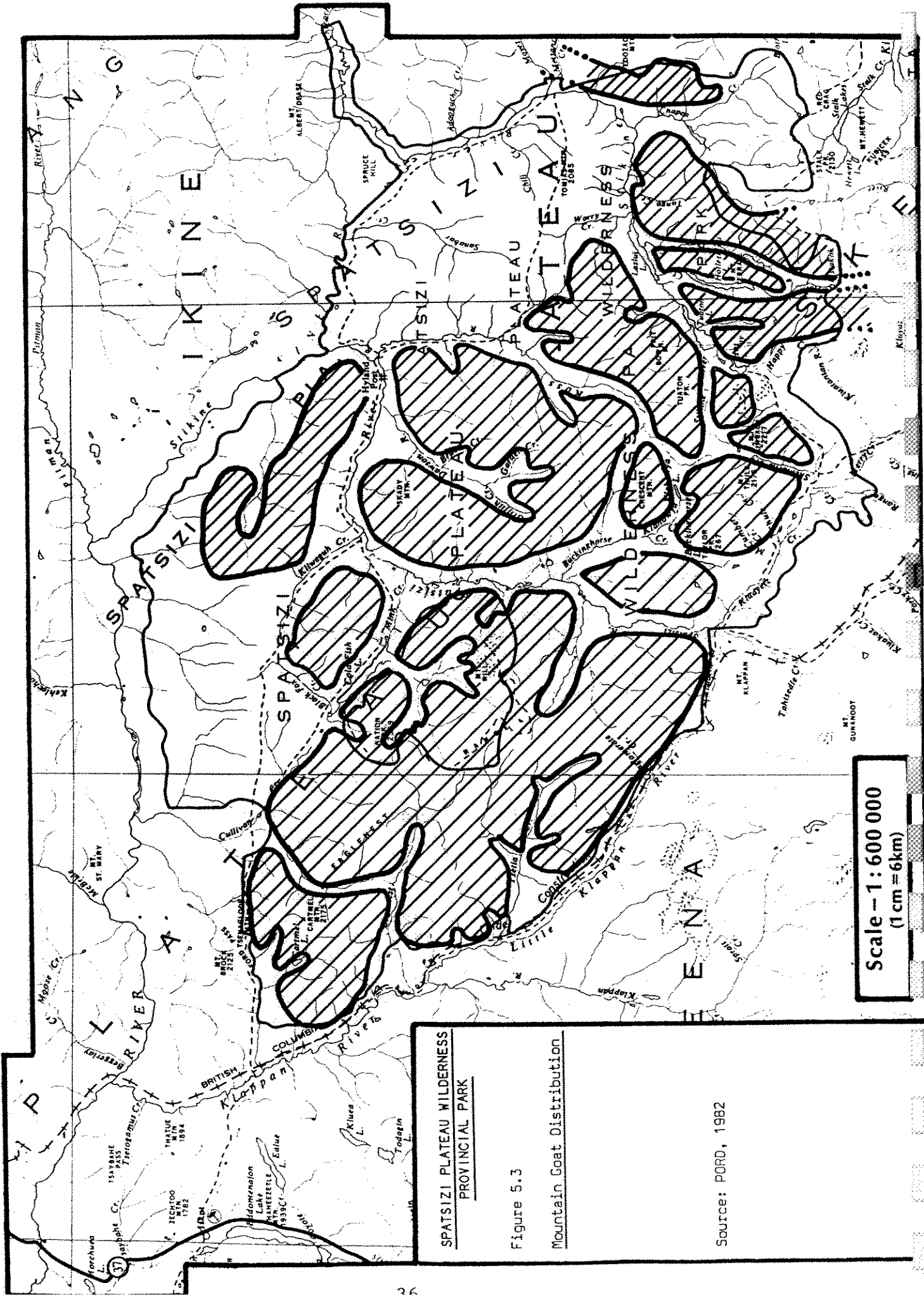
It is estimated that about 875 goats are present in the park (PORD) which represents a moderate density. The greatest concentrations of goats in the province are found along the mainland coast (VanDrimmelen, pers comm.).

#### 5.2.3.1 Mountain Goat Habits and Habitat

Mountain goat habitat obviously varies a great deal since they have a range that covers the wettest coastal climates to the driest interior climates. This is because, in most cases, they occupy very steep, wind-blown sites where snow cover is minimal. Mountain goat diet consists of grasses, sedges, and rushes in summer. In winter they also feed on subalpine fir (Banfield, 1974). Hence, vegetation found on the mountains in Spatsizi Park represent good goat habitat.

#### 5.2.3.2 Mountain Goat Distribution In the Park

Goats occupy the most rugged mountainous terrain and they can withstand deeper snow conditions than sheep (Banfield, 1974). Therefore, not only are goats found in the same areas as sheep but they are also found in most of the mountain ranges within Spatsizi Park (Figure 5.3) (PORD, 1982). Goats are known to migrate across valleys during spring suggesting that each mountain does not have a discrete population (Banfield, 1974). The winter distribution of



Scale - 1 : 600 000  
(1 cm = 6km)

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Figure 5.3

Mountain Goat Distribution

Source: PORO, 1982

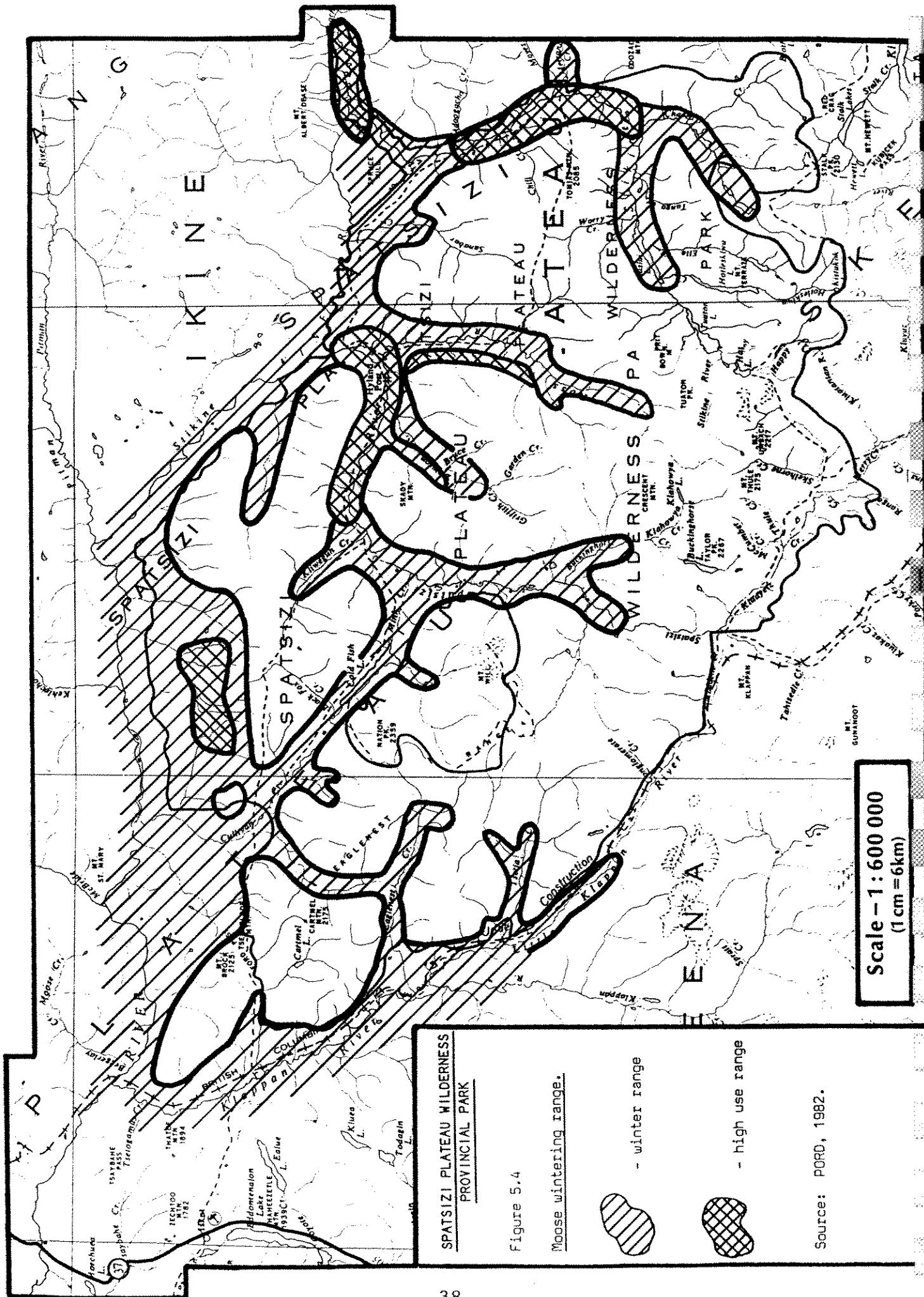
goats in the park is not well known. Hatler (pers. comm.) suspects that there is more seasonal movement of goats in Spatsizi Park than in other studied populations. In particular, the goat winter ranges are not well defined.

#### 5.2.4 Moose (Alces alces)

Moose are found across northern Europe and Asia as well as northern North America. During the past century moose have been expanding their range in British Columbia from the northern boreal zones into the central and southern province (Banfield, 1974). Moose distribution now covers almost the entire province except for most coastal areas. Moose are found throughout Spatsizi Park and minimum numbers are estimated at 400 animals (PORD, 1982).

##### 5.2.4.1 Moose Habits and Habitat

Unlike the other wild ungulates moose are solitary animals and are found in groups only in wintering areas where space is at a premium. Moose also migrate seasonally spending the summer in mountain areas and the winters in valley bottoms. Banfield (1974) notes, "although the moose is considered a forest dweller, it generally shuns monotonous climax coniferous forests for the subclimax stages of shrubby growth." Moose are browsers with the chief food sources being shrubs and aquatic vegetation in the summer and willows, aspen and birch in the winter (Banfield, 1974).



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Figure 5.4

Moose wintering range.



- winter range



- high use range

Source: PORD, 1982.

Scale - 1 : 600 000  
(1 cm = 6 km)

#### 5.2.4.2 Moose Distribution

In summer moose are found throughout the park and at all elevations. In the winter they tend to favour lower elevations as shown in Figure 5.4 (PORD, 1982). Most winters the moose are found on the valley bottoms.

#### 5.2.5 Mule Deer (Odocoileus hemionus)

Mule deer is a North American species with a range from Mexico to northern British Columbia (Banfield, 1974). The occurrence of mule deer in Spatsizi Park is sporadic. Small pockets of deer exist where climate conditions are favourable such as near Hyland Post, Bug Lake and in the upper Spatsizi River. Population numbers vary from year to year depending upon winter survival and there are probably less than 50 deer in the park (Hatler, pers. comm.).

#### 5.2.6 Grizzly Bear (Ursus arctos)

The grizzly bear, closely related to the European brown bear, once occupied all of western North America. Now, however, there are only a few in Mexico and in the western United States and most are found in British Columbia, Yukon, Northwest Territories and Alaska (Banfield, 1974). It was estimated that there were 130 grizzly bears in Spatsizi Park. However, recent grizzly bear habitat capability analysis by the B.C. Wildlife Branch suggests that the park likely supports about 50 animals.



#### 5.2.6.1 Grizzly Bear Habits and Habitat

Grizzly bear occupy a wide variety of habitats from coastal rain forest to alpine and subalpine forests. Their feeding habits are omnivorous and include plant roots in the spring, berries in the fall and mice and ground squirrels. They will hunt moose, sheep, goats or black bears if an opportunity occurs. Territory sizes for individual animals are not well known since they range over great distances. In some studies they have been recorded covering 50 miles in a day. During the winter grizzlies establish dens, usually in the high mountains, remaining dormant from mid-November to April (Banfield, 1974).

#### 5.2.6.2 Grizzly Bear in Spatsizi Park

Osmond-Jones (1977) reports that signs of grizzly bear are common throughout the park. However, they appear to be more common in the southern mountains between Buckingham and Laslui lakes and in the Gladys Lake Ecological Reserve. Actual information on the ranges of grizzly bears in the park is limited and it is not known how many of the bears remain in the park throughout the year. Osmond-Jones (1977) suggests that there should be ample range in the park for the estimated population. Grizzly bears are also known to prey on caribou calves (Bergerud and Butler, 1978) but the relative impact of this predation has not been well documented.

#### 5.2.7 Black Bear (Ursus americanus) and Wolves (Canis lupus)

It is estimated that there are about 100 black bear in Spatsizi Park (PORD, 1982). The black bears seem to be concentrated in the

lower valleys areas as opposed to the higher alpine areas. Most observations are in the northern portions of the Park. They are not commonly seen due to heavier forest cover in the valleys where they hide to avoid grizzlies. (Osmond-Jones et al. 1977).

It is estimated that there are about 100 wolves in the park (PORD, 1982). They are found throughout the park but it is suggested that wolves tend to congregate more in the fall at the caribou rutting areas while in the winter they move down into the river bottom caribou wintering areas (see Figure 5.1) (Osmond-Jones et al. 1977).

### 5.3 Wildlife Management

#### 5.3.1 History of Wildlife Research in the Park

Management of the Spatsizi area began with the granting of a guiding territory, including most of the Stikine River drainage upstream of the Klappan River, to Tommy Walker in 1948. Walker was first drawn to this area because of information from other people suggesting that it was an area rich in wildlife and Cold Fish Lake would be a good base for a guiding operation. Walker guided in the area from 1948 to 1968, during which time the Spatsizi gained an international reputation for big-game trophy hunting, particularly for Stone's sheep and caribou. The presence of goats, moose and grizzly bear also added to its desirability as a place to hunt. Over the 20 years that Walker guided in the area he became concerned about the future of the Spatsizi as a wilderness area as did many of the influential hunter clients.

During the winter periods Walker promoted his concerns with prominent individuals such as Ian McTaggart-Cowan of U.B.C. and government managers and politicians. He presented a brief to the B.C. Government in 1960 to make people better aware of the values of the Spatsizi area (Hazelwood, 1976).

By the late 1950's the first scientific studies were conducted by the B.C. Museum staff including Szczawinski (1958) and Guiget (1959). Wildlife studies began in 1961 with the work by Geist (1966, 1971) with his PhD Thesis on Stone's sheep and a text book on sheep behaviour and evolution.

The first provincial government surveys were done during 1962 (Hartman, 1963). This, and work done in 1971, was summarized in a more complete survey done by Harper and Gosling, (1972). Surveys done by Luckhurst (1973) and Sinclair (1976) improved the knowledge of winter habitat for Spatsizi caribou (Bergerud and Butler, 1978).

In 1975, the Gladys Lake Ecological Reserve and Spatsizi Plateau Wilderness Park were established. As well, due to concerns of preserving the wilderness in the Spatsizi area the "Spatsizi Association for Biological Research" was established dedicated to "aiding in the perpetuation of the living resources of Spatsizi" and "contributing to an understanding of how to conserve resources of a similar type". This group included notable researchers such as Dr. V.J. Krajina and Dr. Ian McTaggart-Cowan as well as Tommy Walker.

By 1975 the level of public awareness of Spatsizi was high. Knowledge of the amount of trophy hunting and the disclosure of hunting infractions by the guide-outfitter at that time resulted in great concern being expressed for the Spatsizi wildlife populations. As a result of public and governmental concern about

wildlife in the park a number of studies were carried out (Osmond-Jones, 1977, Bergerud and Butler, 1978, and Haber, 1978). (PORD, 1982). The results indicated that it was possible to over-harvest the game populations. As a result of these studies guide quotas and Limited Entry Hunting were established in 1977 (PORD, 1982).

From 1980 to the present the main emphasis has been on caribou winter range and migratory route research including radio-collar studies tracking caribou movement throughout the park. This work, and wildlife counts in the park, are part of a joint program which includes the Parks and Outdoor Recreation Division's wildlife biologist, various B.C. Ministry of Environment staff, and D. Hatler, biologist for the Spatsizi Association for Biological Research. At present, the B.C. Wildlife Branch is preparing wildlife capability mapping for the park and surrounding area.

As a result of this extensive research program in the park the Parks Branch managers now have some of the best data on wildlife populations in the province to manage the wildlife resource.

### 5.3.2 Management of Hunting in the Park

The Order-In-Council creating Spatsizi Park in 1975 specifically states that "hunting and fishing within sustained yield limits, is permissible". Since the inception of the park, hunting has been a major issue with environmentalists throughout British Columbia. The protest over hunting became front page news when the Green Peace organization entered Spatsizi Park and attempted to confront the big-game guide and his clients in 1979.

Continuing studies and yearly game counts have established a solid basis for population estimates of the big game species. The hunting guides are given specific quotas for big game harvest and public hunting is managed by a limited entry draw (LEH) whereby only a limited number of hunters are allowed to hunt in the park each year. The guide quotas are low, reflecting a high success rate of guided hunts. Conversely the number of Limited Entry Hunting Permits is higher reflecting a low success rate by resident hunters.

The 1986/87 hunting quotas, population estimates, and estimates of harvest for Spatsizi Park are presented in Table 5.1. These quotas are established by the Parks and Outdoor Recreation Division based on yearly population estimates and applying conservative harvest rates. Hence, the chance of over-harvesting is reduced by conservative management. Further, Spatsizi Park is divided into several wildlife zones and populations of the big game species are estimated for each zone (Figure 5.5). When guide quotas are made it is also specified how many animals can come from each zone which insures a uniform harvest throughout the park. At present the Caribou Mountain zone is closed for goat hunting.

### 5.3.3 Big Game Guiding in the Park

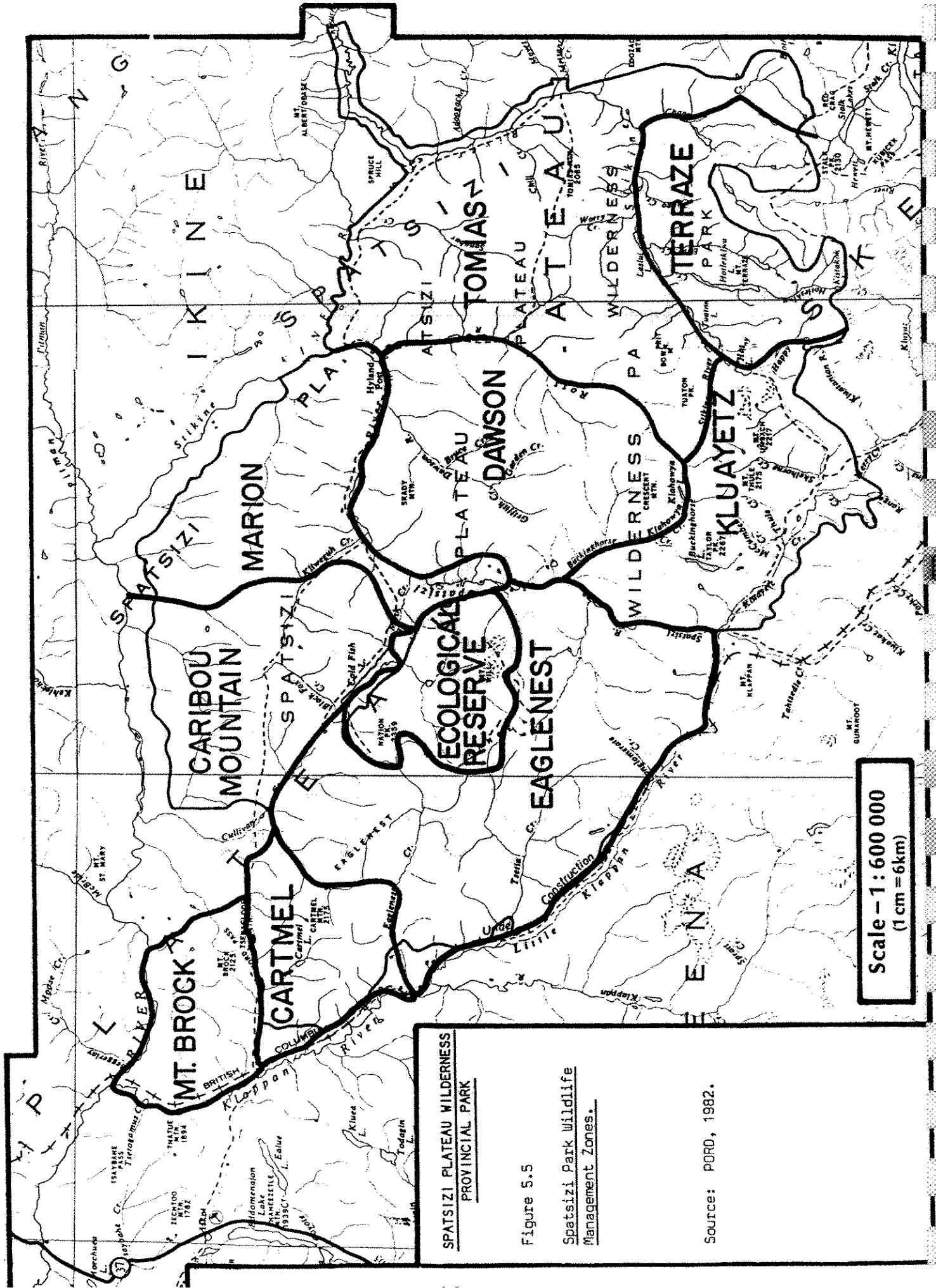
Big Game Guiding has occurred in the park area since at least the early 1940's and a guiding territory was awarded to Tommy Walker in 1948. Walker held the territory until he sold it in 1968. It has changed hands three times since then and is presently owned by Collingwood Brothers Guiding based in Smithers. As can be seen in Figure 5.6 the Collingwood territory and Spatsizi Park follow almost the same boundary line.

Table 5.1 Big Game Population and Harvest Estimates  
 (Source--B.C. Parks and Recreation Division, Prince George)

<u>Species</u>	<u>Populations Estimate</u>	<u>Target Harvest Rate %</u>	<u>Guide Quota</u>	<u>Resident LEH Permits</u>	<u>Average Yearly* Harvest 1976 - 1984</u>
Mountain Goat	875	3%	13	36	12
Stone's Sheep	485	2%	7	37	8
Caribou	1,600	1.5% **	21	52	17
Grizzly Bear	50	3%	2	7	1.4
Moose	400	15%	40	75	28
Black Bear	100	n/a	4	n/a	1.5
Wolf	100	n/a	10	n/a	2

\* Up till 1974 all the animals were taken by guides, since 1974 60% to 70% are taken by guides the rest by resident hunters.

\*\* "Analysis of population data indicated that harvests should not exceed 1.5% of total numbers when most animals taken were bulls 4 years and older. This harvest rate was about one-half of the calculated net annual recruitment into the harvested sex-age class and therefore allowed for an increased proportion of bulls in the population." (Jones, 1985).



**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Figure 5.5  
Spatsizi Park Wildlife  
Management Zones.

Source: PORD, 1982.

