THE UPPER YUKON RIVER, THE SALMON AND THE PEOPLE:

A HISTORY OF THE SALMON FISHERIES

DRAFT

Prepared for Parks Canada, the U.S. Parks Service,
and the Tr'ondëk Hwëch'in

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Cover photograph:

Archie Heath and Pete Lundeen with a chinook salmon caught in the Yukon River, Eagle, Alaska, 1903.

[Eagle Historical Society: Smith Collection, 0012-36]

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Preface

The management planning process for the Tr'ochëk heritage site at the mouth of the Klondike River has required heritage research to ensure that the full scope of activities, events and people associated with the Tr'ondëk Hwëch'in presence in the region is identified and set in an appropriate context. A number of projects have been carried out to accomplish this goal, and *The Upper Yukon River, the Salmon and the People: a history of the salmon fisheries* is one contribution to the environmental history of the Yukon River.

This description of the upper Yukon River fisheries is a product of several years of research into written records about the history of the region and its fisheries. Beginning in 1997, the Yukon River Panel, an international body representing interests in both Alaska and the Yukon Territory, funded a series of archival research projects to find historical information about salmon-spawning locations in the Yukon River system in Canada. From April 1999 to March 2000, the author compiled additional historical material about the Yukon River fisheries, but widened the scope of research to include the salmon fisheries of the upper Yukon River in Alaska and issues that fishers had been facing in more recent years. These records form the basis of this report, which focuses on the relationships between the upper Yukon River in Alaska and the Yukon Territory, the people and their fisheries.

Acknowledgements

The enthusiasm of others to see the history of the upper Yukon River salmon fisheries documented became infectious. Many fisherfolk, biologists, researchers and managers donated their time to explain the basics of salmon fishing and salmon lifecycles, and the requirements of the fish once they are hatched in the river. They also discussed some of the problems they face on the Yukon — problems from the points of view of fishers and of fisheries managers — some of their strategies to fill their nets and fishwheels, and how they try to better understand the patterns of the salmon. Their patience and help over the past year have been immensely appreciated.

Special thanks to the following fishers along the upper Yukon, all of whom wear several hats related to the fisheries: Mike Sager in Eagle, and Mel Besharah, Tim Gerberding, Gerry Couture, Christine Ball, Jake Duncan, and Peggy and Steve Kormendy in Dawson.

Several people working for themselves or for government departments and organizations on both sides of the border set me straight on a number of issues and provided valuable input and reports. They include: Al von Finster, Pat Milligan and Gord Zealand at the Department of Fisheries and Oceans in Whitehorse; Bonnie Borba and David Andersen at the Alaska Department of Fish and Game in Fairbanks; the Yukon River Panel, which encouraged me to delve into the subject of Yukon River salmon in the first place; Randy Brown in Fairbanks and Mary Ellen Jarvis in Whitehorse, who, through their work and personal involvement in the salmon fisheries, shared some of what they have seen and experienced on the river; William Schneider and his co-workers at the Rasmuson Library, who got me onto the Jukebox program to listen to oral history recordings and steered me in the right direction at the University of Alaska Fairbanks Archives; Helene Dobrowolsky, who gave me some good tips; Elva Scott and Jean Turner at the Eagle Historical Society, who were most helpful in taking the time to talk and to find photographs and background information; Mabel Henry, in Dawson, who allowed me to use an interview with her and her husband; and the Selkirk First Nation in Pelly Crossing, which kindly allowed me to use a detailed description of fish traps found during archaeological research in their traditional territory.

And finally, sincere thanks to the U.S. Parks Service, the Tr'ondëk Hwëch'in and to David Neufeld, Parks Canada, for giving me the opportunity to research such a wide range of material and to explore the relationship between people, the river and the fish of the upper Yukon River. I take full responsibility for any errors.

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THE UPPER YUKON RIVER, THE SALMON AND THE PEOPLE: A HISTORY OF THE SALMON FISHERIES

Introduction

"I have never heard any satisfactory explanation as to the reasons some of the salmon have for pushing on to the very head of a stream, when spawning grounds seemingly of equal attraction are to be found close to the sea up any of the tributaries. Why, for instance, do some of the Yukon fish turn up the first stream flowing in from the tundra, and others run up the main river 2300 miles to the Pelly Lakes? and what a river it is, to afford such a long run without a waterfall to stop the passage of a fish!"

— Warburton Pike, 1896.[1]

If a group of river travellers made the 3,000-kilometre (1,800-mile) journey up the Yukon River — from its mouth at the Bering Sea in Alaska to its upper reaches in the Yukon Territory — during the latter part of the summer, a variety of scenes in which salmon fishing played a prominent role would unfold. There would be flurries of activity along the riverbanks and on the river itself where people set their fishwheels or nylon nets to catch salmon. Families would be hanging up fish to smoke and dry, storing dried salmon for dog feed in the winter, filling their freezers with whole and cut fish, and loading their shelves with jars of canned salmon. The river would be humming with the sound of motor boats shuffling gear and people between their fishing sites and their camps or villages. Had government officials determined from their calculations on salmon returns that a sufficient number of fish should eventually reach their spawning beds, the visitors might also see dozens of commercial fishwheels in operation in Alaska and a few more between the Canada/U.S. border and Dawson City. Commercial operators would be hanging salmon strips, making salmon jerky, or smoking, packaging and freezing the fish to sell to local people and businesses. Some sport fishers may also be seen on the banks of the river or on guided tours hoping to hook on to a trophy fish. Between the commercial, subsistence, domestic, personal use, aboriginal and sport fishers, the harvest on the length of the river for the year could total over 165,000 chinook and 325,000 fall chum salmon.[2]

If this same party of travellers was transported back to the height of the Klondike gold rush more than 100 years ago, and if they again ventured upriver during the summer months, the Yukon River would be the stage for a different array of activities. Woodcutters would be piling logs at camps along the river to fire up steamboats loaded with people and supplies. Missionaries would be constructing churches where people could congregate. Over 20,000 recent arrivals would be bustling in or near the booming town of Dawson. Along the river between

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[1] Warburton Pike, Through the Subarctic Forest, pp. 178-79.

[2] Numbers derived from: The United States/Canada Yukon River Joint Technical Committee, Yukon River Salmon Season Review for 1998 and Technical Committee Report, Attachment 1.

Dawson and Circle City, more than 2,000 people may also be seen living in towns such as Fortymile, Eagle City and Seventy-Mile City.[3] Some people would be gossiping about where the lucky ones had found good prospects, while others, whose dream of getting rich from Klondike gold nuggets had evaporated, would anxiously be preparing to return to their homes elsewhere in North America or overseas.

> "*Salmon are taken in great numbers by the Indians, who build willow fish-traps in the small streams where the fish are running; and when they are caught the squaws clean and hang them on a framework so that they will dry by the heat of the sun. Sometimes the salmon flesh is so thick that it is cut in many pieces before being exposed to the drying action of the sun and air. It is not an uncommon sight to see racks containing hundreds of salmon going through the process of drying on the bars of the different rivers and streams, and always in the vicinity of the Indian camp.*"
>
> — Robert C. Kirk, 1899.[4]

Thousands of broke and disillusioned Klondike prospectors would be dreading the fast-approaching winter. They may be worried that local businesses had not successfully brought in enough food or that they would not be able to buy any wild meat sold in town mostly by First Nation people. Only a few entrepreneurial individuals would be hovering along the river near Dawson waiting for the first salmon to swim by, and no government regulations would prevent them from setting nets anywhere they wished in order to intercept the salmon runs. Some of the newcomers would demonstrate their prowess at fishing, hunting and harvesting much of their own food, but many would rely upon the abilities of others to put meat and fish on their table.

If the river travellers reached the upper Yukon River while the salmon were running in mid-August 1896, shortly after the gold discovery that sparked the stampede to the Klondike, they would no doubt be amazed by the contrast. Passing the hastily surveyed townsite of Dawson, they would come to Tr'ochëk, the large Han fish camp at the mouth of the Klondike River. If asked, the First Nation people there could hardly have predicted their future. Within a few weeks many would sell their dwellings at this idyllic spot, and in the following summer, logs and rafts floating downstream from the mining camps would destroy their willow fish traps set in the river. This Tr'ondëk Hwëchin village site, used for many generations by Han people as base camp for fishing and for hunting expeditions, would soon become a red-light district with the unsavoury name of Lousetown.

If the group of travellers journeyed to yet an earlier era, to the 1840s, they would witness another series of scenes along the river — some sights would be the same, others would be quite different. The travellers would learn that Russian and British fur traders operated posts where First Nation people brought pelts of marten and other fur-bearing animals to trade for European goods such as

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[3] Tappan Adney, The Klondike Stampede, pp. 456-458.
[4] Robert C. Kirk, Twelve Months in Klondike, p. 254.

tobacco, kettles and firearms. They would hear that the aboriginal people along the upper Yukon River were well-versed in this type of exchange. They would also see that instead of trading with other First Nation people who in turn traded with Europeans on the coast, many of the interior Athapaskans were enjoying dealing directly with the newcomers on a regular basis.

Figure 1: Indian fishing village, Lower River, 1894. [Yukon Archives: Veazie Wilson. Glimpses of Alaska, p. 83.]

The travellers would probably marvel at the distances between settlements where traders lived and at the extent to which they could provide for themselves. Rather than seeing non-native people in numerous pockets along the river as in the late 1890s, the travellers in the 1840s would find only a few European men and precious few European women between St. Michael at the mouth of the river and Fort Selkirk, approximately 2,600 kilometres (1,600 miles) upriver. They would learn that both European and First Nation people relied almost entirely on their own abilities to harvest wild foods, particularly game and fish.

Hudson's Bay Company traders at Fort Yukon and Fort Selkirk would likely express their immense relief when the first salmon reached their nets in July. They would anxiously wait each summer for the fish to appear. They knew that the coming season could be as bad as in 1849 when the men caught almost no salmon at Fort Yukon. At Fort Selkirk, Robert Campbell may also confess that upon his arrival at the Pelly and Yukon rivers, he desperately wished that the First Nation people would show him how and where to harvest the fish that passed in front of the post during the summer and early fall. Extracted from twine gill nets that the traders introduced to the area, the chinook and chum salmon would contribute to the survival of trappers, traders and, later, the prospectors during the winter and spring months. While abundant in a good year, the fish would prove to be, as a Hudson's Bay Company trader at Fort Yukon complained, totally unreliable.[5]

Salmon species.

Scientists call the Pacific salmon *Oncorhynchus*, the Latin word for "hooked snout", because of the curved jaws developed during sexual maturation. The five main species of Pacific salmon share two major life history traits: they live in both fresh and salt water, and they die after spawning.

Of these species — chinook, chum, coho, pink, and sockeye — only chinook and chum salmon regularly swim the 1,800 kilometres (1,150 miles) or so to the Yukon/Alaska border and beyond. While the Yukon River is one of North America's largest chinook and chum producers, chinook are the least abundant of the North American Pacific salmon. Also called king salmon, chinook can weigh up to 57 kilograms (126 pounds) and tend to populate larger river

[5] Letter from Alexander H. Murray, River Youcon, to Governor George Simpson, November 18, 1849. [National Archives of Canada: Hudson's Bay Company records, Reel 3M 88, D.5/26, f. 486-489]

systems. The smaller chum salmon, also known as dog salmon, are the most widely distributed species of Pacific salmon.

Coho have occasionally been seen on the Yukon River upstream from the Porcupine River confluence. Coho on the Porcupine River continue their journey as far upstream as the Fishing Branch River, past the community of Old Crow.

Figure 2: Luk cho ("big fish")[6], also known as chinook salmon.

Figure 3: Thëy, also known as dog salmon or fall chum salmon.[7]

Figure 4: Summer chum salmon.

Figure 5: Coho salmon.

Today, fish from the river system are still a magnet for many people and essential for some, despite the myriad of cultural, political, social, environmental, technological and economic changes over the past 150 years. These changes have affected the river, the fish, people's relationships with both, and people's relationships with each other. They are reflected in the uses of the river, in the degree of human dependency on the salmon, in local, national and international politics, in the methods used to harvest and preserve the salmon for future use, in the intensity of the fisheries, and where and by whom the fish are consumed. The changes have affected each other and have contributed to cycles of growth and decline of the Yukon River salmon fisheries.

A number of interacting factors have influenced people's relationships with the natural resources in the upper Yukon. Population growth, economic hardships, aboriginal rights and the environmental movement contributed to increased pressure on governments and the general public to reexamine an approach toward resource extraction widely accepted at the turn of the century: get in, take as much as can be taken, and get out. Whether or not to develop the commercial use of the salmon resource at the expense of subsistence use is just one of many choices that governments and the public have faced as the fisheries sector of the economy has evolved. Shifts in attitudes toward the resources and how best to exploit them are reflected in the history of the salmon fisheries, just as they are in mining and other resource sectors of the economy.

The purpose of this paper is to describe the salmon fisheries of the upper river within the context of political, economic and social change in the upper Yukon. It focuses specifically on the stretch of river between Circle, Alaska, and Dawson City, Yukon. Based almost exclusively on written records, it will trace the development of and changes to the salmon fisheries from the early days of

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[6] Edward Roberts in Dawson provided the Han name for chinook salmon. He also explained that chinook salmon are also called "tr'o-ja", referring to the place where people fished for them at the mouth of the Klondike River (pers. comm. April 6, 2000). Gerald Isaac provided the English translation.

[7] Edward Roberts in Dawson also provided the Han name for dog salmon.

European contact to the present day, and it is intended to answer two main questions:

- How have social, political and economic factors influenced the development of and changes to the fisheries along the upper Yukon River?
- How does the history of the salmon fisheries reflect people's relationships to the Yukon River salmon and the river itself?

Part 1 — The lure of the river: fishing for food and trade in the 1800s.

It is not possible to present a complete description of the aboriginal salmon fishery along the upper Yukon River prior to the arrival of Europeans. Many questions remain unanswered about, for example, the relationship between changes to people's use of the environment and changes in the use of various technologies. How did people's lives fundamentally change after they began using firearms? With the introduction of repeating rifles — and, as some have argued, the subsequent decline of big-game populations — did people become more dependent on the fish? To respond to these types of questions, we can look for evidence, speculate and continue researching.

In many cases, early narratives written by non-native people about aboriginal lifestyles were influenced by personal bias or limited exposure to the people described. The adventurous individuals who worked or travelled in the Yukon River region in the mid-1800s provided mere glimpses of aboriginal cultures at that time. Other types of valuable records help to fill in the picture: First Nation people have shared traditional knowledge and passed their stories down from generation to generation; archaeologists continue to uncover material records; and researchers continue to develop and examine various hypotheses about early inhabitants of the region. While it is not possible to reconstruct aboriginal life as it existed prior to European contact, a number of sources reveal aspects of First Nations cultures that contribute to a better understanding of life at that time.[8]

The focus of the following two chapters is to present what written records tell us about the salmon fisheries in the upper Yukon River basin before the stampede of non-native people to the Klondike region at the end of the 19th century. The first chapter describes how First Nation people used fishing techniques designed for specific conditions of the upper Yukon River, and how they adapted their seasonal patterns to the environment and the availability of resources. The second chapter introduces some of the influences that non-native people had on the local subsistence and trade economies, and interactions between the fur traders and aboriginal people that involved the salmon fisheries.

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[8] Frederica de Laguna, Tales from the Dena, pp. 60-61.

1. Aboriginal fisheries along the upper Youcon.[9]

Demographic patterns.

