

V THE RESOURCE BASE

The Stikine Plateau Area, with its mosaic pattern of environmental zones, provides habitats for a wide range of plant and animal species which were available for exploitation by the Tahltan people. This chapter presents and describes these various

resources according to the class to which they belong. For each major resource exploited, a brief summary is provided of the habitat, characteristics, seasonal availability and abundance.

Mammal Resources

All of the ungulates, bears, and a variety of medium sized herbivores which inhabit the study area were traditionally (and still are today) valued as primary or supplementary sources of food and raw materials. The Stikine Plateau area is one of the last remaining natural areas in North America to support such diverse as well as abundant populations of large game animals. Since the turn of the century, people from various parts of the world have been drawn to the Stikine to hunt large game trophies and guide outfitting came to be an important means of livelihood for many Tahltans.

Largely due to the wilderness nature and remoteness of the area, little in the way of environmental studies or wildlife inventories has been carried out in the Stikine area until very recently. A wildlife inventory, conducted in Spatsizi Park in 1976, by B.C. Parks Branch, indicates that the ungulate potential of the area is excellent. Wintering ranges in the park, extremely important for winter survival and productivity, compare favourably with the very best ungulate ranges in other areas of the province (Osmond-Jones *et al.* 1977:32). Based on accounts by local Tahltan people, it is assumed that wildlife potential of other plateau areas within the Stikine drainage with similar topography and climate is comparable to that of the Spatsizi.

Caribou

The woodland caribou (*Rangifer tarandus osborni*) which occurs in the Stikine

Plateau is not involved in large scale migrations. Its movements primarily involve shifting from alpine tundra to winter forage within forested zones. In May caribou move above treeline where calving takes place on high exposed ridges in late May through June. Females and young form small nursery bands which remain on ridges and in alpine meadows throughout the summer where they feed on tundra grasses, sedges, horsetails, flowering plants, and leaves of willow and birch. Males descend into forested areas during the summer and remain until September at which time they shed velvet from their antlers.

Males and females come together in large bands in alpine areas by the end of September for the rutting season. In late fall caribou may move back to forested areas along subalpine creeks and lakes at lower elevations in order to shed antlers. Males shed their antlers between November and March, while pregnant females do not shed their antlers until after parturition in June. In January, while the snow cover is soft, caribou move up to tree line to feed on birch-lichen communities. Later in the winter, in February to March when the snow cover in open areas becomes crusted, caribou move down to timbered areas in the subalpine zone along river valleys to feed on mosses and lichens under the soft snow cover (Osmond-Jones *et al.* 1977:36-43).

During flights in September 1976, Hazelwood and Hatler observed a minimum number of 1200 caribou in Spatsizi Provincial Park and estimated the population of Spatsizi Plateau area at

about 2,000 animals (Osmond-Jones *et al.* 1977:36). The woodland caribou weighs up to 700 pounds (320 kg) (Cowan and Guiget 1956:384), with an average weight of 400 pounds (180 kg) for adults.

Moose

Largest of the American deer family, the moose also moves seasonally from alpine to forested habitats. Two sub-species of moose occur in the Stikine Plateau area. Alces alces andersoni, weighing 900 to 1200 pounds (410 to 500 kg) inhabits most of the area south of the Stikine River and east of the Tuya, while Alces alces gigas, a larger variety weighing up to 1800 pounds (820 kg), occurs to the northwest of these two rivers. Preferred food consists of young growth of deciduous trees and shrubs including aspen, birch and willow as well as marshy plants and balsam fir (Cowan and Guiget 1956:376).

The moose is a solitary browser which frequents ponds, swamps, lakes, and streams in the alpine and subalpine zones in summer when it feeds mainly on aquatic vegetation. Moose gather in small groups in late September and during the rut in October. They may be found in early winter, when the snow cover is soft, feeding near timberline on south facing slopes. Later, when the snow becomes crusted, they move into forested areas along the major river valleys. Antlers are shed in December and January. Young are born in June along watercourses where they can be protected from wolves. Guide outfitters estimate the moose population of the Spatsizi Plateau area at about 2300 animals (Osmond-Jones *et al.* 1977:53).

Natural cycles of abundance and decline in populations of large game animals such as moose are poorly understood. It appears that moose inhabited the Stikine Plateau in earlier times but dramatically declined from 1800 to 1877 (Emmons 1911:71). Moose populations have increased over the last one hundred years while caribou populations have declined. Whether these changes in population are related to small scale shifts in the climate and vegetation of the area or to other factors is unknown at the moment.