Table 5.2 List of Guides and Registered Traplines in and around Spatsizi Park.  
(Source: B.C. Ministry of Environment)

Guides

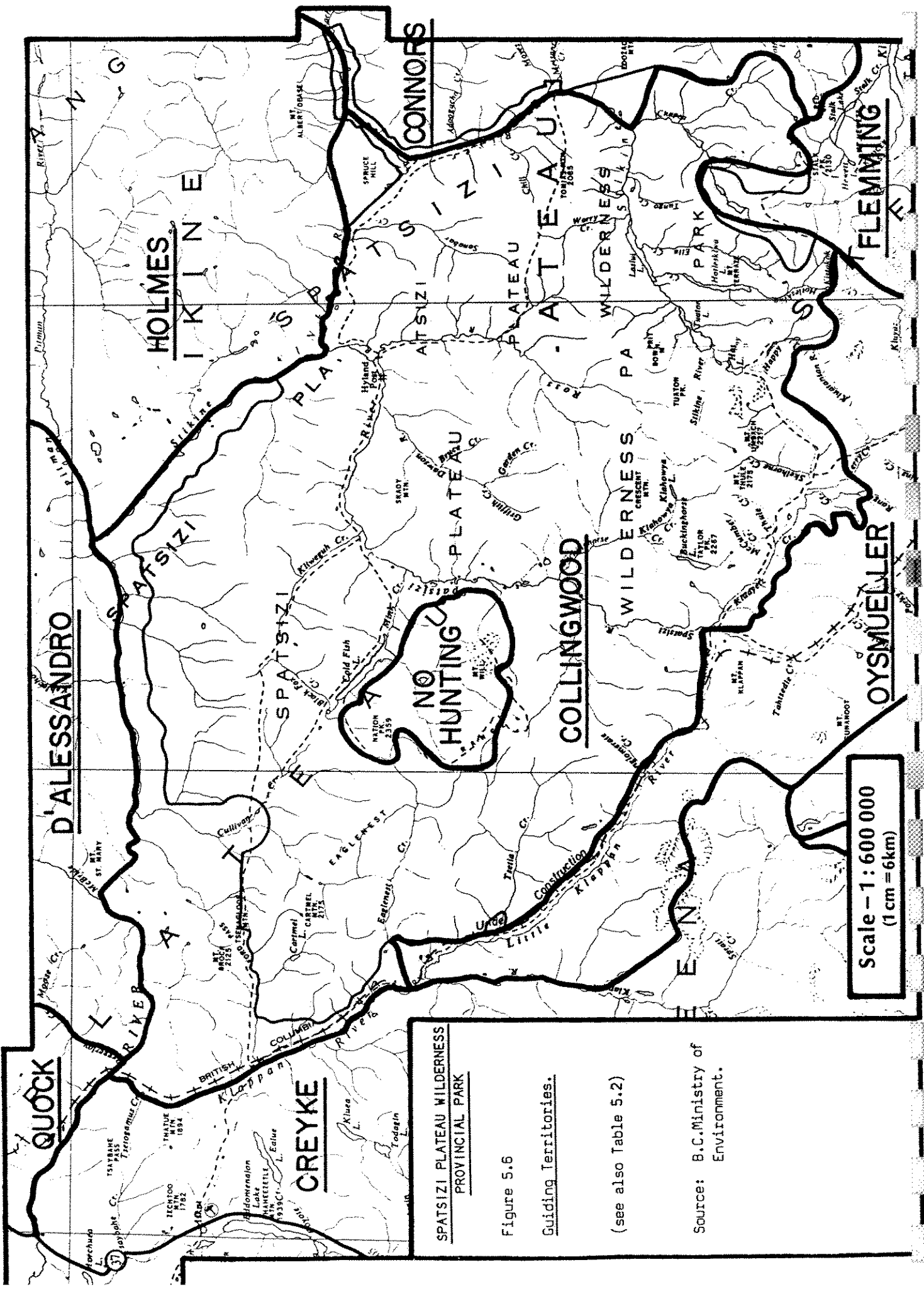
<u>Name and Address</u>	<u>Certificate #</u>	<u>Date of Issue</u>
* Creyke B.D. Box 31, Cassiar B.C.	#56	January 24, 1973
Dysmueller K. RR#1 Kispiox Rd. Hazelton B.C. Comment-Borders the Park to the south.	#272	June 24, 1983
* Collingwood R.L. Box 235, Smithers B.C. Comment- Has his territory in the park.	#58(2)	Sept. 24, 1979
Connors B.K. 4080 Lansdowne Rd. Prince George B.C. Comment-Has some territory in the park and has 5 moose and 1 caribou quota.	#125(1)	Feb. 11, 1980
Flemming R. RR#1, Hazelton, B.C. Comment-Borders park to the South.	#(A90)	August 6, 1973
Holmes G.T. Box 742, Prince George, B.C. Comment-Has some territory in the park and has a 5 moose quota.	#366	April 29, 1986
* D'Alessandro C.L. Box 604, McBride, B.C.	#48	May 8, 1986
* Quock J. General Delivery, Iskut, B.C.	#336	March 27, 1985

Registered Trap Lines

<u>Number</u>	<u>Address</u>
0617T007	Kole R.A., Kole R.B., Kole R.J., Kole F.W., Sexsmith P, General Delivery, Hazelton, B.C.
0618T007	Morrison R.B., Morrison G.B., Morrison M.R., Lenor M., Morrison A.G., Box 370, Terrace, B.C.
0618T008	Moore J. General Delivery, Hazelton, B.C.
0619T002	Jordan A.E. Box 117, Terrace, B.C.
0619T004	Louie A., Louie R., General Delivery, Iskut
0619T006	Vacant
0620T001	Iskut Band, General Delivery, Eddontenajon, B.C.
0620T002	Reid R., Reid G., Reid B.N., Reid D., General Delivery Telegraph Creek B.C.
0621T008	Charette. C. General Delivery, Iskut

\*These territories would be in the proposed Recreation Area along the Stikine River as described in Section 7.4.





**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Figure 5.6

Guiding Territories.

(see also Table 5.2)

Source: B.C. Ministry of Environment.

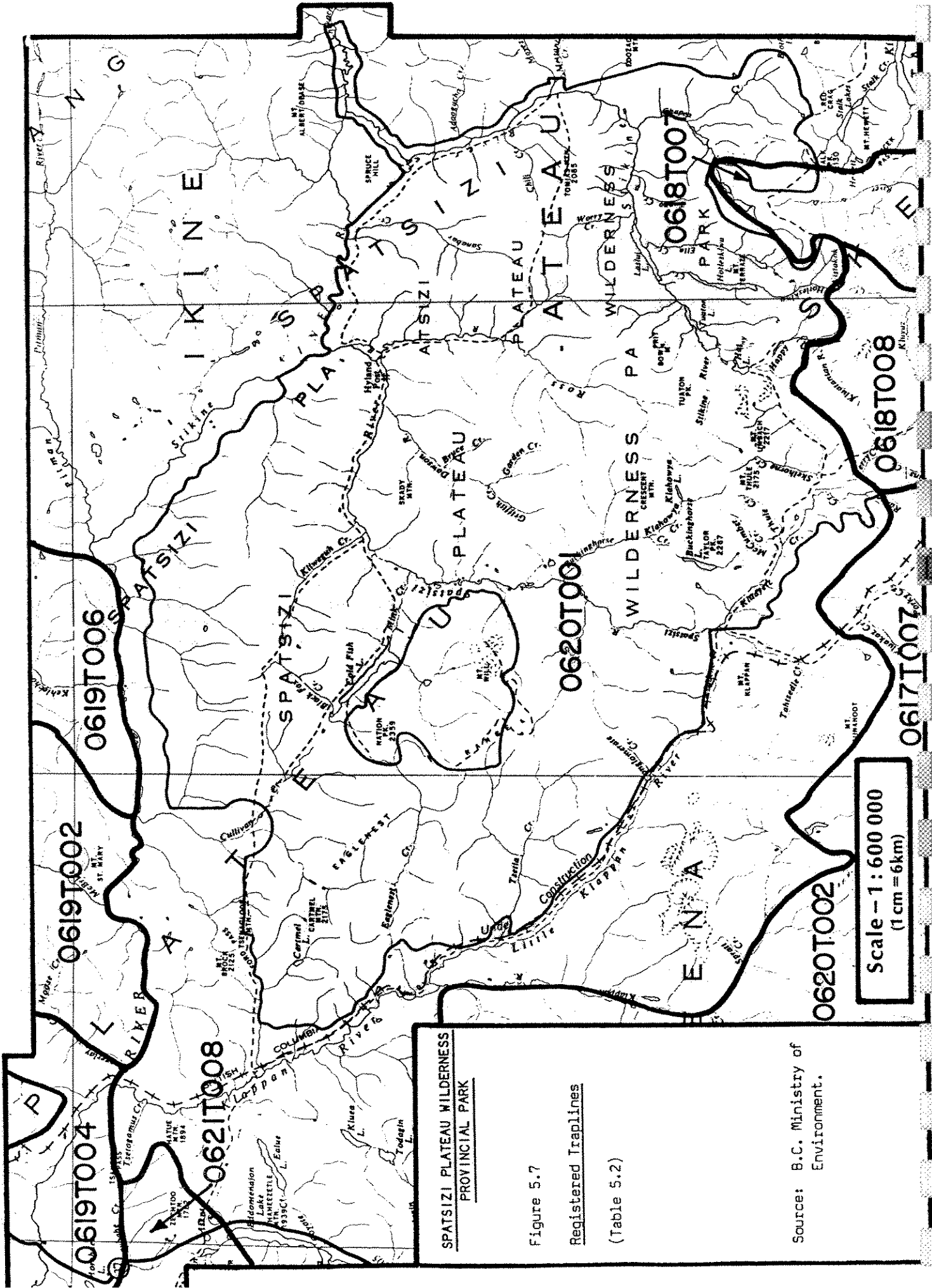
Scale - 1 : 600 000  
(1 cm = 6 km)

There are seven additional guiding territories along the park boundary. Connors and Holmes have small sections of their territories within the eastern edge of the park. Hence Connors, Holmes and Collingwood all have wildlife harvest quotas for the park. Collingwood has the largest proportion of the quota while Connors and Holmes, have a combined quota of one caribou and 10 moose. The total quota figures are found in Table 5.1. There are two other guides with territories on the park boundary (Oysmueller and Flemming). Table 5.2 provides a list of the Guides found in and around Spatsizi Park.

The presence of guiding in the park has provided positive benefits for park management. Tommy Walker's Cold Fish Lake Camp was bought by the B.C. Nature Trust and is now leased and maintained by Parks Branch as a facility open to the general public. Since the chief form of access and method of moving equipment into the area was by pack horse a major series of trails have been established. In fact, in recent times the use of pack horses has been reduced and many of the trails are starting to grow over with willow (Pojar, pers. comm.). As the park is a wilderness area, access throughout the area is difficult and expensive so the presence of the guides during the hunting season provides additional monitoring of the area.

#### 5.3.4 Trapping

The entire park is within Trapping Permit # 0620T001 which belongs to the Tahltan Band at Iskut (Figure 5.7). The members of the Band consolidated all their individual permits to create one large permit area. Little information is available on the amount of trapping going on in the park or the number animals taken. Most of the trapping done at present is along accessible areas like the Klappan River. A complete list of the trapping territories is found in Table 5.2, and their locations are portrayed by Figure 5.7. Territories 0618T008 and 0618T007 border the park to the



**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Figure 5.7

Registered Traplines

(Table 5.2)

Source: B.C. Ministry of  
Environment.

south, while four territories (0619T002, 0619T004, 0619T006 and 0621T008) will all be included in the proposed Recreation Area along the Stikine River.

Due to the present low level of trapping use in the park the issue of trapping has not been of major concern to date.

#### 5.4 Fisheries Resources

The quality and quantity of the fish resources in Spatsizi Park are not as substantial as areas just outside the park and definitely are not as good as many areas throughout the province. However, where present, the populations are valuable and are a major asset to the park.

##### 5.4.1 Fish Species Present in the Park

Nine species of fish are known to occur in Spatsizi Park. The two most common species are Dolly Varden char (Salvelinus malma) and mountain whitefish (Prosopium williamsoni). They are rarely found in large numbers but are found throughout the park in a wide variety of habitats and at very low densities. Both species are fished for and Dolly Varden can grow to a large size.

#### 5.4.1.1 Dolly Varden Char (Salvelinus malma)

Dolly Varden char is a member of the char family which includes the lake trout, eastern brook trout and the Arctic char. In some locations it is commonly called the bull trout. The species is found in eastern Asia and in western North America from northern California to Alaska (Scott and Crossman, 1973). With its body covered with red dots Dolly Varden gets its name from a Charles Dickens character named Dolly Varden who was a gayly dressed, young woman. (Scott and Crossman, 1973).

This fish is solitary in behaviour which allows it to feed with little competition for food. Consequently, individual fish commonly achieve weights of two to five kilograms and up to ten kilograms in some locations. In Spatsizi Park, Dolly Varden char up to four kilograms have been caught. Dolly Varden are slow growing taking five to seven years to reach maturity and very easy to angle, hence they are easily over-fished.

Dolly Varden are fall spawners (late August, September). They are very colourful in spawning condition with dark orangy hues on the body and white stripes on the fins. Dolly Varden tend to migrate into small streams, often just downstream of a waterfall, to spawn and can be frequently observed in these locations.

#### 5.4.1.2 Mountain Whitefish (Prosopium williamsoni)

Mountain whitefish are part of a large group of species called white fishes found throughout the northern hemisphere. However, the mountain whitefish is a North American species found in British Columbia, Alberta, and the northwestern United States. Of the five whitefish species found in British Columbia only the mountain whitefish is found in Spatsizi Park.

As the name suggests, white fish are small silvery animals and in Spatsizi Park they average about 0.1 to 0.2 kg in weight (Osmond-Jones et al. 1977). Whitefish are usually angled for in areas where no alternative species are found, hence they are normally not considered a significant sports species. Whitefish are found in greater densities than Dolly Varden and when found are usually in groups.

Whitefish, like Dolly Varden char, spawn in the fall and tend to school-up in specific locations such as large pools before spawning. On some occasions, if the water is clear, it is possible to observe these fish when they spawn.

#### 5.4.1.3 Rainbow Trout (Salmo gairdineri)

Rainbow trout have a wide distribution across North America and have been introduced to many other parts of the World (Scott and Crossman, 1973). The rainbow trout is found throughout British Columbia and is considered the prime sports fishing species by most anglers in the province.

In the park, most rainbow trout are found in the larger lakes. Distribution within the lakes is not uniform and in most situations the fish are concentrated at lake outlets or inlets (Hazelwood, pers. comm.). Except for outlet streams of lakes, rainbow are not found in great concentrations in the streams. In Spatsizi Park mature rainbow trout average about 0.4 kg in weight and most of the larger fish are five to six years old (Osmond-Jones, et al. 1977).

Rainbow trout are stream spawners and in Spatsizi Park they spawn in late June or early July. It is possible to see the trout spawning if the streams are relatively clear.

#### 5.3.1.4 Arctic Grayling (Thymallus arcticus)

Arctic grayling are found in northwestern North America and in most of Asia (Scott and Crossman, 1973). In British Columbia they are normally considered to be an Arctic drainage species. However they are present in Spatsizi Park which is in the Stikine River system, a part of the Pacific drainage. This makes the presence of Arctic grayling in the park an unusual occurrence.

The largest numbers of Arctic grayling are found in the Cold Fish Lake-Mink Creek area and the upper Stikine River below Laslui Lake. They are also found in lower numbers throughout the Spatsizi River. Generally, grayling are a prized sports species and are sought by anglers in the park (PORD, 1982).

Grayling spawn in the spring of the year in streams and may also be visible in streams during that period. Grayling tend to be surface insect feeders so surface feeding activity would be noticeable during the summer.

#### 5.3.1.5 Lake Trout (Savelinus namaycush)

Lake trout only occur in North America and are common in north-central British Columbia. Where abundant it is a highly prized sports species and is sought by anglers because of its large size which can be in excess of 25 kilograms in some areas (Scott and Crossman, 1973). Although lake trout are found mainly in lakes, the young fish are found rearing in streams as is the case in Mink Creek (Osmond-Jones et al. 1977). The lake trout is a fall spawner and usually spawns in lakes amongst boulders or cobbles (Scott and Crossman, 1973).

In Spatsizi Park lake trout have only been found in Black Fox and Cold Fish lakes where fish up to 8 kilograms in weight have been caught.

#### 5.3.1.6 Other Species

Burbot (Lota lota) is a fresh water cod found across Canada. They have been caught in Cold Fish and Gladys lakes (Osmond-Jones et al. 1977).

The long nose sucker (Catostomus catostomus) is found in the upper Stikine drainage in Tuaton, Laslui and Hotlesklawa lakes (Osmond-Jones et al. 1977).

Prickly sculpin (Cottus asper) has been found in Cold Fish Lake and it, along with the three spine stickleback (Gasterosteus aculeatus) are found in Tuaton, Klahowya and Laslui lakes (B.C. Ministry of Environment files, Smithers).

### 5.5 Fisheries Management

#### 5.5.1 Fisheries Research

The presence of a sports fishery has been known since Tommy Walker first established his guiding operation in 1948. However, to



date, the only fisheries work has been that of Ted Osmond-Jones in 1976 (Osmond-Jones et al. 1977). The fisheries work concentrated on the lakes where the best known fish populations occurred. However, numerous small lakes have not been sampled. The data included gill net sampling for fish, morphometric lake data such as depths and lake area and water quality sampling for oxygen levels and pH. (Table 5.3).

Work on the streams (Osmond-Jones et al. 1977) is cursory since most of the data collected was either visual observations or a result of angling. If, or when, more data on streams is required then stream population data, usually by electroshocking will be required. Electroshocking in streams close to the park (upper Spatsizi, Klappan and Little Klappan rivers) revealed very low densities of fish and similar densities should be expected in the park.

#### 5.5.2 Management of Fishing

The standard fishing regulations that apply to the region (Region 6 - Skeena) also apply to the park and no special regulations have been applied to the park (Chudyk, pers. comm.). The need for special regulations has never been required since most people fishing in the area keep a few fish for eating but release most of the catch. Guide summaries show annual catches of 200 to 600 rainbow trout from areas such as Cold Fish and Tuaton Lakes (Table 5.4). However, the "good fishing" in the park is restricted to very specific areas and most of these areas are well known. The work by Osmond-Jones (1977) shows that generally, growth rates of fish are very slow (due to cold water temperatures) and outside studies show that stream rearing populations are probably generally small (Harding, pers. comm.). Hazelwood and Pojar (pers. comm.) both point out that most park users including hunters, hikers and canoeists usually carry a fishing rod. As use increases in the park it will become evident that some form of

Table 5.3 Summary of Lake Survey Data (Osmond-Jones et al. 1977)

<u>Name</u>	<u>Surface Area</u> (hectares)	<u>Mean Depth</u> (meters)	<u>Maximum Depth</u> (meters)	<u>TDS</u> (PPM)	<u>Ph</u>	<u>Species Present</u>
Cold Fish	787	21	56	68	7.5	rainbow, lake trout, mountain whitefish Arctic grayling, burbot, prickly sculpin
Bug	25	-	-	-	-	no fish present
Black Fox	30	-	-	56	7.0	rainbow, lake trout, mountain whitefish Arctic grayling
Gladys	60	8	18	43	7.3	lake trout, Dolly Varden, burbot mountain whitefish, Arctic grayling
Happy	133	9	24	56	7.5	mountain whitefish
Tuaton	378	10	27	51	7.4	rainbow trout, Dolly Varden, long nose suckers, mountain whitefish
BuckingHorse	189	13	41	82	7.4	rainbow trout
Klahowya	40	5	11	40	7.3	rainbow trout
Chapeau	-	-	-	29	7.2	rainbow trout
Laslui	575	8	23	56	7.6	rainbow trout, mountain whitefish long nose suckers, Dolly Varden
Hotlesklwa	490	15	38	55	7.6	rainbow trout, mountain whitefish long nose suckers, Dolly Varden

Table 5.4 Guided Angler Summary for Spatsizi Park (PORD, Prince George, Guide Reports)

<u>Year</u>	<u>Rainbow</u>		<u>Dolly Varden</u>		<u>Grayling</u>		<u>Lake Trout</u>		<u>Whitefish</u>	
	<u>Kept</u>	<u>Released</u>	<u>Kept</u>	<u>Released</u>	<u>Kept</u>	<u>Released</u>	<u>Kept</u>	<u>Released</u>	<u>Kept</u>	<u>Released</u>
1980	66	607	5	39	6	110	-	-	-	-
1981	76	669	2	37	4	38	0	4	-	-
1982	83	511	6	27	13	64	7	52	4	22
1983	21	332* 70	5	36	5	49	-	-	-	-
1984	23	151	0	148	0	82	0	5	3	3
1985	253	466	29	40	4	158	-	-	-	-

\* 332 rainbow trout were not classified as either kept or released.

Angler days in 1982 were 152, 56 in 1983, and 128 in 1985.

regulation will be required to protect the stocks of fish and that some additional research will be required.

## 5.6 Wildlife Management Problems

### 5.6.1 Illegal Hunting and Fishing

Rumours of poaching and illegal hunting and fishing in the park have come up in recent years. During the construction of the B.C.R. Railway along the southwest boundary of the park it was known that a serious level of illegal hunting had occurred (Pojar, pers. comm.). Over-hunting for sheep in the Cartmel Lake area also occurred at this time (Hatler, pers. comm.). Since road access onto the B.C.R. grade is now only from Highway 37 near Tatogga Lake it is possible to better enforce the hunting regulations. The Spatsizi Park Supervisor and Ministry of Environment Conservation Officer are now based at Dease Lake and they can frequently check activity on the road.

Although enforcement has improved, evidence has shown that a small amount of illegal hunting still occurs along the B.C.R. grade since it is impossible to patrol there continuously.

Illegal fishing in the park is not a significant issue since there are much better fly-in areas outside the park (Ferguson, pers. comm.).

### 5.6.2 Fire Management

Section 4.4 shows that fire is an integral part of the ecosystem in Spatsizi Park. Fire is recognized as a natural method of maintaining wildlife habitats and evidence suggests that Indians increased ungulate populations by the use of fire (Friesen, 1985). Hence, there is a policy to allow fire to occur to maintain habitat diversity and ecosystem stability and the use of prescribed burning as a wildlife management tool might be considered appropriate options (Section 9.3).

Fire as a management tool, by the use of prescribed burning to enhance wildlife habitat, has yet to be practised in the park. Hatler (pers. comm.) suggests that controlled burning on the sheep range areas (Figure 5.2) and in moose wintering areas would be a useful wildlife management option.

The winter range of caribou (Figure 5.1) in the proposed Recreation Area is forested. The actual function of the trees in the development of the winter range is not known. Hence, at this time, there is great concern over the loss of the forest due to fire. Green, (pers. comm.) suggests that controlled burning in the forested areas to reduce the amount of fuel, hence reducing the chance of a major fire, may be a necessary management procedure if this habitat is to be preserved.

Prescribed burning may in fact be the only way to improve habitat because the Fire Management policy states that all fires will receive initial attack. This means that the chances of natural fire burning a large area of the park is reduced although "initial attack" may only mean detection and monitoring of fires. The role of fire in northern ecosystems has been studied by Parminter, (1983).

## 6.0 CULTURAL RESOURCES

### 6.1 Native Use of the Upper Stikine (Based largely upon Freisen, 1985 and Albright, 1984).

The upper Stikine and Spatsizi area has been inhabited by northern Athapaskan Indians since the retreat of the last ice age about 10,000 years ago. The Athapaskan people occupied a large area from northern Manitoba to the northern interior of British Columbia and portions of Alaska and the Yukon. As an adaptation to their sub-Arctic environment, the Athapaskans generally followed a nomadic, hunting and gathering life style. They lived together in small family groups usually composed of fewer than 100 individuals and they rarely developed permanent settlements.

It appears that three sub-groups of Athapaskan Indians - the Tahltan, Sikani and Tsetsaut - have occupied the Stikine region. However, the Tahltans have traditionally been the main group of Indians in the Stikine region while the Sekani and Tsetsaut occupied peripheral areas to the east and south. The Tsetsaut were a small group which disappeared in the early 1900's.

The Tahltan Indians are centered at Telegraph Creek but their large territory includes the Spatsizi Plateau and adjacent mountains. In prehistoric times summers were spent fishing on the lower Stikine River while winters were spent hunting in the uplands. The Tahltans were subdivided into several clans. The Thloadennis Clan was the main group who traditionally hunted in the territory now known as Spatsizi Park. They mainly used snares to capture caribou, sheep, goats, marmots, ptarmigan and ground squirrels. They also netted whitefish and trout from the lakes and rivers and tended to live in temporary shelters and tents. Unfortunately, the Thloadennis Clan died out by 1874 as a result of introduced diseases and warfare. About this time a group of Sekani Indians took over the territory of the Thloadennis Indians.

The Sekani Indians are traditionally from areas east of the Rocky Mountains. Within historic times they also occupied territories in the Finlay and Parsnip River drainages. Through inter-marriage with the Gitskan Indians in the late 1800's some Sekanis became established at Bear Lake in the Skeena drainage to the south. It was a small group of these Indians who formed a camp at Caribou Hide in the 1890's. These people primarily hunted caribou and they travelled through the region living mainly in temporary shelters. They used the now well known trails to trade at centres such as Telegraph Creek and Fort Ware.