"*The huge stages for drying fish [along the Pelly River], and the traps carefully stowed away for future use, suggested great abundance of salmon in the autumn, while the skeletons of these fish were to be seen everywhere scattered along the banks of the little creeks. Every year, no doubt, the Pelly Indians camp here to gather their harvest, which needs no sowing, but comes of its own accord from the distant waters of the Behring Sea.*"

— Warburton Pike, 1896.[10]

Demographic patterns of First Nation people reflected the availability and use of resources and technology. In the spring or early summer, Han, Gwich'in, Northern Tutchone and others living within the upper Yukon River basin moved from their hunting and trapping areas to their fish camps on salmon-bearing streams to prepare for the arrival of the chinook salmon in June and July. Before direct trade with the Hudson's Bay Company began disrupting trading patterns in the 1840s, Tlingit people from the coast had long been visitors to some of these camps during the summer to exchange coastal and, later, Russian wares for furs, copper and other valuable items from the inland areas. Many Yukon River fish camps also served as bases for hunting expeditions until mid-October.[11]

The level of usage of fish camps varied, in part, according to the availability of resources both in the river and in the hills. At Fort Yukon in 1849, trader Alexander Hunter Murray and his men suffered from what was probably a poor year for salmon returns to the upper Yukon. While this shortage of fish alarmed the Hudson's Bay men, Murray noted that the First Nation people adapted to the situation:

"*No dependence can be placed on the fisheries here, in fall, trout [chum salmon] are sometimes plentiful in the river, but the season [sic]. Although every exertion has been made, all the fish taken will scarcely be one weeks ration. The Indians here depend principally on dry fish for subsistence during winter. They have taken almost none this season, which circumstance may prevent them from devoting much of their time to collecting furs but are not afraid of their suffering*

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[9] Hudson's Bay Company trader John Bell descended the Porcupine River in 1846 and named the river into which the Porcupine flows the "Youcon," taken from the word "Yuchoo", meaning "the Greatest River" or "Big River". [Robert Coutts, Yukon Places and Names, p. 292.] This original spelling is frequently seen in the journals and early writings of early explorers and traders in the region.

[10] Warburton Pike, Through the Subarctic Forest, pp. 178-179.

[11] Catharine McClellan, Part of the Land, Part of the Water, p. 157. There are several examples of aboriginal hunters returning to fish camps, including: C. W. Hayes, "The Journal of Charles Willard Hayes, 1891," in Arland S. Harris, Schwatka's Last Search, p. 236; Harry De Windt, Through the Gold-Fields of Alaska to Bering Straits, pp. 98-99.

much for want of food as moose are abundant and the Rein deer country to the north, always a safe resort."[12]

Murray and his men survived the ordeal, but not without anxiety; meanwhile the First Nation people sought other food sources to sustain them during the winter.

Murray witnessed aboriginal culture in the early stages of direct contact with Europeans and kept detailed records about activities at his post. In contrast are conclusions reached by subsequent visitors passing through the region that create a highly inaccurate picture of aboriginal life at this time. Many comments reflect a lack of knowledge about local people and their seasonal movements. In the 1880s and early 1890s, explorers travelling downriver from the headwaters of the Yukon River in the spring or early summer often reported that they saw few, if any, aboriginal people above the Pelly River. This apparent absence led American explorer Frederick Schwatka to conclude that local people took very few fish, quite unlike those further downriver who harvested and dried salmon in great quantities.[13] Only after reaching the Pelly River area on July 15, 1883 did Schwatka see preparations being made for the salmon harvest. At every fish camp between this summer village of about 200 individuals and the villages in the Kandik River area, Schwatka observed that people, while catching great numbers of fish, did not dry or store fish for winter use. He suggested that the people at the village near the Pelly River were lazy and poorly prepared for winter because they generally consumed all of the salmon before vacating the village. Similarly, he wrote that the tribe of 100 or so people at Nuclaco, opposite Fort Reliance, did not keep dried fish for winter use.[14] At Charley's village in the Kandik River area, he again commented that people devoted themselves to catching salmon during the summer but saved none. He blamed the absence of stored fish on the "primitive" technology used to harvest the salmon.[15]

Several factors should be considered while reading Schwatka's colourful prose. Clearly not an expert on the subsistence patterns of the local First Nation people, Schwatka based his conclusions about aboriginal cultures and activities either on what he briefly saw or on what his interpreters told him. He may not have been aware that the first run of Yukon River salmon does not reach the upper stretches of the river until July, hence the absence of salmon fishing above the Pelly River area at the time he passed through. While the quality and volume of salmon closer to the headwaters of the Yukon River does deteriorate, Schwatka's assertion that only people much further downriver dried fish for winter use is false.

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[12] Letter from Alexander H. Murray, River Youcon, November 18, 1849, to Governor George Simpson. [National Archives of Canada: Hudson's Bay Company records, Reel 3M 88, D.5/26, f. 486-489]

[13] Frederick Schwatka, Report of a Military Reconnaissance in Alaska Made in 1883, p. 81.

[14] Ibid, pp. 82, 84-85.

[15] Frederick Schwatka, "A Reconnoissance [sic] of the Yukon Valley, 1883," in United States. Congress. Senate. Committee on Military Affairs, Compilation of Narratives of Explorations in Alaska, p. 343.

Three other explorers in the Yukon provide evidence of life along the river unseen by Schwatka. Four years after Schwatka's first tour in the Yukon, William Ogilvie (a Canadian surveyor) was impressed upon seeing the abundance of salmon caught by people in August at the mouth of the Tatchun River, just downstream of present-day Carmacks and well above the Pelly River. Warburton Pike, an adventurer on the Pelly River in 1892, saw fish-drying stages at every location he deemed suitable. Puzzled by the absence of canoes and seeing only rafts tied to the riverbank used exclusively to cross the river, he suggested that the local aboriginal people only camped on the riverbanks during the salmon runs.[16] Five years later, in November, Arthur St. Cyr reported that he saw a summer fish camp on a salmon-spawning stream near the headwaters of the Yukon River. Abandoned in the winter months, the camp on Michie Creek (a tributary to McClintock River, which flows into Marsh Lake) was used by Tagish First Nation people who stored dried fish in log caches nearby.[17]

These observations, made over a 50-year time span, not only demonstrate the need to question conclusions hastily reached by passersby such as Frederick Schwatka, but they also illustrate the use of the river by First Nation people. We cannot determine what the level of dependency of First Nation people on their salmon fisheries used to be, nor can we assume that each year produced identical seasonal rounds of subsistence activities. As Alexander Hunter Murray observed at Fort Yukon in the 1840s, people spent variable amounts of time along the river to fish because they adapted their movements to circumstances in any particular year. But, while salmon fishing was only one of a number of possible activities in annual subsistence cycles, its cultural and dietary value for First Nation people should not be understated.

Chinook salmon life cycles.

Chinook eggs usually hatch in the gravel of a river system in mid-winter — and possibly as early as in September in the central Yukon Territory[18] — and fry emerge after mid-April. After a one- to two-year period of rearing in fresh water, they migrate to the Bering Sea and remain in the ocean for a period ranging from two to six years. Guided by an olfactory homing instinct (or, in layperson's terms, smell), adult chinook first begin travelling in late May or early June up the Yukon River to the spawning grounds where they originated. They first reach the Dawson area in late June or early July, and some continue as far up the river system as tributaries to Marsh Lake. Chinook salmon usually spawn in July and early August near the Canada/U.S. border, and in late August or early September in the upper drainage.

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[16] Warburton Pike, Through the Subarctic Forest, p. 203.

[17] "Report of A. St. Cyr, D.L.S. Exploration of the Country between the Stikine River and the Mouth of the Teslin River," Feb. 1, 1898, in: Canada. Annual Report of the Department of the Interior for the Year 1897, p. 124.

[18] Al von Finster, "Utilisation of Habitats by Chinook and Chum Salmon in the Yukon River Basin in Canada," regularly updated summary of salmon habitat information, Department of Fisheries and Oceans, Whitehorse, January 12, 1999.

Chinook salmon travel upriver in distinct runs. Tributaries of the Yukon River may support genetically distinct stocks of salmon, and the migration timing of each run varies according to the destination. At the river mouth, studies indicate that Canadian-bound chinook are abundant earlier in the run than salmon destined for waters further downriver. Male salmon, generally larger than females and different in appearance, usually move upriver first. Some First Nation people in the Stewart River area call the fish in this run "Queens", whereas the females and larger males that follow are known as "Kings". In the Ross River area, the early chinook salmon, which are more robust and sometimes still silvery in colour, are considered by some people to be a completely different type of fish from the fish coming later. The later arrivals are intensely coloured and adorned with a hooked nose and big teeth.[19]

Variations in sizes of the salmon may also be attributed to the length of time spent in the ocean. A study in 1982 showed that male chinook that had remained in the ocean for five years weighed an average of 12.3 kilograms (approximately 27.06 pounds) whereas those that had spent only four years in the ocean weighed approximately 5.5 kilograms (or 12.1 pounds).[20] Jacks (male salmon that return to the Yukon River at age three) can weigh as little as one kilogram.[21]

Chum salmon life cycles.

Chum salmon eggs hatch from late December to late February, and the fry remain in the gravel bed until the spring or early summer. It is generally believed that, unlike chinook, chum salmon usually begin migrating to the ocean immediately after emerging from the gravel. However, biologists have observed juveniles in one spawning location in the Yukon Territory from mid-April to mid-June. This protracted residence may be due to a staged emergence caused by different thermal regimes during incubation, or to a period of rearing after, or during, emergence from the gravel beds.[22]

Two genetically distinct chum salmon runs occur annually in the Yukon River. The summer chum enter the mouth of the river in early June. While some do reach waters in the Yukon Territory, the summer chum primarily spawn in runoff streams in the lower 800 kilometres (500 miles) of the drainage and in the Tanana River drainage. They are characterized by rapid maturation in fresh water, smaller size (averaging 6 to 7 pounds, or 2.7 to 3.2 kilograms) and a larger population size.[23] The fall chum salmon begin their upstream migration in the Yukon River during mid-July. They weigh between 3.5 and 4.2 kilograms (7.7 and 9.25 pounds) on average, the males generally being longer and slightly heavier than the females. Passing through the Dawson area from August to early

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[19] Pers. comm. Mary Ellen Jarvis, Whitehorse, May 20, 1999, and January 6, 2000.
[20] Gordon Ennis, Yukon River Basin Study; Adam Lewis, Salmon of the Pacific; P. A. Milligan et al, The Distribution and Abundance of Chinook Salmon.
[21] Pers. comm. Al von Finster, Department of Fisheries and Oceans, Whitehorse, January 17, 2000.
[22] Ibid.
[23] Alaska. Department of Fish and Game, Annual Management Report Yukon Area, 1998, p. 2.

October, a number of fall chum salmon are destined for spawning areas as far up the river system as the Teslin and Kluane rivers, where they spawn in late October.[24] The vast majority of returning chum salmon have spent four years in the ocean.

Coho salmon.

Coho salmon enter the Yukon River from late July through September and average approximately 3.2 kilograms (7 pounds) in weight. They spawn discontinuously throughout the Alaskan portion of the drainage, primarily in the lower 1,150 kilometres (700 miles) of the drainage and in the Tanana River drainage.[25]

Northern Tutchone fish camps.

"David Silas of Pelly Crossing remembered how the Northern Tutchone of Fort Selkirk had fish camps all along the Pelly River in the fall. These camps, he said, reached all the way up to Pelly Crossing.

"Little Salmon and Carmacks Indians built fish weirs at three main places: the mouth of the Little Salmon, the mouth of the Nordenskiold, and the mouth of Tatchun Creek. They used these fish camps as bases for hunting until mid-October.

"Susie Skookum, a Northern Tutchone woman, told about some salmon traps near Carmacks: 'People from Carmacks went down the Dawson Road four miles to fish. They had traps there. My father made them. They were shaped like boxes. They put the trap in small creeks, such as Big Creek. Sometimes they put in three traps side by side. Sometimes they got filled up in one night. They cut the fish and dried them. Sometimes they could hear them coming.'"

— Catharine McClellan, 1987.[26]

[24] Gordon Ennis, Yukon River Basin Study; Adam Lewis, Salmon of the Pacific; P. A. Milligan et al, The Distribution and Abundance of Chum Salmon.
[25] Alaska. Department of Fish and Game. Annual Management Report Yukon Area, 1998, p. 2.
[26] Catharine McClellan, Part of the Land, Part of the Water, p. 157.

Importance of salmon.

"On the night of 9th July [1892] we passed a large encampment of Indians [up the Yukon River from the White River confluence in Canada], and learned from them that the first of the salmon had arrived. An all-important event is this annual run of salmon to the numerous natives who dwell along the banks of the Yukon and its tributaries. Three weeks before the fish reach Fort Selkirk, the various tribes of Esquimaux at the mouth of the river are laying in their provisions for the winter. Thousands of traps, to say nothing of the countless numbers of scoop-nets, have to be passed by the salmon along the course of the river before they reach the Pelly lakes, where the moose-hunters are lying in wait for them late in the autumn. Far up the Tanana, among the Alaska Alps, and in the foothills of the Rockies at the head of the Porcupine more traps and more nets are in readiness to work destruction on the salmon. On the lesser streams that head among the dreary swamps of the tundra encircling the Arctic and the Behring Seas, the same scenes are enacted year by year — men, women, and children engaged in killing and curing the fish that are the staple food of the vast native population of Northern Alaska."

— Warburton Pike, 1896.[27]

Many people who travelled through northwestern North America in the 1800s commented on the eagerness and the anxiety with which First Nation people awaited the arrival of salmon in the summer months. Not as plentiful and rich as salmon in the lower Yukon River, chum and chinook in the upper sections nevertheless made an important contribution to people's diet of caribou and moose meat, small game, berries and other wild foods.

We can neither determine the relative importance of the salmon fisheries in the human diet at the time, nor infer exactly how much it changed in the ensuing years. Nobody recorded per capita consumption rates or quantities of Yukon River salmon regularly caught by First Nation people in the early years of European contact. Even if someone had, the record would show that harvests fluctuated from year to year and varied in the different regions of the river basin. A number of factors would explain the variations: the decline of the aboriginal population due to rampant infectious diseases; human-caused and natural changes to the environment and to fish and wildlife habitat; poor salmon runs for any number of biological or environmental reasons; fluctuations in wildlife populations and human hunting effort; new trading patterns, new foods and new technology such as twine nets and firearms; the increased use of dogs as beasts of burden to transport furs to the trading posts; and differences in subsistence patterns among First Nation people. People fished for themselves, for trade and for their dogs, and the amount of fish required or available for these purposes was not constant.

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[27] Warburton Pike, Through the Subarctic Forest, pp. 213-214.