Mule deer

The mule deer (Odocoileus hemionus hemionus) inhabits broad valleys of the middle and upper sections of the Stikine River and its major tributaries, keeping to lower elevations in winter and ascending valleys in summer. It prefers burnt over areas where it browses on aspen, willow, serviceberry, mountain juniper, balsam fir, herbaceous plants, and grasses in spring. The mule deer mates in October to November with fawns born in June. Antlers are shed during early winter. Males weigh 180 to 400 pounds (82 - 180 kg) while females weigh 120 to 160 pounds (54 - 73 kg) (Cowan and Guiget 1977:369). Deer are not plentiful in the Stikine River area at present (Osmond-Jones *et al.* 1977:56, B.C. Fish and Wildlife Branch 1980). They provide an additional or occasional source of meat, however.

Woodland Buffalo

The woodland buffalo (Bison bison athabasca) formerly inhabited portions of the Stikine Plateau (Teit 1956:68, Thorman n.d.). A skull of recent origin has been found in a bog near Atlin (Cowan and Guiget 1956:388). The buffalo grazes on grasses and forbes and has an estimated weight of 2000 to 2200 pounds (900 - 1000 kg).

Mountain Goat

The white, woolly mountain goat (Oreamnos americanus columbiae) inhabits rough rocky crags on mountains above timberline and steep rocky canyons along the Stikine. It grazes on a variety of alpine grasses and forbes, all tree and shrub species except spruce, and seeks alkaline earth licks during summer. Mating takes place in November to December. Young are born in May to June. Females and young form small gregarious bands while males are solitary. This goat weighs 250 to 300 pounds (114 - 136 kg). Its horns are not shed but increase in size annually (Cowan and Guiget 1956:392). Goats do not move any great distance within their home range. A minimum population of 521 goats has been observed within Spatsizi Park, although not all ranges were

surveyed (Osmond-Jones *et al.* 1977:43). Excellent goat habitat occurs throughout the Stikine Plateau area.

Sheep

The habitat of sheep (*Ovis dalli stonei*) is the alpine meadows above timberline where it grazes on grasses, forbes, and dwarf willow. It uses distinct summer and winter ranges within the alpine zone. It seeks out rough, rocky terrain as protection from predators and may be found feeding with goats. Sheep are gregarious, although male and female bands are separate except during the rut which takes place from mid-November to mid-December. Their horns are not shed, increasing in size annually. Mature sheep weigh 250 to 300 pounds (114 - 136 kg) (Cowan and Guiget 1956: 399). A minimum of 279 sheep has been observed in Spatsizi Park, although much of the best sheep habitat has not been surveyed. Since females mate with mature dominant rams, excessive hunting of these in recent years has had an adverse effect on reproductive capability and a serious decline in sheep populations has resulted (Osmond-Jones *et al.* 1977:47).

Black Bear

The black bear (*Ursus americanus cinnamomum*) occurs in the Stikine Plateau area in both black and brown phases. It ranges from salmon streams at low elevations to higher elevations within a generally wooded habitat. It has an omnivorous diet consisting of fish, berries, seeds, grasses, insects and small mammals. This bear hibernates in dens from November to March. Females bear young only every other year with one to four cubs being born in mid-winter during hibernation. Weights of adult bears vary greatly, ranging from 125 to 600 pounds (57 - 273 kg) (Cowan and Guiget 1956: 289, 293).

Grizzly Bear

The grizzly (*Ursus arctos horribilis*) frequents a variety of seasonal habitats including alpine meadows, coniferous forests at higher elevations and salmon streams at lower elevations. It has an omnivorous diet of grasses, roots, berries, insects, fish,

small mammals, and larger game when the opportunity provides. The grizzly also hibernates from November until March with one to four cubs born in mid-winter in alternate years. Although adults may weigh up to 1100 pounds (500 kg) the average adult weight is 450 pounds (205 kg) (Cowan and Guiget 1956: 295-6). The study area provides much of the best wilderness habitat for grizzlies remaining in North America. The Spatsizi Plateau has an estimated potential for 250 grizzlies based on comparison of habitat, range size and density with studies in other areas (Osmond-Jones *et al.* 1977:59-60).

Beaver

The American beaver (*Castor canadensis sagittatus*) is a large aquatic rodent which inhabits smaller streams and lakes in forested areas. Houses are constructed of sticks, logs and mud, about 12 feet (4 m) in diameter and rising to four feet (1.3 m) above waterline. The beaver feeds on leaves and bark of aspen, poplar, willow and some conifers as well as marshy plants. Adults have an average weight of 40 to 60 pounds (18 - 27 kg). Water levels in streams are controlled by the construction of dams which are constantly repaired and quite often stream habitat is changed to the detriment of fish species such as salmon. Winter food supply is cut in autumn and left on the stream or lake floor near the lodge (Cowan and Guiget 1956: 170-174). Beaver are abundant in the Stikine Plateau particularly in the subalpine zone.