In 1922 a severe epidemic killed almost everyone at Caribou Hide. The survivors decided to move and establish a camp near the north side of Metsantan Lake. About 1948, Metsantan was also abandoned and the "Bear Lake Sekani" either joined other Indians at Iskut or went to work for Tommy Walker at Cold Fish Lake. Subsequently, these Indians moved to the vicinity of Telegraph Creek but in the early 1960's they returned to Iskut. The Bear Lake Sekani amalgamated with the Tahltan people and are now referred to as the Tahltan Band at Iskut.

## 6.2 Archaeological Sites

Only within the last ten years has there been any systematic attempt to document the location and types of archaeological sites in the Spatsizi Park area. The first studies were those related to the B.C.R. railroad extension to Dease Lake and the proposed hydro-electric generation on the Stikine River; e.g., Apland (1980), Drew & Soffels (1974), Friesen (1982), Ian Hayward & Associates Ltd. (1982), Holmes & Mitchell (1972), Mange (1982), Wilson (1984), Wilson *et al.* (1982), Warner & Mague (1983). More recently, archaeological surveys have been carried out for the Mount Klappan coal development (Aresco, 1986). However, these studies deal primarily with the periphery of the park or areas to the west.

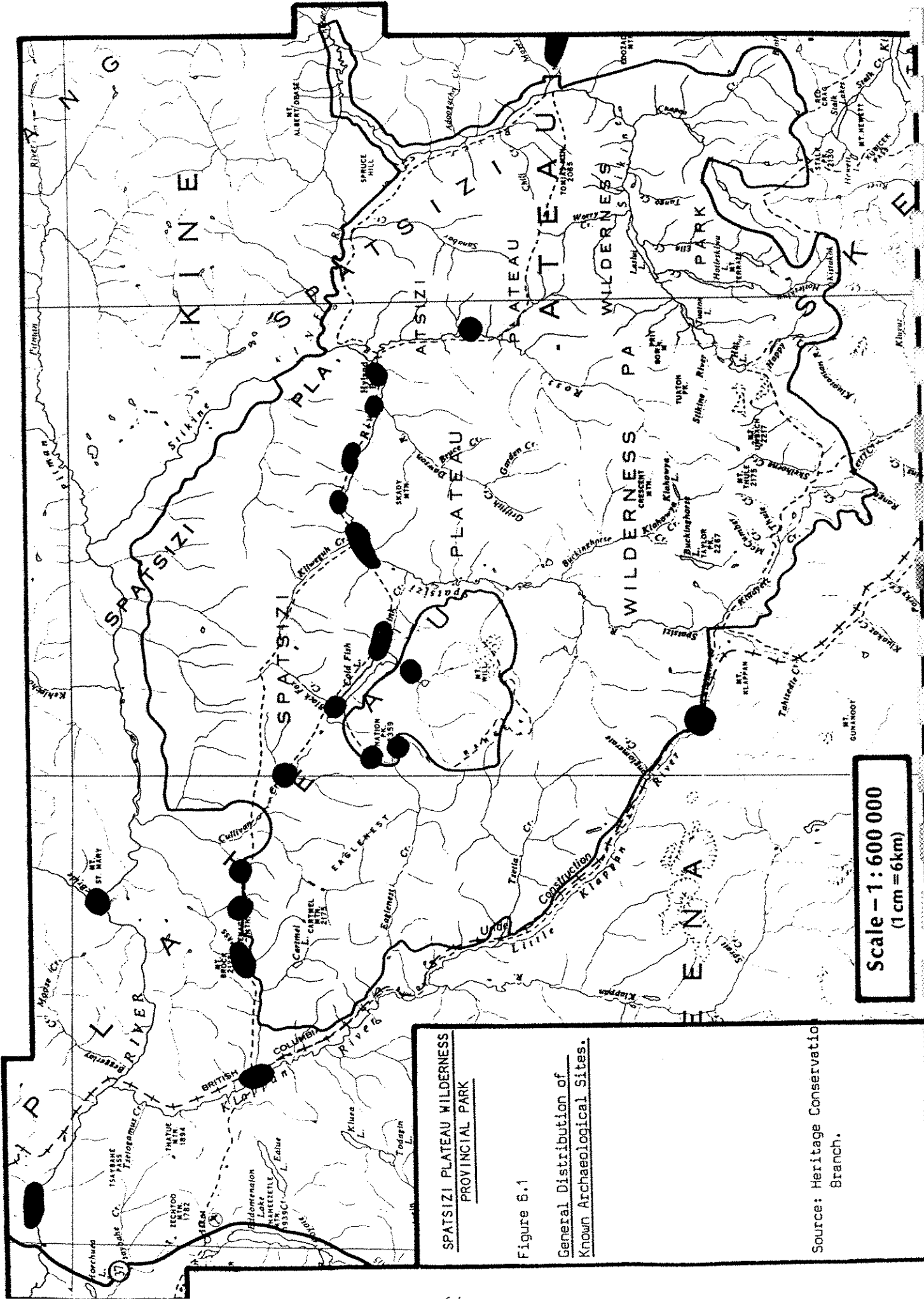
The studies of Friesen (1985) and Albright (1984) provide the most comprehensive sources of historic and archaeological information for Spatsizi Park. Based largely on Friesen's research, several dozen archaeological sites are now known to occur in and around the park. Figure 6.1 shows the general distribution of these sites. Not surprisingly, the majority of sites are found along water courses and along the Hyland Post trail which was an established aboriginal route. One of the most extensive archaeological sites in the park is found at the northwest end of Cold Fish Lake in the vicinity of Tommy Walker's cabins. This site appears to have been a relatively large base camp covering more than four hectares centered on an elevated terrace overlooking the lake. Other sites in the park also include seasonal hunting or fishing camps although many of them represent small isolated finds of single artifacts.

Much of the archaeological site data from Friesen's research is only now being catalogued and recorded by the Heritage Conservation Branch. This agency should be consulted for detailed lists, descriptions and locations of sites to be found within Spatsizi Park.

### 6.3 Early Exploration and Euro-Canadian History

The Tahltan Indians traditionally traded with their neighbours, especially the Tlingit who occupied what is now known as the Alaska Panhandle. In the late 1700's and early 1800's the Russians monopolized the fur trade along north coastal North America. The Tlingit operated as middlemen between the Tahltans and the Russians. This represented the Tahltan's first but indirect contact with Europeans.





**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Figure 6.1  
General Distribution of  
Known Archaeological Sites.

Source: Heritage Conservatio  
Branch.

Scale - 1:600 000  
(1 cm = 6km)

In 1824, Samuel Black, as an agent of the Hudson Bay Company, was the first European to visit the Stikine area. He crossed over from the Finlay River and briefly explored the Upper Stikine in the vicinity of Metsantan Lake and the Chukachida River. Subsequently, in 1826, Fort Connelly was established at Bear Lake about 125 km south of the current park boundary. This represented the first European settlement in this region of British Columbia. Through the 1830's there was considerable exploration and development of the fur trade by the Hudson Bay Company. About this time Dease Lake was established as a Hudson Bay trading post.

In 1838 Robert Campbell explored the Stikine River and possibly made the first recorded European contact with the Tahltans near the mouth of the Tahltan River. (Some accounts suggests that John McLeod contacted the Tahltans in 1834.)

During this period, the first series of epidemics began to decimate the Tahltan and Sekani Indians. Between 60% and 80% of these people were killed by disease by 1850.

In the early 1860's Buck Choquette explored the Upper Stikine River. At the same time, gold was discovered on the lower Stikine River and a minor gold rush ensued. This resulted in an influx of miners who travelled up the Stikine by boat to Glenora, a short distance downstream from Telegraph Creek. In the mid 1860's the upper Stikine was further surveyed for the development of the Collins Overland Telegraph Trail. This project was only completed to just north of Hazelton when the trans-Atlantic cable was successfully laid.

In 1873 gold was discovered near Dease Lake and in the following year the town of Laketon sprang up with a population of 2,000. This activity severely affected the Tahltan people with further epidemics and total disruption of their traditional life style and

trading patterns. The Indians then gathered together and established themselves at a settlement near the mouth of the Tahltan River.

In the late 1890's the area experienced the influx of several thousand more people on their way to the Klondike gold rush in the Yukon. Both the Stikine River and the old Telegraph Trail were used as routes to the Klondike. This resulted in the establishment of Telegraph Creek as a service centre. It became the new head of navigation on the Stikine River and was a telegraph station on a line linking Dawson City with the outside world. At the same time, missionaries entered the region and by 1910 they had established the first school. During this same year Chief Nanok of the Tahltans formally signed a declaration claiming their rights over traditional Tahltan territories.

#### 6.4 Recent Settlement Patterns

Guided hunting trips into the upper Stikine started shortly after the turn of this century. These excursions originated from the Kispiox Valley and continued into the 1940's. About 1926, Hyland Post was established as a trading center on the Spatsizi River. This operation appears to have continued for several years. In 1948 Tommy Walker arrived and established the now well known guide hunting operation on the Spatsizi Plateau. He built several cabins and structures at Cold Fish Lake, the center of his operation and he took over Hyland Post.

Tommy Walker worked hard toward coaxing the government to establish a wilderness preserve on Spatsizi Plateau. Through the 1950's and 1960's government, museum and university biologists visited the area and began to document its varied flora and fauna. However, it wasn't until 1975 that the present park and ecological

Table 6.1 Chronology of Major Historical Events

- 1741 Russians begin exploration and fur trade along Pacific coast
- 1793 Captain Vancouver charts areas near the Stikine River without recognizing the river.
- 1824 Samuel Black briefly visits the Stikine area.
- 1827 Fort Connelly established at Bear Lake
- 1834 John McLeod (H.B.C.) discovers Dease Lake
- 1837 Robert Campbell establishes H.B.C. post at Dease Lake
- 1839 H.B.C. leases coastal territories from the Russians
- 1861 short gold rush on the lower Stikine River
- 1860's Buck Choquette explores the upper Stikine River drainage
- 1866 upper Stikine River surveyed for Collins Overland Telegraph route
- 1874 Cassiar gold rush at Dease Creek (Laketon)
- 1896+ Klondike gold rush; missionaries arrive on lower Stikine River; Telegraph Creek established as a service centre; Indians establish a camp at Caribou Hide; Stewart established as a prospecting centre with a population of 10,000. 1901 telegraph line between Yukon and southern B.C. established
- 1910 Chief Nanok signs a formal "Declaration of the Tahltan Tribe"
- 1922 Metsantan established
- 1926 Hyland Post established
- 1932 Dease Lake-Telegraph Creek road improved for automobiles
- 1940's shipyard constructed at Dease Lake; transport of materials through Telegraph Creek and Dease Lake for airfield construction at Watson Lake
- 1948 Tommy Walker arrives at Coldfish Lake; Metsantan abandoned
- 1972+ Highway 37 connected to Highway 16
- 1970's extensive mine exploration activity; B.C.R. Dease Lake Extension
- 1975 Spatsizi Plateau Wilderness Park and Gladys Lake Ecological Reserve established
- 1980's studies for proposed hydro-electric generation on Stikine River
- 1982+ feasibility of several mines near Spatsizi Park are considered

reserve were established. This was partly the result of the considerable change in access to the Stikine region in the early 1970's and growing recognition of the area by outside people.

By 1972 river boats had stopped running on the Stikine River to Telegraph Creek and the first vehicles were travelling what is now Highway 37 between Highway 16 to the south and the Alaska Highway to the north. About the same time, the Dease Lake railroad bed was nearing completion and there was considerable mine exploration activity throughout the region. To date, very few mines have operated in the Upper Stikine but presently there appears to be a number of imminent mine developments at the margins of Spatsizi Park.

#### 6.5 Historic Routes and Trails

The Hyland Post trail connects historic and contemporary centers such as Telegraph Creek, Tahltan, Iskut, Cold Fish Lake, Hyland Post, Caribou Hide, Metsantan and Fort Ware. This appears to be one of the most significant aboriginal trails in the Upper Stikine region. As well, it has continued as an important route for guided hunting and is currently recognized as one of the main trails for recreational travel through the park. Aboriginal trails are also documented along the following drainages: Klappan, Little Klappan, Spatsizi and Stikine rivers and Didene and Kluayetz creeks.

An alternate trail to the Klondike apparently followed the Klappan River. A police patrol trail (R.N.W.M.P. Yukon Patrol) followed Kluayetz and Didene Creeks and the Little Klappan River. This latter trail approximates the aboriginal trail mentioned above and has probably been fairly important for centuries because it joins together a large number of significant valleys including the Klappan, Nass, Skeena and Spatsizi rivers.

The Collins Overland Telegraph Trail follows a route about 50 km south and west of Spatsizi Park. It crosses a divide between the Nass and Bell-Irving Rivers, follows portions of the Highway 37 corridor and crosses Mt. Edziza part way toward Telegraph Creek.

## 7.0 LAND TENURE AND PROPOSED BOUNDARY CHANGES

### 7.1 Introduction

Only six Orders-in-Council pertain to Spatsizi Plateau Wilderness Park. These are briefly summarized in the Appendices. The Appendices also provide a Schedule outlining a legal description of the boundaries of the park.

There is some difficulty in interpreting the legal description for Spatsizi Park. Various maps show significantly different park boundaries. For instance, 1:250,000, 1:500,000 and 1:600,000 government topographic and planimetric maps each show quite different boundaries in the Duti Lakes area to the southeast. Figure 7.1 shows the "correct" boundary for Spatsizi Park in the Duti Lakes area.

### 7.2 Proposed Boundary Changes

Although not formally approved, it is expected that there will be some minor "housekeeping" changes made to the boundaries of Spatsizi Park. A narrow section paralleling the Little Klappan River and B.C.R. railroad grade will be deleted along the southwest border of the park. A 'finger' of park land along the Chukachida River will also be deleted. At the same time, small areas will be added to the park in three areas: around upper Cullivan Creek; along a narrow fringe to the north parallel to the Stikine River; and a narrow fringe east of the Stikine River between Metsantan Creek and the Chukachida River. In all, 2,910 hectares will be added to the park and 5,775 hectares will be deleted resulting in a net loss of 2,865 hectares representing a change of less than one-half percent. Figure 7.2 portrays the location of these changes.

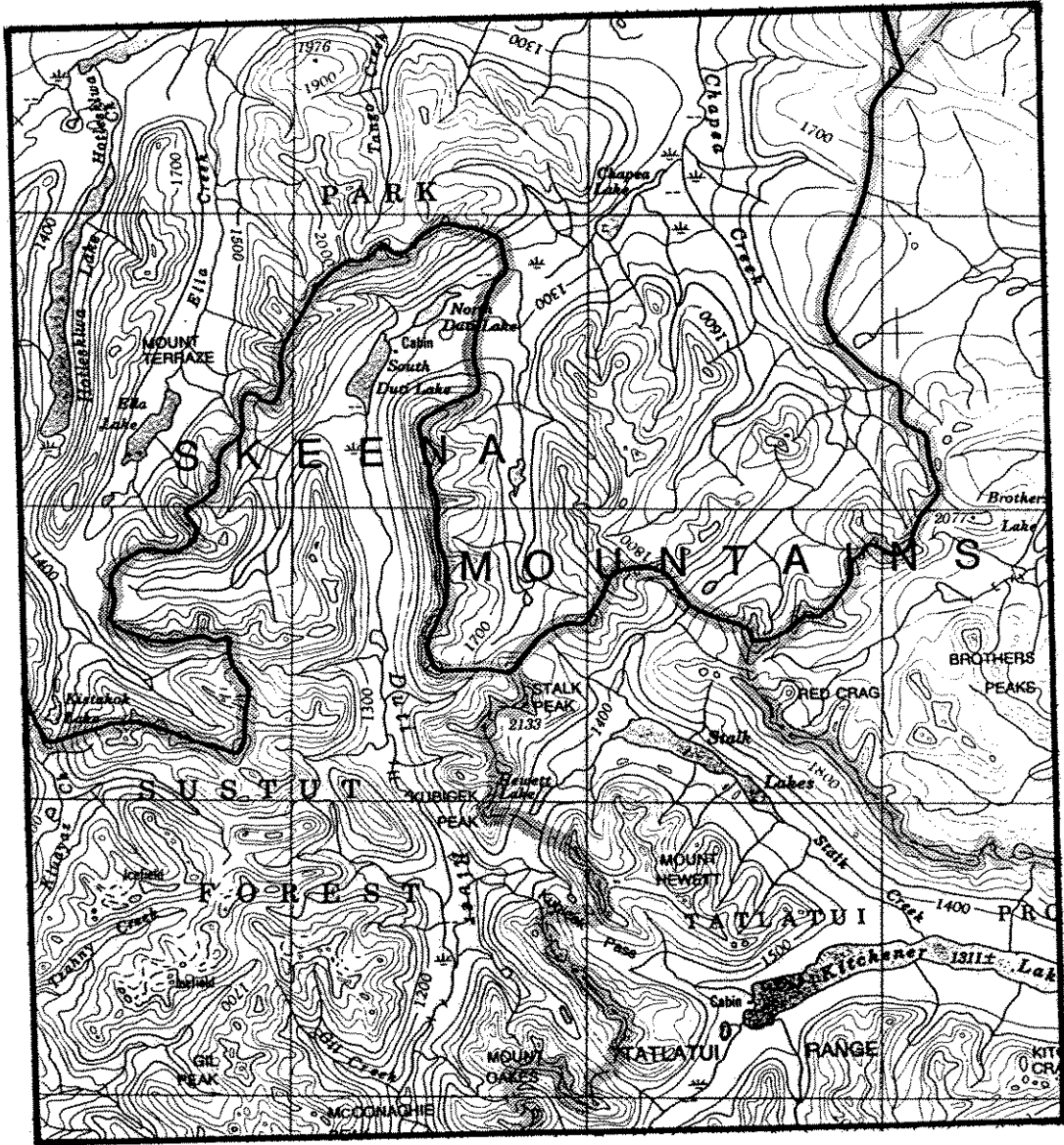


Figure 7.1 SOUTHEAST PARK BOUNDARY

Scale: 1:250,000

From N.T.S. Map 94-E  
Second Edition



### 7.3 Didene Creek Map Reserve

On February 10, 1986, a map reserve was established adjacent to Spatsizi Park at the confluence of the Spatsizi River with Didene and Kluayetz creeks. The purpose of the reserve is to control the area around the canoe/boat access trail from the B.C.R. railroad grade to the Spatsizi River. The map reserve represents about 2,270 hectares of unsurveyed Crown Land. It is made in favour of the Parks and Outdoor Recreation Division for a period of five years. The location of the reserve is shown in Figure 7.2.

### 7.4 Deferred Planning Area

Since 1981 a 142,000 hectare area along the north edge of Spatsizi Park and extending along either side of the Stikine River downstream to the Highway 37 bridge has been under review. The major issues under consideration were whether to include this area in the Provincial Forest or devote it to park and recreation use. Other issues include the presence of two mineral claims (the Brock and Ark mineral claims), a guide outfitters camp, a B.C. Hydro flooding reserve as well as wildlife habitat and sport fishing values. In particular, this area is important for caribou and moose wintering (see Section 5.2.1). In addition, the proposed Recreation Area would include an important mineral lick at Mount Brock (Hazelwood, 1976).

Recently the Wilderness Advisory Committee reviewed this area and recommended that it should be established as a Provincial Recreation Area on its lower portions and ultimately be established as a Class A Park on its upper portion, above Cullivan Creek.

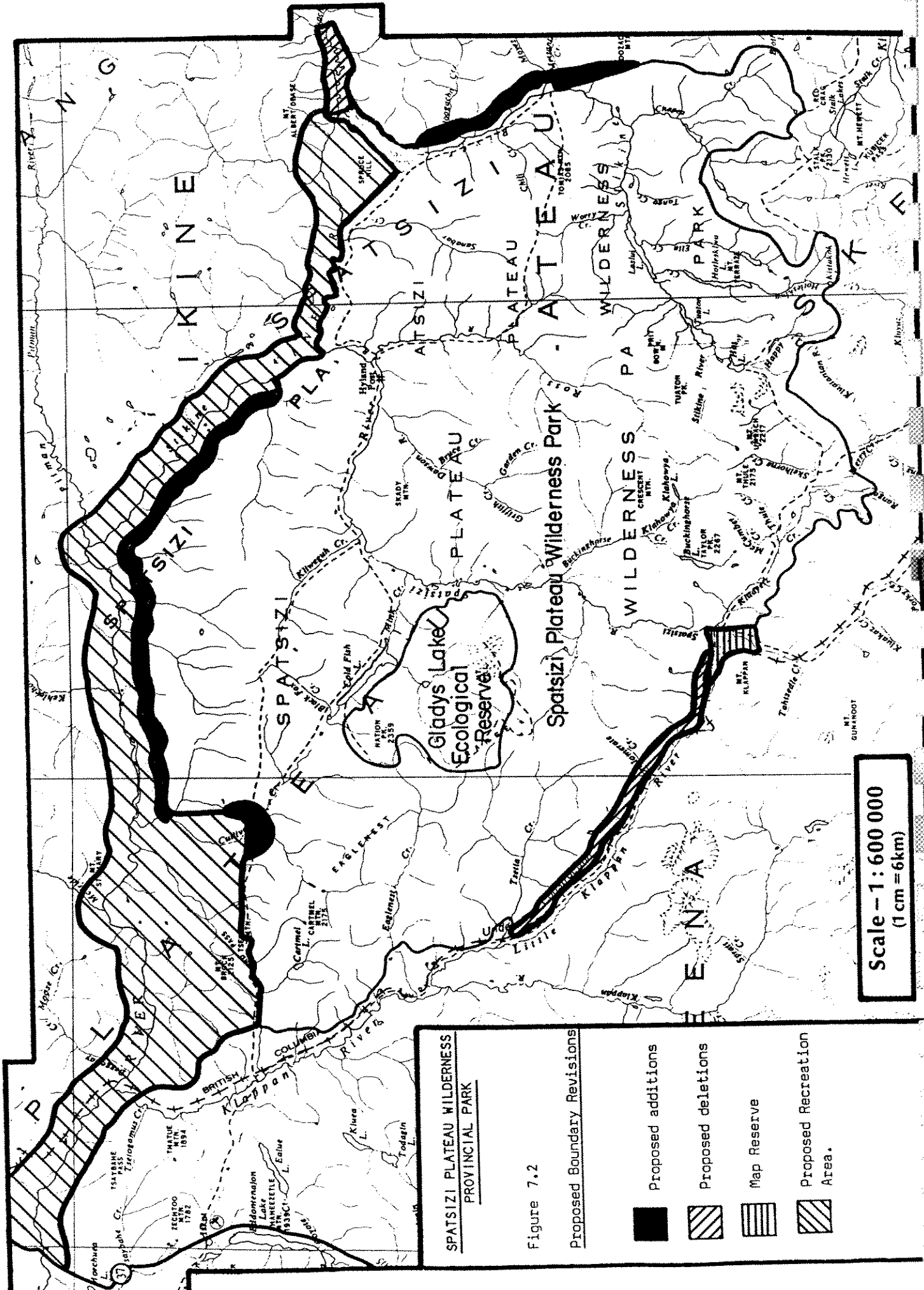


Figure 7.2

**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Proposed Boundary Revisions

- Proposed additions
- Proposed deletions
- Map Reserve
- Proposed Recreation Area.

Scale - 1:600 000  
(1 cm = 6km)

## 7.5 Other Land Reserves

A land status search by the Lands Branch revealed that there are a number of transportation, utility and government reserves both within and adjacent to Spatsizi Park. These reserves are listed and summarized in Table 7.1.

## 7.6 Gladys Lake Ecological Reserve

Gladys Lake Ecological Reserve is located entirely within Spatsizi Park. The ecological reserve was established separate from the park primarily to protect biotic features, especially populations of Stone's sheep and mountain goats.