Despite some debate on the level of salmon dependency of coastal and interior First Nation people through history, records left by early traders and others show that people from the upper Yukon River area relied, albeit to varying degrees, on the salmon runs throughout the 19th century.[28] Certainly below present-day Dawson, families focused on salmon during the summer and fall runs. When Alexander Hunter Murray established the Hudson's Bay Company post at Fort Yukon in 1847, First Nation people explained to him that the salmon were of better quality further downriver but that plenty of salmon were caught upstream.[29] Forty-five years later, an explorer travelling through the Yukon Flats noted that people seemed to consider the fine whitefish caught in their nets to be of little value while the salmon were running.[30] In contrast, a First Nation man at Marsh Lake in the 1950s commented that in the fall, his people preferred the more abundant whitefish than the chum salmon, few of which made it that far up the river in the fall. When the chinook run ended, they moved to the nearby lakes.[31] Along the length of the river, personal preferences, available alternatives, and the quantity and quality of salmon influenced people's use of and their dependence on the fish. Although they caught salmon as far up the Yukon River system as in tributaries to Teslin and Marsh lakes, aboriginal people fishing below present-day Dawson and on the lower Pelly River and its tributaries seem to have relied most on the salmon runs for food.[32]

The value of the salmon was embedded in the culture and social organization of many First Nations utilizing river systems flowing into the Pacific Ocean. Salmon played an important part in mythology and ceremonial activities, and through that role created what today might be called a conservation ethic. Respect for the fish may have helped to ensure that enough returned and enough spawned to sustain the fishery. Philip Drucker, in his description of aboriginal people on the Northwest Coast, explained that Haida and Tlingit people believed that they shared the world equally with fish, animals and birds. A race of supernatural beings known as Salmon People lived beneath the sea. Transformed into

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[28] For details on this debate, see: Edward H. A. Hosley, "Reexamination of the Salmon Dependence of the Pacific Drainage Culture Athapaskans," in: J. W. Helmer et al, eds., Problems in the Prehistory of the North American Subarctic: The Athapaskan Question. Hosley argues that the decreased emphasis on hunting and increased salmon dependency of Pacific drainage Athapaskans as witnessed by Cornelius Osgood in the 1930s is the product of acculturation and diffusion. He attributes this shift in part to the introduction of the repeating rifle and subsequent decimation of caribou herds in the coastal regions and most of the adjacent interior, resulting in a greater emphasis on fishing particularly on the lower main rivers. The fur trade and increased use of dogs also encouraged the harvesting of salmon. He points to the coastal areas of the Kuskokwim and the Yukon rivers as being particularly affected by these changes, with the interior aboriginal cultures adopting a "pale reflection" of the new fishing culture by the time Osgood conducted studies along the Yukon River. Hosley does not, however, discuss other variables, such as climate change, and the impact they may have had on people's activities.

[29] Alexander H. Murray, Journal of the Yukon, p. 65; Fort Yukon – Post Journals [National Archives of Canada: Hudson's Bay Company records, B.240/a/1 to B.240/a/3].

[30] Warburton Pike, Through the Subarctic Forest, p. 232.

[31] Report by Cpl. R. G. Moulton, RCMP Whitehorse detachment, November 5, 1954. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, box 78, f. 721-4-27] Today, chum salmon do not migrate as far as Marsh Lake.

[32] Catharine McClellan, Part of the Land, Part of the Water, p. 156.

salmon as the spawning season approached, they swam up streams to sacrifice themselves for the benefit of humankind. If unoffended by human beings, the spirit of each fish would return to the sea, resume its life in a human-like form, and prepare for another spawning season. In elaborate first salmon ceremonies, the Haida and Tlingit people honoured and welcomed the arrival of the salmon to each stream. They knew that nothing should be done to harm or delay the fish because, as legends taught, they depended on the good will of the Salmon People to return to the streams and replenish the food supplies.[33]

Figure 6: "After the trip and the harvest from the net. Mrs. Callahan and Mrs. Morency 1899," Circle. [University of Alaska Fairbanks, Alaska and Polar Regions Archives: Dorothy Loftus Coll., acc. 80-84-8]

Figure 7: Fishing camp above Eagle, no date. [University of Oregon, Division of Special Collections & University Archives: C. L. Andrews, #384, AD 1510].

People living within the Yukon River basin also showed their appreciation and respect for the first salmon. Frederica de Laguna, an anthropologist who recorded stories from the Tanana, Koyukuk and Yukon rivers in 1935, described one such ceremony: "The first king salmon caught by the Koyukon was laid out on some fresh clean willow leaves, everyone in camp sprinkled it with fresh water from a willow branch, saying 'Draw up your canoe here!' to attract more fish. Everyone ate a piece of the salmon..."[34] Cornelius Osgood, an anthropologist who spent time in Eagle in the early 1930s, learned about similar traditions among the Han. According to Walter Benjamin, born in about 1882 in Eagle, the first salmon caught was boiled, and everyone except women observing menstrual taboos or nursing babies shared at least the broth. Upriver at Moosehide, near present-day Dawson, it was said that the man who caught the first king salmon gave everyone a small piece. Osgood concluded: "The simple explanation for this behavior was that everyone was so happy to see the salmon return after having eaten dried fish for so long."[35] While undoubtedly true that people were happy to see the fish, such rituals may also have helped to develop and support an understanding of relationships among all living things. People's view of the world influenced their activities and shaped their sense of good and bad, right and wrong. It served in part to check any misuse of the resource and to preserve nature's offerings.[36]

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[33] Philip Drucker, Indians of the Northwest Coast, pp. 140-41.
[34] Frederica de Laguna, Tales from the Dena, p. 61.
[35] Cornelius Osgood, The Han Indians, pp. 53-55.
[36] Richard Cooley, Politics and Conservation, p. 22; Catharine McClellan, Part of the Land, Part of the Water, p. 250.

Dietary value of Yukon River salmon.

It is not difficult to understand why First Nation people along the upper Yukon River highly valued the chinook and fall chum salmon for food. Several features of the Yukon River have conspired to help produce exceptional fish, and the very nature of Yukon River salmon reflects their ability to adapt to this environment.

When they enter the river at the Bering Sea, some chinook salmon destined for Canadian waters swim over 3,000 kilometres (1,800 miles) to reach their spawning beds, constituting one of the longest freshwater migrating salmon stocks in the world. Chum are reported to have come up the Yukon River as far as Marsh Lake before the Whitehorse dam was built, but today few travel past the Teslin River.[37]

Yukon River salmon swim at astonishing speeds to reach their destinations during the short season that the river is not choked with ice. Studies show that the chum swim on average between 36 and 50 kilometres (22 to 30 miles) per day, whereas chinook travel between 17 to 57 kilometres (10 and 34 miles) per day. Eating nothing once in fresh water, the salmon must nevertheless travel against the river's swift current. To accomplish such a feat, they must build up a sufficient reserve of fat during the few years spent in the ocean.

Yukon River chinook salmon in particular have an exceptionally high oil content — reportedly 50 percent higher than other runs of salmon in the world — and the richness of the flesh creates a particularly tasty and nutritious food source. The high quality of Yukon River chinook, particularly those caught near the mouth of the river, is recognized in the marketplace where it fetches a higher price than salmon from elsewhere in the world.

While smaller and less rich than chinook salmon, fall-run chum salmon are generally more numerous and therefore allow people to more easily harvest large numbers for both themselves and their dogs. The fall-run chum salmon are larger and more oily than their summer-run counterparts, the latter only occasionally reaching the upper Yukon River.

Aided by the dry climate, First Nation people in the interior of Alaska and the Yukon preserved Yukon River salmon by drying or smoking it at their fish camps. The organization of fish camps varied throughout the river system, and it depended, in part, on the climate. Where damp conditions prevailed, drying fish required smoke; but where conditions are generally drier, such as the Yukon River upriver from Circle, people could more easily and effectively dry the fish in the open air.

Reverend Bowen described fish camps along the river during his stay in the Yukon Territory after 1895. He did not, however, refer to the use of smoke to cure the fish:

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[37] Report by Cpl. R.G. Moulton, RCMP Whitehorse detachment, November 5, 1954. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, box 78, f. 721-4-27]

"When the canoe came ashore at the camp, the women would be there and immediately get to work on the catch in a most business like way. They would split the fish by cutting along both sides of the backbone and throwing the flesh flat to the cutting board on either side, exposing all the offal which was all cleaned out, then from the centre of the fish to the under side of the skin the cleaner would cut through the fish with his knife, making the strips about one and a half inches wide, the fish would then be placed on a rack and dried in the sun, when it was sufficiently dried it was placed in a cache built on posts, well out of the reach of the dogs. I can assure that when travelling in winter this dried salmon is acceptable food to both men and dogs."[38]

Figure 8: Smoking and drying salmon downstream from Dawson, ca. 1900. [Alaska Historical Library: Metcalf Coll., PCA 34-136]

In contrast, Frederica de Laguna described camps on the lower Tanana River in 1935. There, people established the camps on two levels: they cut and prepared the fish for curing on the riverbank, and the smokehouse, usually a tall, square structure made of poles and bark, stood on higher ground. Slow fires burned under the racks of fish. On the Koyukuk River, de Laguna was told that the smokehouse was a long, low building of logs, roofed with poles, birchbark and sod: "One end of this structure, without walls, contained the fireplace and served as a daytime living area for the family; the other larger part, enclosed with walls of bark or willows, was where the fish were hung. Sometimes two families used the same smokehouse, each with their own fire. The fish were dried outdoors for a day on uncovered racks until they developed a dry crust. Then they were smoked indoors."[39]

Figure 9: Tr'ochëk, 1894. [Yukon Archives: Veazie Wilson. Glimpses of Alaska, p. 40]

By drying and smoking the flesh to preserve it, aboriginal people benefited almost fully from the nutritional values of each fish. Reduced to a fraction of the weight, dried fish were easily bundled, transported and stored, often held in reserve for the winter months when other food sources may have been scarce. A number of photographs taken in the late 1800s show drying fish hanging on racks in the open air along the Yukon River. At the mouth of the Klondike River, several passersby saw that the Han hung their meat and salmon on large drying and smoking racks made of poles.[40] Aboriginal people often lit smudge fires under the racks to keep the flies away from the fish.[41]

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[38] Richard Bowen, "Incidents in the Life of the Reverend Richard John Bowen Among Natives, Trappers, Traders, Prospectors and Gold Miners. In the Yukon Territory Before and after the Gold Rush of the year 1898," pp. 48-49.
[39] Frederica de Laguna, Tales from the Dena, pp. 8-9.
[40] J. Bernard Moore, Skagway in Days Primeval, p. 65.
[41] Martin Leinweber, "Years on the Yukon," in The Alaska Sportsman, April 1944, p. 25.

Fishing methods, the river and the fish.

In addition to the flesh quality and abundance of Yukon River salmon in most years, First Nation people benefited from two other characteristics of the fish: regular seasonal migrations and their concentration in certain sections of a stream. Using efficient harvesting methods and knowing where the fish rest or are channelled during the upriver journey, fishers expended relatively little effort in catching them.

The river system is not comprised of uniform waterways, and people adapted their techniques to the different conditions of the river and its tributaries — fast- or slow-flowing, clear or murky, deep or shallow. They also adapted to changes in the river itself — for example, by moving their camps when channels dried up or shifted course. Certainly in the mid- and late 1800s, when the first run of chinook salmon reached the upper Yukon River in July, hundreds of First Nation people were waiting, equipped with fishing instruments well-suited to specific sections of the river. The mouths of various tributaries to the Yukon River, such as at the Klondike and Nordenskiold rivers, and stretches of the Yukon River itself, such as near Fort Reliance and further downriver toward Fortymile, offered ideal locations for fish camps. Contrary to Frederick Schwatka's assertion that aboriginal people's technology actually prevented them from securing adequate supplies of salmon, their success in harvesting enough to satisfy their needs when the runs were strong and the role that salmon fishing played in their seasonal movements prove otherwise.[42]

Salmon and the river.

Swimming against the Yukon River current for hundreds or thousands of kilometres (or miles), salmon use the river to their advantage. Only the strongest leaders forge ahead and travel for long distances in the main current of the river. Some of the male fish generally swim ahead and reach the spawning grounds first. Both the chum and chinook take advantage of eddies (areas downstream of points or bars where the flow of the river reverses itself) to rest or benefit from the upstream flow of water. Chum, on average smaller than chinook salmon, tend to stay in the slower-moving water closer to the river's edge, whereas large chinook salmon usually migrate in deeper water.

Salmon eggs must accumulate a certain number of thermal units to complete their development. They also require initial incubation temperatures of at least 3° to 4° C. Because they usually spawn in October when surface water temperatures are low, fall chum salmon choose spawning sites in areas of discharging or upwelling groundwater. The higher water temperature minimizes the risk of the redds (the nests excavated in stream gravels where the salmon spawn) freezing during the winter. Chum salmon spawning grounds are commonly found in side channels or sloughs in certain sections of the main river fed by groundwater sources.

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[42] Frederick Schwatka, "A Reconnoissance [sic] of the Yukon Valley, 1883," in United States. Congress. Senate. Committee on Military Affairs, Compilation of Narratives of Explorations in Alaska, p. 343.

Chinook salmon have somewhat different freshwater habitat requirements. They spawn earlier in the year and, unlike the chum, which spawn in the Yukon River itself or in major tributaries, chinook salmon migrate further upstream to spawn in the most accessible tributaries. This may in part be due to overwintering requirements and may also be because the chinook fry move to various tributaries during the summer months and return to larger tributaries to overwinter. Chinook spawning grounds often include lake-fed tributaries.[43] The fry, after emerging from the gravel, remain in the Yukon River basin for one or two years before moving downriver to the ocean.

Weirs and traps.

Fish weirs and traps play on the relentless urge of salmon to swim upriver to their spawning grounds. Fish instinctively try to swim into the current, and so, whether their passage is completely blocked by a fence or is guided within the confines of a trap, they will try to move upstream. By setting weirs and/or traps during strong salmon runs, people could catch large numbers of fish with relatively little effort.

Families commonly used fish weirs with or without fish traps along the upper Yukon River and its tributaries. Northern Tutchone people used both methods at the mouths of tributaries where the fish spawned. On the Little Salmon River they used a combination of two or three weirs to span the distance of over 100 feet, and on the Nordenskiold River they set only one weir to cross the 80-foot span.[44] In the vicinity of present-day Dawson, the Han also used both fish traps and weirs, taking large numbers of salmon from the Klondike River. William Ogilvie noted that the river was "full of salmon traps" when he passed by on September 1, 1887.[45] He also explained that people had hammered stakes into the gravel across the entire mouth of the river, hence the aboriginal name of the river, "Trondiuck", meaning "Hammer-water".[46] This type of barrier compelled the salmon to enter the traps set to catch them.

People developed a number of variations on fish weirs and fish traps. One design allowed the placement of a fish trap at its centre. A number of men would plant stakes, beginning on one side of the stream and moving toward the centre. They would plant another row beginning on the opposite side of the stream, which, again, consisted of stakes placed one after the other toward the centre. The men set each row to angle upstream from the shore, forming an upside-down V-shape. Where the rows would otherwise meet midway across the waterway, they installed a fish trap. When salmon reached the weir and were unable to pass, they could only make progress by moving toward the centre of the weir where the fish trap awaited them. Some people built weirs that crossed

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[43] P. A. Milligan et al, The Distribution and Abundance of Chinook Salmon; P. A. Milligan et al, The Distribution and Abundance of Chum Salmon.
[44] Bernard Arcand, Ethnographie des Tutchone, p. 18.
[45] William Ogilvie, "Down the Yukon and Up the Mackenzie," in The Canadian Magazine, , October 1893, p. 636.
[46] William Ogilvie, Early Days on the Yukon & the Story of its Gold Finds, p. 117.

the passage at an angle. The fish would instinctively try to continue swimming upstream and would eventually follow it to a fish trap set at one end. Fish traps, shaped like a three-sided box, funnelled the salmon into an increasingly narrow passage from which there was no escape.

Figure 10: "Indian fish trap at mouth of Earn River, 150 M. up Pelly River, Yukon, 1935." [Canadian Museum of Civilization: J. R. Johnston, 98-99.]