Marmots

Marmots are gregarious animals living in colonies in open meadows near rockslides in the alpine and subalpine zones. They are active from May to September, feeding on a variety of herbaceous plants near streams and seepage sites at the heads of tributary valleys. They live in underground burrows where they hibernate for seven to eight months. Females bear yearly litters of four or five in May. Two species of marmots are found in the study area. One species (*Marmota monax petrensis*) is found only south of the Stikine River. The second and larger species (*Marmota caligata*)

known as the whistler, weighs up to 30 pounds (14 kg). The latter species includes two varieties; M.c. oxytona, of dark grey-brown peltage, occurs throughout the area; M.c. caligata, paler in colour, is restricted to the north and west of the Stikine and Tuya Rivers (Cowan and Guiget 1956:115-125).

Marmots were exploited in early fall, from mid-August to mid-September, when animals had accumulated stores of fat just prior to hibernation.

Groundsquirrel

The large arctic groundsquirrel (Spermophilus undulatus plesius) is abundant in the Stikine Plateau which is within the southern limit of its distribution. Weighing two to four kg, this animal lives in colonies in bushy meadows of alpine and subalpine valley bottoms. It is active from March to September and feeds on a variety of vegetation (Cowan and Guiget 1956:128, Osmond-Jones et al. 1977:67).

Hares

The rabbit or snowshoe hare (Lepus americanus macfarlandi) of the Stikine Plateau prefers a semi-open mixed forest habitat where it makes runways among deciduous thickets and nests in protected depressions. It feeds mainly on deciduous vegetation, resorting to conifers for food as well as protection during heavy snowfalls. Hares provide prey for all carnivorous fur bearing animals. Adults have an average weight of three pounds (1.5 kg). Females bear up to four litters per year of two to four young each. Periodic increases in hare populations occur every seven to nine years (Cowan and Guiget 1956:100). It changes colour from dark grey-brown in summer to white in winter.

Porcupine

The porcupine (Erethizon dorsatum nigrescens) prefers an open coniferous forest habitat with areas of broken rock or cliffs. It feeds on green vegetation, especially pine, and makes dens in rocky clefts, small caves, hollow stumps, or at the base of large, low limbed conifers. It has an average

weight of 15 pounds (6 kg). Single young are born once a year (Cowan and Guiget 1956:245).

Carnivores

Among the wide variety of carnivores which occur in the Stikine area, lynx was the only species which was traditionally used as a source of food and even its consumption was restricted by many regulations (Teit 1956:82, n.d.). A few carnivores, such as marten, fisher, and fox were captured for their fur only. The use of most carnivores was restricted by a variety of taboos or association with supernatural powers which could only be controlled and used by shamans.

Lynx

The lynx (Lynx canadensis canadensis) is a medium sized cat weighing up to 35 pounds (16 kg). It frequents old burns and natural clearings along the forest edge in a mixed deciduous and coniferous forest habitat, from valley bottoms to mountain tops. Its diet consists almost entirely of hare, with the occasional bird, rodent, or young ungulate. Lynx populations vary directly with hare populations (Cowan and Guiget 1956:342).

Wolf

The wolf (Canis lupus columbianus) frequents a variety of habitats from deciduous river bottoms to high plateaux above timberline. It feeds on all kinds of large and small animals, competing with people for many of the same resources (Cowan and Guiget 1956:280). It often hunts and travels in packs of up to 30 (Osmond-Jones et al. 1977:63), and is extremely cunning. Tahltan traditions (Teit 1919:240-251) indicate that wolves were once tamed and trained as hunting dogs, and that they gave people knowledge and good luck in hunting. Neither wolves or dogs were used as food (Teit 1956:82). Teit (1956:67) notes that the skins of the wolf or the dog were never used for clothing, robes or bedding, the hair being considered poisonous.

Coyote

The coyote (Canis latrans incolatus) frequents open areas in burnt over coniferous forests and alpine meadows. Its diet consists of small rodents, birds, insects, and fruits and young of larger animals on occasion. This carnivore is smaller than wolf with long heavy peltage, variable in colour (Cowan and Guiget 1956:277). The coyote does not appear to be abundant in the Stikine Plateau area. There are no references to its traditional usage. Its Tahltan name refers to its close similarity and relationship to the domestic dog.

Red Fox

The red fox (Vulpes fulva abietorum) is a slender dog-like carnivore with a long bushy tail and long fine peltage, variable in colour, with black, silver, and red cross phases. Its habitat is natural clearings as well as lake shores and river banks close to the protection of trees and bush. Its diet consists of birds, small mammals, insects, fruit, and berries (Cowan and Guiget 1956:285). Foxes were captured by means of hide snares and their skins used for robes and bedding.

River Otter

The river otter (Lutra canadensis evexa) occupies a riverine habitat along larger rivers, where it feeds mainly on fish. It travels in water, making dens along the banks (Cowan and Guiget 1956:330). Considered to have strong supernatural powers, the river otter was never taken for food or its skin. Only very powerful shamans were able to obtain and control otter spirits (Emmons 1911:75, Teit n.d.).