Similar to the park, there has been some difficulties with the boundaries of the ecological reserve which were formally changed in 1981. This change was made to include important wildlife habitat mainly to the west of the original reserve and to include a significant mineral lick. At the same time, portions of the ecological reserve which bordered Cold Fish Lake were put into the park because there was no critical wildlife habitat in this area. Figure 7.3 shows the current boundaries of the ecological reserve which conform to the schedule accompanying Order-in-Council #726 which changed the reserve's boundaries. The area of the reserve is 48,560 hectares.

On June 27th, 1983, Order-in-Council #162 designated management and administration of Gladys Lake Ecological Reserve to the Parks and Outdoor Recreation Division. The Regional Director for the Northern B.C. Region of the Division at Prince George is named as the Warden of the ecological reserve. Unlike the park, hunting

Table 7.1 Summary of Non Park/Recreation Reserves

Reserve #	Reserve Description
0227453	B.C. Rail Reserve along the Little Klappan and Klappan rivers to the west and along the Stikine River to the north as far upstream as the Chukachida River (in the proposed Recreation Reserve)
0313412	B.C. Hydro flooding reserve to contour level at 2,700 feet (823 meters) upstream along the Klappan river to 7 km north of McEwan Creek and upstream along the Stikine River to 11 km east of Cullivan Creek (in the proposed Recreation Area)
0240063	Ministry of Forests and Lands, small reserve on west side of Stikine River 7 km north of mouth of Spatsizi River (in park)
0239276	Ministry of Forests and Lands, cabin on the north bank of the Stikine River 2 km east of mouth of McBride River (in proposed recreation area)
0335165	Ministry of Forests and Lands, lookout on Mount Sister Mary 4 km east of McBride River (in proposed Recreation Area)
0335634	Ministry of Forests and Lands, small recreation site on Klappan River (west side) near Ealue Lake
0224528	Fisheries and Oceans Canada, on lower Klappan River (west side) near Ealue Lake
6400453 & 0356487	Fisheries and Oceans Canada, two reserves on Stikine River just downstream from its confluence with Spatsizi River (in proposed Recreation Reserve)
0313623	Ministry of Forests and Lands, industrial reserve of about 869 hectares near mouth of Klappan River (in proposed Recreation Area)
6402503	Ministry of Energy Mines and Petroleum Resources, proposed Mount Klappan mining road along Nass and Klappan Rivers
0253450	Conch Methane Pipeline Proposal, a corridor along Kluayaz Lake, Kluatantan Creek and parallel to Stikine River from south of Caribou Hide to Chukachida River then east along Chukachida River (would presumably go through southeast portion of park at Tuaton and Laslui lakes if different portions of the reserve joined together in a logical manner)
0288786	Archaeological site along Mink Creek (in park)
6402500	Ministry of Environment and Parks, notation of interest at mouth of Klappan River (in proposed Recreation Area)
-----	Tree Farm Licence along south edge of southeastern portions of park
-----	Several coal licences along southwest edge of park (Mount Klappan Coal)
0230886	Gladys Lake Ecological Reserve (surrounded by park)



SCALE 1:250 000



N.T.S.No. 104 H

Figure 7.3. ECOLOGICAL RESERVE No.68  
GLADYS LAKE

and firearms are prohibited in the ecological reserve and it is illegal to land aircraft on Gladys Lake, under the Ecological Reserves Act.

### 7.7 In-Holdings

There are three surveyed lots within Spatsizi Park and there is a fourth lot within the proposed addition to the park at Caribou Hide. The three lots within the park are privately owned while the lot at Caribou Hide (Lot 5975) is Crown owned.

Lot 6686 at Cold Fish Lake is owned by the Nature Trust of B.C. (formerly the National Second Century Fund). This property, at the northwest end of the lake, was the headquarters for four different guide outfitters starting with Tommy Walker in 1948. In 1979, the 84 hectare lot was leased to the Parks and Outdoor Recreation Division for a period of 99 years. About the same time the Division purchased all buildings and improvements on the lot from the Nature Trust except for the Tommy Walker cabin.

Two lots, Lot 5773 (52 hectares) and Lot 5974 (108 hectares), are found at Hyland Post. These private lands are owned by Laurene Holdings at Smithers. The eastern most lot (Lot 5974) has an air strip and a few small buildings which are used by Collingwood guide outfitters.

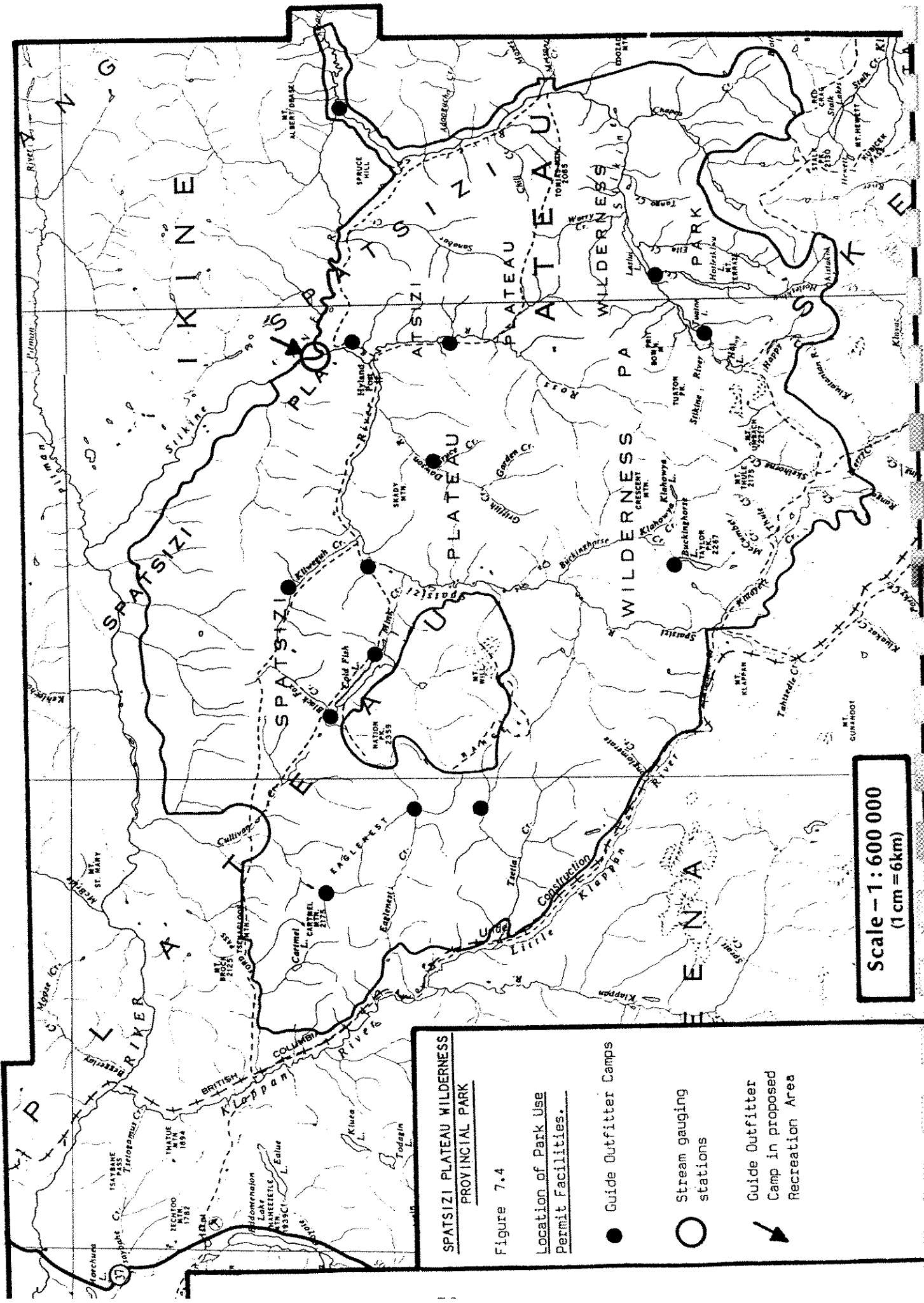
Sketch maps portraying the location and configuration of the private in-holdings are found in the Appendices.

## 7.8 Park Use Permits

A variety of Park Use Permits have been issued over the years for Spatsizi Park including ones for film production and river rafting. Presently, there are nine Park Use Permits (PUP's) issued: seven for guiding and outfitting, one for a snow measurement course and one for stream gauging stations. Table 7.2 summarizes the existing PUP's. Figure 7.4 indicates the general location of facilities related to the PUP's. Figure 5.6 in Section 5.0 shows the extent of guide territories which conform to their respective park use permits. A Table in the Appendices summarizes improvements and structures found at guide outfitters' camps in the park.

The PUP's are issued for a fixed period with terms commonly varying from one to ten years. Typical annual fees for a PUP in Spatsizi Park varying from \$60 to \$396. Within Spatsizi Park the terms and conditions of PUP's include the following features:

- annual reports from guide outfitters are required regarding fish and game harvests (species, locations, numbers, dates),
- annual reports from guide outfitters are required regarding the number of recreation users and the purposes of their visits,
- there are restrictions for PUP holders regarding the number of horses and their use in the park as well as guidelines for the construction and use of fish and game camps,
- there are regulations regarding the control of fires, the utilization of dead wood only for fires, the removal of all garbage and no operation of all-terrain-vehicles.



Scale - 1 : 600 000  
(1 cm = 6km)

**SPATSIZI PLATEAU WILDERNESS PROVINCIAL PARK**

Figure 7.4

Location of Park Use Permit facilities.

- Guide Outfitter Camps
- Stream gauging stations
- Guide Outfitter Camp in proposed Recreation Area



Table 7.2 Park Use Permits

<u>PUP #</u>	<u>Expiry Date</u>	<u>Permittee and Purpose</u>
853	March 31, 1987	R. Collingwood; for commercial guiding with specialization in wilderness and photographic trips, tourist parties and river rafting operated as Spatsizi Wilderness Trips.
974	March 31, 1987	R. Collingwood; for big game hunting guiding covering almost the entire area of the park for moose, mountain goat, sheep, caribou, grizzly bears and black bears operated as Collingwood Brothers Guides and Outfitters.
977	March 31, 1987	R. Collingwood; for operation of five fishing camps and eight campsites in conjunction with commercial and big game hunting guiding.
999	January 31, 1991	Water Survey of Canada; for four sites near the confluence of the Spatsizi and Stikine rivers for the maintenance and operation of stream gauges.
1098	March 31, 1987	B.K. Conners; for big game guiding along the eastern edge of Spatsizi Park east of the Stikine River and south of the Chukachida River
1262	March 31, 1987	D.A. Holmes; for big game guiding along the north side of the Chukachida River
1270	March 31, 1987	B.K. Conners; for a fishing and hunting camp on the south bank of the Chukachida River near its confluence with the Stikine River
1282	October 31, 1993	B.C. Ministry of Environment; for a snow course for measurement of snow depths and water equivalents in the upper Stikine River drainage area; note, another snow course is located in the Eaglenest Creek drainage within Galdys Lake Ecological Reserve
1608	December 31, 1986	W. Williams; for commercial (Non-Hunting) guiding

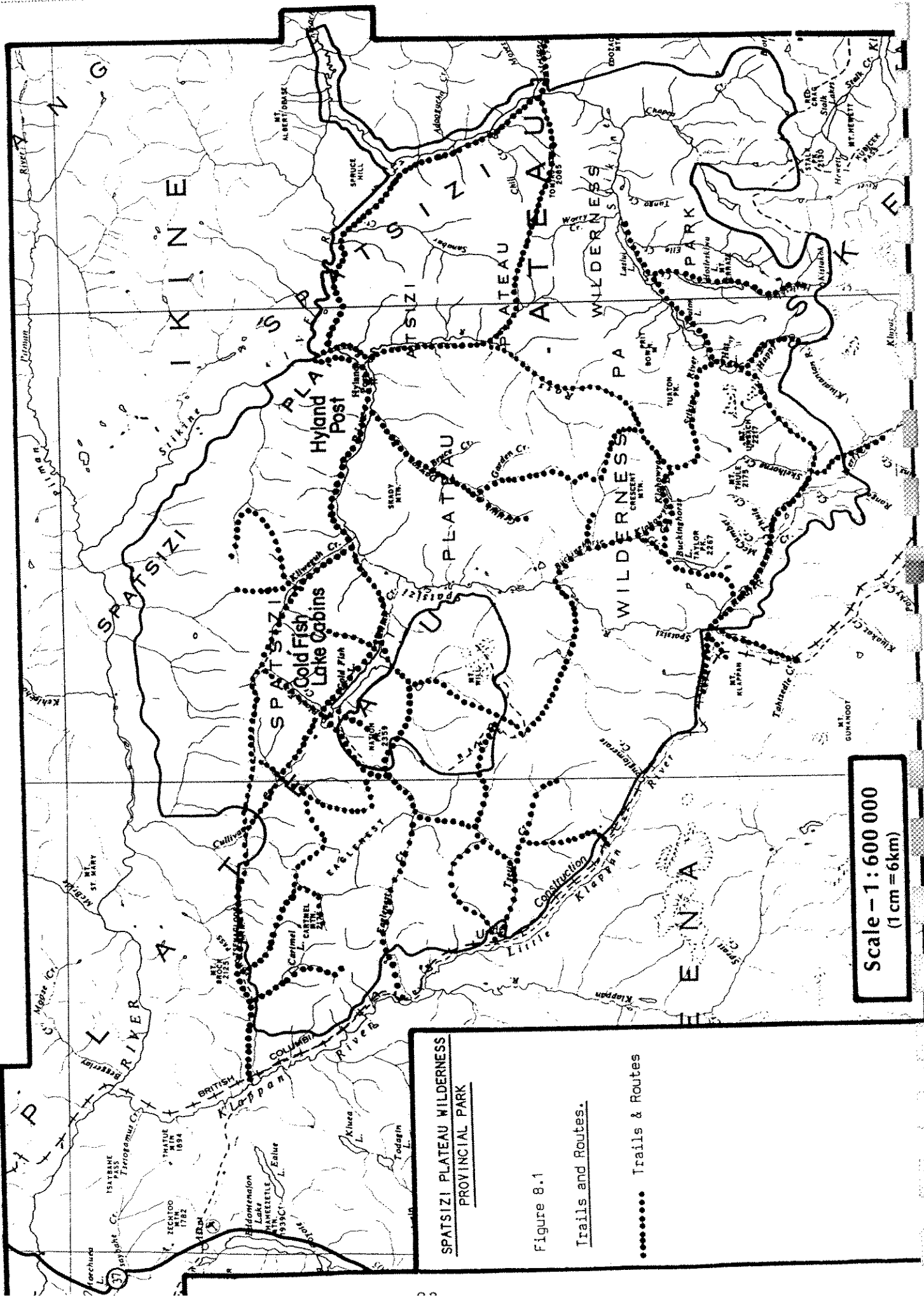
## 8.0 PARK FACILITIES AND USE

### 8.1 Park Facilities

There are very limited facilities in Spatsizi Park. This is largely because of the relatively low level of use and the wilderness orientation of recreation activities within the park.

The major park facilities are found on the property at the northwest end of Cold Fish Lake. This is considered a main entry point to the park. Here, about ten small buildings and cabins are available for public use and over-night accommodation including a cookhouse and sauna. The cabins are open to the general public year-round on a first-come, first-serve basis. The only limitations are that individuals can only occupy a cabin for a maximum of seven consecutive days or for a total of 14 days per year. Also, no commercial use of the cabins is permitted, (i.e., no use by outfitters.)

Two trails, one each along McEwan and Eaglenest creeks, provide the main ground access routes to Cold Fish Lake. From Cold Fish Lake a number of other trails lead in several directions radiating out to numerous areas and features throughout the park and nearby Gladys Lake Ecological Reserve. In many instances, the trails should be looked upon more as routes which have evolved from game and horse trails. The routes involve numerous stream crossings making foot travel difficult, especially in early summer when the spring run-off is still in progress. In addition, the trail-routes tend to fan out in wet terrain or in the open alpine areas and can be difficult to follow. Presently, a major benefit of having horses in the park is that they help to keep the otherwise lightly used trails clear. \*



SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK

Figure 8.1

Trails and Routes.

..... Trails & Routes

Scale - 1:600 000  
(1 cm = 6km)

No comprehensive map inventory of trails at large scale is available for Spatsizi Park and different sources show somewhat different routes for some trails. Figure 8.1 represents an attempt to show major trails and routes within the park based on reference to various small scale maps and descriptions from different reports.

A recently established facility is a five kilometer long access trail allowing people to carry canoes down to the upper Spatsizi River from the B.C.R. railroad grade. It is anticipated that this will become another major entry point to the park. Previously, downstream river travel through Spatsizi Park involved float plane trips to the upper reaches of the Spatsizi or Stikine rivers.

There are no organized campgrounds within the park other than the guide outfitter camps referred to in Section 7. In addition, there are a number of abandoned guide outfitter camps and "traditional" camping areas along the major trails and rivers corridors. Some of the better known sites in this regard include Cartmel Lake, Caribou Hide, Klahowya Lake and Laslui Lake.

## 8.2 Park Use

The relatively small amount of recreation use in Spatsizi Park is spread out over a large area. Consequently, it is difficult to assess park use and reliable statistics have not been well documented.

Four general categories of recreation use presently take place in the park:

- hiking and wilderness travel,
- guided hunting
- guided fishing
- river trips

The major associated recreation uses are primitive camping, nature appreciation, landscape viewing, photography, fishing and non-guided resident hunting. Other types of use which appear to take place at very low levels are guided horse back riding trips and cross-country skiing.

Almost all recreation use is confined to the summer and early fall months. The peak season for hiking, wilderness travel and river boating appears to be August. Hunting, depending upon species sought, may occur from August 1st to mid-November but the most intensive period of activity is from mid-August to early October.

Tables 8.1 through 8.4 summarize recreational use levels in Spatsizi Park based upon available information. To these figures may be added some isolated statistics provided by the guide outfitters:

- in 1979, 42 individuals engaged in 84 man-days of guided river rafting,
- in 1979, 10 individuals engaged in 170 man-days of guided horse back riding,
- in 1982, 10 individuals engaged in 70 man-days of guided photography

There is an undetermined amount of use related to the Iskut Band, providing recreational guiding in the park. Grant McPherson (PORD, Smithers) estimates that there may have been 1000 camper nights related to river trips down the Spatsizi and Stikine rivers in 1986.

Table 8.1 1986 Self Registration At Cold Fish Lake  
 (Non commercial hike-in or fly-in use)  
 Source: Parks and Outdoor Recreation Division

Month	May	June	July	August	September	October	Totals
Visitors	0	2	24	54	49	0	137
Staff*	10	12	15	7	0	0	34
Totals	<u>10</u>	<u>12</u>	<u>39</u>	<u>61</u>	<u>49</u>	<u>0</u>	<u>171</u>

\* Includes PORO staff, Volunteer Hosts, Fire Fighters

Table 8.2 1986 Backcountry Visitor Counts  
 Source: Parks and Outdoor Recreation Division

Month	July	August	September	Totals
Back Packers	8	0	0	8
Spatsizi River Travellers	24	44	8	76
Stikine River Travellers	9	36	2	47
Total	<u>41</u>	<u>80</u>	<u>10</u>	<u>131</u>

Table 8.3 Recreational Hunting Days  
 Source: PORO, 1982.

Year	Resident (estimated)	Non-Resident (Reported)	Total
1976	1075	406	1481
1977	689	476	1165
1978	516	674	1190
1979	635	558	1193
1980	658	502	1160
1981	-	479	-
Average	<u>715 /year</u>	<u>516 /year</u>	<u>1237 /year</u>

Table 8.4 Non-Resident (Guided) Hunting and Angling  
 Source: Parks and Outdoor Recreation Division

<u>Year</u>	<u>Hunting</u>		<u>Angling</u>	
	<u>Participants</u>	<u>Man-Days</u>	<u>Participants</u>	<u>Man-Days</u>
1980	34	502	17	119
1981	34	479	23	151
1982	35	470	23	180
1983	37	386	11	56
1984	38	437	21	129
1985	44	441	20	128
Average	37/year	453/year	19/year	127/year

Table 8.5 Total Estimated Annual Park Use

<u>Activity</u>	<u>Participants</u>	<u>Man-Days</u>
Cold Fish Lake Self Registration (Table 8.1)	137	685 *
Back Packing (Table 8.2)	8	80 **
Spatsizi River Travel (Table 8.2)	76	456 ***
Stikine River Travel (Table 8.2)	47	282 ***
Resident Hunting (Table 8.3)	?	715
Guided Hunting (Table 8.4)	37	453
Guided Angling (Table 8.4)	19	127
Totals	324	2798

\* assumes 5 days of participation for visitors at Cold Fish Lake  
 \*\* assumes 10 days of participation back packing  
 \*\*\* assumes 6 days of participation on river trips

Using information derived from Tables 8.1 through 8.4. Table 8.5 provides a rough estimate of minimum recreation use presently taking place in Spatsizi Park. The figure of 2,798 man-days total seasonal recreation use must be viewed with extreme caution. It is based on a number of hard-to-defend assumptions:

- that self registration at Cold Fish Lake accounts for all visits to that portion of the park,
- that back country visitor counts are accurate and that parties visiting the park are not missed nor counted twice,
- that factors used to estimate total man-days in Table 8.5 are reasonable.



## 9.0 PARK MANAGEMENT

### 9.1 Summary of Order-in-Council #3756

Order-in-Council #3756 of 1975 sets out the management objectives and guidelines for regulation in Spatsizi Park:

"The area will be maintained as a wilderness landscape in which natural systems may proceed without alteration. Hunting and fishing within sustained yield limits, is permissible. Recreational use of the area shall be limited to activities which do not detract from or disturb the wilderness experience sought by visitors. These uses include: fishing, hunting, hiking, climbing, camping, horse travel and nature study."

The Order-in-Council allows for the use of aircraft for access but "otherwise the use of combustion engines for recreational purposes shall be prohibited." However, restrictive boating regulations have not been pursued with the Federal Government under whose jurisdiction they lie.

The Order-in-Council states that "the area will be retained as a roadless tract" with the exception that a mining access road may, in the future, be allowed to pass through the southeast portion of the park along one or more of the tributary headwater valleys of the upper Stikine.

## 9.2 Existing Park Management

From an administrative point of view, Spatsizi Park lies within the Tyhee Zone of the Skeena District of the Parks and Outdoor Recreation Division which is headquartered at Smithers. In turn, the Skeena District is part of the Northern B.C. Region which is headquartered at Prince George.

Management of the park is primarily the responsibility of the District office at Smithers while more direct day-to-day duties are supervised by the Parks Office at Dease Lake. Input for master planning is received from the Regional Office.

Currently, three Parks personnel spend approximately 14 man-months in the park each season. Their major duties are to ensure that the facilities at Cold Fish Lake are maintained, to aid visitors in the park and to monitor commercial guiding and recreational activities. Presently, a major project of Parks staff is to review the trails within Spatsizi Park and create suitable alternatives for hikers now using the more difficult portions of the horse trails and routes.

An important aspect to park management is the Volunteer Host Program. Each season, different groups of individuals volunteer to stay at Cold Fish Lake to assist Parks staff and provide a full-time presence in the park through the summer and early fall months. The volunteers provide information to visitors, help control activity within the park and provide assistance in response to emergencies. In addition, liaison is maintained between Parks staff and the guide outfitters who are in a favourable position to monitor what is going on throughout the park.

The management of wildlife is one of the most important responsibilities of the Parks and Outdoor Recreation Division in Spatsizi Park. Generally, policies and management objectives regarding fish and wildlife resources are set by the Division. PORD is responsible for game population estimates, the setting of quotas, analysis of harvest data, and enforcement within the park. In order to put the regulations into law PORD recommendations for limits and quotas are presented to the Wildlife Branch in Smithers for incorporation into the "Hunting Regulations". The creation of the regulation goes through a regional and provincial approval process before becoming law. For the most part the Wildlife Branch makes few changes to those regulations giving PORD full management responsibility.