First Nation people on the Stewart River system used willow baskets. Martin Leinweber, who ran the Clear Creek store in 1904, described what he saw:

"*After the high water was gone and the salmon were running on the rivers, the Indians would build willow baskets, big at one end and small at the other. Then they would build a runway like a maze across the stream, with the baskets fastened at the ends. The salmon got into the runways and were caught in the baskets, where they couldn't turn around. Every few hours the men would go out and empty the baskets. The women sat on the shores cleaning the fish. They cut the fish in halves, sliced the flesh down to the skin in several places, and hung the halves over the poles. They had smudge fires to keep the flies away from the fish, which was soon dried in the sun. This fish was put away for the dogs and Indians, too, to eat during the winter.*"[47]

Percy Henry, a Han Elder in Dawson, interpreted Leinweber's description as follows: "I think they mean [...] a fish trap. That is like a fence. The fish come in but they can't go back out. They use baskets. They had a walkway on this bridge and they could come and get the fish. They fished during the day and let it open at night."[48]

Figure 11: Salmon trap. [Cornelius Osgood, The Han Indians, p. 68]

Another example of fish traps built into the weir is indeed the earliest written description of a fence in the upper Yukon River — at the confluence of the Porcupine and Yukon rivers in June 1845. Hudson's Bay trader John Bell did not witness the system in use, but he did see fences made of wood stakes set across several river channels. He explained how they stopped salmon: "Against these stakes they erect willow netting to the height of five feet to prevent the egress of the fish, which entered by several openings left for the purpose of receiving them, and once inside of this enclosure they are easily speared and captured."[49] His description suggests that people set a number of traps behind openings along the fence, perhaps so narrow that the fish were unable to turn around.

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[47] Martin Leinweber, "Years on the Yukon," p. 25.
[48] Percy Henry, interviewed by Sally Robinson, Dawson, October 20, 1997, in: Jake Duncan, Summary of Streams in the Tr'on dëk Hwech'in Traditional Area, p. 79.
[49] Letter from John Bell, Pelly River [Yukon River], to George Simpson, August 1, 1845. [National Archives of Canada: Hudson's Bay Company records, Reel 3M 69, D.5/14, f. 212-213]

Figure 12: This drawing was adapted from an old photograph taken of the Cowichan River on Vancouver Island, ca. 1867. [Hilary Stewart, Indian Fishing, p. 103.]

Variations on the specific purpose and the design of weirs are found along the upper Yukon River and its tributaries. Instead of setting a trap at the centre or end of the weir to catch the fish, people would sometimes construct a continuous fence made of interlaced rods and split rods that completely blocked the fish from progressing upriver. Unable to pass through the barrier, the fish would be guided toward strategically placed baskets set just downstream from the weir. On July 17, 1892, C. W. Hayes described this technique in use on the Nisling River, a tributary in the White River drainage. "The trap is a fence across the river made of wattles tied to stakes. At a point down stream are conical baskets of slats. Fish going upstream strike the fence, and following it to get around go into the open end of the basket and as it grows smaller can't turn around, and can't back out on account of the current."[50] This technique was also used in the Yukon River itself below Fort Selkirk and has been a valuable subject for archaeological research in the area.

Three Way Channel fish trap.

"Selkirk Elders identified the island on the north side of Three Way Channel as a traditional king salmon fishing camp and one of their most important fish trap locations. It was here that people built weirs across the shallow waters of the slough and set the basket traps in the stream just below the weir. Located 19 km below Fort Selkirk, the slough is now seasonally dry. During the archaeological survey of the island, we discovered a wealth of artifacts at the eastern end of the island related to the old fishing camp. These included the remains of several conical fish baskets that had been cached in the willows, dozens of poles used to make the basket traps, a bow made from birch, and three large hammerstones used to drive in the weir posts. Imbedded in the muddy bank of the slough, we also found the well-preserved remains of another fish basket that was still bound together with its spruce root ties. Based on the pieces of fish baskets that were recovered and the recollections of the Elders, we know that the baskets were conical in shape and about 9 feet (2.75 m) long. The ribs of the basket were usually made of straight spruce or willow saplings. These were tied to hoops made of birch or willow with split spruce root, with baskets having generally three to four hoops. The fish baskets were anchored in shallow sloughs that had been blocked with a weir made of poles and woven saplings. At the mouth of each basket a ramp made of sharpened willow sticks was set. The ramp allowed fish to enter the basket but not get out again. The Elders say as many as three or four baskets would be placed in a slough. All of the salmon trying to swim up through the slough would be funnelled into the trap. The village site associated with the fish weir appears to have been located about 100 m to the east, at the extreme east end of the island. Selkirk Elders indicated that people had to camp

[50] C. W. Hayes, "The Journal of Charles Willard Hayes, 1891," in: Arland S. Harris, Schwatka's Last Search, p. 237.

some distance from the site of the fish traps to avoid bothering the fish. Archaeological testing at this location exposed traces of many layers of old fire hearths, showing that people returned to this campsite annually over hundreds of years. The village at Three Way Channel was abandoned almost a century ago, probably as a result of a sudden shift in the course of the Yukon River which left the slough too dry for fishing." [51]

In some cases, people did not set traps in combination with the weirs. They simply installed the fence to create a concentration of salmon along its limit or at one end where the fishers could more easily scoop them with a hand net. This method may have been what a group of prospectors observed on the Big Salmon River in 1886: "We saw Indians forking with round nets for King Salmon. They had a fish trap all across the river but we got by all right."[52] It is not clear, however, if Henry Davis used the term "fish trap" to describe the combination of weir and trap, or simply the weir itself.

Figure 13: Traps were used in a variety of ways in combination with fence weirs in shallow rivers. These particular designs were used by the Nootka in British Columbia. [Hilary Stewart, Indian Fishing, p. 115.]

Hand net

Successful usage of the scoop net or dip net required great skill, particularly below the confluence of the White River where people fishing could not see the salmon through the silty water. To fish from shore, the individual stood on a point that jutted into the river and around which the water flowed. The river, as it goes around a point of land, literally reverses its course to fill in the space on the downriver side. Travelling upstream, great numbers of salmon swim close to shore where there is less resistance, and often rest or benefit from the upstream flow in these eddies.

As William Ogilvie commented, First Nation people understood very well how the fish used the river. They watched the salmon advance through the slack current, the progress marked by ripples on the river's surface. Knowing that the salmon must get around the point but unable to see them, the fisherman would use a hand-held net: "He gently drops his scoop-net into the water up stream, sweeps down with the current through three quarters of the circumference of the circle, lifts the net, completes the circle, quietly replaces the net and repeats the operation over and over again." Aware of how quickly fish respond to a perceived threat, Ogilvie commended these individuals on their judgment, skill and care in making the sweeps and choosing suitable fishing sites.[53]

Figure 14: Fisherman at the Klondike, with a dip net in his canoe. [Veazie Wilson, Glimpses of Alaska, p. 42.]

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[51] Greg Hare & Ruth Gotthardt. A Look Back in Time, pp. 14-18.
[52] Henry Davis, "Recollections," in: Herbert L. Heller, ed., Sourdough Sagas, p. 36.
[53] William Ogilvie, "Down the Yukon and Up the Mackenzie," in The Canadian Magazine, October 1893, pp. 650-651.

Along the river near Fort Yukon and at Belle-Isle (near present-day Eagle, Alaska), First Nation people successfully used their scoop nets or dip nets from canoes. Scouts watching for the salmon positioned themselves on a point or on a stage overlooking the swift current of the river. Following the ripple of the water, they could see when and where the fish passed. Strachan Jones, a Hudson's Bay Company trader at Fort Yukon in the 1860s, described the technique used by Han people:

"*The other men, each in the middle of his small canoe, push out, all provided with a [netted] bag at the end of a pole; the bag is about five feet deep, and has an oblong frame around its mouth three feet long by one broad; the pole is eight or nine feet long. The Indian paddles his canoe in front of the fish, and pushes his net to the bottom right in front of it; as soon as the salmon enters the bag the man pulls it to the surface and stabs the fish with a knife fastened to a pole about five feet long; he then either lifts the salmon into his canoe, or drags it ashore in the net.*"[54]

Simultaneously manoeuvering a canoe and handling a net required great skill, and one visitor to the region in the early 1860s commented that he saw only two people at Fort Yukon who could scoop king salmon from their canoes.[55]

Twenty years later, Frederick Schwatka was so impressed by this technique that he referred to it as "the most wonderful and striking performance given by any natives we encountered on the whole trip." At Klat-ol-klin' (or Johnny's Village), about a mile upstream from Belle-Isle, the fishers set out in canoes to go about 200 to 250 feet from shore. They gave a carefully timed twist of the handle once the fish was in the net, and then they used a club to immediately kill the salmon. Hundreds of king salmon hung from poles under skin roofs and on the beach, and Schwatka witnessed seven netting attempts over three hours, two of which produced salmon weighing between 15 and 20 pounds.[56]

Figure 15: "Klat-ol-klin (Johnny's) Village (Looking up the Yukon River) Indian catching salmon." [Frederick Schwatka, Along Alaska's Great River, p. 253.]

Schwatka was completely mystified at how the fishers could know where the fish were: "How these Indians can see at this distance the coming of a single salmon along the bottom of a river eight or ten feet deep, and determine their course or position near enough to catch them in the narrow mouth of a small net, when immediately under the eye a vessel holding that number of inches of water from the muddy river completely obscures an object at its bottom, is a problem that I will not attempt to solve." His interpreters explained to him that the motion of a fish, even when deep in the water, revealed its presence on the surface of the river. Schwatka's party evidently did not see what Ogilvie later called the "ripple" of salmon.

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[54] Strachan Jones, "The Kutchin Tribes," in Smithsonian Institution Annual Report, 1866, p. 323.
[55] Robert Kennicott in: James Alton James, The First Scientific Exploration of Russian America and the Purchase of Alaska, p. 111.
[56] Frederick Schwatka, A Summer in Alaska, p. 257.

People seem to have used the hand nets primarily to catch the less-numerous chinook salmon. Visitors to the region in the 1800s witnessed men using the nets as high up the Yukon River as at the mouth of Tatchun River[57] and also in the Big Salmon River in combination with weirs.[58]

Figure 16: Sketch of the net. The dip net seen in 1883 consisted of a net attached to a kidney-shaped frame, which is attached to a pole about 10 feet long. [Frederick Schwatka, Along Alaska's Great River, p. 258.]

Figure 17: Sketch of "salmon-killing club" as seen in 1883. [Frederick Schwatka, Along Alaska's Great River, p. 259.]

Spears

Several explorers during the 1800s observed people fishing with spears, both from shore and from canoes. Robert Kennicott learned between 1861 and 1862 that people far up the Yukon River speared chinook salmon as they passed through shallow water, and a surveyor in 1896 noted that the First Nation people at the mouth of the Klondike wielded spears while manoeuvering their birch canoes.[59]

Two accounts describe the construction of the spears. Frederick Schwatka described those used by men in canoes in 1883 as consisting of three points — the centre point made of iron and the two others made of bone with a nail or scrap of iron attached to make a barb — attached to the end of a long pole.[60] Cornelius Osgood recounted a description of a spear used to catch king salmon given by Henry Harper, of Moosehide, in 1932. Harper explained that it consisted of a detachable bone point that fitted into a socket at the end of a 12-foot long shaft of dried wood. Walter Benjamin, of Eagle, confirmed the use of this type of spear.[61]

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[57] William Ogilvie, "Down the Yukon and Up the Mackenzie," in The Canadian Magazine, October 1893, pp. 650-651.
[58] Henry Davis, "Recollections," in: Herbert L. Heller, ed., Sourdough Sagas, p. 36.
[59] James Alton James, The First Scientific Exploration of Russian America and the Purchase of Alaska, pp. 123-124; Edward Spurr, "From the Coast to the Golden Klondike," in Outing, Sept. 1897, p. 538.
[60] Frederick Schwatka, Report of a Military Reconnaissance in Alaska Made in 1883, p. 81.
[61] Cornelius Osgood, The Han Indians, p. 69.

Gaffing on the Yukon.

"Down at Forty Line [Forty Mile], they fish there too but they just gaffed them. They explained to me that there was a little island there and they had a scaffold on there and there is a man on the shore with a little canoe. When the fish comes you can see him, he makes a wave. Then he would tell him and he would go out there and gaff him. The name of the place is '*jeu-kla-kaí*' in Han. 'Jeu' is island."

— Percy Henry, Dawson, 1997.[62]

Figure 18: Spearing salmon, probably along the Pelly River, in 1927. [Yukon Archives: Claude Tidd Coll., acc. 77/19, #7084]

[62] Percy Henry, interviewed by Marilyn Jensen, July 31, 1997, in: Jake Duncan, Summary of Streams in the Tr'on dëk Hwech'in Traditional Area, p. 90.

2. *The people and their fisheries: First Nations, fur traders and early prospectors.*

In the 1840s, the Hudson's Bay Company expanded its fur-trading network into the upper Yukon River. The company approached the river basin from two directions: from the southeast via the Liard River to the Pelly River, and from the northeast via the Peel River to the Porcupine River. The Hudson's Bay Company in the upper Yukon River area faced a number of problems in its effort to penetrate the trade network in the upper Yukon region, including: the existence of a flourishing trading system among the coastal Tlingit and interior aboriginal groups; difficulties, in some cases, in getting information and assistance from the First Nation people; the enthusiasm with which aboriginal people in the Fort Yukon area exploited the competition between the European traders, namely the Russians and the British; transportation and supply problems, particularly for trader Robert Campbell in the Pelly River region; and, critical to survival at the posts, harvesting enough local foods.[63] While competition among the players is best discussed elsewhere, aspects of the relationship between First Nation people and the Hudson's Bay Company traders are important to understand the role of the salmon fisheries at this time, and how the fisheries evolved.

The company's exploration of the Yukon River region initiated a type of direct relationship between non-native and local aboriginal people that proved to be relatively short-lived. Their dealings were, in large part, mutually beneficial. Native people enjoyed obtaining items that they incorporated into their material culture, and the traders' profits and, in some situations, their survival relied on the skills and knowledge of First Nation people. When the first two traders established their respective posts in the upper Yukon River area — Robert Campbell at Pelly Banks and then at Fort Selkirk, and Alexander Hunter Murray at Fort Yukon — one immediate concern was, naturally enough, how and where to secure ample supplies of meat and fish for the year.

Upon reaching the Yukon River basin, both Campbell and Murray quickly learned how dependent they were on the contributions of local people. They had much to learn before being able to harvest adequate supplies of fish and game for themselves. Shortly after establishing his Pelly Banks post in 1846, Robert Campbell admitted his ignorance about when and how to catch salmon from the Pelly River. He got none that year, despite the fish being plentiful.[64] In the following year, he confessed that he still did not know how to catch the salmon and remained dependent on his loyal hunters, whose services were "necessary till the forks [Fort Selkirk] be established and a knowledge of how the salmon is captured is acquired, and the Pelly Indians begin to contribute their mite [sic], both items I should think when available will be sufficient for the maintenance of

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[63] For discussion on economic relations between First Nation people and the European fur traders in the upper Yukon River region, see: Ken S. Coates, Best Left as Indians, pp. 23-29.

[64] Letter from Robert Campbell, Pelly Banks, to George Simpson, August 26, 1846. [National Archives of Canada: Hudson's Bay Company records, Reel 3M 74, D.5/18, f. 190-191]

the people there."[65] Unfortunately for Campbell, things did not go according to plan.

Two years later, having established a post at Fort Selkirk but having mixed success at securing food for the post, Campbell expressed his increasing frustration to his superiors about the lack of local assistance in providing food. He attributed this wrinkle in part to First Nation people being "ignorant how to prepare and trade it."[66] Curiously, Campbell noted many times in his Fort Selkirk post journals that people, bearing various foods, visited the post from up and down the river. In July of his first summer at the post, he also wrote that the "Aunas" from downriver came up to tell him that the first salmon would soon arrive. People then informed him that the fish had indeed arrived. A few weeks later, Campbell mentioned that native people were willingly trading fish and meat at the company's tariff.[67] Clearly, Campbell and his men did obtain Yukon River salmon, both through their own efforts in netting them in the Yukon and Pelly rivers, and in trade. His men returned to the post with fish and, at least during the chum run, salted roe from various camps along the Yukon and Pelly rivers.[68]

Figure 19: Copper Joe and a boy at Fort Selkirk, ca. 1920s. [Yukon Archives: A. Thornthwaite Collection, acc. 83/22, #63]

The harvests varied from year to year. In his last recorded season at Selkirk in 1851, Campbell's men accumulated approximately 6,000 salmon; in the worst year, 1849, they had just under 1,600. First Nation people may also have experienced the yearly variations, and this may help to explain their reluctance to trade what little they had.