Marten

The marten (Martes americana actuosa) frequents a variety of habitats including deciduous and coniferous forest and talus slopes. Its diet consists of rodents, squirrels, rabbits, fish, birds, and insects. Females bear one litter, averaging three per litter, each year. Females are sedentary while males range over several square kilometres. (Cowan and Guiget 1956:300).

Marten were captured by means of deadfalls and their skins were used in making warm winter robes (Teit n.d.).

Fisher

The fisher (Martes pennanti columbiana) is a large marten which inhabits mixed forest areas. It preys on rabbits, grouse, porcupine, rodents, insects, fruit and berries. It has one litter of two or three per year (Cowan and Guiget 1956:305). Fisher were captured and used the same as marten.

Weasel

The small slender weasel (Mustela erminea richardsoni) changes from winter white to brown in summer. It occupies a variety of habitats at lower elevations and has a broad diet of small mammals and birds. Associated with strong supernatural powers, the weasel was not used for food or for skins traditionally. It could only be obtained and controlled by powerful shamans (Emmons 1911:76, Teit n.d.).

Mink

The mink (Mustela vison energumenos) inhabits deciduous forest along stream and river banks. Semi-aquatic in habits, it feeds on fish, amphibians, birds and mammals (Cowan and Guiget 1956:320). Like the weasel, the mink had supernatural powers, and was not used for food or for its skin, except by shamans (Emmons 1911:76, Teit n.d.).

Wolverine

Inhabiting the subalpine forest, the wolverine (Gulo luscus luscus) feeds on all larger mammals and birds, competing with people for many of the same resources. It resembles a short legged bear with a bushy tail (Cowan and Guiget 1956:322). The wolverine was captured by means of deadfalls and the furs used for making robes, on occasion. Its flesh was not eaten; Tahltan tradition indicates that wolverine was once a cannibal, but today only eats corpses (Teit 1919:249).

Small Bodied Mammals

A variety of small bodied rodents, shrews, and bats occur throughout the Stikine Plateau area (Cowan and Guiget 1956, Osmond-Jones *et al.* 1977:68, Swarth 1922) and are listed below. None of these

were used for food or their skins due to their small size, the nature of their diets, their foul odour, or bad habits, except during times of extreme stress (Teit 1956:82, n.d.)

Cinereus shrew	<u>Sorex cinereus cinereus</u>
Wandering shrew	<u>Sorex vagrans obscurus</u>
Navigator shrew	<u>Sorex palustris navigator</u>
Pygmy shrew	<u>Microsorex hoyi intervestus</u>
Little brown bat	<u>Myotis lucifugus alascensis</u>
Least chipmunk	<u>Eutamias minimus caniceps</u>
Red squirrel	<u>Tamiasciurus hudsonicus columbiensis</u>
Northern flying squirrel	<u>Glaucomys sabrinus alpinus</u>
Deer mouse	<u>Peromyscus maniculatus borealis</u>
Wood rat	<u>Neotoma cinerea occidentalis</u>
Northern bog-lemming	<u>Synaptomys borealis dalli</u>
Siberian lemming	<u>Lemmus sibericus helvolus</u>
Tundra redback vole	<u>Clethrionomys rutilus dawsoni</u>
Mountain heather vole	<u>Phenacomys intermedius intermedius</u>
Meadow vole	<u>Microtus pennsylvanicus drummondi</u>
Long-tailed vole	<u>Microtus longicaudis littorale</u>
Muskrat	<u>Ondatra zibethica spatulata</u>
Jumping mouse	<u>Zapus princeps saltator</u> <u>Zapus hudsonius hudsonius</u>

Reptiles

No reptiles occur within the study area due to its northern latitude and cold

climate (B.C. Fish and Wildlife Branch 1979, Osmond-Jones *et al.* 1977:68).

Avian Resources

The geographical setting of the study area is such that the avifauna is represented by a wide range of birds which frequent a variety of local habitats as seasonal or year round residents. Many birds of coastal and more northern influences pass through the area during spring and fall migrations. The 149 different species of birds which have been observed in the Spatsizi Plateau (Osmond-Jones *et al.* 1977:15-32) are listed in Appendix 1. Since most of these have also been observed in the Telegraph Creek area of the Stikine River valley (Swarth 1922), it is probable that these, and possibly other, species of birds occur in varying numbers in similar habitats throughout the study area.

Upland ground birds, including three species of grouse and three species of ptarmigan, are year round residents of the Stikine area and of all bird species were of greatest economic importance. The blue grouse (*Dendragapus obscurus*), largest of the grouse family, inhabits coniferous forests, old burn areas, and subalpine forest clearings. At higher elevations in winter it feeds on balsam fir, while in spring it descends to lower elevations to feed on pine and spruce. The spruce

grouse (*Canachites canadensis*) feeds on spruce and pine needles within the coniferous forest. The ruffed grouse (*Bonasa umbellus*) is found at lower elevations than other grouse in deciduous woodlands where it feeds on berries, fruit, and deciduous leaves of aspen, poplar, and willow. Grouse are readily available and easy to locate during spring mating season when the male "drumming" can be heard from a distance.