### 9.3 Park Regulations

Hunting and fishing regulations are summarized in the Appendices. All other regulations pertaining to Spatsizi Park are essentially covered by the Park Act and Park Act Regulations. Certain regulations which have special importance for Spatsizi Park are summarized as follows:

- horses are not permitted in the park unless authorized by a Park Use Permit (such as for the guide outfitters) or by special letter of authority from the District Manager at Smithers,
- motor vehicles, motor cycles, all-terrain-vehicles and snow mobiles are not permitted in the park,
- all meat, even from trophy animals, must be removed from the park by the hunters.

#### 9.4 Fire Management Plan (B.C. Ministry of Forests)

The parks policy regarding fire in the park is summarized as follows:

"Fire is important in maintaining the vegetation mosaic which provides habitat diversity and ecosystem stability. Protection of values at risk is of paramount importance. Provided these values are protected, it is intended that fire maintain its important ecological role".

The park is divided into two fire protection classifications, control zones and natural fire zones. All zones will receive an initial attack. Initial attack may not necessarily be an attempt to put the fire out, but could simply be a monitoring procedure. If the fire is in, or near, a control zone, "there will be immediate mobilization for full control of all flanks except those bordering natural fire zones". Natural fire zone fires will be evaluated on an individual basis. The decision to control or let a fire burn is made by the District Forest Manager in consultation with the Regional Forest Protection Officer. The District Park Manager will be notified immediately. A factor to be considered at this time is protection of economically exploitable timber outside the park which is threatened.

The two recognized control zones are at Cold Fish Lake and Hyland Post.

It is also recognized that prescribed fire may be used to enhance wildlife habitats and rejuvenate vegetation succession although planning for this is in its infancy.

## 10.0 RECREATION AND VISUAL RESOURCES

### 10.1 Recreation Features and Opportunities

#### 10.1.1 Introduction

Within Spatsizi Park opportunities for extensive activities such as hiking, nature study and wilderness travel are outstanding. From a recreational point of view, landscape quality and wildlife features compare favourably with those found anywhere in western Canada. Opportunities for wilderness and river travel are amongst the highest quality within British Columbia. However, capability for popular outdoor recreation pursuits such as for swimming, beach activities and organized camping are poor.

#### 10.1.2 Wildlife Features

The Spatsizi region provides an unique combination of varied wildlife populations. There are better areas to observe specific species such as mountain goats or to hunt grizzly bears. However, Spatsizi Park offers a diversity of species in significant numbers which is uncommon elsewhere in the province. Up to now, hunting has been the major activity related to the wildlife resource. With growing numbers of hikers and river travellers to the park, wildlife viewing is gaining in importance. Indeed, the future long-term importance of the park's wildlife may be greater from a non-consumptive point of view. There are excellent opportunities to view wildlife throughout the park, especially for the seven species of big game, several carnivores and a wide variety of birds.

There are moderate opportunities for sport fishing throughout Spatsizi Park. Most fishing takes place in the dozen or so larger lakes and during river trips on the Spatsizi and Stikine rivers. Dolly Varden and mountain whitefish, usually found in low numbers, are the most widely distributed fish throughout the lakes and streams of the park and can be caught almost anywhere. However, anglers tend to seek out the good areas for rainbow trout and Arctic grayling and these two species receive most of the fishing pressure.

### 10.1.3 River Boating Opportunities

(Note: Eastwood, 1981 provides a fairly comprehensive account of river navigation along the Stikine River.)

One of the most important attractions of Spatsizi Park is the excellent opportunity for river boating. Two major routes are found: one originating on the upper Spatsizi River and another originating on lakes near the headwaters of the Stikine River. Both these routes meet at the confluence of the Spatsizi and Stikine rivers and continue down the Stikine River to a pull-out at the Highway 37 bridge (See Figure 10.1). The entrance to the Grand Canyon of the Stikine, which is not navigable, is found a short distance downstream from the Highway 37 bridge.

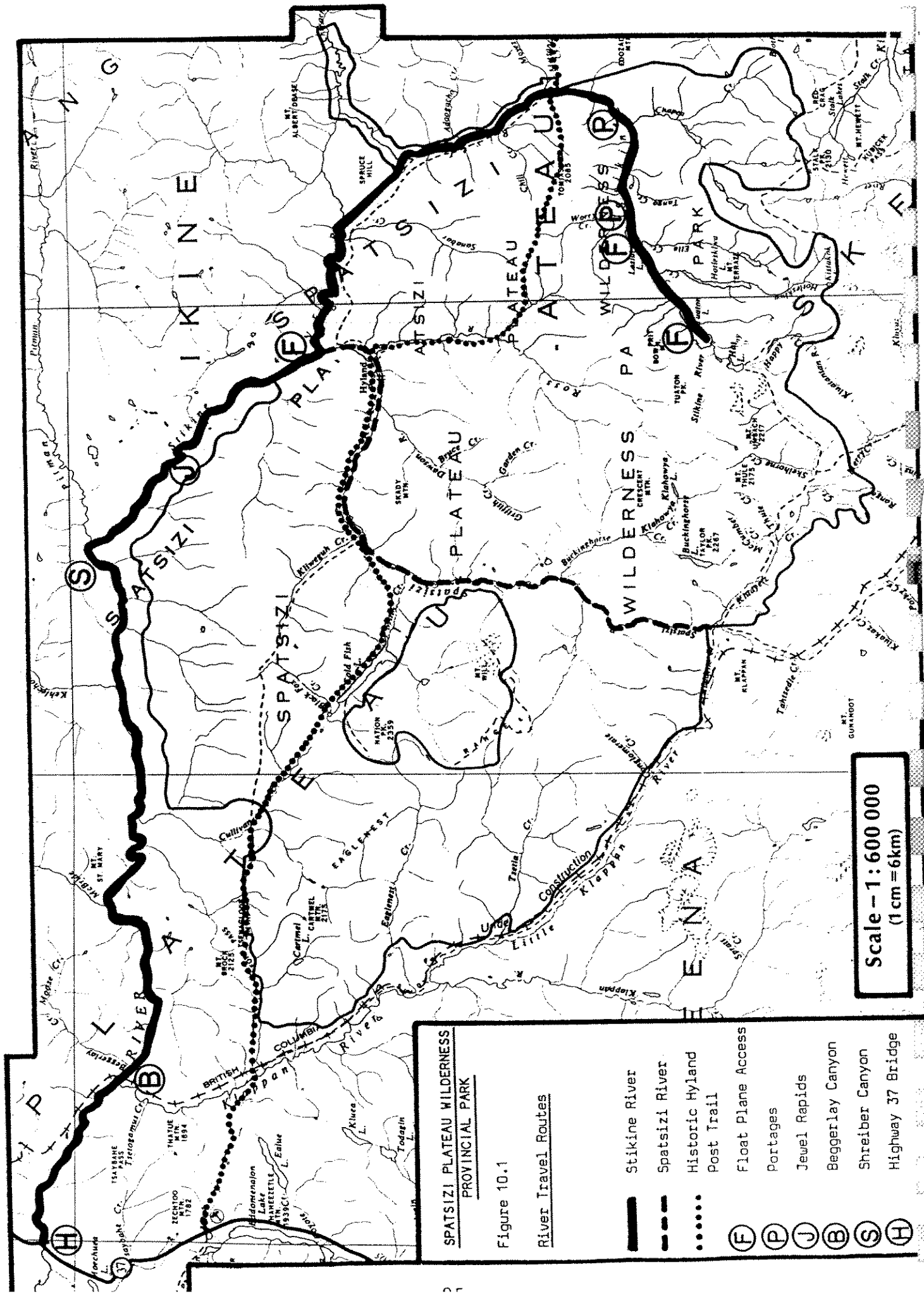
The river routes feature excellent landscape viewing and good opportunities for camping, angling, and wildlife observation. Observations of big game along the main rivers is limited to moose and black bear and perhaps mule deer. To see sheep, goats or caribou an individual must hike into the upland areas. The river trips are usually done with canoes or inflatable boats and several outfitters offer guided river trips. Hunters use power boats for access along the lower reaches of the Stikine River upstream to at least the Pitman River. Under favourable conditions and with a good knowledge of local conditions jet boats and power boats can

ascend the Spatsizi to Buckinghorse Creek and the Stikine River to Caribou Hide. Anyone attempting trips on rivers in the park are strongly advised to have advanced experience. Trips are made throughout the summer months but it is much safer to make canoe and raft trips in late summer and early fall when water levels are relatively low. Parks Division recommends that canoeists travel in late summer, at low water, with a party of at least 3 canoes each of which should contain one advanced paddler.

#### 10.1.3.1 Upper Stikine (Tuaton Lake to Spatsizi River; 125 km)

Tuaton and Laslui lakes near the headwaters of the Stikine River are traditional put-in points on the upper Stikine River. The only access is by float plane to one of the lakes. From here, a 300 kilometer long trip taking six or more days can be made to the Highway 37 bridge. The most challenging sections of the river are found between Laslui Lake and Metsantan Creek which feature two portages, sections of continuous rapids and a series of canyons. The first portage is about two kilometers downstream from Laslui Lake on the north bank along a 0.75 km long trail. About one kilometer downstream from the mouth of Chapea Creek there is a second portage on the north bank which is one kilometer long. The upper Stikine is for advanced canoeists or rafters only.










Downstream from Metsantan Creek there can be a series of large standing waves depending upon water levels but there are few mid-stream obstructions downstream to the confluence of the Spatsizi River.



**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Figure 10.1

River Travel Routes

-  Stikine River
-  Spatsizi River
-  Historic Hyland Post Trail
-  Float Plane Access
-  Portages
-  Jewel Rapids
-  Beggerlay Canyon
-  Shreiber Canyon
-  Highway 37 Bridge

**Scale - 1 : 600 000**  
(1 cm = 6 km)

**(F) (P) (J) (B) (S) (H)**



#### 10.1.3.2 Spatsizi River (Didene Creek to Stikine River; 100 km)

A five kilometer long trail provides relatively easy canoe portage access from the road on the B.C.R. railroad grade to the upper Spatsizi River at Didene Creek. From here, it is about 265 kilometers to the Highway 37 bridge on the Stikine River requiring about six days of river travel time. For the most part, this is a relatively leisurely canoe or boat trip entailing slow moving waters and numerous oxbows, especially downstream from Buckinghamhorse Creek.

#### 10.1.3.3 Lower Stikine River (Spatsizi Junction to Highway 37 bridge; 165 km)

The two major river routes join at the junction of the Spatsizi and Stikine rivers. At this point, the turbid waters of the Spatsizi River meet the very clear waters of the Stikine River. Except for two obstacles, Jewel rapids and Beggerlay Canyon, the Stikine River downstream from the Spatsizi River to the Highway 37 bridge is relatively easy to navigate. Jewel Rapids, about 20 kilometers downstream from the mouth of the Spatsizi River features a number of large, dangerous boulders and standing waves. A few people portage this 2.5 kilometers long section by walking along the river banks. Shreiber Canyon about 2.5 kilometers downstream from the Pitman River has some large standing waves. The most difficult section on the lower Stikine River is at Beggerlay (Goat) Canyon just downstream from the mouth of Beggerlay Creek. Extreme caution is required to safely navigate this section even during periods of low water levels. A partial portage may be chosen along the south shore of the river depending upon a boater's skill and water conditions. Parks and Outdoor Recreation Division intends to install a complete portage on the north shores of the canyon with a suspension bridge across Beggerlay Creek.

#### 10.1.3.4 Tributary Rivers

Several tributaries to the Stikine River offer some river boating and canoeing opportunities. The Chukachida River is navigable by boat upstream from the Stikine River for at least 15 kilometers. This route passes through an attractive wetland unit with excellent opportunities for mountain viewing and wildlife observation. The lower reaches of the Klappan and Pitman rivers are also navigable.

#### 10.1.4 Site Specific Features

There is no comprehensive inventory of landscape and recreation features available for Spatsizi Park. However, there are a number of significant site-specific features throughout the park such as waterfalls, distinctive landforms, rock formations and small glaciers.

#### 10.1.5 Cultural Features

Compared to other regions, historic and archaeological features of recreational significance in Spatsizi Park are of modest importance. Within a local context, the Cold Fish Lake property, Hyland Post and Caribou Hide have some importance as cultural sites. Cold Fish Lake is probably the most significant site combining evidence of relatively recent settlement by Tommy Walker with what appears to be the most extensive archaeological site within the park. The Caribou Hide trail also has historic significance. This appears to have been an important aboriginal route as well as a historic trail between the vicinity of

Telegraph Creek and areas east of the park. Within Spatsizi Park it follows McEwan and Cullivan creeks to Cold Fish Lake, follows Mink Creek and the Spatsizi River to Hyland Post and then crosses Tomias Mountain to Caribou Hide (see Figure 10.1).

#### 10.1.6 Winter Recreational Opportunities

The long cold winters and poor access have restricted recreational use of Spatsizi Park. With better recognition of the park interest in winter recreational activities may increase. Combined with ski plane access, large expanses of open terrain and the relatively clear weather during the winter months, activities such as cross-country skiing may hold some potential in the future. The camp at Cold Fish Lake has considerable potential as a winter cross country ski base.

### 10.2 Landscapes and Visual Resources

#### 10.2.1 Regional Landscapes

The Parks and Outdoor Recreation Division have developed a system of identifying regional landscapes for the purpose of planning a park system which will include adequate samples from the varied landscapes of British Columbia (PORD, 1982). These regional landscapes are primarily based upon Holland's physiographic units (Holland, 1976).

Within Spatsizi Park two regional landscapes are found: the Southern Stikine Plateaus and the Boreal Skeena Mountains. These landscapes respectively conform to the Stikine Plateau and Skeena Mountain physiographic units described in Section 2.0 and shown in Figure 2.1.

### 10.2.2 Landscape Patterns and Visual Quality

Vegetation and physiography in the upper Stikine River area combine to provide relatively outstanding viewing opportunities. This section is accompanied by several photographic plates which illustrate some of the visual qualities of Spatsizi Park. Four basic landscape patterns are found within the park: (1) broad, open valleys, (2) open alpine plateaus, (3) rugged mountainous terrain and (4) the relatively monotonous lowlands adjacent to the lower Stikine River.

One of the most distinctive features of the region is the existence of broad valleys accompanied by adjacent, scenic mountainous topography. This configuration of the landscape allows for relatively long and wide sightlines providing superior views from many lowland and valley bottom observer positions. This feature is further enhanced by a distinct vegetative pattern. In a number of instances, cold air pooling has created a non-forested landscape in the valley bottoms. In areas such as Fire Flats and along the Kluayetz Creek valley one can travel for distances in excess of 25 km with continuous and unobstructed views of adjacent and distant mountains rising 1000 meters above the valley floor. Similar conditions prevail along the major river boating corridors and lower tributary valleys.

Another distinctive landscape feature of the park area is the existence of broad, open alpine terrain at higher elevations. Mountainous terrain in northern portions of the park between

Tomias and Black Jack mountains is comprised of rolling plateaus at 1,500 to 2,000 meters elevation. Once having gained elevation, a traveller can hike or ride for up to 40 km across rolling hills of open tundra without having to descend into any major valleys. In addition to the attractive landscapes, these areas often feature some of the better opportunities to view wildlife, especially the caribou herds.

Within the broad valley bottom and plateau landscapes described above, Spatsizi Park offers some of the most outstanding hiking, riding and wilderness travel opportunities within British Columbia.

The most rugged terrain encountered within the park is found towards the southwest in the Eaglenest Range. Here, valleys tend to be narrower and the local relief comparatively greater. This section also contains the highest peaks in the park such as Mount Will and Nation Peak with summit elevations of about 2,450 and 2,360 meters respectively. Although somewhat more difficult to traverse, the terrain in the Eaglenest Range offers good hiking and riding opportunities accompanied by frequent scenic features, waterfalls and rock formations of interest.

To the north, the mountainous plateau landscape gives way to the broad valley of the Stikine River. Here, relatively monotonous terrain prevails with undulating topography and a closed-canopy, coniferous forest interspersed with small marshy areas and open wetlands. Within this landscape pattern, the most interesting visual qualities are confined to the the margins of the Stikine River.

PLATE 1. Fire Flats Distinctive, open valley bottom terrain common to areas in Spatsizi Park, especially to the south and southeast. This landscape provides outstanding opportunities for viewing and hiking. (Photo: P.O.R.D., Prince George)

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PLATE 2. Inverted Vegetation Pattern Cold air pooling results in open, non-forested vegetation in many valley bottoms. (Photo: C. Clement)

PLATE 3. Maternity Mountain View Open alpine terrain found in the Eaglenest Range.  
(Photo: Tommy Walker, P.O.R.D., Prince George)

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PLATE 4. Eaglenest Creek Narrow valleys and steep topography characteristic of the  
Eaglenest Range. (Photo: C. Clement)

PLATE 5. Spatsizi Plateau Caribou on the typical open alpine terrain of Spatsizi Plateau with excellent opportunities for hiking, wilderness travel and wildlife viewing. (Photo: P.O.R.D., Victoria)

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PLATE 6. Cold Fish Lake The cabins and airstrip at the northwest end of Cold Fish Lake. (Photo: P.O.R.D., Victoria)



PLATE 7. Rock Formations. Spatsizi  
Park has numerous significant  
site specific features such  
as rock formations, waterfalls  
and distinctive landforms.  
(Photo: P.O.R.D., Victoria)

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PLATE 8. Mink Creek Fishing near the outlet of Cold Fish Lake. (Photo: P.O.R.D., Victoria)

## 11.0 MARKET ANALYSIS

### 11.1 Population

The northwest portion of British Columbia is one of the most lightly populated and least developed regions in the province. Developed industries, service centers and transportation facilities are minimal north of Highway 16. In 1983 it was estimated that the Stikine and Skeena regions had a population of about 73,400 representing 2.6% of the population of the province (Ministry of Industry and Small Business, 1984). Close to 95% of this population resides along the Highway 16 corridor in centres such as Prince Rupert, Terrace, Kitimat and Smithers. Watson Lake, just across the B.C.- Yukon border to the north, has a population of about 5,000.

Excluding the Skeena-Highway 16 corridor and Watson Lake, there are slightly more than 3,000 people living along the Highway 37 corridor, (see Table 11.1). More than 80% of these people live at Stewart and Cassiar and the population in the upper Stikine area is limited to a few small communities totaling less than 1,000 people.

It is difficult to provide accurate population statistics for this region. The local population has a relatively high proportion of Natives. In general, census figures are unreliable for assessing Native populations. Official census figures for 1981 are somewhat dated and apparently did not include enumeration of Iskut. Another factor contributing to unreliable population estimates is the fact that the local population is highly mobile. For instance the population of the largest community, Stewart, experiences significant fluctuations depending upon economic and market conditions affecting the mining industry. Furthermore, the local population fluctuates on a seasonal basis. It tends to

Table 11.1 Summary of Populations for Regional Settlements

<u>Settlements</u>	<u>1981 Census</u>	<u>Various Estimates (and source)</u>
Cassiar	1,053	
Dease Lake	100	500 (Gulf, 1985)
Dease Lake Indian Reserve	237	
Telegraph Creek	270	
Iskut	-	341 (Gulf, 1985)
Around Iskut *	-	50 to 90 (Gulf, 1985)
Bob Quinn Lake	-	20 (DPA, 1982)
Stewart	1,456	
Total	<u>3,116</u>	

\*Eddontenajon, Tatogga Lake, 40 Mile Flat

swell in the summer when tourism, mine exploration and guide outfitting activities are greatest. Keeping these limitations in mind, Table 11.1 provides a summary of populations for regional settlements.

### 11.2 Service Centres and Facilities

Smithers and Terrace are the major centres serving the upper Stikine Region. Both are approximately the same distance away - about 400 kilometers by air from Iskut. Within the upper Stikine, Telegraph Creek, Dease Lake and Iskut are the main service centres.

Cassiar, which is about 190 kilometers north of Iskut, is the site of a large asbestos mine. It is a company town with a population in excess of 1,000 but it has limited facilities and services for tourists and the travelling public.

Dease Lake, which is about 75 kilometers north of Iskut, is the major administrative centre for the upper Stikine area. Its population, according to the 1981 census figures, is 100 but informed estimates of its actual size vary from 300 to 500. Dease Lake features offices for a number of provincial agencies such as for the Ministry of Forests and the Parks and Outdoor Recreation Division. It has a surprisingly large paved airstrip 1,800 meters long. As a single centre with two moderate sized motels it offers the greatest amount of tourist accommodation north of Stewart (see Table 11.2). Dease Lake lies on the edge of the Arctic watershed strategically located at the junction of Highway 37 and the road to Telegraph Creek.

Telegraph Creek is a relatively isolated community towards the end of a fairly rough road close to 100 kilometers southwest of Dease Lake. It has a relatively stable population of about 300 which does not seem to fluctuate like the other resource-based or seasonally tourist-based economies of other settlements in the region. There are two small lodges with limited accommodation for travellers. A gravel airstrip and a small number of guides provide for a local outfitting business.

Iskut is the closest community to Spatsizi Park and is a major "jumping off" point for travellers to the park. Float plane air services to Cold Fish Lake normally originate here after travellers arrive at the local airstrip by wheeled aircraft from Terrace or Smithers. Also, the Highway 37 bridge crossing of the Stikine River 24 km north of Iskut is the main put-in/pull-out point for boats and canoes travelling the upper Stikine River. Iskut itself is primarily an Indian community of about 350 individuals. Nearby areas have also been settled, mainly by whites which include Tatogga Lake, Eddontenajon, Kluachon Lake and 40 Mile Flat. These areas may account for up to another 90 residents. In all, Iskut and its nearby resorts account for 9 motels and campgrounds offering 55 motel units and 122 campsites. In a diffuse way, the vicinity of Iskut is growing into a major service center near the half-way point along highway 37.

Stewart, with a 1981 census population of 1,456, is the largest community along the Highway 37 corridor. It is actually located at the head of Portland Canal 67 kilometers along Highway-37A southwest of Meziadin Junction. Stewart's economy is largely based on the mining sector which has experienced marked fluctuations in recent years. It is also a trans-shipment point between Highway 37 serving the north and tidewater. Stewart has two motels, a hotel and a private campground providing 65 rooms and 50 campsites for the travelling public.

Table 11.2 Summary of Tourist Facilities - Highway 37 Corridor

Location	Number of resorts, motels, hotels and campgrounds	Accomodation Units	Campsites
Boya Lake Prov. Park	1	-	44
Dease River	1	6	20
Dease Lake	2	48	-
Telegraph Creek	2	9	-
Kluachon Lake	3	13	10
Iskut	3	25	52
Ealue Lake	1	3	15
Eddontenajon Lake	1	4	15
Tatogga Lake	1	10	30
Kiniskan Prov. Park	1	-	36
Echo Lake (Bob Quinn)	1	-	*
Meziadin Lake	2	6	42
Stewart	4	65	50
Cranberry Junction	1	-	*
<b>TOTALS</b>	<b>24</b>	<b>189</b>	<b>314+</b>

Sources: Gulf, 1984, P.O.R.D., 1985, Ministry of Tourism, 1986.

\* campground noted for location but number of sites unknown.

Three small provincial park facilities are found along Highway 37 while the three large wilderness parks are found more or less adjacent to the highway corridor in the upper Stikine region. Table 11.3 provides a summary regarding these parks.

### 11.3 Transportation and Access

#### 11.3.1 Road Access

Vehicle access in this region is generally confined to Highway 37, a 772 kilometer-long route linking the Alaska Highway near Watson Lake to Highway 16 at Kitwanga. The highway has recently been paved between Kitwanga and Meziadin Junction and large sections north of Dease Lake are paved. However, most of the 340 km between Meziadin Junction and Dease Lake has a gravel surface. The leg of road down to Stewart, Highway 37A, has also been paved recently.

Few side roads provide access off Highway 37 including Highway 37A to Stewart just mentioned.

From the vicinity of Tatogga Lake south of Iskut a gravel road leads eastward past Ealue Lake to the B.C.R. railroad grade. Presently, the public can use this road, cross the Klappan River, then drive along the railroad grade past the Gulf camp near Mount Klappan to the upper Spatsizi River. This road parallels the Klappan River and runs along the southwest border of Spatsizi Park. It is approximately 115 kilometers from Tatogga lake to the trail serving the boat put-in on the Spatsizi River.