The situation at Fort Yukon unfolded under somewhat different circumstances. Alexander Hunter Murray arrived at the confluence of the Yukon and Porcupine rivers at the end of June 1847 and established the new fort. Unlike Campbell, Murray described no difficulties in his letters or journal about quickly adapting to the availability of local resources. He mentioned his workers doing endless chores, including making and running the fishnets. They set the nets in the river upon their arrival and continued to set them for the duration of the salmon runs. Like Campbell, Murray referred to yearly variations in the runs, but he did not refer to trouble in recruiting local help to operate the nets or to show his men various places to fish.

By the fall of Murray's first year at Fort Yukon, the workers had extracted 1,380 salmon from 13 nets. Chum comprised the largest number of salmon harvested,

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[65] Letter from Robert Campbell, Fort Simpson, to George Simpson, August 22, 1847. [National Archives of Canada: Hudson's Bay Company records, Reel 3M 77, D.5/20, f. 133-134]
[66] Letter from Robert Campbell, Forks Pelly & Lewes, to George Simpson, July 11, 1849. [National Archives of Canada: Hudson's Bay Company records, Reel 3M 86, D.5/25, f. 379-380]
[67] Fort Selkirk. Journals kept at the post at the forks of the Lewes and Pelly Rivers, 1848-1852. [National Archives of Canada: MG 19 D 13]
[68] Ibid. Campbell mentioned his men bringing up the salted roe from a camp downriver from Selkirk. The roe was probably from chum salmon, since it was brought up at the end of September.

just as they did at Fort Selkirk. Unfortunately for his men, the most desired species was not chum. Describing these fish, Murray wrote: "They make their appearance in August, but are not plentiful until the beginning of September, when they ascend the river in immense shoals; when they first make their appearance they are tolerable eating, have a silvery tinge on the back and upper part of their sides, the belly is of a dark brown and green, and the lower part of the sides blue; but before they disappear towards the end of September, they lose their bright colour, are soft and lean, and of a strong rancid taste. The men get tired of them in a few days if served out constantly for rations."[69]

Murray had mixed success with his gill nets set on the Yukon and Porcupine rivers. Driftwood and high winds occasionally ruined them, and Murray found that they were not always the most effective means of harvesting the fish. No doubt frustrated in watching First Nation people have better luck using their own techniques — Murray reported that the locals had never seen or used gill nets before[70] — he ordered his men to copy the aboriginal methods.

Just as John Bell had observed in 1845, Murray saw weirs and fish baskets set in small channels of the river. Using this method, First Nation people caught large numbers of "real salmon", a species that his men caught only once in their nets.[71] In early August of his first year, he referred to two men (presumably working for him) constructing a basket for catching fish. In July of his second year at Fort Yukon, he observed that while his nets caught none, First Nation people using hand nets in the swift current in the middle of the river channel caught several large chinook salmon, some of which they gave to Murray. Probably realizing that this method was more effective than setting nets close to shore, Murray began sending some of his own men out to fish equipped with hand nets.[72] Murray understood the need to adapt to local conditions.

Warburton Pike, an explorer and adventurer who travelled in the Yukon River area in 1892, summarized his view of successful fishing in northern rivers. The early Hudson's Bay men may well have appreciated this advice:

"*No matter how good a hunter or fisherman you may be, there are sure to be spells of scanty living if none of the party have any local knowledge as to the best places for game or fish, and you often come across a strip of country entirely deserted by birds and beasts. Fishing in a large river during high water is seldom satisfactory, as a net can only be set in some quiet backwater to be clear of the strong current and drifting logs; and such places are not always to be found.*"[73]

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[69] Alexander H. Murray, Journal of the Yukon, p. 63.
[70] Mike Elson, [Memorandum] "Historical Exploitation of Yukon Fish Stocks," May 24, 1973, p. 7. [Department of Fisheries and Oceans, Whitehorse] Elson refers to a letter written by Murray to his superior.
[71] Alexander H. Murray, Journal of the Yukon, p. 65.
[72] Ibid, p. 65; Fort Yukon – Post Journals [National Archives of Canada: Hudson's Bay Company records, B.240/a/1 to B.240/a/3]
[73] Warburton Pike, Through the Subarctic Forest, p. 183.

In other words, without fishing technology best adapted to the conditions or to the species of fish desired, and without the knowledge of where to fish, the chance of success would be enormously reduced.

As trading, trapping, hunting and fishing had long been activities in the seasonal rounds of aboriginal people, trading furs and traditionally harvested foods at the posts did not compromise their self-sufficiency during the fur trade era. They knew what foods were available and how to harvest them, and their fishing technologies required no capital outlay. While the non-native men usually set gill nets for salmon, aboriginal people demonstrated their prowess at catching fish using weirs, hand nets, traps and fish baskets.

The pleasure of receiving salmon in 1895.

Several accounts of travel through the Yukon refer to salmon providing a taste sensation that lent variety to a rather limited diet. Despite marked improvements following the stampedes to Forty Mile in 1887, market foods were relatively rare and of poor quality, and many people could scarcely afford what was available. A Canadian police officer, Sergeant M. H. E. Hayne, stationed at Fort Cudahy in 1895, described the pleasure in receiving such a rare treat:

"*Occasionally a solitary indian would pass in a birch-bark canoe. We hailed their approach eagerly, for they generally brought two or three fine king-salmon, which are a most beautiful form of food. We used to give them a small bit of bacon in exchange for an enormous fish, and they were quite satisfied... The fish dinners with which they provided us were almost the only comfort we had in those days.*"[74]

Yukon River salmon proved to be an important link between First Nation people and newcomers to the region. Since both native and non-native people recognized its importance and shared an interest in obtaining it, it emerged as a valuable trade item — or commodity — between them. The desire for salmon also highlighted the dependency of the traders on the First Nation people because the Hudson's Bay men faced a steep learning curve to successfully harvest it. Furthermore, the traders, always keen on generating interest in goods that they could supply, introduced to the trading arena such things as twine to substitute for fine caribou babiche that First Nation people were using as netting material.

With the trickle of prospectors to the upper Yukon in the 1870s came more varied economic opportunities for First Nation people. Unlike the Hudson's Bay Company traders who had the manpower and the ability to harvest or trade for most of their provisions, the early prospectors were of a different breed. As independent prospectors were usually short on time and valuables to trade, they could not engage teams of people to gather the dearly needed foods, and they seldom had the wherewithal during the summer months to take full advantage of the local resources, including the passing runs of salmon.

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[74] M. H. E. Hayne and H. West Taylor. The Pioneers of the Klondyke, p. 56.

Saved by salmon in the 1880s.

For some people, the presence and skills of First Nation people probably saved their lives. Leroy McQuesten recounted a story about a man who left Sixty Mile with neither his gun nor provisions. He did finally reach his destination, Fort Reliance, but had eaten nothing during his trip. He gratefully found some aboriginal people and lived on salmon for two weeks.[75]

Prior to the discovery of Klondike gold, a blend of social, cultural and economic values guided resource-based activities in the upper Yukon River region. Most people in the region survived off of fishing, hunting, trapping and trading, pursuits that often required a cooperative effort and a solid understanding of the various participants' expectations. Non-native prospectors and traders trickling into the country over the years either arrived with or acquired the necessary skills to live, for the most part, off the land. First Nation people adopted some new techniques to harvest fish and game. People in general could supply a substantial portion of their food requirements for themselves, their dogs and their families, and many also harvested resources to supply the demand of others.

Nets in the Klondike, 1894.

"*At that time two men were located at the mouth of the Klondyke fishing for salmon. I helped them haul in their nets, and we found numerous salmon varying in weight from fifteen to fifty-eight pounds.*"

— A. E. Ironmonger, July 21, 1894.[76]

Harvesting fur, fish and game, trading imported goods, and prospecting for minerals proved to be reasonably compatible activities. A number of researchers who have studied the fur trade and early prospecting era argue that the increase in human activity in the upper Yukon River region did not significantly disrupt the cultural and economic rhythms of aboriginal people until the mid- to late 1890s. Provisioning the traders and prospectors did not require a significant shift in their seasonal patterns, nor did fishing or hunting by Hudson's Bay Company men interfere with commercial transactions at the posts. Aboriginal people could earn sufficient cash (or barter potential) by supplying provisions and offering short-term and part-time labour to purchase goods from non-native traders. These temporary arrangements, similar to those with the fur traders, interfered in only a limited way with their hunting and fishing cycles.[77] Providing salmon to the newcomers, for example, was often an on-the-spot arrangement rather than a commission, and something from which both parties could benefit. To the extent that First Nation people became involved in new economic pursuits, working for cash and trading for certain items did not upset their subsistence activities.

With all of the increased activity before the strike at the Klondike, aboriginal people had little need to compete with the newly arrived prospectors and traders

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[75] Leroy M. McQuesten, Recollections of Leroy N. McQuesten, p. 13.
[76] A. E. Ironmonger Sola, Klondyke: Truth and Facts of the New El Dorado, p. 67.
[77] Ken Coates, Best Left As Indians, p. 37. In his book, Coates describes this economic relationship and its evolution in detail.

in the economic sector. They fared quite well in exchanges of labour and provisions for imported goods. In 1895, Bishop Bompas went so far as to say that they were becoming "rich" by trading meat and fish and by working for the miners on a short-term basis.[78] As seen, for example, during the 1840s at Fort Yukon, where First Nation people managed to benefit from the Hudson's Bay Company's problems, the aboriginal people generally had the upper hand in trade, and they knew how to play it to their advantage.[79] But gradually, as their material needs changed and as the cash economy drew some people away from their seasonal activities, they turned to the traders and other businesses for more goods and with more regularity. The Klondike gold rush, the creation of Dawson City and the loss of Tr'ochëk, the traditional fishing village at the mouth of the Klondike River, ended one chapter in life as the Tr'ondëk people knew it. The delicate balance between the economies of native and non-native people began to tip in the newcomers' favour.

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[78] Reference to MG 17, B2, Bompas to CMS, January 3, 1895, in: Ken Coates, Best Left As Indians, p. 35.

[79] Ken S. Coates explores the relationship between the First Nation people at Fort Yukon and at Fort Selkirk in: Best Left As Indians, pp. 23-31. He also describes how, for example, the Hudson's Bay Company's assorted problems in securing trading posts resulted in expanded economic opportunities for the aboriginal people.

Part 2 — In a climate of constant change: fisherfolk, fish and governments in the 20th century.

As thousands of goldseekers and entrepreneurs poured into the upper Yukon River region following the great Klondike gold discovery in 1896, and as the economy expanded into new sectors, governments recognized the need to manage certain resources and control people's access to them. Regulations and formal mineral claim surveys were introduced to the local mining industry, and government control gradually extended to other sectors of the economy, including the fisheries.

While the salmon fisheries had long been an interaction between the people fishing, the river and the fish, the intervention of the state at the turn of the century introduced a new player to the stage. Guided by economic theories, political issues and their interpretation of public interests, American and Canadian governments determined what they considered to be the best uses of the resource, and the best way to monitor and regulate how much, by what means and by whom the resource could be harvested. These decisions affected the development of the Yukon River salmon fisheries in the 20th century by creating a particular climate in which people could harvest salmon.

In the next three chapters, we will examine the upper Yukon River fisheries during three loosely defined periods — at the turn of the century, during the post-gold rush and interwar era (between World Wars I and II), and during the post-World War II period (from the late 1940s to the 1970s). After introducing the prevailing theories guiding fisheries management for each of these periods, we will turn to the salmon fisheries in the upper Yukon River region and explore their evolution.

3. At the turn of the 20th century.

Laissez-faire fisheries.

"The cod fishery, the herring fishery, the pilchard fishery, the mackerel fishery, and probably all the great sea fisheries, are inexhaustible: that is to say that nothing we do seriously affects the number of fish. And any attempt to regulate these fisheries seems consequently, from the nature of the case, to be useless."

— T. H. Huxley, British Darwinian,1883.[80]

In Europe in the latter part of the 19th century, few restrictive laws applied to fishing in European waters. Indeed, in 1866 the British government repealed those that had been in place, perhaps under pressure from Darwinians such as T. H. Huxley, who strongly believed in the inexhaustibility of the sea. Many scientists were convinced that fish have enormous reproductive capabilities — after all, female cod lay millions of eggs at each spawn — and that nature has the ability to correct imbalances or, at least, to find an equilibrium at a lower level of abundance. Fishing, according to those who opposed any restrictive policies, would have no long-term effect.

A degree of confusion about the fisheries nevertheless existed in scientific quarters around the turn of the century. In an article in 1954, H. Scott Gordon, an innovative economic theorist from Carleton College in Ottawa, highlighted this confusion by pointing out that some biologists directing public policy in Britain at the turn of the century simultaneously advanced diametrically opposed views: (a) no reduction in fish populations would occur if legal size limits were set at a level permitting every fish of a particular species to spawn at least once; and (b) there are too many fish in the ocean for the food available, and the fish populations should be thinned out to reduce competition.

The first argument, known as the "propagation theory", was finally disproved when researchers showed that fish grow in size with age and that commercial catches are heavily affected by good and bad brood years. In studying the age distribution of commercial catches, they found that a good brood year (one favourable to the hatching of eggs and survival of fry) affects future catches, and this particular brood year may dominate the commercial catches of succeeding years. In his description of this theory, Gordon referred to a Norwegian example to explain his point: "1904 was such a successful brood year for Norwegian herring that the 1904 year class continued to outweigh all others in importance in the catch from 1907 through to 1919. The 1904 class was some thirty times as numerous as other year classes during the period." Gordon also used the example of the Canadian Atlantic sardine fisheries, which, like some other fisheries, targeted immature fish. He argued that no evidence existed to demonstrate that catches had in any way been reduced by the practice of taking

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[80] Quoted in: H. Scott Gordon, "The Economic Theory of a Common-Property Resource," p. 126.

very large quantities of fish of pre-spawning age year after year.[81] In other words, targeting fish of a certain size could not guarantee a non-fluctuating population base.

A number of people subscribing to the second approach mentioned above, the "thinning theory", believed that commercial fishing could — and indeed should — crop the resource in order to leave the stocks of fish in the sea completely unchanged. Doing so was entirely possible because less competition among the fish would allow for more rapid growth. Only in later years was this approach finally refuted by those who argued that the commercial fishery cannot fail to diminish the fish stock (see p. 58). Gordon spoke directly to the "thinning theory" in fisheries and equated it to the argument that rabbits had multiplied so rapidly when introduced to Australia because they had no competition from other rabbits. Gordon pointed out that this simplistic explanation neglected all other elements of importance in a natural ecology. If, he explained, the fishing industry reduced the cod population by half, the remaining cod would not enjoy double the food supply and so bounce back rapidly; other marine species use the same food as cod.[82] Gordon's argument is an early statement of the law of unintended consequences. Most ecosystems are incredibly complex and often respond in entirely unexpected ways to external pressures and changes.

The link between the "propagation" and "thinning" approaches lay in the question of how fisheries affect fish populations, a topic of endless discussion among industry, governments, scientists and others in the first decades of the 20th century. Sharing a belief in nature's ability to respond to change and to find its own equilibrium, biologists and governments legitimized the expansion of commercial fisheries in Europe and in North America. Human beings, it was argued, are like all other predators of fish and do not *diminish* the fish stock; the fishing industry merely takes the interest, leaving the capital in place.[83] The terms "overfishing" and "depletion" only came into vogue when the declining stocks of the coastal fish became unmistakable, even to the most ardent believers in inexhaustibility. At the turn of the century, however, most fish populations merely fluctuated. Incontrovertible evidence to prove otherwise did not yet exist, and the belief in inexhaustibility remained strong.