The three species of ptarmigan (*Lagopus lagopus*, *L. mutus*, and *L. leucurus*) are somewhat smaller than grouse, with an average weight of a little less than one kilogram. They inhabit open meadows and rocky tundra in the alpine and subalpine zones. Their plumage varies from white in winter to rusty red or mottled brown in summer.

Migratory waterfowl are most abundant in the many lakes, marshes, and streams of the Subalpine Willow Birch and Boreal Spruce zones in May and October during spring and fall migrations. Ducks and geese are said to be fat and good eating in the spring when coming from southern feeding grounds.

Amphibians

Only four species of amphibians have been observed within the study area (Carl 1973, Osmond-Jones *et al.* 1977:68). These include the boreal toad (*Bufo boreas*), the northern wood frog (*Rana sylvatica*), the western spotted frog (*Rana pretiosa*), and the long toed salamander (*Ambystoma macrodactylum*).

These species inhabit swamps, lakes, streams, or the moist woods along their banks or margins. They require an aquatic environment in which to reproduce. They spawn in spring, the salamander laying only ten eggs, while the boreal toad lays 16,000 eggs. Young hatch as tadpoles and metamorphose over three months into

adults. Amphibians eat a variety of soft bodied insects, larvae, small molluscs, crustaceans, and fish. They are prey for a variety of larger birds and fur bearing carnivores (B.C. Fish and Wildlife Branch 1980:3).

Amphibians were not used as food due to the supernatural qualities associated with them. Tahltan oral traditions indicate that giant toads once inhabited certain areas of the country (Teit 1921:345) and that people were afraid of toads because they used to steal people (Teit 1921:341). A salamander seen along one's path was interpreted as an omen of death within the family (Teit n.d.).

Insects

Insects were not used as food (Teit 1956:86). Tahltan oral tradition describes how the consumption of ants leads to death (Teit 1921:253), and how mosquitos originated from the brains of cannibal giants (Teit 1921:351). The kinds of insects which occur in the Stikine area are

generally considered a nuisance to human comfort and preservation of food and are most effectively dealt with by means of smudges. The pitch of alpine fir can be used to soothe and heal insect bites (Teit n.d.).

Fish Resources

The numerous lakes, streams, and rivers within Tahltan territories produce a variety of different fish resources. The fish species which occur in the study area are listed in Table 3, along with average weights, distribution and spawning periods. The anadromous salmon, which ascend the major rivers in large annual runs, are naturally the most abundant and reliable fish resource available. Fresh water fish are available year round and can be procured at any time, although they are generally most abundant during spawning times. Whitefish and char (*Salvelinus*) spawn in October to November, while most others including trout and grayling spawn in spring from March until June.

Many of the telegraph operators at isolated stations along the Telegraph Line, during the early part of this century, soon realized the importance of adopting the native life style in order to survive in the bush. Lawrence (1965:66,73) noted that in late May thousands of trout congregated along the banks of Tedideeche creek during the spawning period. The Tahltan name of this creek means "catch them with your hands". Lawrence was able to catch and dry 400 trout in just a few days.

Salmon

The large, predictable runs of anadromous salmon provided a reliable resource for the Tahltan people. Large quantities of salmon were dried during the season of the runs and stored for later use.

In contrast to Pacific drainages further to the north, where salmon runs occur during a more restricted period of time (O'Leary 1977, Schalk 1977), runs of the five species of salmon in the Stikine are quite dispersed over time from the end of May until October.

The first chinook run reaches the Telegraph Creek area of the Stikine about the end of May, with several more runs through June and July. Chinook populations spawn in tributaries of the main stem Tahltan and Little Tahltan Rivers, as well as further up the Stikine into the Grand Canyon and Tuya River. Being the first salmon of the season, chinook, also referred to locally as "kings" due to their large size (40 - 50 lbs [18 - 23 kg] is common), are particularly enjoyed fresh, although many are also dried.

The sockeye salmon is the species of greatest economic importance to the Tahltan. Runs begin in the Telegraph Creek - Tahltan River area in mid-June and continue through August. There are at least four major runs, spaced about seven to ten days apart, which proceed to major spawning grounds at Tahltan Lake. Sockeye are eaten fresh throughout the season and dried in quantity for storage. The majority of sockeye are still silver blue with firm flesh when they reach the Tahltan river. Only stragglers, at the end of each run or the last run of the season, have turned red in colour and have distorted heads.