Table 11.3 Summary of Provincial Parks  
Source: PORD 1985.

<u>Park Name and Class</u>	<u>Area (hectares)</u>	<u>Developed Facilities</u>	<u>Annual Park Use</u>
Boya Lake Class A	4,597	44 campsites; 3 day use tables; Boat launch ramp; 30 meters of developed beach.	2,094 campground party nights, June through September. (73% use in July and August) 4,200 day use attendance, May through October. (57% of use in July and August.
Kinaskan (reserve)	2,780	36 campsites; Boat launch ramp	3,200 campground party nights, June through October (67% of use in July and August) 5,033 day use attendance, May through October (63% of use in July and August).
Mount Edziza Class A Rec. Area	131,928 100,767	N/A	Estimated at about 200 to 300 visitor days based on data presented in Section 8.2.
Spatsizi Plateau Wilderness Class A	659,650	N/A	Somewhat over 3,000 visitor days based on data presented in Section 8.2
Tatlatui Class A	105,826	N/A	Roughly estimated at 100 or so visitor days.
Mesiadin Lake (reserve)	1,821	42 campsites; Boat launch ramp	3,021 campground party nights 7,151 day use attendance.



### 11.3.2 Air Transportation

Given the relatively restricted road access, helicopters and airplanes play a major role for travel in the upper Stikine region. In addition to serving the major settlements, aircraft are used extensively by the mining industry and guide outfitters in the more remote portions of the region.

Float planes are used to and from the larger lakes and can land on certain sections of the Stikine and Spatsizi rivers. Planes equipped with skis are used in the winter months. The region also has a network of airstrips of varying size and condition. Figure 11.1 portrays the distribution of airstrips in the area. The status and suitability of these strips is ever changing—depending upon current mine exploration activity and other variables affecting aircraft use. The Parks and Outdoor Recreation Division does not maintain these strips.

Several helicopter and small airline companies operate in this region. Most flights into the area originate from Terrace or Smithers and, to a lesser extent, from Watson Lake. For the most part, air services are provided on a charter or contract basis. However, Trans Provincial Airlines operates a "quasi-scheduled" service out of Terrace on weekdays through the summer months. This airline services Telegraph Creek, Dease Lake, Iskut and Mount Klappan "as required" and weather permitting. A typical trip between Terrace and Dease Lake currently costs \$173.00 one way. To fly into Cold Fish a further \$550 is required to charter a float plane from Iskut to the lake.



### 11.3.3 Other Forms of Transportation

Until 1972, river boats were a major form of transportation along the Stikine River from its mouth to Telegraph Creek. This form of access appears to have been supplanted by the connection of Highway 37 with Highway 16 and the growing use of aircraft in the region. Motor boats and horses are a major form of transportation to and within Spatsizi Park as described in Section 8.

### 11.4 Highway Traffic

Three agencies supplied highway traffic data which have some relevance to the upper Stikine area: B.C. Ministry of Transportation and Highways, Public Works Canada, and the Yukon Department of Highways and Transportation. Reliable highway traffic data does not appear to be readily available for Highway 37. The B.C. agency has concentrated its survey efforts along the Highway 16 corridor while the Federal and Yukon governments have concentrated their efforts along the Alaska Highway. Some traffic data is summarized in Tables 11.4, 11.5, and 11.6, but this information should be viewed with caution. There appears to have been limited surveys along Highway 37 and sample sizes are relatively low. Wide variations in survey techniques and in methods of averaging and extrapolating data seem to contribute to the information having only limited reliability.

### 11.5 Tourism

Tourism in the Skeena and Stikine regions is concentrated along the Highway 16 corridor. This is partly suggested by comparing

Table 11.4 Highway 37 Traffic Counts

One km north of Meziadin Junction (B.C. MoTH)

Early September, 1985-----	850 ADT
Mid August, 1980-----	420 ADT

\*

Half km south of Dease Lake (B.C. MoTH)

Early October, 1985-----	590 ADT
Mid August, 1980-----	648 ADT

Highway 37-Alaska Highway Junction (Yukon Dept. H&T)

1979 (May to July and September)-----	170 ADT
1980 (May through September)-----	182 ADT
1981 ( " " " )-----	244 ADT
1982 ( " " " )-----	182 ADT

Highway 37 - Alaska Highway Junction (Public Works Canada)

1985 (factored to a year round basis-----)	204 ADT
--	---------

Note the discrepancies between the B.C., Yukon, and Federal Figures. This is at least partly accountable to the different time periods covered during the year that the samples were taken.

\* ADT is the average daily total in two directions.

Table 11.5 Highway 16 Traffic Counts (B.C. MoTH)

<u>Year/Period</u>	<u>ADT</u> <u>Near Prince</u> <u>Rupert</u>	<u>ADT</u> <u>Near Fort</u> <u>Fraser</u>
1981	1164	2160
1982	1054	1789
1983	1135	1731
1984	1107	1734
1985	1017	1722
1985 Peak Month	1494 (July)	2539 (August)
1985 Low Month	608 (December)	1205 (January)

Table 11.6 Highway 37 Interview Surveys (B.C. MoTH, north of Kitwanga, August, 1983.

<u>Purpose for Travel</u>	<u>% (rounded to nearest 1%)</u>
work	12%
shopping	7%
personal buisness	23%
social-recreational; one day	7%
social-recreational; multi day	51%
TOTAL	100%

<u>Origin of Occupants</u>	<u>% (rounded to nearest 1%)</u>
Kitimat-Stikine	45%
Other B.C.	23%
Other Canada	7%
Alaska	2%
Other U.S.A.	22%
Overseas	1%
TOTAL	100%

the Highway 16 to Highway 37 traffic counts. The Highway 37 corridor has natural features with potential for high tourism appeal. However, this potential is currently limited by several factors:

- the relative poor quality of Highway 37,
- the lack of easy access to major features (such as the Grand Canyon of the Stikine and nearby wilderness parks),
- the relative lack of tourist services and amenities along Highway 37,
- the great distances to major markets and distances between service centres and large communities.

Currently, a major appeal of the Highway 37 corridor for tourism is that it forms part of a circular tour for travellers going to Alaska or the Yukon. Two circles tours are promoted which involve Highway 37:

The Golden Circle (2,877 km long, 8 to 9 days travel time)

Prince George to Kitwanga via Highway 16,  
Kitwanga to the Yukon or Alaska via Highway 37,  
Return to Prince George via the Alaska Highway to Dawson  
Creek and Highway 97.

Yukon-Alaska Tour (1,917 km long, 4 to 5 days travel time)

Prince Rupert to Kitwanga via Highway 16,  
Kitwanga to Whitehorse via Highway 37 and the Alaska Highway,  
Whitehorse to Skagway via Carcross Highway,  
Skagway to Prince Rupert via Alaska State Ferries.

The North by Northwest Tourism Association provides some analysis of tourism in the region, (see Yellowhead 16 tourist Association, 1984). They interviewed 2,260 parties involving 5,934 persons at four locations along Highway 16 and at Meziadin Junction over a three month period from June to August in 1984. There was incomplete surveying at the Meziadin Junction site and there was no segregation of results between Highway 16 and Highway 37

Table 11.7 Origin and Activities of Tourists on Highway 16.  
 (North by Northwest Tourism Association, 1984).

<u>Origin of Travellers</u>	<u>%</u>
British Columbia	25%
U.S.A.	52%
Canada	18%
Overseas	5%
<hr/>	
TOTAL	100%

<u>Activities</u>	<u>Have Participated</u>	<u>Will Participate</u>
Sightseeing	34%	36%
Camping	16%	17%
Passing Through	10%	6%
Fishing	9%	12%
Visiting	6%	9%
Boating	6%	6%
Swimming	5%	4%

results. Questionnaires were handed out at random to visitors at tourist information centers. Some results of this relatively biased survey are found in Table 11.7.

### 11.6 Spatsizi Park Market Potential

Given the poor road access and policy of maintaining Spatsizi Park as a roadless wilderness area there is little market potential for the park related to tourism activity along Highway 37. Only a few people appear to make the effort to hike into the park and it is unlikely that trail access will ever become a major source of use for the park area. Furthermore, use of Spatsizi Park for hunting cannot be significantly expanded because capability for maintaining wildlife populations is finite.

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The greatest market potential for the park appears to be related to adventure tourism. Although precise figures are not available, a significant number of hunters, river travellers and hikers in the park are from out of the province or from overseas. River trips, either originating from the trail to the upper Spatsizi River or from fly-ins to the upper Stikine River, appear to offer the greatest potential for development of park use at the present time.

Although hunting quotas are unlikely to change much there are also good opportunities for expanding guided tours related more to photographic safaris, wilderness travel and viewing.



## 12.0 RESOURCE DEVELOPMENT

### 12.1 Forestry

Spatsizi Park lies within the huge Cassiar Timber Supply Area which extends from the park in the southeast to the St. Elias Mountains in the northwest. Given the improved transportation opportunities in this area the Ministry of Forests has begun the process of evaluating timber resources in the region (Ministry of Forests, 1984).

Spatsizi Park and the upper Stikine River area lie within the Iskut Supply Block, one of six subdivisions of the Cassiar Timber Supply Area. Generally, forestry values are low throughout the Iskut Supply Block. It is estimated that the area contains 11,298,600 cubic meters of merchantable timber volume with a long-run sustained yield potential of 117,500 cubic meters per year. Presently, the only economically feasible stands are found along the Highway 37 corridor where several small Timber Sale Licenses have been awarded. The logs are processed by small, intermittently operated sawmills or they are exported via the port at Stewart.

Adjacent to Spatsizi Park, the only significant timber potential is found along the Stikine River as previously described in Section 7.0. Since this area may be designated a Recreation Area, any logging that might take place should be carried out in deference to recreational and visual features.

## 12.2 Hydro-Electrical Development Potential

In the late 1970's and early 1980's the B.C. Hydro and Power Authority was actively studying the feasibility of using the Stikine River system for hydro-electric generation. Recent economic and market conditions have indefinitely put the project on hold although interest in generating electricity from the Stikine could be renewed at any time.

Five dams, two on the Stikine and three on the Iskut River and its tributaries, were envisioned for this project. The dams would create four reservoirs with a combined surface area of 21,500 hectares. (One of the dams on a tributary to the Iskut River would be a diversion dam without a reservoir.)

If this hydro-electric project were ever completed as planned, there would be significant implications for Spatsizi Park. The largest reservoir created by a dam at Site Z downstream from the Highway 37 bridge would flood sections of the Klappan and Stikine river valleys adjacent to the park and within the proposed Recreation Area. In addition to potential impacts upon wildlife, fisheries and vegetation resources, such a reservoir would pose impacts upon aesthetics and use of the Stikine River as a wilderness canoeing and boating corridor. The reservoir would likely extend upstream along the Stikine River to the vicinity of Cullivan Creek.

## 12.3 Mining Activity

Note: This section represents a current view of mine development potential. Any changes in economic conditions, markets or available knowledge could abruptly change the prospects for mine development.

Within the upper Stikine River region there has been relatively active mineral exploration for 20 years or more. A few small scale mines have operated sporadically but access limitations and market conditions have, until recently, limited major mine developments.

Most of the area of Spatsizi Park is underlain by sandstones and conglomerates, rocks which have little mineral potential. To the east and north however, volcanic and intrusive rocks prevail providing areas adjacent to the park with high mineral potential. In addition, significant anthracite coal deposits are found along the southwestern edge of Spatsizi Park. Indeed, the somewhat irregular shape of the original park boundary reflects an attempt to avoid potential mine properties.

Improved geologic knowledge for the area has resulted in a number of sites being planned for mine development. Two properties - the ~~Mount Klepper coal deposit to the southwest~~ and the Lawyers gold property to the east - appear to be very close to the mine development stage. Approximately two dozen other properties within a short distance of the park boundary also have varying potential for mine development. Figure 12.1 portrays the main mining prospects and associated access roads which might be developed within the next few years.

### 12.3.1 Mining Prospects to the North and West

There are several known mineral deposits north and west of Spatsizi Park. However, only one, the Kutcho Creek property owned by Sumac Mines Ltd. and Ezzo Minerals Canada appears to have any imminent potential for development. This is mainly a copper/zinc deposit with some lead, silver and gold approximately 25 kilometers north of the junction of the Pitman and Stikine rivers. The property is now at the end of Stage II in the mine review process and will be submitted for Cabinet approval soon.

The Kutcho Creek mine would entail construction of an access road from the vicinity of Dease Lake. The ore would be transported down Highway 37 to Stewart for processing. A workforce of approximately 300 would be required. The miners would probably live in a center such as Smithers and would be flown into a nearby air field for block shifts of about a week's duration. With the current poor markets for copper and zinc it is unlikely that this mine will be developed until the 1990's.

Two other properties, the Letain asbestos deposit and Eaglehead copper deposit, are also located in the upper Turnagain River drainage northwest of Kutcho Creek. There is currently little prospect of mine development at these sites for at least 15 years.

Much closer to Spatsizi Park, the Mount Brock, Ark and Red Chris properties also have an unlikely chance of being developed in the near future. The potential for mine development at other claims such as along the McBride River is apparently very low at present.

#### 12.3.2 Mining Prospects East of Spatsizi Park

The eastern margins of the upper Stikine River adjacent to the east side of Spatsizi Park is part of the Toodoggone volcanics, an area with high mineral potential, especially for gold and silver. Within this area, the Baker gold/silver mine operated for three years in the early 1980's. This was a small, open pit operation about 20 kilometers east of the park boundary at Chapea Creek. The ore was flown out by large aircraft from an air strip adjacent to the Sturdee River.

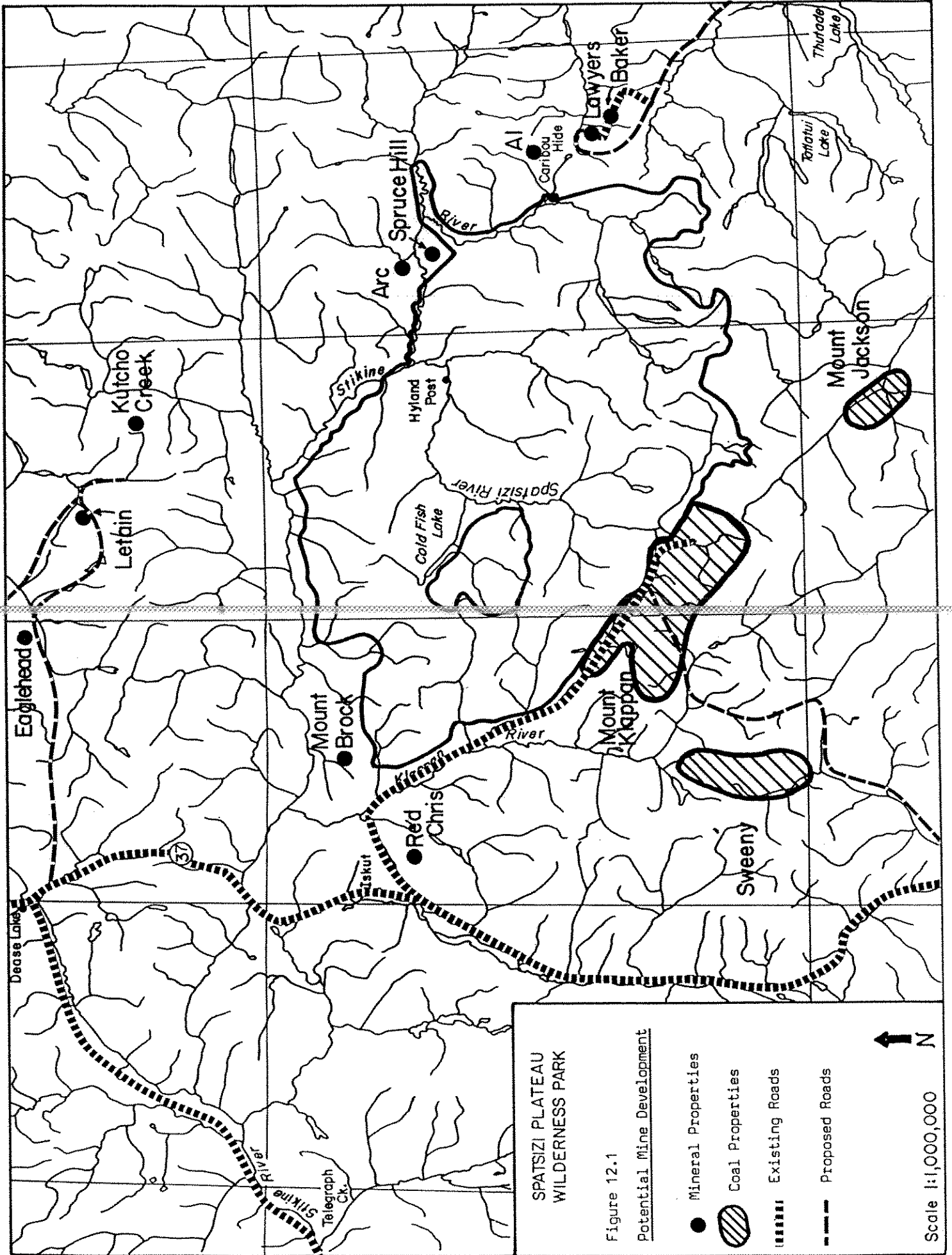
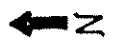


Figure 12.1

Potential Mine Development

- Mineral Properties
- ▨ Coal Properties
- ▬ Existing Roads
- - - Proposed Roads



Scale 1:1,000,000

Table 12.1 Summary List of Mine Prospects Near Spatsizi Park

<u>Property Name</u>	<u>Minerals</u>	<u>Location in Relation to Park Boundary</u>	<u>Possible Start of Mine</u>
Lawyers	Au,Ag	20 km East	1987
Mount Klappan	Coal	S.West edge	1988+
Chappelle (Baker)	Au,Ag	20 km East	1990?
Al	Au,Ag	10 km East	1990+
Kutcho Ck.	Cu,Zn,Pb,Au,Ag	35 km North	1990+
Mount Jackson	Coal	30 km South	1990+
Silver Pond	Au,Ag	10 km East	1990+
Moose	Au,Ag,Pb,Zn	20 km East	1990+
Mets	Au	25 km East	1990+
Eaglehead	Cu	60 km North	2000+
Letain	Asbestos	45 km North	2000+
Sweeny	Coal	40 km S.West	?
Spruce Hill	Cu,Ag	North Edge	?
Mount Brock	Cu	N.East Edge	?
Red Chris	Cu?	15 km West	?

Au--gold, Ag--Silver,Zn--Zinc,Pb--Lead,Cu--Copper

There are close to 20 properties in this general area, a few of which are currently being explored and assessed in detail. Mine construction could start as early as 1987 at the Lawyers gold/silver property at the headwaters of the Toodoggone River. This deposit, owned by Serem Inc., is at Stage III in the mine review process. Essentially, it has obtained all its permits and is mainly waiting only for financing to proceed with mine development. This would be an underground mine with a workforce of about 140 persons. The mine would operate for about six years and the ore, workers and supplies would be transported to and from the mine by air.

An important aspect to the Lawyers mine development would be extensions of the Omineca Road for 71 kilometers from its present terminus at Moosevale Flats. The extension, referred to as the Sturdee Road Project, would follow the Sturdee River valley to the mine site just south of the Toodoggone River. It would be privately operated on a four-month basis each summer and fall in order to supply the mine with fuel and large items of equipment.

As previously mentioned, several other properties are found in this area. For the most part, the prospects of these other properties is strongly linked to extension of the Omineca Road. If the Lawyers mine proceeds then the potential for developing other nearby deposits will be significantly increased. The two most promising prospects in this regard are:

- Chappelle Project - the old Baker gold/silver mine now managed by Multinational Resources Co. ; this property is in pre-guidelines stage in the mine review process,
- Al Property - owned by Energex Minerals Ltd. has recently received Terms of Reference for Stage I ; this would be a small gold/silver open pit operation with a two to four year mine life and a workforce of about 50 persons.

Three other properties in this area were actively explored in 1985:

- Silver Pond - gold/silver property owned by St. Joe Canada Ltd. and found west of the Lawyers Property close to the Spatsizi Park boundary,
- Moose - a gold/silver/lead/zinc property owned by New Ridge Resources Ltd. and found east of the A1 property,
- Mets - a gold property owned by Manson Creek Resources and Golden Rule Resources and located between the A1 and Lawyers properties.

The Spruce Hill property located near the confluence of the Chukachida and Stikine rivers reportedly has some copper and silver. Present prospects of this deposit being mined appear to be relatively low.

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### 12.3.3 Coal Deposits South of Spatsizi Park

The northermost extension of the fairly well known Groundhog coal deposit abuts the southern boundary of Spatsizi Park. Several companies hold a large number of coal licences in this region. The most significant coal property both in terms of imminent development and potential for impact upon Spatsizi Park is the Mount Klappan anthracite deposit owned by Gulf Canada Corporation.

This deposit was discovered in 1981. Presently, Gulf holds 211 coal licences in the area which in part cover the 56,194 hectares of anthracite coal at Mount Klappan. The project is at Stage II in the mine review process and will be submitted for approval in principle in the next few years. If started, this would represent the only anthracite coal production in Canada.



Production estimates vary from about one to more than five million tonnes of coal per year with a mine life of at least 20 years. Important decisions regarding access, power generation and eventual production rates have not been finalized. However, the current view appears to be an anticipated production rate of 1.5 million tonnes per year to be hauled by road south to Highway 37 at Bell II. This would entail construction of an industrial road along the Bell-Irving River.

The Mount Jackson coal property owned by Suncor Inc. may also be considered for mine development in the future. It is located about 50 kilometers southeast of Mount Klappan adjacent to the B.C.R. right-of-way. In terms of development it is at least four years behind the Mount Klappan project.

The Sweeny coal property on upper Konigus Creek is located about 40 kilometers southwest of Mount Klappan. Esso Resources Canada Ltd. is presently applying for a licence here and testing for coal.

#### 12.3.4 Implications of Mine Development

Presently, Spatsizi Park appears to be surrounded by a number of mine development prospects. There is a chance that none of the mines will be developed, at least in the near future. On the other hand, if a few mines do get started, an access and service infrastructure will emerge and there could be considerable momentum to develop a large number of mines. This poses some significant implications for the maintenance of Spatsizi Park as a wilderness area.

If only one, or a few, mines are developed it appears that no new settlements will be created in the area. Current plans for the most definite mine developments suggest that the work forces will be housed in centres such as Smithers or Terrace and flown into the minesite camps for alternative shifts of a week on and a week off work. However, if production rates are higher than currently anticipated or if more than a few mines are operated at the same time, then settlement centres may be proposed for development near, or adjacent to the park. Sites at Tsetia Creek, near the existing Mount Klappan camp and at McEvoy Flats (near Mount Jackson) have been identified as candidate settlement centers, (see Task Force On Northwest Economic Development Opportunities, 1983).

With mine development there will be a requirement for energy. Options for energy supply will vary greatly depending upon the size and number of mines in operation at any given time. The types of options for consideration include: extension of transmission lines from the B.C. Hydro grid in the south; locally developed hydro-electric generation; diesel generation; a coal fired energy plant at one of the coal properties; resumption of interest in the Stikine-Iskut hydro-electric project.

Mine development will require new access. Rail access has been reviewed as an option but is not being pursued at present. There is a strong likelihood that two new roads will be developed near the periphery of Spatsizi Park - one from the southwest to the Mount Klappan coal field and another from the southeast to the upper Toadoggone River. A third, less imminent road might also be constructed to the Kutcho Creek area to the north. These roads may be operated as single use, private, industrial roads. The Omineca Road extension is closest to the construction phase and plans regarding its operation are in place. It will feature a manned gate and any other industrial users other than for Lawyers mine would have to share the costs of its operation and maintenance. There is a legal requirement that the road will be de-activated (bridges removed, etc.) when it is no longer required by the owner. However, once these roads are in place there may be

pressure to open them for other resource users such as for forestry or for general public access.