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[81] Ibid, p. 127.
[82] Ibid.
[83] Ibid, p. 128.

Setting the scene: salmon fishing in the upper Yukon at the turn of the century.

"With the influx of people will come the development of new industries. Salmon canneries upon the Yukon will be established for the first time. There are fish enough in the great river to keep a hundred canneries running for years."

— E. Hazard Wells, journalist, 1897.[84]

The widespread faith in nature's ability to produce infinite numbers of salmon inflicted no obvious harm on the Yukon River fisheries in the years before or soon after the Klondike gold rush. Despite exclamations of disbelief from newcomers about the abundance of salmon in the river, large canneries and commercial operations were not immediately established at the river mouth, nor was there a high seas fishery harvesting huge amounts of salmon bound for the Yukon River. Compared to other large river systems in North America such as the Columbia or Fraser rivers, the Yukon River itself has had a relatively short history of heavy fishing exploitation.

Demographics helped to limit the exploitation of the Yukon River salmon toward the end of the 1800s. The nature of the aboriginal subsistence economy and of prospecting and trading activities meant that the human population was thinly distributed throughout the region, and in no settlements would one have found more than a few hundred people immediately prior to the gold discovery in the Klondike. Discoveries near Forty Mile and rumours of gold in the Klondike area drew hundreds of optimistic prospectors to nearby creeks between the early 1880s and mid 1890s, but they joined a declining population of native people, reduced by perhaps two-thirds by the turn of the century.[85]

The gold discoveries in the Forty Mile and Klondike areas enticed a wide variety of people, not just those fixated on gold. New ideas and personal ambitions activated a variety of economic pursuits in the region in the 1890s. The abundance of salmon in the Yukon River did not escape the attention of some individuals. More people in a concentrated area and the increased use of dog teams to travel and transport supplies meant more hungry mouths to feed. As is often the case, development in one sector of the economy had repercussions on others. The influx of people to the region certainly left its mark on the salmon fisheries in the Klondike.

In the following sections, we will see that fisheries managers and the people fishing approached the fisheries with different perspectives at the turn of the century and in the early years of the 20th century: some families relied on the fish for themselves and their dogs; some business people harvested fish to feed the

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[84] E. Hazard Wells, Magnificence and Misery, p. 7.

[85] Epidemics had already reduced the population of aboriginal people to perhaps 2,000 or 3,000 within the future boundaries of the Yukon Territory. Fewer than 200 First Nation people may have lived in the Dawson to Fort Selkirk area during the Gold Rush period, and, according to Bishop Bompas, 39 individuals died between 1895 and 1898. [Ken Coates, Best Left As Indians, p. 13.]

foxes or mink on their fur farms; some saw its commercial value; some people were concerned primarily about its conservation; others saw no value in salmon at all.

Fishing and place: a snapshot of the Klondike fisheries during the gold rush.

Fishing for opportunities in the Yukon

While native people sold or traded Yukon River salmon to the prospectors and traders through the 1800s, non-native people only entered the local commercial fishery in the years leading up to the Klondike gold rush. Most prospectors arrived on the scene transfixed by dreams of mountains of gold; others branched off to supply the hordes of recent arrivals. Rev. Canham referred to one non-native fisherman who, before the Klondike strike, set his nets at the mouth of the Klondike River and smoked salmon to sell to nearby miners:

"*The fact that the salmon were so plentiful at this point decided a miner to establish himself there for the purpose of putting up salmon in barrels, to sell to the miners who were working Forty Mile Creek. He was very successful, and made much more than he would have done at mining. Of course he charged very high for his fish. This, by the way, is only one of the many instances of how the poor Indians are being robbed, not only of their land and the wealth of their land, but also of their very subsistence.*"[86]

Within three years, others had followed this commercial fisherman's lead, perhaps thinking that they could earn more by catching salmon than they could by labouring on somebody else's gold claim.

Figure 20: "Frits Fishery: showing a white man's method of drying fish," 1894. [Veazie Wilson's photo in Glimpses of Alaska..., p. 41.]

Percy DeWolfe and Pete Anderson.

Percy DeWolfe and his partner Pete Anderson arrived in Dawson during the summer of 1898:

"*... They were both broke so quickly [they] began figuring out what they could do to make a stake. Pete had lengthy fishing experience from the coast so the two partners decided to enter that game. They bought a fish net on credit, went 16 miles down the Yukon and brought up the first fresh salmon for the local market. From this humble start the two men built up a profitable fishing business...*"

— *Dawson Weekly News*, March 1, 1951.

[86] T. H. Canham, "The Diocese of Selkirk: its work and workers," in Church Missionary Intelligencer, 1898, p. 20.

The right to fish at the Klondike.

The displacement of the First Nation people from Tr'ochëk at the mouth of the Klondike River in 1896 and 1897 is described in detail elsewhere.[87] However, it is important to note here that, in addition to affecting the Tr'ondëk Hwëch'in as a people, the series of events both preceding and following these moves reflected a shift in the use of the river and people's relationship to it. This change involved government officials in Canada deciding the best uses for the waterways and deciding who could use the resources.

The situation at Tr'ochëk erupted over the ownership of space. The Tr'ondëk Hwëch'in had drying racks for salmon on an island at the confluence of the Klondike with the Yukon River. They had racks for meat harvested upriver, and they had more permanent shelters in their village on the south shore. In August 1894, the chief explained to North-west Mounted Police Inspector Charles Constantine that his people caught few salmon that season because high water had caused a late and poor run of fish. Constantine commented on the value of salmon fishing to First Nation people in his annual report: "The Indians are very much troubled about the scarcity... The scarcity of fish this season is a serious one for the Indians, as they, in a great measure, depend on them for their winter food, also for food for their dogs, which are the beasts of burden in the country."[88]

The First Nation people's occupation and use of Tr'ochëk were not simply represented by the structures on it. During fishing season, families used the riverbank and the island at the river mouth to repair or build their fish traps, to watch for the salmon, to quickly access their canoes to net or spear the fish, and to dry their catch. Their continued use of the area was inextricably linked to their ability to fish in this highly productive salmon stream; unfortunately for them, the area around their village at the mouth of the Klondike became highly appealing to non-native people as well.

Figure 21: "Mouth of Klondike River at Time of the Strike — Chief Isaac's Salmon Racks." [1896]. [Tappan Adney, The Klondike Stampede, p. 280.]

One month before George Carmack, Skookum Jim (Keish), and Dawson Charlie (Káa Goox) discovered the gold that sparked the rush to the Yukon, Tr'ondëk people were waiting for the arrival of the chinook salmon in the Klondike River area. The birch canoes from which they speared salmon lay on the shore nearby. One observer noted: "At the time we were there most of the male Indians were stationed along the river, eagerly watching for the first salmon to leap out of the water, for about this time of the year the immigration of these fish begins..."[89]

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[87] See related work by Helene Dobrowolsky on the Tr'ochëk and Moosehide sites.
[88] Inspector C. Constantine, "[Report] Re. Yukon District," Moosomin, N.W.T. October 10, 1894, in NWMP Annual Report 1894, December 5, 1894.
[89] Josiah Edward Spurr, Through the Yukon Gold Diggings, p. 106.

At the Klondike.

Mrs. Rowena Flynn explained that when her grandfather and his family first came to the Klondike River area, they did not know anyone and camped at the only dry place:

"*My grandmother always tease my grandfather. I was small but just like a dream I saw my grandfather. They don't know people. He heard some people down the Klondike River and ran back to say there was some crazy Indians and we got to go. My grandmother went to look. The people used the small roots like they used to weave baskets. They weave it like a net about 150 feet. All the men, even the tallest, haul it out and go way out in the Klondike River. They go out and around and they hold it, and coming in, they singing eh? They were shouting and the women and kids were making noise. My grandfather thought they were going to kill those men. He went running back. My grandmother went to see. Oh, the salmon. They gave her a salmon and she went back to camp. Look, see what those crazy Indians gave us.*"

— Rowena Flynn, 1997.[90]

In August, one newcomer to the region, William Johns, stopped at Kate and George Carmack's camp at the mouth of the Klondike. Her husband was away, but Kate Carmack (Shaaw Tláa), a First Nation woman from the Tagish area, was waiting for the salmon run. Johns described the scene before him: "The mouth of the Klondike was filled with fish weirs woven with willows to catch the salmon and when I had occasion to go up the river soon after, I wondered how any fish for spawning could get through."[91]

Later that year, North-west Mounted Police Superintendent Charles Constantine disputed a number of accusations made by the local Anglican Bishop, William Carpenter Bompas, about unfair treatment of First Nation people at the site. An individual who showed little sympathy for aboriginal people, Constantine dismissed the argument that non-native people had given the Han a raw deal in buying their dwellings at the mouth of the Klondike River in 1896. He also tried to disprove the accusation that non-native fishermen had usurped aboriginal fishing grounds along the Yukon River. He argued that only four dog-team owners set nets between the Alaska border and the Klondike that year. The 1896 salmon run was poor, and none of these men sold their salmon. At least one of them moved to Circle City because of difficulties in securing enough fish for his dogs.[92]

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[90] Rowena Flynn, Interviewed by Ingrid Johnson, July 31, 1997, in: Jake Duncan, Summary of Streams in the Tr'on dëk Hwech'in Traditional Area, p. 55.

[91] Wm. Douglas Johns, "The Early Yukon, Alaska and the Klondike Discovery: As They Were Before the Great Klondike Stampede Swept Away the Old Conditions Forever." [Yukon Archives: MSS 092, acc. #78/69, f. 20]

[92] Letter from Supt. C. Constantine, NWMP, to Deputy Minister of the Interior, November 19, 1896. [Canada, Department of Indian and Northern Affairs, Ottawa: f. 801/30-0-1]; Inspector C. Constantine, "Report on the Yukon Detachment," in Report of the Commissioner of the North-west Mounted Police Force 1896, pp. 237-238. Curiously, Fritz Kloke, one of the "teamsters" named by

Insofar as suggesting that non-native fishermen had no commercial interest in securing fishing grounds in 1896, Constantine may have had a point. It is unlikely that these individuals would be selling the few fish they caught, especially if they did not have enough to feed their own dogs.

William Ogilvie contributed to the debate when he wrote from Fort Cudahy on November 6th, 1896. He confirmed that non-native people had attempted to take possession of aboriginal "fishing stands" along the river between the Fortymile and Klondike rivers. One man had apparently applied for the exclusive right to fish opposite Forty Mile, a site that Ogilvie considered to be the best aboriginal fishing location. Ogilvie expressed his concern about granting "exclusive privileges" to non-native people because this would remove yet another means by which First Nation people could earn a living.[93]

Meanwhile, Charles Constantine — who, in addition to being police superintendent at the time, was the de facto Indian Agent and responsible for overseeing Dominion government operations in the Yukon — strongly opposed the view that non-native people had encroached on First Nation land or on First Nation fisheries in the Yukon or Klondike rivers. He reported that in the few miles of river between Forty Mile and Coal Creek, First Nation people had set more then ten nets during the summer of 1896.[94] He also understood that he was under orders not to recognize any aboriginal rights to land or to the resources where no treaties existed.[95] Constantine believed that his hands were tied and could therefore not deal with Ogilvie's concerns at that time.

In the midst of all this confusion, the Han were forced to grapple with a foreign definition of land ownership that distanced them from their fisheries. The government learned that after selling their dwellings in 1896, the people who traditionally spent time at Tr'ochëk moved across the river to remain close to their fishing grounds.[96] The police force already had an interest in this land however, and by the fishing season of 1897, the local First Nation people had been squeezed off both shores of the Klondike River at its mouth. Their inability to prepare for the salmon runs or to process the fish on site was compounded by all of the activity in the Klondike — miners rafting logs down the river destroying their fish weirs, and the impressive land developments at the river mouth. It does not appear that they tried to return in 1898.

Constantine, owned the fishing operation seen on the Klondike River two years earlier, and he was likely the man reportedly selling fish to prospectors at Forty Mile that year. Kloke was also seen at the site during the 1896 fishing season, drying fish under a rough shed of poles covered with canvas. [Tappan Adney, The Klondike Stampede, p. 283]

[93] Extract from William Ogilvie's letter dated Fort Cudahy, November 6th, 1896. [Canada, Indian and Northern Affairs, Ottawa: f. 801/30-0-1]

[94] Letter from Supt. C. Constantine, NWMP, to Deputy Minister of the Interior, November 19, 1896. [Canada, Indian and Northern Affairs, Ottawa: f. 801/30-0-1]

[95] Letter from C. Constantine, to Wm. Ogilvie, D.L.S., November 10, 1896. [National Archives of Canada: MG 30, E55, vol. 4]

[96] Memorandum by Jas. A. Smart, Deputy Minister, Department of the Interior, to the Bishop of Selkirk, Buxton Mission, Upper Yukon River, N.W.T., August 12, 1897. [Canada, Indian and Northern Affairs, Ottawa: f. 801/30-0-1]

Figure 22: View of miners' camps along Klondike River, [1897?] [Yukon Archives: Tappan Adney Collection, acc. 81/9, PHO 260. Credit: Dept. of Rare Books and Special Collections of the McGill University Libraries.]

Aboriginal people had long used sites according to family and cultural arrangements. They generally constructed a central camp where they dried salmon, set their nets in eddies in the vicinity and passed the use of particular fishing grounds from generation to generation. In productive streams such as the Klondike River, larger groups of people could successfully harvest the fish they needed. In contrast, Hon. Stratford Tollemache remembered the approach taken by his fellow non-native fishermen in the Fort Selkirk area between 1898 and 1909. Unlike the aboriginal fishers, they set their nets alone and literally raced to secure their fishing spots:

"*An unwritten law exists in the Yukon that when a person has set his net in a particular eddy, no other person is supposed to interfere with him, but must proceed to some other eddy in a fresh locality; so on arriving at our particular spot, we quickly pitch the tent and set the net before any one else arrives, and are then ready to receive the salmon when they make their first appearance.*[97]

Fortunately for all fisherfolk, from the days of the Hudson's Bay Company traders at Fort Yukon to some 50 years later when the first commercial fisheries were established at the mouth of the Klondike, no serious conflict appears to have arisen over the fisheries. However, the influx of people to the Klondike region fuelled a new approach to "owning" fishing grounds.

Non-native people in the 1890s brought with them a desire to establish rights to fishing grounds similar to that used in mining — claiming an exclusive right to a resource at a specific location. William Ogilvie's argument against the adoption of this approach in the salmon fisheries in 1896 and his objection to the government granting exclusive fishing rights to non-natives did not please those who wanted the freedom to select their fishing sites and then secure them for their own use. Ogilvie also strongly opposed any arrangement that prevented aboriginal people from fishing, arguing that non-native people could earn a living in any number of ways whereas First Nation people had limited opportunities.[98] When asked to comment on the question of fishing rights for non-native people, the Department of Marine and Fisheries replied that no request for exclusive rights had been brought to the department's attention.[99]

The official granting of exclusive rights to fishing areas did not occur, but events in the area effectively excluded the Han from the fishing grounds at the Klondike River mouth. The government granted land to non-natives on both shores of the river mouth and certainly did not discourage mining and commercial activities on

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[97] Stratford Tollemache, Reminiscences of the Yukon, p. 292.

[98] Extract from William Ogilvie's letter dated Fort Cudahy, November 6, 1896. [Canada, Indian and Northern Affairs, Ottawa: f. 801/30-0-1]

[99] Letter from F. Gourdeau, Deputy Minister of Marine and Fisheries, to Superintendent General of Indian Affairs, Ottawa, January 29, 1897. [National Archives of Canada: Indian Affairs records, RG 10, vol. 3962, f. 147,654-1, 2]

the river. Within one year, the Han had lost their ancestral fishing village and camp. For them, the land and their fishing grounds were inseparable, and they could no longer use either as they had in the past.