Only small numbers of pink (humpback) and chum (dog salmon) ascend the Stikine as far as the Tahltan River. Arriving in

Table 3. Fish Species Occurring in Study Area.¹

Common Name	Scientific Name	Average Weights	Distribution	Spawning Period
<u>Anadramous</u>				
Sockeye salmon	<u>Oncorhynchus nerka</u>	7 lbs. (3.2 kg)	Stikine River to Tahltan L. Skeena and Nass Headwaters Tatsamenie Lake (Sheslay R.)	July-Aug. Sept.-Oct. July-Aug.
Chinook salmon	<u>Oncorhynchus tshawytscha</u>	20 lbs. (9 kg)	Stikine-Tahltan-Tuya Sheslay-Nahlin Rivers	June-July June-July
Coho salmon	<u>Oncorhynchus kisutch</u>	9 lbs. (4 kg)	Stikine-Iskut Sheslay-Nahlin	Sept.-Nov. Sept.-Nov.
Pink salmon	<u>Oncorhynchus gorbuscha</u>	4 lbs. (1.8 kg)	Iskut-lower Stikine	Aug.
Chum salmon	<u>Oncorhynchus keta</u>	10.4 lbs. (4.7 kg)	Iskut-lower Stikine	Aug.
Steelhead trout	<u>Salmo gairdneri</u>	8 lbs. (3.6 kg)	all river systems	April-May
<u>Fresh water</u>				
Rainbow trout	<u>Salmo gairdneri</u>	1-2 lbs. (450-900g)	all systems except Dease Lake	May-June
Cutthroat trout	<u>Salmo clarki clarki</u>	1-2 lbs. (450-900g)	Stikine, Nass, Skeena	April-May
Dolly Varden	<u>Salvelinus malma</u>	5 lbs. (2 kg)	all river systems	Sept.-Oct.
Lake trout	<u>Salvelinus namaycush</u>	5-10 lbs. (2-5 kg)	Tuya, Dease, upper Nahlin R., Cold Fish Lake	Sept.-Oct.
Arctic grayling	<u>Thymallus arcticus</u>	3 lbs. (1.3 kg)	Stikine, Dease, Nahlin	May-June
Longnose sucker	<u>Catostomus catostomus</u>	3 lbs. (1.3 kg)	all river systems	May-June
Burbot (Ling)	<u>Lota lota</u>	3 lbs. (1.3 kg)	Skeena, Dease, Cold Fish Lake (Spatsizi)	Feb.-March
Mountain whitefish	<u>Prosopium williamsoni</u>	2 lbs. (900 g)	Skeena, Nass, Stikine Dease	Oct.-Nov.
Round whitefish	<u>Prosopium cylindraceum</u>	1-2 lbs. (450-900g)	Dease, Nahlin	Sept.-Nov.
Lake whitefish	<u>Coregonus clupeaformis</u>	3-5 lbs (1.3-2 kg)	Dease, Skeena	Sept.-Nov.
Northern pike	<u>Esox lucius</u>	10 lbs. (4.5 kg)	Dease Lake	May-June
Northern squawfish	<u>Ptychocheilus oregonensis</u>	3-5 lbs. (1.3-2.2 kg)	Skeena system	May-June

1. Data from Carl et al. 1959. Aro and Shephard 1967, Osmond-Jones et al. 1977, Dept. of Fisheries and Environment, Whitehorse office.

August, they are eaten fresh and dried along with sockeye. Runs of coho pass up the Stikine during September and October. Iskut River provides the major spawning area for Stikine coho, although small runs ascend as far as the Tahltan River. Coho are very much enjoyed fresh, and, with the cooler temperatures of fall, are often preserved by freezing. The anadromous steelhead trout is also taken during predictable migrations to and from the sea. Runs in the Stikine River occur mid-March through April and again in September.

Physical obstructions and velocity

barriers prevent access of anadromous salmon and trout to well over 50% of the Stikine drainage as seen in Figure 6. Many of these obstructions have been caused by recent (during the last 10,000 years) volcanic activity in the Mt. Edziza and Iskut River areas (Souther 1970:55). It is quite probable that in earlier prehistoric times salmon runs were much larger and more extensive in the Stikine watershed. The lakes forming the headwaters of the Iskut River may have provided spawning habitat for large numbers of salmon.