Other implications of mine development include potential for:

- direct impacts upon wildlife and vegetation;
- undesirable air and water contamination;
- special regulations, enforcement and control for hunting, fishing, general recreation and A.T.V. use;
- aesthetic, visual and noise impacts in the vicinity of the park;
- increased public access to the park and added demands made upon park managers;

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~~increased bear-man problems~~

- pressure to develop access corridors through the park.

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#### 14.0 CONTACTS AND PERSONAL COMMUNICATIONS

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Norrish R. Parks and Outdoor Recreation Division, B.C. Ministry of Environment and Parks. Victoria

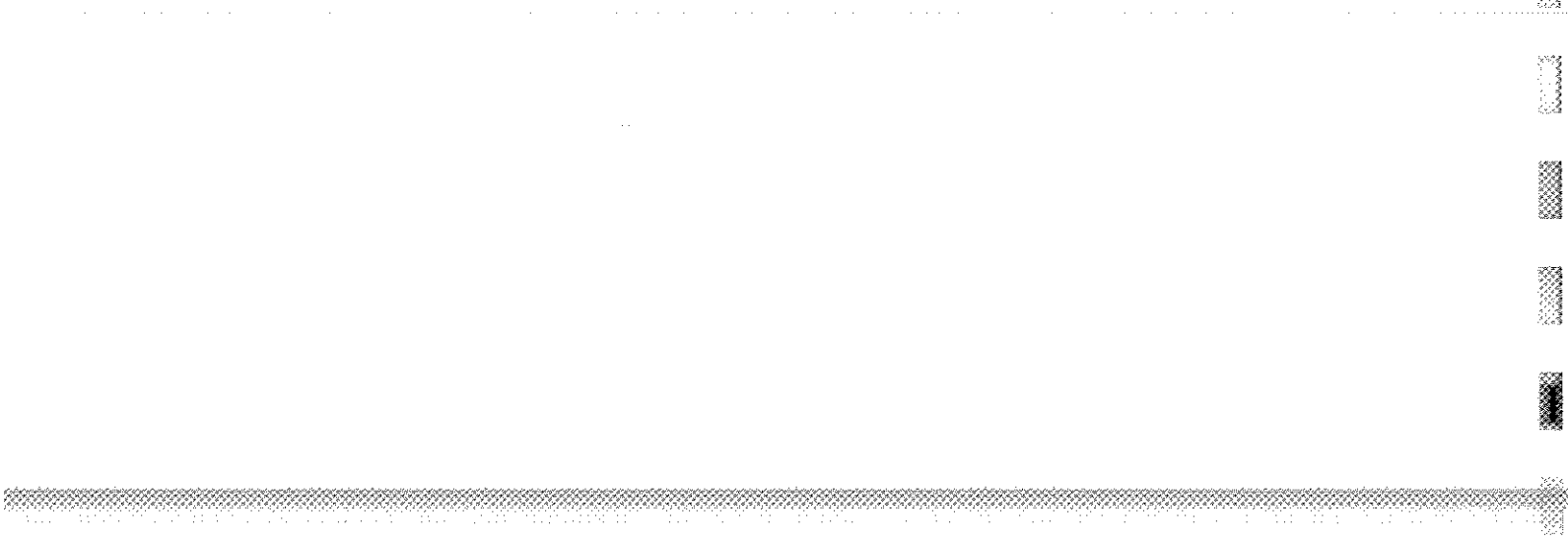
Pinder Moss J. Ecological Reserves, Ministry of Environment and Parks, Victoria.

Pojar J. B.C. Ministry of Forests and Lands. Forest Research Division Smithers B.C.

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VanDrimmelen B. Regional Wildlife Biologist. B.C. Ministry of Environment. Smithers B.C.

15.0 APPENDICES



APPENDIX 15.1 Orders-In-Council Summaries

<u>O.I.C. #</u>	<u>DATE</u>	<u>SUMMARY PURPOSE</u>	<u>PURSUANT TO</u>
3678	Nov.28/75	Establish Gladys Lake Ecological Reserve	Ecological Reserves Act
3756	Dec.3/75	Establish Spatsizi Plateau Wilderness Park	Park Act
787	Mar.15/79	Minister of Lands, Parks & Housing acquire a 99 year lease from Second Century Fund (Nature Trust of B.C.) for District Lot 6686 at Cold Fish Lake	Park Act
726	Mar.19/81	Re-establish Gladys Lake Ecological Reserve and Spatsizi Plateau Wilderness Park with new Schedules	Ecological Reserves Act and Park Act
1474	Jul.28/82	New legal description for Spatsizi Plateau Wilderness Park	Park Act
162	Jun.27/83	Parks and Outdoor Recreation Division to manage and administer Gladys Lake Ecological Reserve	Park Act

SCHEDULE

Commencing at the southeast corner of Lot 5975, Cassiar District;  
thence in a general southeasterly direction in a straight line to  
triangulation station "PTARMIGAN", (elevation 2068.07 m), being a point on  
the easterly boundary of the watershed of Stikine River;  
thence in a general Southerly and Westerly direction along the easterly and  
southerly boundaries of said watershed to the easterly boundary of the  
watershed of Ranger Creek;  
thence Southerly along the easterly boundary of said watershed to the  
intersection with the 1371.60 m contour;  
thence in a general Northwesterly direction along the said 1371.60 m  
contour line to a point due south of the point of intersection of the  
natural boundary of Didene Creek, on the right bank thereof, and the  
natural boundary of Spatsizi River on the left bank thereof;  
thence due North to the said intersection of the natural boundaries of  
Didene Creek on the right bank thereof and Spatsizi River on the left bank  
thereof;  
thence in a general westerly direction along the said natural boundary of  
Didene Creek on the right bank thereof to a point perpendicularly distant  
one kilometre from and lying northeasterly of the centre line of the  
British Columbia Railway right-of-way;  
thence Northwesterly along a line parallel to and perpendicularly distant  
one kilometer from the said centre line to the first intersection with the  
1066.80 m contour;  
thence Northerly along the said 1066.80 m contour to the intersection with  
the first tributary flowing northwesterly into Eaglenest Creek;  
thence Westerly along the said tributary to Eaglenest Creek;  
thence due North to the 1066.80 m contour;  
thence in a general Northwesterly, Northerly, and Easterly direction along  
the said 1066.80 m contour to the point of intersection with the right bank  
of McEwan Creek;



thence Easterly along the said bank to a point due south of the summit of Tsanaglode Mountain;

thence due North to said summit;

thence due East 15,500 metres;

thence due North 8,000 metres, more or less, to a point on the right bank of Cullivan Creek;

thence Northerly along the right bank of Cullivan Creek to a point lying three kilometres due south of the left bank of the Stikine River;

thence Easterly along a line parallel to and perpendicularly distant three kilometres from the left bank of said Stikine River to an unnamed creek which flows easterly in to Stikine River at a point 13.2 kilometres north and 800 metres west more or less of the northeast corner of Lot 5974, Cassiar District;

thence Easterly along the left bank of said creek to the left bank of the Stikine River;

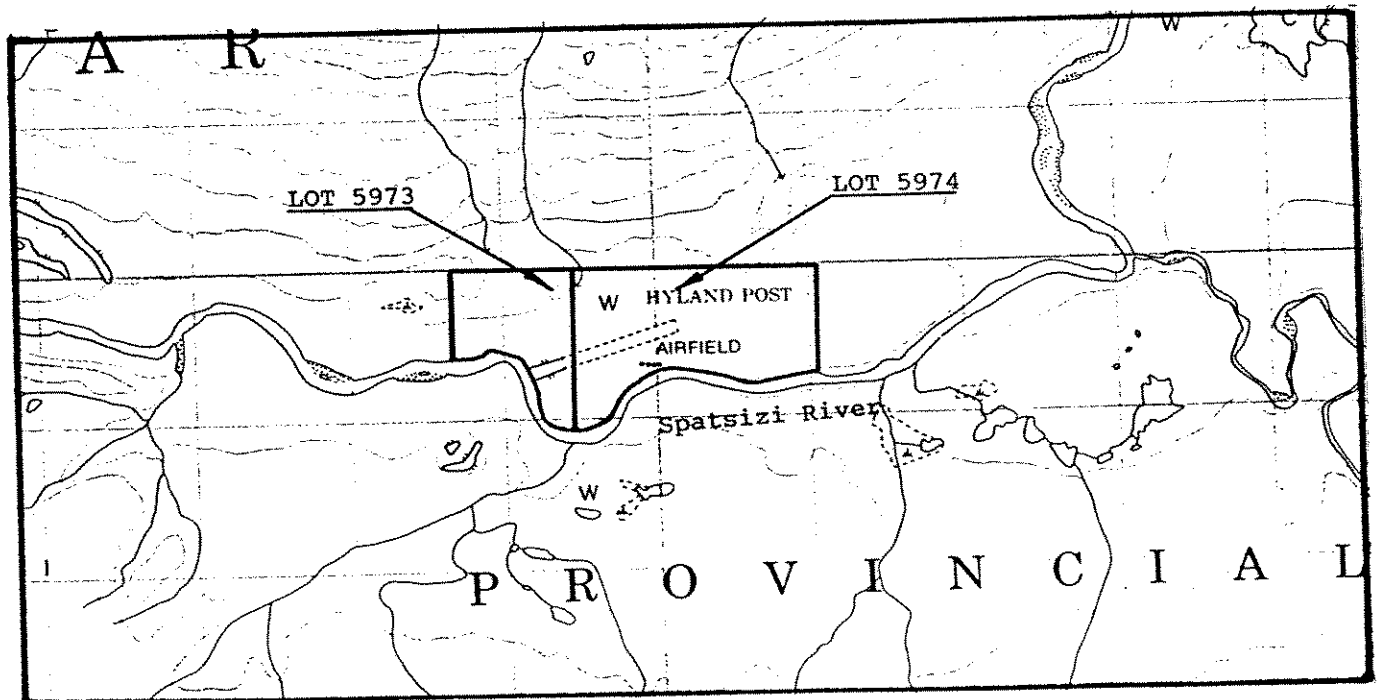
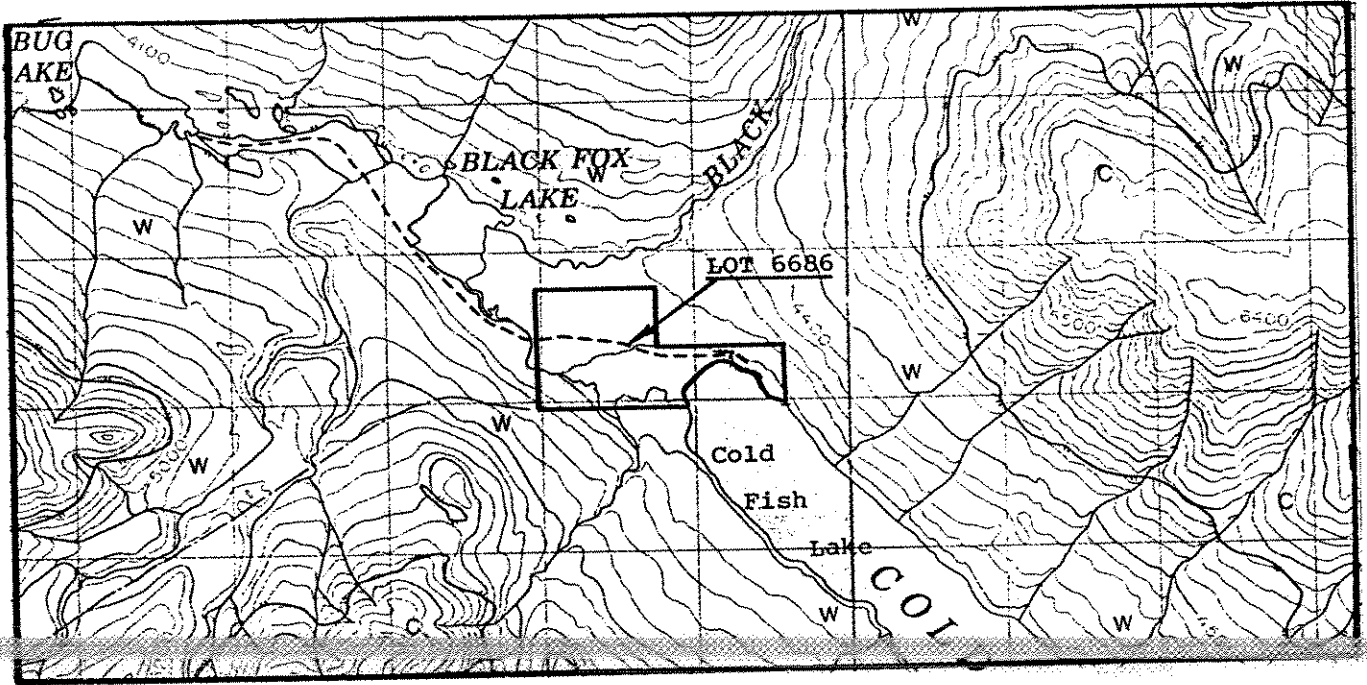
thence Southeasterly along the left bank of the Stikine River to the confluence with Sanabar Creek.

thence S 55° E across the Stikine River to a point one kilometre perpendicularly distant easterly from the right bank of Stikine River; thence Southerly along a line parallel to and perpendicularly distant one kilometre from the right bank of Stikine River to the northerly boundary of Lot 5975, Cassiar District;

thence Easterly and Southerly along the northerly and easterly boundaries of said Lot 5975, Cassiar District to the southeast corner thereof, being the point of commencement, except thereout Gladys Lake Ecological Reserve; the whole containing 656,785 hectares, more or less.

APPENDIX 15.3 Schedule Providing Legal Description of Gladys Lake Ecological Reserve

commencing at the mouth of a creek flowing into Cold Fish Lake, locally known as Gladys Creek; thence due west to the 1524 metre contour and continuing along said contour to a point due east of a major fork in a southerly tributary of Cullivan Creek; thence due west to said fork; thence following the west tributary from said fork to its headwaters and continuing through a pass locally known as Ice Box Canyon to a tributary of Eaglenest Creek and continuing down to a major fork of said creek; thence following the south fork and continuing southerly to an intersection with a north tributary of Tsetia Creek locally known as Waterfall Creek; thence following said tributary's north fork easterly to the pass leading into McMillan Creek being a tributary to Gladys Lake; thence down said tributary of McMillan Creek to a major fork of said creek; thence southerly up the south tributary of said fork to a point due west of an intermittent tributary that leads eastward to a pass and to the headwaters of a creek flowing easterly into the Spatsizi River; thence due east to and along said intermittent tributary, and along its headwaters of said creek flowing easterly into Spatsizi River, thence easterly following said creek to a major fork lying immediately south of Spatsizi Mountain; thence due north to the 1524 metre contour and continuing in a general easterly, northerly, and westerly direction along said contour to its closest point to the mouth of Gladys Creek; thence westerly in a straight line to the point of commencement



APPENDIX 15.5 Summary List of Facilities At Guide Outfitters Camps

Bug Lake Camp: south shore of Bug Lake; 5 tent frames, cache, corral, dock

Rainbow Camp: south end Cold Fish Lake; 1 log cabin, 2 tent frames, wharf

Buckinghorse Lake: north end; 3 tent frames, corral

Tuaton Lake: east shore; 2 tent frames, dock, cache

Hotesklwa Creek Camp: south of Laslui Lake; 7 tent frames, corral, pole cache

Horse Camp: 10 km downstream from Hyland Post; log cabin, corral

MacDonald Camp: north side Eaglenest Cr.; poles for wall tent, cache, table

Ram Creek Camp: junction Ram & North Eaglenest Cr.; poles for wall tent, table, corral

Waterfall Camp: south side Tsetia Cr.; tent poles, table, cache, corral

Bear Creek Camp: junction Bear Cr. & Spatsizi R.; tent poles, table, cache, corral

Ross River Camp: west side; tent poles, cache

~~Dawson River Camp: junction Bruce Cr. & Dawson R.; tent poles, table, cache, corral~~

Cache Creek Camp: north side Kliweyuk Cr.; tent frame, corral, cache table

Chukachida River: south bank near junction with Stikine R.; wood frame cabin, toilet

Sport Fishing Regulation for Spatsizi Park (1986/87)

1. There are no specific regulations for lakes or streams within Spatsizi Park.
2. No fishing in streams from April 1st to June 30th.
3. Catch quotas:
  - 0 trout per day, under 30cm (fork length), from any stream;
  - 2 trout per day, over 50cm; possession limit 4;
  - 3 trout per day; all sizes in streams; possession limit 6;
  - 5 trout per day; all sizes in lakes; possession limit 10;
  - 5 trout per day; all sizes, all waters; possession limit 10;
  - 25 whitefish per day; all species, all waters; possession limit 50;
  - 10 burbot per day; all waters; possession limit 20;
  - 8 Arctic grayling per day; all waters; possession limit 16;

Hunting Regulations for Spatsizi Park (1986/87)

Fire Arm Restriction:

1. Discharge of fire arms only during lawful hunting season,
2. No shooting within one km of Cold Fish Lake at all times.

Areas Closed To Hunting:

1. BCR railroad grade in M.U.'s 6-17b, 6-18, 6-19 & 6-20 a distance of two km either side of grade. The use of motor vehicles to transport wildlife or hunters to or from the location of wildlife is prohibited in the area parallel to and two km perpendicular distance from the mid-line of the B.C.R. right-of-way from the confluence of the Skeena and Mosque rivers in the south to the intersection of the B.C.R. rail right-of-way with Highway 37 in the north;
2. Closed for mountain goat hunting in Caribou Mountain zone;
3. No hunting in the Gladys Lake Ecological Reserve.

Limited Entry and Non-Resident Quotas:

1. Limited Entry Hunting or Non-Resident Quota in Spatsizi Park for mountain goat, caribou, grizzly bear, moose, mountain sheep;
2. Non-Resident Quota for black bear and wolf.

Other Species:

1. Wolf, no closed season, limit of 10 per year;
2. Coyote, Sept. 1 to March 31, no bag limit;
3. Lynx, Nov. 1 to Feb. 28, limit of One per year;
4. Wolverine, Oct. 15 to Nov. 15, limit of one per year;
5. Blue, Franklin and ruffed grouse, Sept. 10 to Nov. 15, daily limit of ten; possession limit of 30;
6. Ptarmigan, Aug. 15 to Feb. 28, daily limit 10, possession limit 30;
7. Migratory birds including ducks (8 daily, 16 possession), coots (10 daily, possession 20), snipe (10 daily, possession 20), geese (5 daily, possession 10).
8. No deer hunting is permitted.

## APPENDIX 15.7 TOPOGRAPHIC MAPS AND AIR PHOTO COVERAGE

### TOPOGRAPHIC MAPS

1:50,000 and 1:250,000 topographic maps are the largest scale topographic maps available for the entire area of Spatsizi Park.

1:250,000 Maps: 104-H covers the western 3/4 of the park area  
94-E covers the eastern 1/4 of the park area

1:50,000: Nineteen 1:50,000 maps are required to cover the entire area of Spatsizi Park. Figure 15.7(a) on the following page provides an index for these maps.

Topographic Map Availability The topographic maps are available for \$4.00 per map from:

Surveys and Resource Mapping Branch,  
Ministry of Environment,  
Parliament Buildings,  
Victoria B.C. V8V 1X5  
Telephone: (604) 387-1441

### PROVINCIAL AIR PHOTO COVERAGE

A variety of Provincial black and white air photos at various scales are available for certain portions of Spatsizi Park. The park area does not have complete, up-to-date air photo coverage. Figure 15.7(b) summarizes the general areas of air photo coverage from the Provincial government. Some very small areas along the south and southeast portions of the park have more recent and alternative air photo coverage than that shown on Figure 15.7(b). This alternative coverage includes:

1:60,000, 1984, Index 104SE & SW, Sheet 2  
1:40,000 1981, Index 104H Sheet 4 and 94E Sheet 4  
1:15,000 1981, Index 94 E/W, Sheet 2

Provincial air photos and Index Maps (required for the selection of individual air photos) are available from the Surveys and Resource Mapping Branch address given above. Provincial black and white air photos cost \$2.70 per print.

FEDERAL AIR PHOTO COVERAGE

Several series of black and white Federal air photos cover portions or all of Spatsizi Park per the following list:

- 1:72,000, 1972, only covers portions of the park between Caribou Hide and Taylor Peak
- 1:50,000, 1967, covers western portions of the park on map sheet 104-H
- 1:32,000, 1947/48, only covers portions from Garden Creek south to Fire Flats
- 1:32,000 1949 covers entire area of park
- 1:3,870,000, 1979, Landsat (satellite) colour mosaic

A series of special high level air photography were flown by the Federal government over portions of the park area in August, 1972. These included colour, false colour and infrared images which are not normally listed by the National Air Photo Library.

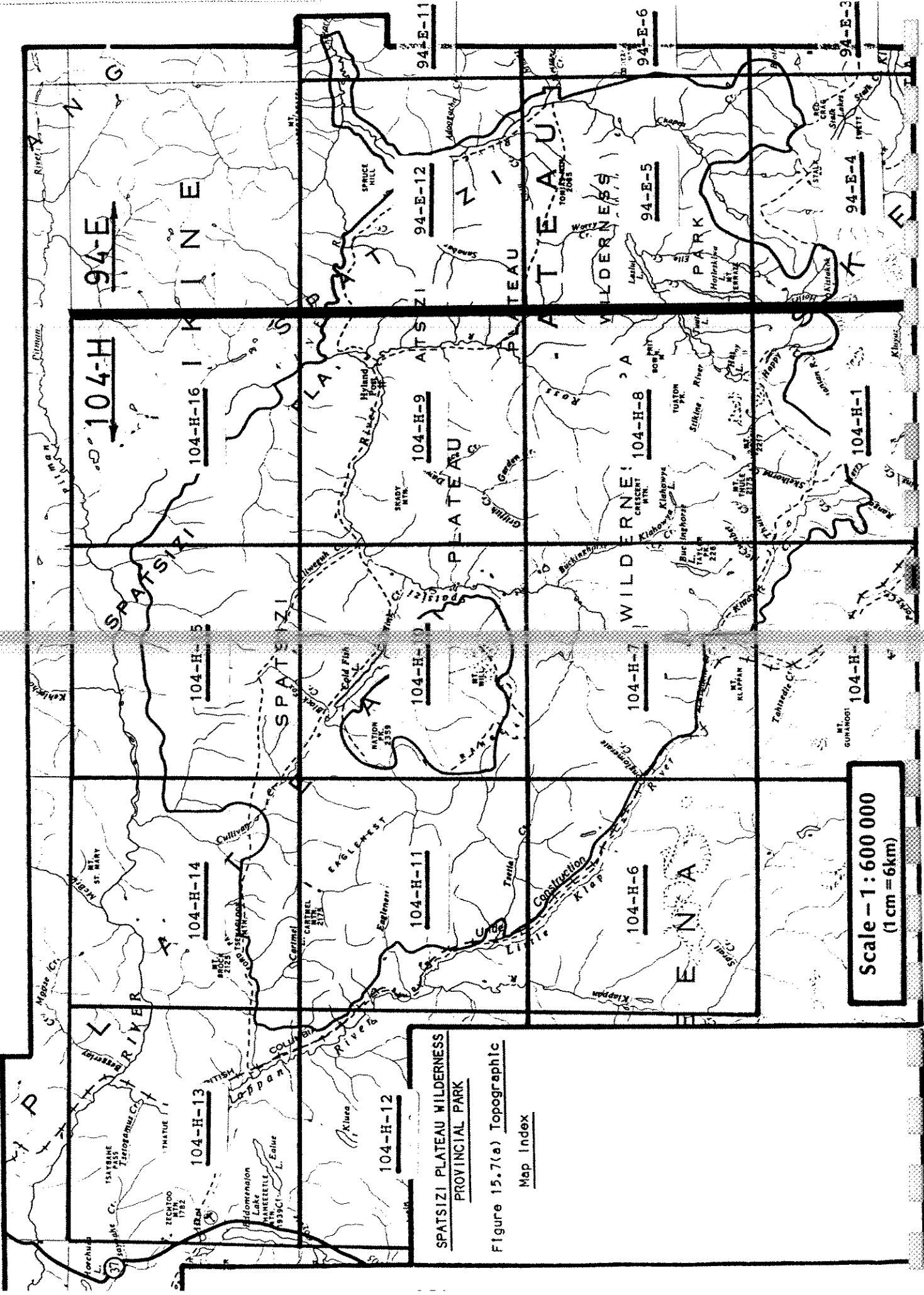
Federal air photographs and index maps are available from:

National Air Photo Library,

Ottawa, Ontario, K1A 0E9

Telephone: (613) 995-4560

Federal black and white air photos cost \$3.50 per print. Small Landsat images cost \$8.50 each. Enlargements are available at considerably more cost.