Fisherfolk and the fish: depending on an unpredictable resource.

"*Although not so completely dependent upon the salmon as the natives of the lower [Yukon] river, the upper-river people also would be at sore loss without it. The chase is more or less precarious everywhere; the harvest of the water is sure. Dried and smoked, the fish are stored up for the winter, and furnish a large part of the subsistence of man and dog. In some seasons the catch is plentiful and in others it is scant, but it never fails altogether.*"

— Archdeacon Hudson Stuck, 1917. [100]

As illustrated in the journals of Robert Campbell and Alexander Hunter Murray in the 1840s and in accounts during and after the gold rush, the runs of the different salmon species (chinook, chum and coho) from year to year have never been consistent. Several runs in the 1900s did not consist of enough fish to satisfy the demand along the upper river. At such times, people had to adapt to the situation by purchasing food or by harvesting more big game or other species of fish. In his report from Moosehide in 1924, a missionary referred to the necessary flexibility:

"*The Indians welfare and happiness depend principally on the supply of fish and game available; when these are lacking his lot is indeed a hard one. The salmon on which the Indians depend so much have been very scarce of late years, and this condition is no doubt due to the extensive commercial fisheries which have been carried on at the mouth of the Yukon river until very recently. The caribou, another mainstay at this station, have been scarce this season so that long and laborious trips are necessary for even a limited supply. To offset these conditions, the rabbits are exceptionally numerous and large quantities have been secured. Some of our men engage in wood cutting for the Dawson market, and in this way procure some of the necessities of life.*"[101]

Figure 23: Women with fish drying racks and gear at Moosehide village, [1897]. [Yukon Archives: Tappan Adney Collection, acc. 81/9, PHO 260, #45. Credit to Department of Rare Books and Special Collections of the McGill University Libraries]

People living along the upper Yukon, like the river itself and the salmon using it, caused, adapted and responded to changes. They put as much effort into their fisheries as their needs demanded and the supply provided. Did they have to feed only themselves or 20 dogs as well? Were they trying to satisfy the market

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[100] Hudson Stuck, Voyages on the Yukon and its Tributaries, p. 182.

[101] Report from Moosehide, in *Northern Lights*, Anglican Church, vol. XII, no. 1, February 1924, p. 9.

demand for chum or chinook, or did they want any salmon at all? Their salmon harvests corresponded to the size of the runs, to the gear they used, and to the amount of time and effort put into their operations. These variables inevitably caused surges and declines in the salmon fisheries along the upper Yukon.

People relied on the fish for a number of reasons: the high cost of living if one were to depend on imported foods; dependence on dogs for transportation; a source of income; requirements for other economic activities such as fur-farming; and traditional use of the salmon. The fact that many families could adapt to the natural fluctuations of salmon returns to the river in no way lessened its intrinsic value to them.

Adaptability.

Old Crow and Rampart House on the Porcupine River, 1924: "*The Indians of this district are having a rather trying winter. Fish were scarce last autumn and the Indians were unable to lay up a supply for the winter season. Caribou have not been numerous this season either and were it not for the rabbits, which are plentiful, the people would be very badly off indeed.*"

— *Northern Lights*, Anglican Church, Whitehorse: February 1924.

Moosehide, 1933: "*The fishing was poor in the summer and consequently the natives have little dog-feed or money for the winter. Fortunately caribou were available during the winter.*"

— *Northern Lights*, Anglican Church, Whitehorse: May 1934.

Moosehide, 1939: "*Though the opening of the salmon run was rather late this year the catch was rather good and more men have been engaged in this employment than is usual. One Indian has shown sufficient industry to build his own wheel and has operated it with success using his own outboard boat to and from the village to the wheel. Following a winter that was poor for both hunting and trapping the good fish run has been a welcome relief.*"

— *Northern Lights*, Anglican Church, Whitehorse: August 1939.

Fluctuating salmon returns and fluctuating harvests.

Trappers, mail carriers and others relied on salmon to support their lifestyle and, in some cases, make a living. A number of people chose not to — or simply could not —depend exclusively on store-bought foods, and many of those living in the bush used dog teams during the winter for transportation. But, as the Hudson's Bay Company fur traders had learned, harvesting enough fish required healthy returns in the river.

Reports on conditions in the Yukon Territory by the local fisheries inspector reflect wide fluctuations in fishing success in the early 1900s. Although he admitted his data was inaccurate, the fisheries inspector attempted to present

some information about the salmon fisheries in the Yukon Territory in his annual reports. These statistics should at best be considered estimates to suggest trends.

Table 1: Non-native salmon harvests, 1903 and 1908.

	Chinook (lb.)	Chum (lb.)	Total (lb.)
1903	50,000	20,000	70,000
1908	90,000	15,000	105,000

In 1909, the fisheries inspector classified the Yukon fisheries statistics under new headings and compiled statistics for the aboriginal fishery, which he had formerly not included in his reports. He derived the statistics for the aboriginal fishery from information provided by local non-native people.

Table 2: Salmon harvests, 1909.

		Salmon (lb.)	Salmon, smoked/dried (lb.)	Total (lb.)
1909	Non-native	53,515	27,050	80,565
	First Nation	38,207	19,802	58,009
	Total	91,722	46,852	138,574

Table 3: Salmon harvests, 1910-1916.

	Salmon (lb.) — Non-natives	Salmon (lb.) — First Nations	Total (lb.)
1910	104,700	65,200	169,900
1912	101,300	122,800	224,100
1913	75,500	106,500	182,000
1914	80,600	108,000	188,600
1915	58,500	98,500	157,000
1916	52,500	91,000	143,500

The fisheries inspector in Dawson reported that people blamed human activity for low salmon returns following the 1909 season. He observed that the non-native population harvested 25-percent fewer fish than they had in the previous year. H. T. McKay wrote: "In previous years it was only necessary for fishermen on the Yukon river to be engaged for a few hours each day in order to supply their needs. Persistent efforts on their part however, during season of 1909-10 failed to secure a quantity sufficient to compensate them for the time thus

employed." The primary explanation for this lack of success was spilled crude oil, used to fuel the steamboats between St. Michael and Dawson City.[102]

Figure 24: "Salmon Fishing in the Yukon," Dawson, July 17, 1913. [YA: Eileen Shilleto fonds, acc. 81/31] According to Chappie Chapman, commercial fishers in the Dawson area in the early 1900s used drift nets for chinook salmon on the Yukon River, particularly from the mouth of the Klondike River downstream approximately a half mile to the Bank of Commerce building. In an eddy just below the bank, commercial fishmongers situated rafts equipped with cleaning tables where people could go to buy fresh fish.[103]

Four years later, a new fisheries inspector withdrew the charge that the oil had caused diminishing salmon returns over the years. C. C. Payson noted that with the 1913 season came the largest run of salmon since 1898.[104] In the following year, he reported that the river yielded as many fish as ever. However, he again cited human activity as a factor determining the size of the fish runs: strong runs existed "despite the fact that fishwheels are used in an unlimited number on the lower Yukon on the Alaskan side."[105] In 1915, the inspector commented on the lightness of the salmon run and also reported that, with a number of experienced fishermen enlisting in the service at the outbreak of World War I, harvests had dropped.[106]

The drastic fluctuations in salmon returns in the Yukon River and the effects of poor runs on the people living within the Yukon River basin became most evident in 1919, reportedly one of the worst seasons — if not the worst — ever known up to that time. Countless letters and reports from communities expressed the hardships faced by people along the length of the river. The American investigators in 1920 described the scene as follows:

"*No basis is available for a well-founded estimate of the amount of dried salmon put up in 1919, but we believe that 150 or 200 tons would be an outside estimate for the entire river. The price rose to 25, 30, and 35 cents per pound with no stocks available even at these prices. Men compelled to travel during the winter experienced the utmost difficulty in securing substitute dog feed. Fresh meat was used, although this is by no means satisfactory, and deplorable numbers of caribou were slaughtered by natives and others for this purpose. Cereals and*

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[102] "Yukon Territory Report on Fisheries," by H. T. McKay, Dawson, April 6, 1910, in Forty-Third Annual Report of the Department of Marine and Fisheries: 1909-1910. Fisheries, p. 233.
[103] N. Seigel and C. McEwen. A Historical Overview of Fishing in the Yukon, pp. 27-28.
[104] "Annual report on the fisheries of the Yukon Territory," by C. C. Payson, in the Forty-Seventh Annual Report of the Department of Marine and Fisheries: 1913-14. Fisheries, p. 247.
[105] "Report on the fisheries of the Yukon," by C. C. Payson, in the Forty-Eighth Annual Report of the Fisheries Branch, Department of the Naval Service: 1914-15. Fisheries, p. 243. The effects of commercial fishing at the river mouth and of fishwheel use in Alaska will be discussed in more detail beginning on p. 54 and again on p. 61.
[106] "Report on the fisheries of the Yukon," by C. C. Payson, Inspector of Fisheries, in the Forty-Ninth Annual Report of the Fisheries Branch, Department of the Naval Service: 1915-16, p. 239; "Report on the fisheries of the Yukon," by C. C. Payson, Inspector of Fisheries, in the Fiftieth Annual Report of the Fisheries Branch, Department of the Naval Service: 1916-1917, p. 226.

bacon were made use of, and stores and trading posts soon found their stocks running low. The natives killed, or permitted to die of starvation, half or more than half of their dogs, and many white men were compelled to adopt the same course. Undoubtedly the best dogs were retained and the least valuable were culled out of the teams. But the general opinion entertained by those best acquainted with the natives and their needs was to the effect that the great reduction in the size of their dog teams was disastrous and the dog shortage was sure to hamper them in their efforts to make a living during the coming winter. There were no reported cases of starvation or of serious suffering among the natives during the winter of 1919 because of the shortage of salmon, although they might well have occurred in outlying districts if help had not been given by white traders and by others..."[107]

Dogs and dog salmon.

The salmon returning to the Yukon River in the summer and fall months were, in most years, reasonably abundant and reliable. Large runs of chum salmon usually arrived late enough in the season that the fishers could easily freeze them in the cold weather. Many dog-team owners saw chum salmon in particular as destined to become dog food.

According to the American fisheries investigators in 1920, people along the Yukon River valued chum much more than chinook salmon.[108] Aboriginal and non-aboriginal people depended on their dogs for transporting supplies when they trapped, hunted, cut wood or moved camp, and most took advantage of the passing runs of salmon to provide the necessary fuel. In addition to cornmeal, cooked rice, oatmeal and bacon, a dog's diet commonly consisted of dried and frozen salmon. John McPhee, in his description of the people living along the upper Yukon in Alaska, summarized the value of salmon for dog-team owners:

"The big kings [chinook] weigh as much as sled dogs. Their dense ruddy flesh — baked, smoked, or canned — is one of the supreme gifts of nature. The river people are less interested in kings than in the chum salmon that follow, for while the king salmon may be luxuries on the human palate, chum — dried or frozen — are year-round staples for dogs. They are, in effect, gasoline. A team consumes at least a thousand a year. The river people believe that the health of a sled dog can be measured by the proportion of fish in its diet. When they happen to do odd jobs for one another or engage in barter, they like to be paid in dog salmon. Lilly Allen has given fifty salmon for a quarter of a bear. You try to get your meat around the first week of October, hunting moose and bear while they are still fat. This is a fat-starved country. This is not the coast."[109]

Figure 25: Ed and Bella Biederman's dogs and fish house at Charlie Creek, half way between Circle and Eagle, ca. 1920s. Ed Biederman carried the mail from Eagle to Circle, mushing 7,000 kilometres (4,200 miles) every

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[107] Charles H. Gilbert and Henry O'Malley, "Investigation of the Salmon Fisheries," pp. 147-148.
[108] Ibid, p. 135.
[109] John McPhee, Coming into the Country, pp. 257-258.

winter. In the summer months, as well as fishing, the Biederman's often boarded 60 dogs at the fish camp in the summer; 24 of them were their own.[110] [Eagle Historical Society: Briggs Collection, 0159-03]

Some of the heaviest users of their dogs along the upper Yukon River were the men delivering mail between Circle and Dawson, and the Royal Canadian Mounted Police officers who travelled between Dawson and Fort McPherson and patrolled throughout the Yukon Territory. Indeed, a police report from Fort McPherson in 1921 described the problem of feeding the 20 dogs required to do the mail run to Dawson as "a severe drain" on the detachment. The men expended tremendous effort to prepare food for the animals throughout the winter. Unable to fish for salmon in the Mackenzie area, they relied mostly on flour and bacon, a diet recognized at the time as being totally inadequate for dogs in daily use. For a return trip between Dawson and Fort McPherson one winter, the men fed the dogs1,200 "green fish" and carried 650 pounds of dry fish, at a cost of $217.00.[111]

Which would you prefer: chum or chinook salmon?

Efforts to obtain either of the two salmon species that travel up the Yukon River to the Canadian border varied according to personal tastes, the availability of labour, individual needs, and the availability of the fish. Native and non-native people caught chum salmon primarily for dog feed, but most considered the more flavourful chinook salmon to be more desirable for the human palate.

Chum salmon's paler flesh is less oily and, because of its diet, has a blander taste. While some aboriginal people prefer chum salmon as an eating fish because it is less rich, perhaps its greatest value lay in its abundance and late arrival in the upper Yukon River. Hon. Stratford Tollemache described the importance of chum salmon at Fort Selkirk in the early 1900s:

"For purposes of food they cannot be compared to the king salmon, and in fact are only eaten by the Indians. However, they are far more numerous than the king salmon, so their appearance at Selkirk late in the autumn proves most convenient, as it enables people to provide a large supply of dog food for the ensuing winter. They can be caught in large quantities about the third week in September, when it is freezing hard, and the trouble of cutting them and drying them becomes then unnecessary. I used generally to net about 500 of them, and as at that time of the year they quickly freeze, it was only necessary to slit them down the throat and to deposit them in a cache or shed where there was no fire, and during the winter they could be boiled up for the dogs as required."[112]

For people who relied on dog teams for transportation and hauling supplies — and this included the police force, First Nation people, trappers, prospectors, mail carriers, and others on both sides of the international boundary — being

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[110] Elva Scott, Jewel on the Yukon, p. 102.

[111] Letter from S.T. [?] Wood, inspector Comd'g Arctic Sub District, to the Officer Commanding R.C.M.P. Edmonton, Fort McPherson, N.W.T., June 25, 1921. [National Archives of Canada: RCMP records, RG 18 A-1, vol. 604, file 40/1920]

[112] Stratford Tollemache, Reminiscences of the Yukon, pp. 290-295.

able to catch hundreds of chum salmon at a time of year when they could easily be frozen made these fish highly valuable. However, people did not always limit the type of salmon used for dog feed to chum salmon. Parkason James Jewell wrote in August 1894 from the Forty Mile area that chinook salmon are "the finest the world can produce. It is so plentiful that it is used for dog feed."[113] Depending on the volume of harvests, chinook salmon could also serve the purpose well.