The entire Tuya River drainage provides

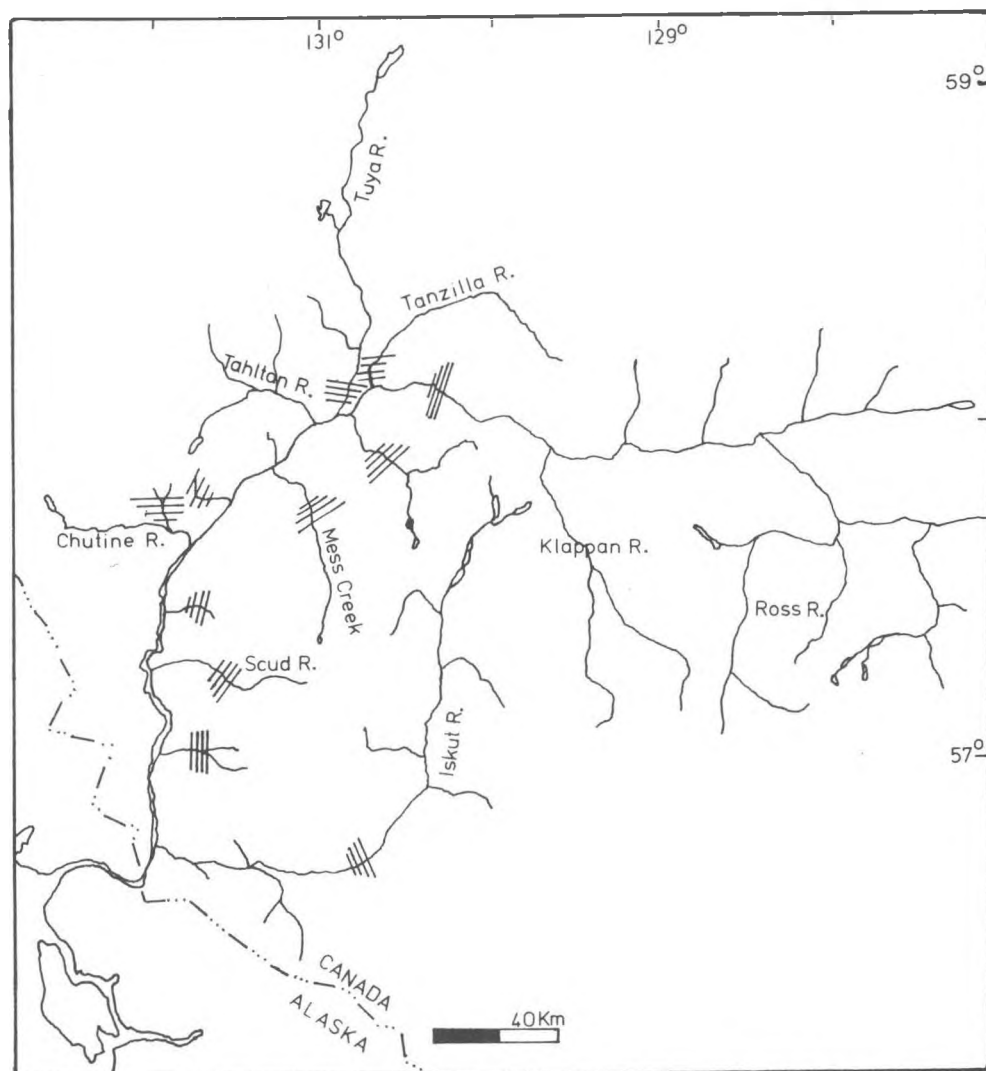


Figure 6. Location of barriers impassable to salmon within the Stikine watershed (after Canada, Dept. of Fisheries and Environment)

excellent spawning habitat (Gould n.d.) and the Federal Department of Fisheries and Environment are presently considering clearing of the blockage on the lower portion of the river and a salmon enhancement program. Archaeological survey indicates that the use of an ethnographic village at the mouth of the Tuya River extends back to prehistoric times. Chinook salmon spawn in the accessible portion of the lower Tuya River and further into the canyon of the Stikine River. Although still difficult of access, further archaeological survey of the Tuya River system may provide evidence of prehistoric fishing sites and use of salmon in this drainage.

Salmon resources were also available to the Tahltan in other parts of their traditional territories besides the Stikine drainage. In the Taku River system, sockeye ascend the Sheslay River at least as far as Tatsamenie Lake from June to August. Chinook are most abundant in the Nahlin River in May and June. Coho are found in both the Sheslay and Nahlin drainages from July through October (Aro and Shepard 1967:324). Several large fishing villages have been recorded at strategic locations on the Sheslay and Nahlin Rivers and tributaries.

Sockeye salmon also ascend the Skeena and Nass Rivers to upper tributaries within Tahltan territories, and several fishing villages have been recorded for the headwaters of both rivers. Fifteen to twenty thousand sockeye ascend the Nass to spawn in Bowser Lake; 60,000 spawn in Kwinageese Lake; about 12,500 spawn in Damdochax Lake; and 97,500 sockeye spawn in Meziadin Lake (Aro and Shepard 1967:275). Runs to the upper Nass and Skeena Rivers occur in September and October. Many of the conflicts recorded (Duff 1959, Teit n.d., Thorman n.d.) between the Tahltan and the Kitwancool ("Nass River people") may have resulted from attempts to gain access to valuable salmon resources in the area between Bowser and Meziadin Lakes.