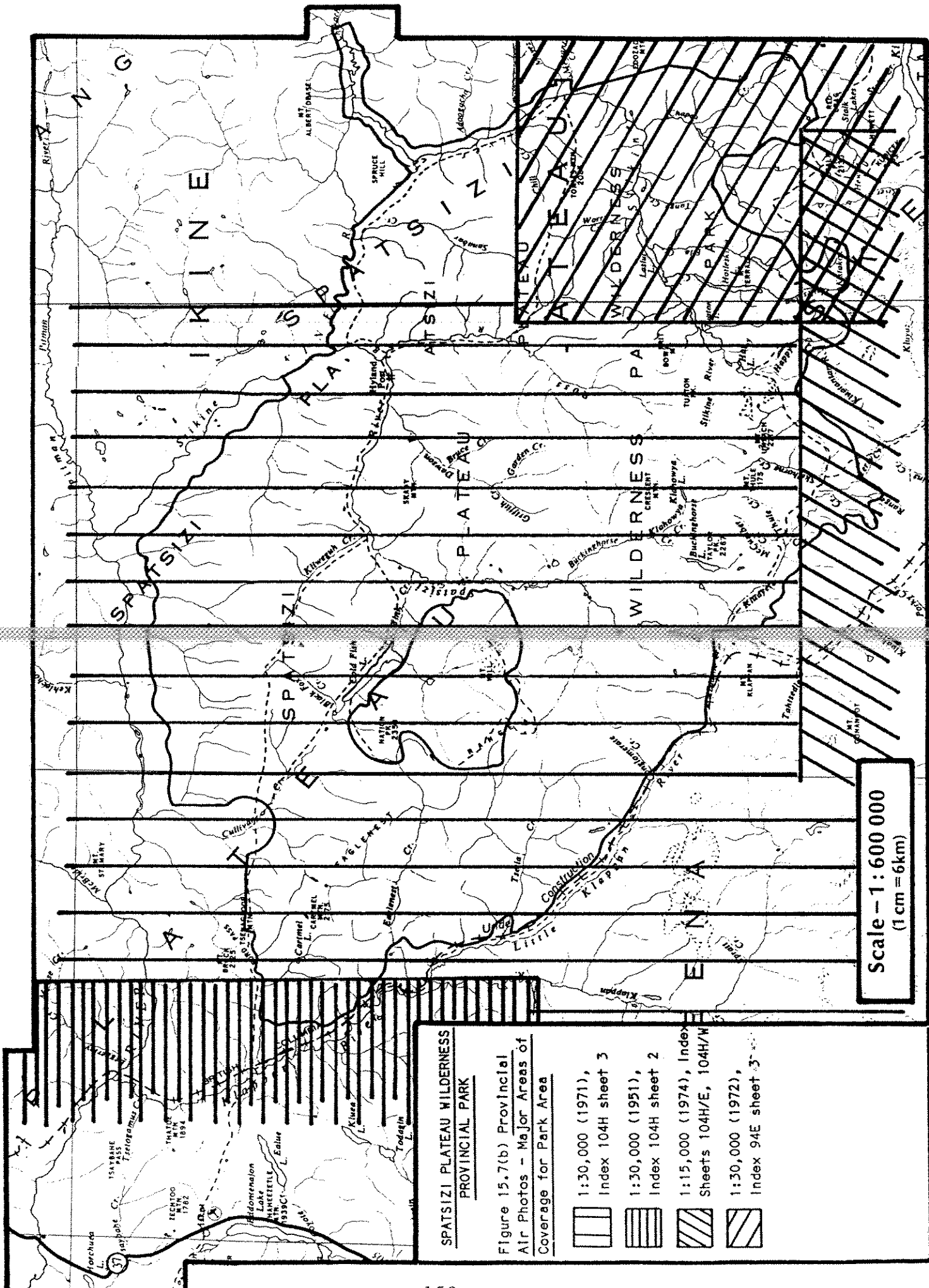


**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Figure 15.7(a) Topographic





Map Index





**SPATSIZI PLATEAU WILDERNESS  
PROVINCIAL PARK**

Figure 15.7(b) Provincial  
Air Photos - Major Areas of  
Coverage for Park Area

-  1:30,000 (1971),  
Index 104H sheet 3
-  1:30,000 (1951),  
Index 104H sheet 2
-  1:15,000 (1974), Index  
Sheets 104H/E, 104H/W
-  1:30,000 (1972),  
Index 94E sheet 3

Scale - 1:600 000  
(1 cm = 6km)

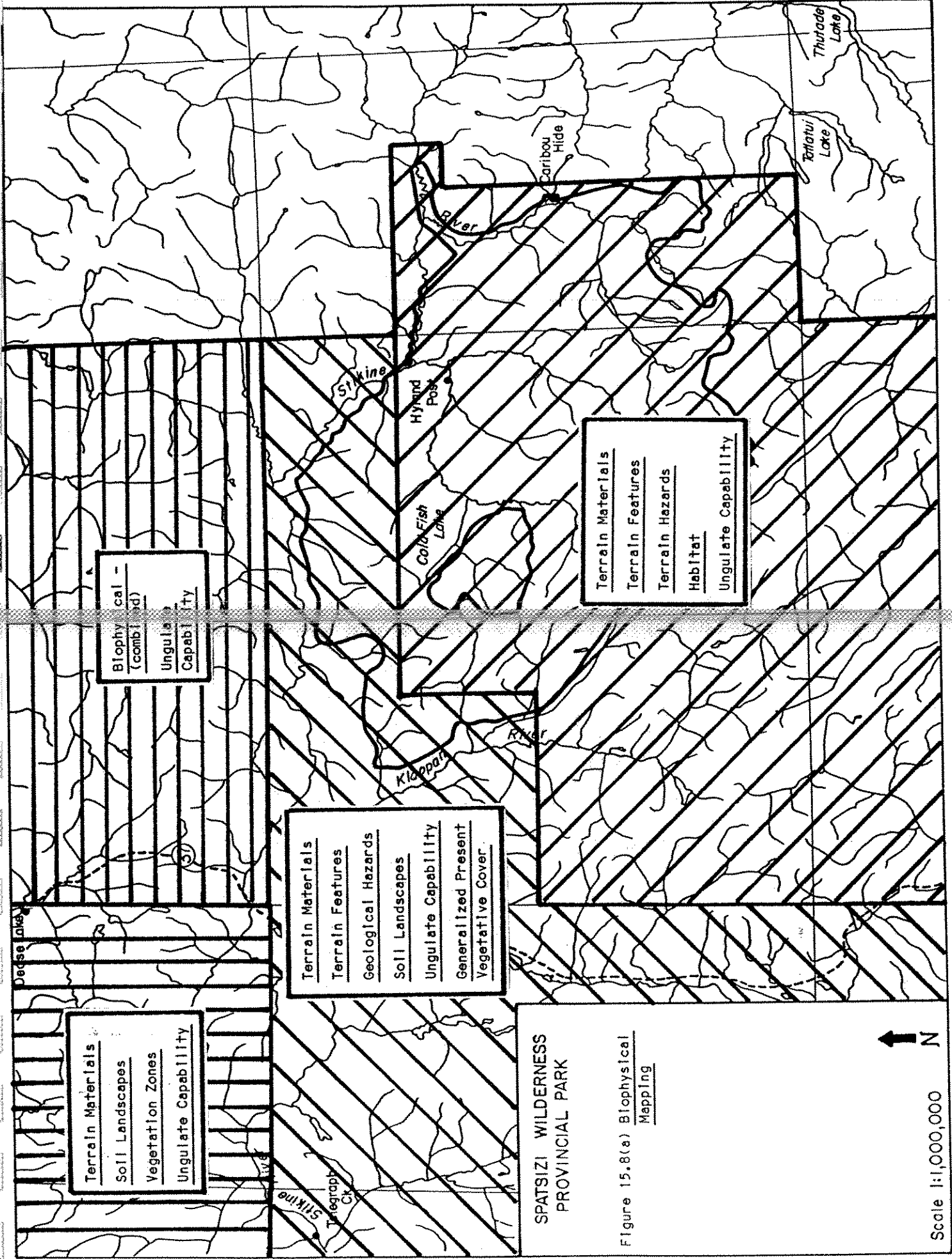
## APPENDIX 15.8 BIOPHYSICAL AND RESOURCE MAPPING

Numerous surveys and studies have been carried out in the vicinity of Spatsizi Park, especially those related to big game. These studies are readily identified by referring to the bibliography.

Several biophysical mapping inventories have been carried out around the park. Biophysical maps completed at a scale of 1:250,000 have been prepared over several years since the late 1970's. The extent of these map inventories are shown by the following Figure 15.8(a). Biophysical mapping information is available from the Wildlife Branch, Ministry of Environment and Parks, Victoria.

Figure 15.8(b) shows additional map series:

- Recreation Features mapping at 1:50,000 prepared by the Parks and Outdoor Recreation Division, Victoria, in 1981 to 1982,
- Mean Annual Maximum Snowfall at 1:250,000 prepared by the Ministry of Environment, Victoria, in 1984,
- Terrain and Hazards mapping at 1:100,000 prepared by the Ministry of Environment, Victoria, in 1978.



Terrain Materials  
Soil Landscapes  
Vegetation Zones  
Ungulate Capability

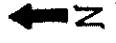
Biophysical (combined)  
Ungulate Capability

Terrain Materials  
Terrain Features  
Geological Hazards  
Soil Landscapes  
Ungulate Capability  
Generalized Present Vegetative Cover

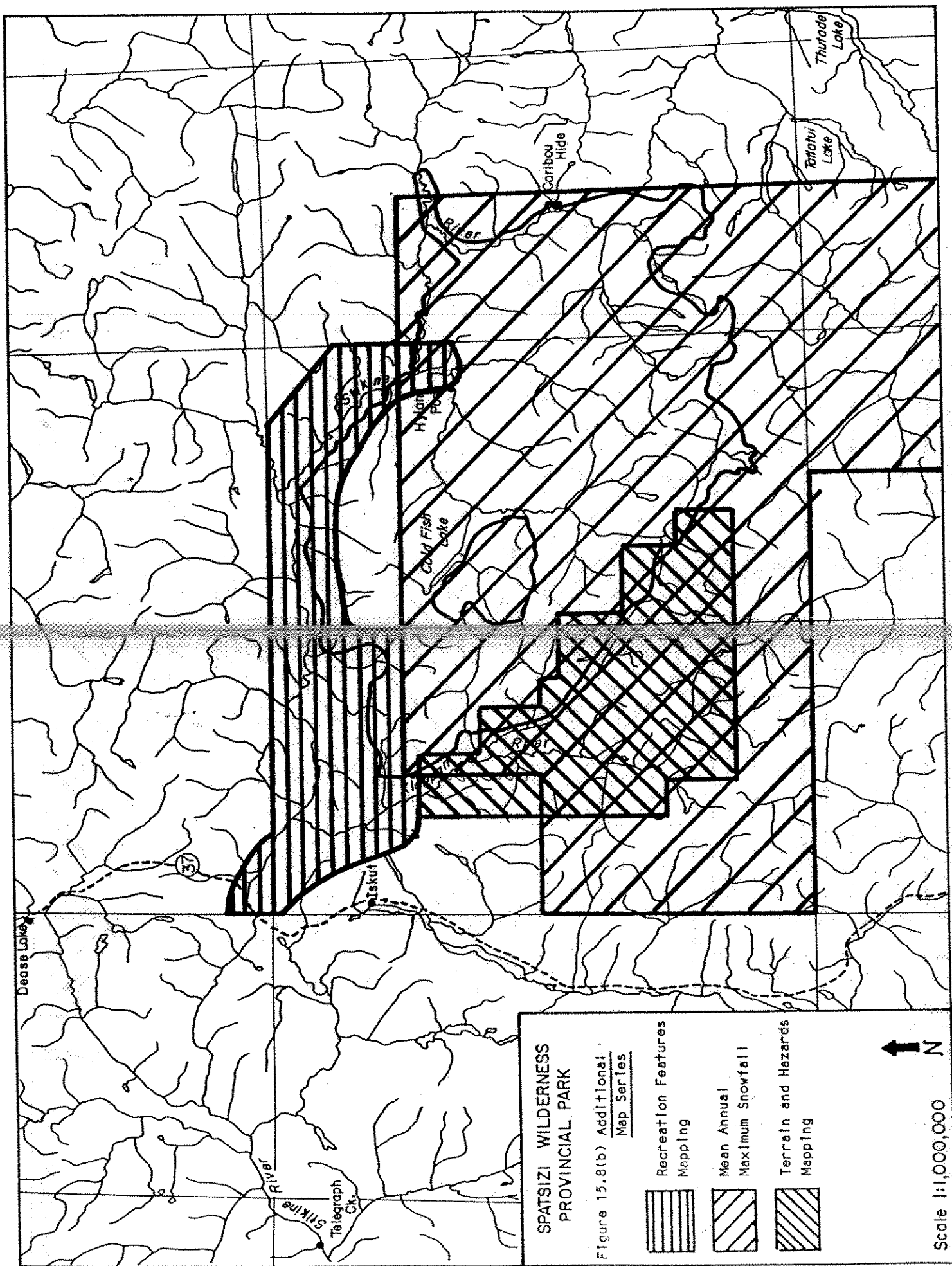
Terrain Materials  
Terrain Features  
Terrain Hazards  
Habitat  
Ungulate Capability

SPATSIZI WILDERNESS  
PROVINCIAL PARK

Figure 15.8(a) Biophysical Mapping



Scale 1:1,000,000



APPENDIX 15.9 TERRESTRIAL VERTIBRATE SPECIES LIST FOR SPATSIZI PARK

Source: Parks and Outdoor Recreation Division, 1982.

A. Wildlife Species List

1. Amphibians

a) Known Species

Northwestern Toad - Bufo boreas

~~Northern Wood Frog - Rana sylvatica~~

b) Unconfirmed Species

Long-toed Salamander - Amphispelma macrodactylum

Western Spotted Frog - Rana pretiosa

2. Reptiles

None

### 3. Birds

#### a) Known Species

##### Gaviiformes

- Common Loon - Gavia immer
- \*Yellow-billed Loon - Gavia adamsii
- Arctic Loon - Gavia arctica
- Red-throated Loon - Gavia stellata

##### Podicipediformes

- Red-necked Grebe - Podiceps grisegena
- Horned Grebe - Podiceps auritus

##### Anseriformes

- Canada Goose - Branta canadensis
- Mallard - Anas platyrhynchos
- Pintail - Anas acuta
- American Wigeon - Mareca americana
- Northern Shoveler - Spatula clypeata
- Blue-winged Teal - Anas discors
- Green-winged Teal - Anas carolinensis
- Ring-necked Duck - Aythya collaris
- Greater Scaup - Aythya marila
- Lesser Scaup - Aythya affinis
- Common Goldeneye - Bucephala clangula
- Barrow's Goldeneye - Bucephala islandica
- Harlequin Duck - Histrionicus histrionicus
- \*Black Scoter - Oidemia nigra
- White-winged Scoter - Melanitta deglandi
- Surf Scoter - Melanitta perspicillata
- Common Merganser - Mergus merganser

##### Falconiformes

- Sharp-shinned Hawk - Accipiter striatus
- Marsh Hawk - Circus cyaneus
- Red-tailed Hawk - Buteo jamaicensis
- Golden Eagle - Aquila chrysaetos
- Bald Eagle - Haliaeetus leucocephalus
- Osprey - Pandion haliaetus
- Gyr Falcon - Falco rusticolus
- Merlin - Falco columbarius
- American Kestrel - Falco sparverius

##### Galliformes

- Blue Grouse - Dendragapus obscurus
- Spruce Grouse - Canachites canadensis
- Ruffed Grouse - Bonasa umbellus
- Willow Ptarmigan - Lagopus lagopus
- White-tailed Ptarmigan - Lagopus leucurus

## Charadriiformes

- American Golden Plover - Pluvialis dominica  
Black-bellied Plover - Squatarola squatarola  
Semipalmated Plover - Charadrius semipalmatus  
Killdeer - Charadrius vociferus  
\*Whimbrel - Numenius phaeopus  
Upland Sandpiper - Bartramia longicauda  
Solitary Sandpiper - Tringa solitaria  
Spotted Sandpiper - Actitis macularia  
\*Wandering Tattler - Heteroscelus incanum  
Lesser Yellowlegs - Totanus flavipes  
Long-billed Dowitcher - Limnodromus scolopaceus  
Sanderling - Crocethia alba  
Least Sandpiper - Erolia minutilla  
Semipalmated Sandpiper - Ereunetes pusillus  
Western Sandpiper - Ereunetes mauri  
Northern Phalarope - Lobipes lobatus  
Common Snipe - Capella gallinago  
\*Glaucous gull - Larus hyperboreus  
Herring Gull - Larus argentatus  
California Gull - Larus californicus  
Mew Gull - Larus canus  
Bonaparte's Gull - Larus philadelphia  
Arctic Tern - Sterna paradisaea

## Strigiformes

- Great-horned Owl - Bubo virginianus  
Short-eared Owl - Asio flammeus  
Hawk Owl - Surnia ululu  
Pygmy Owl - Glaucidium gnoma

## Caprimulgiformes

- Common Nighthawk - Chordeiles minor

## Apodiformes

- Rufous Hummingbird - Selasphorus rufus

## Coraciiformes

- Belted Kingfisher - Megascops alcyon

## Piciformes

- Common Flicker - Colaptes auratus  
Yellow-bellied Sapsucker - Sphyrapicus varius  
Hairy Woodpecker - Dendrocopos villosus  
Downy Woodpecker - Dendrocopos pubescens  
Black-backed Three-toed Woodpecker - Picoides arcticus

Passeriformes

Say's Phoebe - Sayornis saya  
Western Wood Pewee - Contopus sordidulus  
Olive-sided Flycatcher - Nuttallornis borealis  
Horned Lark - Eremophila alpestris  
Barn Swallow - Hirundo rustica  
Cliff Swallow - Petrochelidon pyrrhonota  
Violet-green Swallow - Tachycineta thalassina  
Tree Swallow - Iridoprocne bicolor  
Bank Swallow - Riparia riparia  
\*Stellar's Jay - Cyanocitta stellaria  
Gray Jay - Perisoreus canadensis  
Common Raven - Corvus corax  
Black-capped Chickadee - Parus atricapillus  
Boreal Chickadee - Parus hudsonicus  
Dipper - Cinclus mexicanus  
Red-breasted Nuthatch - Sitta canadensis  
Winter Wren - Troglodytes troglodytes  
American Robin - Turdus migratorius  
Varied Thrush - Ixoreus naevius  
Townsend's Solitaire - Myadestes townsendi  
Hermit Thrush - Hylocichla guttata  
Swainson's Thrush - Hylocichla ustulata  
Gray-cheeked Thrush - Hylocichla minima  
Mountain Bluebird - Sialia currucoides  
Golden-crowned Kinglet - Regulus satrapa  
Ruby-crowned Kinglet - Regulus calendula  
Water Pipit - Anthus spinoletta  
Bohemian Waxwing - Bombycilla garrulus  
Cedar Waxwing - Bombycilla cedrorum  
Northern Shrike - Lanius excubitor  
Starling - Sturnus vulgaris  
Warbling Vireo - Vireo gilvus  
Tennessee Warbler - Vermivora peregrina  
Orange-crowned Warbler - Vermivora celata  
Yellow Warbler - Dendroica petechia  
Yellow-rumped Warbler - Dendroica coronata  
Townsend's Warbler - Dendroica townsendi  
Blackpoll Warbler - Dendroica striata  
Northern Waterthrush - Seiurus noveboracensis  
Common Yellowthroat - Geothlypis trichas  
MacGillivray's Warbler - Oporornis tolmiei  
Wilson's Warbler - Wilsonia pusilla  
American Redstart - Setophaga ruticilla  
Red-winged Blackbird - Agelaius phoeniceus  
Rusty Blackbird - Euphagus carolinus  
Brewer's Blackbird - Euphagus cyanocephalus  
\*Common Grackle - Quiscalus quisqualis  
Brown-headed Cowbird - Molothrus ater  
Western Tanager - Piranga ludoviciana  
Purple Finch - Carpodacus purpureus  
Pine Grosbeak - Pinicola enucleator  
Gray-crowned Rosy Finch - Leucosticte tephrocotis



Passeriformes cont'd

Pine Siskin - Spinus pinus  
White-winged Crossbill - Loxia leucoptera  
Savannah Sparrow - Passerculus sandwichensis  
Dark-eyed Junco - Junco hyemalis  
Tree Sparrow - Spizella arborea  
Chipping Sparrow - Spizella passerina  
White-crowned Sparrow - Zonotrichia leucophrys  
Golden-crowned Sparrow - Zonotrichia atricapilla  
Fox Sparrow - Passerella iliaca  
Lincoln's Sparrow - Melospiza lincolni  
Lapland Longspur - Calcarius lapponicus  
Smith's Longspur - Calcarius pictus  
Snow Bunting - Plectrophenax nivalis

\* of rare occurrence

b) Unconfirmed Species

Whistling Swan - Olor columbianus  
Goshawk - Accipiter gentilis  
Peregrine Falcon - Falco peregrinus  
Greater Yellowlegs - Totanus melanoleucus  
Long-tailed Jaeger - Stercorarius longicaudus  
Mourning Dove - Zenaidura macroura  

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Rough-winged Swallow - Stelgidopteryx ruficollis  
Western Meadowlark - Sturnella neglecta  
Hoary Redpoll - Acanthis hornemanni  
Common Redpoll - Acanthis flammea

#### 4. Mammals

##### a) Known Species

###### Insectivora

Cinereus Shrew - Sorex cinereus  
Wandering Shrew - Sorex vagrans  
Navigator Shrew - Sorex palustris

###### Chiroptera

Little Brown Bat - Myotis lucifugus

###### Lagomorpha

Varying Hare - Lepus americanus

###### Rodentia

Hoary Marmot - Marmota caligata  
Arctic Groundsquirrel - Spermophilus undulatus  
Least Chipmunk - Eutamias minimus  
Red Squirrel - Tamiasciurus hudsonicus  
American Beaver - Castor canadensis  
White-footed Mouse - Peromyscus maniculatus  
Northern Bog-lemming - Synaptomys borealis  
Siberian Lemming - Lemmus sibiricus  
Tundra Redback Vole - Clethrionomys rutilus  
Mountain Heather Vole - Phenacomys intermedius  
Meadow Vole - Microtus pennsylvanicus  
Long-tailed Vole - Microtus longicaudus  
Muskrat - Ondatra zibethica  
Western Jumping Mouse - Zapus princeps  
Porcupine - Erethizon dorsatum

###### Carnivora

Coyote - Canis latrans  
Wolf - Canis lupus  
Red Fox - Vulpes fulva  
American Black Bear - Ursus americanus  
Grizzly Bear - Ursus arctos  
Marten - Martes americana  
Fisher - Martes pennanti  
Short-tailed Weasel - Mustela erminea  
Mink - Mustela vison  
Wolverine - Gulo luscus  
Canadian River Otter - Lutra canadensis  
Cougar - Felis concolor  
Canada Lynx - Lynx canadensis

Artiodactyla

Mule Deer - Odocoileus hemionus

American Moose - Alces alces

Woodland Caribou - Rangifer tarandus caribou

Mountain Goat - Oreamnos americanus

Stone's Sheep - Ovis dalli stonei

b) Unconfirmed Species

Pygmy Shrew - Microsorex hoyi

Northern Flying Squirrel - Glaucomys sabrinus

Meadow Jumping Mouse - Zapus hudsonicus