The abundance of most salmon spawning

populations in the Stikine and Taku drainages is still poorly documented. One day spot surveys of spawning chinook in the Tahltan River sporadically from 1956 to 1975 have recorded 200 to 800 in Little Tahltan River and as many as 2,700 in Tahltan River main stem (Dept. of Fisheries and Environment n.d.)

Major exploitation of Stikine River salmon since 1895 has been by Alaska commercial gillnet fisheries operating in the vicinity of the mouth of the Stikine River. Average catch statistics, presented in Table 4, indicate that the high exploitation rate by commercial fisheries during the first half of this century has caused a serious decline in all Stikine River salmon stocks. Restrictions on gear and fishing time have been imposed recently in order to rebuild some stocks (Dept. of Fisheries and Environment n.d.).

Table 4. Average Catches of Stikine Salmon by Alaskan Gillnet Fisheries.¹

Year	Chinook	Sockeye	Coho
1933-40	N/A	56,561	78,431
1941-50	5,132	33,421	66,059
1951-60	21,378	20,161	50,669
1961-70	7,089	21,571	21,621
1971-77	7,296	19,462	15,484
Largest Catch	61,144 (1952)	80,686 (1941)	125,658 (1941)

1. Dept. of Fisheries and Environment Office, Whitehorse.

A sockeye enumeration weir has operated since 1959 at the outlet of Tahltan Lake, the principal spawning ground of Stikine River sockeye. Tahltan Lake escapement was estimated to account for 90% of sockeye production. Counts have averaged 17,000 since 1959. Gillnet catches and escapement figures between 1959 and 1964 indicate an average exploitation rate of 68% of Stikine sockeye by commercial gillnet fisheries (Dept. of Fisheries and Environment n.d.). Available figures on

exploitation and escapement of Stikine River sockeye since 1959 are presented in Table 5. A small commercial fishery was started up in the Telegraph Creek area in 1975 but was limited by marketing problems. A commercial fishery on the lower Stikine within Canadian waters was made possible by the introduction in 1979 of an organized marketing system involving brine barge storage and aircraft transportation of catches to canneries in Prince Rupert.

Table 5. Estimates of Exploitation and Abundance of Stikine River Sockeye 1959 to 1980.\

Year	Tahltan Lake Weir Counts	Tahltan Food Fishery	Canadian Commercial Gillnet Catches	Alaska Commercial Gillnet Catches	Total
1959	4,311	3,000 average	--	20,258	27,569
1960	6,387	"	--	13,652	23,039
1961	16,619	"	--	21,608	41,227
1962	14,598	"	--	27,515	45,113
1963	1,780	"	--	9,997	14,777
1964	18,353	"	--	20,301	41,654
1965	1,471	"	--	21,419	50,890*
1966	21,580	"	--	36,710	61,290
1967	38,801	"	--	29,226	71,027
1968	19,726	"	--	14,606	37,332
1969	11,706	"	--	19,211	33,917
1970	8,419	"	--	15,120	26,539
1971	18,523	"	--	18,143	39,666
1972	52,354	"	--	51,735	107,089
1973	2,877	"	--	21,501	27,378
1974	8,106	"	--	2,434	13,540
1975	8,159	1,982	270	--	10,411
1976	24,111	2,911	733	18	27,773
1977	42,960	4,335	1,976	48,374	97,645
1978	22,488	3,500	1,500	56	27,544
1979	10,211	3,000	10,534	2,158	25,903
1980	11,018	2,100	18,819	13,919	45,856

\ Data from federal Dept. of Fisheries and Envir. office in Whitehorse, Yukon.

* includes an estimated 25,000 fish unable to pass landslide barrier

Plant Resources

Although the study area is located within the Boreal Forest Region of Canada, the boreal black and white spruce zone in the Stikine Plateau area is restricted to lower elevations (below 3,000 feet or 900 meters) along major river valleys. The forest cover is characterized by a mosaic growth, or open mixture of trembling aspen, white spruce, and lodgepole pine, with birches and cottonwood, along with alders and willows along river banks, and alpine fir and black spruce at somewhat higher elevations (Rowe 1972:B25).

Due to the dry interior climate, grassland communities are found in many areas throughout the Stikine Plateau; shrub and moss-lichen communities predominate extensive areas of the alpine and subalpine zones, providing excellent habitat for the diverse fauna of the area. Over 370 species of vascular plants and

more than 200 species of mosses and lichens have been recorded (Pojar 1976) for Spatsizi Park; most of these from the alpine and subalpine zones.

Within the traditional subsistence economy plant resources were used for food, medicines, and raw materials. The various species of trees and other plants used as sources of materials for technological purposes are listed in Appendix 2 along with a summary of their uses. Wood and bark from trees growing in the Stikine area were essential resource materials for the building of structures and other facilities, and for the manufacture of a variety of tools and implements. Procurement and uses of these resources are discussed in detail in Chapter 6. Appendix 3 lists approximately 80 edible plant species which occur in the Stikine River area.