The amount of dried or frozen salmon fed to the dog teams along the Yukon varied according to how hard the dogs worked and how much the owners were prepared to feed them. Working dogs belonging to "Klondike Mike" in 1897 only enjoyed a pound and a quarter per day of dried fish, or three pounds of fresh frozen fish.[114] Asked about the dog feed he used, Percy DeWolfe, known as the "Iron Man of the North" because of his celebrated feats as a Royal Mail carrier on the Dawson-Eagle route from 1915 to 1950,[115] fed his dogs about 2.5 pounds of dried salmon per dog every night:

"*'I use dry salmon most of the time' he replied. 'These are caught in the Yukon river either by net or in a fish-wheel in the summer. These are cleaned, cut open, then dried and wired in bales of about fifty pounds to the bale. I may then leave a few bales at each stopping place on my first trip down by boat in the Fall. This saves me hauling them on the sleigh in the winter... For my own dogs I may use anything up to four or five tons [of dog feed] a year although I put up more than that in a good season. There is always a good market in Dawson for any dog-feed that I have left.'*"[116]

Figure 26: Percy DeWolfe feeding his sled dogs, Forty Mile, 1938. [Yukon Archives: Claude Tidd Collection, acc. 77/19, #8372]

Many prospectors and trappers also owned dog teams, and those who caught their own salmon worked the fishing season into their lifestyle. Some managed to catch enough fish for their own purposes and then sold the surplus. Dave Swanson, who came to the Yukon in 1887 and lived at Forty Mile until at least the 1920s, required little more than what he obtained with his own hands. As Claude Tidd, a police officer in the area, observed: "It costs him very little to live here; he cuts his own firewood, or lassos some of the driftwood out of the Yukon river which runs by his very door; maybe someone in the community will shoot a caribou or a moose which is usually shared by all; in the Fall he goes out and catches and dries salmon which he later sells to the dog-drivers for dog-feed."[117]

Not everyone along the Yukon fed fish to their dogs, either because they could not harvest it themselves or because they could not afford to buy it. Instead they relied on mush, bacon, and, according to Walter DeWolfe (Percy DeWolfe's son)

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[113] Parkason James Jewel, "Letters from the Yukon," in Pacific Northwest Quarterly, January 1990, p. 13.
[114] Merrill Denison, Klondike Mike: An Alaskan Odyssey, p. 132.
[115] Carol Livermore, "Percy DeWolfe 'Iron Man of the Yukon'", in The Beaver, Autumn 1977, pp. 16-20.
[116] Claude Tidd, n.d. [Yukon Archives: Claude Tidd Collection, Manuscripts MSS 061, 77/19]
[117] Ibid.

some fed big game to their animals: "We never wasted anything. And there's one thing I don't like to do — feed moose meat to dogs. I never give my dogs any moose meat. I gave them strong bull caribou in the fall of the year and plenty of fish. We had a big fish camp downriver... It's best to save moose for people. You never know [when you might need it]."[118]

"It was a big job every day preparing food for the dogs. The Indians fed frozen fish but I had no way of accumulating such stocks, either by fishing or buying. My dogs always thrived on bacon and mush."

— J. R. Reid, in Dawson and on the Stewart River in 1898.[119]

"All the roadhouses had facilities to keep dogs, little log houses all lined with hay. Ed had to carry his own dog food, usually dried salmon, of which he fed them two pounds a day. (The police in Dawson kept fifty dogs for their patrols. Ed said their rations were one and a half pounds per day.) Ed also carried quarter pound dog biscuits for little treats during the day. 'I still love dogs,' he said, 'and I really looked after my team.' The dried salmon would be cooked up with rice, or cornmeal, and fed to them, warm, after the day's work was done. They always ate before Ed did."[120]

— Ed Whitehouse delivered mail between Dawson and the Stewart River in the winter of 1928-29.

Fur farming and salmon.

The first fur farming operations began in the upper Yukon River region in about 1912. The high proportion of black and silver foxes — as opposed to the more common red foxes — initially attracted people to the business, and the fact that foxes did not require a specialized diet helped to boost the industry. In 1914, Colwell Fur Farms Ltd. of Whitehorse reported that a breeding pair giving a pure silver strain garnered up to $25,000 in the marketplace. Prices soared after World War I, and breeders exported hundreds of live foxes from the Yukon Territory until the 1920s, when many turned to raising mink as these furs became more fashionable.[121]

Figure 27: Captain Martin's fox farm, Carmacks area, 1915. [Yukon Archives: Christopher Everest Webb Collection, acc. 80/87, PHO 137]

In the 1920s, a battle raged between the fur farmers and the Canadian government over harvesting wild game for the animals raised at the farms. The *Game Act* allowed farmers to harvest caribou and moose, but the federal government amended the law to exclude moose from the permit. Farmers argued vociferously against the change, and they also objected to the prohibition

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[118] Catharine McClellan, Part of the Land, Part of the Water, p. 293.
[119] J. R. Reid, My 4½ Years in the Klondike, p. 14.
[120] Joyce Yardley, Yukon Riverboat Days, p. 162.
[121] Robert G. McCandless, Yukon Wildlife: A Social History, p. 126.

on buying or selling game for animal feed. The RCMP inspector for the Whitehorse area agreed with the farmers' pleas and explained that the new regulations would have particular hardships on those in the Carmacks area because fish "in any quantity is not procurable at this point".[122] Some farmers abided by the restrictive new law; others simply ignored it. Those who respected it and lived along the river therefore spent a great deal of time fishing for salmon and other fish.

In 1923, 21 fur farms operated in the Yukon Territory, but the number declined steadily until 1944 when the Dominion Bureau of Statistics reported no operating fur farms.[123] With the collapse of the fur market in 1947 and 1948 came the final demise of the fur-farming industry. Occasional reports of mink and fox farms appeared after World War II, but regular production ceased and the ranchers' demand for fish fell dramatically.[124]

Fishing for a living: supplying salmon to an unstable market.

Romantic tales of people going from rags to riches after finding close to $1,000 worth of gold in a single pan of gravel distorted the reality of the Klondike. Investing in the life of a prospector guaranteed no success and indeed brought many to their knees. By the fall of 1897, two companies supplying foodstuffs to Dawson had run out of goods, and people prepared for the impending starvation over the winter.[125] In his description of the bleak situation, E. Hazard Wells, a journalist in Dawson, suggested that a good supply of salmon would have helped to alleviate it: "It will be practically impossible for many people to escape up the Yukon River on the ice this winter, as there is no dried salmon here or along the river for the dogs which draw the provision sleds through the fresh snow in early winter."[126] Many people had to depend on their own abilities and resources to survive the winter.

Charles Constantine may well have been accurate in his prediction that low yields of salmon in 1896 would discourage many would-be fishermen from setting their nets in the following season.[127] But while commercial fishers may not have considered it a worthwhile activity when the runs were poor, they would have found it much more lucrative when the number of returning salmon was higher and when the demand for salmon was greater.[128] More non-native people

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[122] Memo from R. Field, Inspector Commanding Whitehorse Sub-District, to the Officer Commanding RCMP, Dawson, May 7, 1925. [Yukon Archives: Yukon Game Branch records, YRG 1, Series 3, GOV 1890, f. 12-5C]

[123] K. J. Rea, The Political Economy of the Canadian North, p. 83.

[124] Robert G. McCandless, Yukon Wildlife: A Social History, p. 126.

[125] "Extracts from Reports of Thos. Fawcett, D.T.S., Gold Commissioner for the Yukon," in Annual Report of the Department of Interior for the Year 1897, p. 80.

[126] E. Hazard Wells, Magnificence and Misery: a First-Hand Account of the 1897 Klondike Gold Rush, p. 86.

[127] Letter from Supt. C. Constantine, NWMP, to Deputy Minister of the Interior, November 19, 1896. [Canada, Indian and Northern Affairs: f. 801/30-0-1]

[128] Inspector C. Constantine, "[Report] Re: Yukon District," Moosomin, N.W.T. October 10, 1894, in NWMP Annual Report, 1894, December 5, 1894; Letter from Supt. C. Constantine, NWMP, to

wanted fish for themselves and to feed the growing number of dog teams in the Klondike and further down the Yukon River, and the fishers used highly efficient means of harvesting the salmon. In 1897, a number of white men used 150- to 250-foot drift nets to catch salmon near Dawson, while some aboriginal people continued to set the more labour-intensive fish weirs.[129]

The price of salmon varied widely according to supply and demand. People who owned dog teams required a large volume of salmon, primarily chum salmon. A working dog in Dawson cost about $3 per day to support in 1897 because salmon and other suitable feed fetched $1 per pound.[130] The police force, which in 1898 had 119 animals to feed, also demanded great quantities of fish and meat, and they often added butter to the mixture.[131] In 1901, the Dawson division of the NWMP required 38,549 pounds of fish to complement stores of butter and hardtack.[132] Most, if not all, of this fish came from the coast.[133]

The commanding officer for the force suggested that dog feed should be purchased locally in 1902, stating that: "I can get all the dried meat I want from the Slaughter Houses in this Vicinity, and fish from Marshall and Cakden, and it would be much cheaper than to have this dog feed brought in from the outside." He also explained that the fish brought in from Vancouver suffered significantly from being kept in a hot place during transit and that it became a source of "scour" to the dogs.[134] However, it may not have been prudent for dog-owners to depend exclusively on local supplies of fish. According to Charles (Chappie) Chapman, the salmon harvest by Yukon fishers could not always keep up with market demands for dog feed, and the Northern Commercial Store in Dawson imported large quantities of dried chum salmon from the lower Yukon River, particularly from Tanana, Alaska.[135]

Chinook commanded a higher price than chum salmon. In the early days of the run in June 1898, chinook salmon, weighing up to 50 pounds each, sold for $2 per pound.[136] By the end of July, salmon sold at a lower price than meat. On July 28, 1898, fish caught opposite town sold for 35¢ per pound while meat cost 65¢ per pound.[137] Tappan Adney, a journalist in Dawson, reported that in a single day

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Deputy Minister of the Interior, November 19, 1896. [Canada, Indian and Northern Affairs, Ottawa: f. 801/30-0-1]

[129] Tappan Adney, The Klondike Stampede, p. 449.

[130] E. Hazard Wells, Magnificence and Misery, p. 208.

[131] "Report of Superintendent S. B. Steele, January 10, 1899," in Annual Report of the North-west Mounted Police, 1898, p. 25.

[132] Letter from Z. Wood, Supt. Commanding NWMP, Yukon Territory, to the NWMP Comptroller, March 28, 1901. [National Archives of Canada: RCMP records, RG 18, D1, vol. 3]

[133] Letter from Z. Wood, Supt. Commanding NWMP Yukon Territory, to the NWMP Comptroller, Ottawa, January 8, 1902. [National Archives of Canada: RCMP records, RG 18, D1, vol. 4]

[134] Letter from Z. Wood, Supt. Commanding NWMP, Dawson, to the NWMP Comptroller, Ottawa, January 8, 1902. [National Archives of Canada: RCMP records, RG 18, D1, vol. 4]

[135] N. Seigel and C. McEwen. A Historical Overview of Fishing in the Yukon, p. 22.

[136] Tappan Adney, The Klondike Stampede, p. 449.

[137] John McDougal, "Diary of a trip to the Yukon in 1898." [National Archives of Canada: MG 29 C 90]

during the height of the chinook run, a party of fishermen caught seven fish, a total weight of 150 pounds that they sold for $75 (or 50¢ per pound).[138]

Commercial fishing continued to produce an income for a number of fishermen, despite the shrinking local market as the disenchanted left the Klondike. Even in 1899, when the population of Dawson fell dramatically, those who remained eagerly sought the salmon caught adjacent to the town.[139] Referring to the 1901 chinook run, the NWMP reported that: "The salmon catch on the Dawson water-front this year has far exceeded any other year. For the two latter weeks the average catch was something like 10,000 pounds daily. The price of fresh salmon at the beginning of the season was $1.00 per pound but the sudden overflooding of the market quickly brought the price down to 8¢, 10¢, and 12¢ per pound. The cold Storeage [sic] are buying the salmon in large quantities."[140] The decline in the price of chinook salmon as the season progressed probably reflects two factors not mentioned by the NWMP officer: the high quality of fish caught early in the salmon runs, and the availability of other fresh foods in the market, which lured people away from salmon.

The nature of the Yukon River salmon fisheries noticeably changed after the turn of the century for several reasons. Without proper storage facilities or speedy access to other markets, the market for salmon remained limited to businesses and individuals in the region. People earning a substantial part of their yearly income from fishing depended on both an unstable market and an unpredictable resource. In 1903, for example, fishing intensity near Dawson dropped significantly. The NWMP detachments bought little salmon locally and kept fewer dogs as more horses were brought to the territory. The force substituted chit rice and dog biscuit for dried or frozen fish, much of which came from the coast.[141] Meanwhile, whitefish caught in large quantities in lake fisheries and grayling caught near Dawson filled a niche in the local market, and ocean-caught fish arrived regularly aboard the steamers. According to a fisherman several years later, the Canadian government's new freshwater fishery regulations drove up the price of whitefish and grayling after 1900, and the "professional salmon fishermen" of the early days shifted their attention on the more lucrative freshwater fisheries.[142] People selling chum salmon in the 1903 season received one-fifth the price of whitefish or trout — chum garnered a mere 3¢ per pound, and chinook sold for 10¢ per pound. The fishery inspector of the day also

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[138] Tappan Adney, The Klondike Stampede, p. 449.
[139] Report of Superintendent P.C.H. Primrose, Commanding NWMP, 'B' Division, [ca. November 1899], in Report of the North-west Mounted Police, 1899, p. 53.
[140] "Report for the Month of July, 1901," by W. Routledge, Commanding B Division, Dawson, for the Officer Commanding, NWMP, Yukon, August 12, 1901. [National Archives of Canada: RCMP records, RG 18, vol. 211, f. 316-01]
[141] [Annual Report of Superintendent A. E. R. Cuthbert], Dawson, November 30, 1903, in Report of the North-West Mounted Police, 1903, p. 58.
[142] Letter to the editor by Jack Lee, in *Dawson Daily News*, June 8, 1909.

commented that higher wages in the mining industry undoubtedly attracted many would-be fishers.[143]

While many of the commercial fishermen were non-native, aboriginal people continued to sell a portion of their catch. Some, such as Steven Simon and his wife Phoebe, traded for specific items. They lived part of the year at Eagle but used to go down to Shade Creek where they fished for king salmon. Returning to Eagle, they exchanged dried salmon at the mission for clothing.[144]

Figure 28: "Salmon-drying," Eagle Village, no date. [University of Oregon, Division of Special Collections & University Archives: C. L. Andrews, #1030].

On the Canadian side of the border, First Nation people, also subject to the commercial fisheries regulations, were required to purchase a commercial fishing licence to sell their fish. The fishery inspector in Dawson, however, chose to turn a blind eye to native people selling fish in the early 1900s, and only in 1909 did this cause a public stir. The NWMP in Dawson received a letter signed by Silas, a First Nation man from Moosehide. A fisherman had apparently told Silas' son that he could not sell salmon in Dawson and that, should he try to do so again, he would be arrested. This same fisherman also complained to the fishery inspector in Dawson about First Nation people selling salmon to the Arcade Restaurant and the Third Avenue Meat Market.[145] In his letter to the NWMP, Silas requested clarification: "We wish to know why the fishermen in Dawson will not allow the Indians to sell salmon in town. Some of our people went to Dawson on Saturday, but had to return with their fish not having been allowed to offer them for sale. We wish to know if we are at liberty to sell salmon, and if so, to ask for protection when interfered with."[146]

Reminiscent of comments made by William Ogilvie in the late 1890s, F. T. Congdon (the Member of Parliament in the Yukon) suggested to the Minister of Marine and Fisheries in 1910 that aboriginal people be permitted to catch and sell fish without a permit. Congdon argued that the purchase of a licence was beyond the financial means of First Nation people: "The result is that the Indians are practically deprived of one of the two modes they have of making an independent living."[147] The minister replied unfavourably, stating that while the government did not require First Nation people to obtain a domestic licence, the situation was entirely different if they compete with non-native fishermen in a commercial manner. He explained that the requirement for a licence allowed the

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[143] [Report on the Yukon District by Inspector T. A. Stewart], Dawson, in Thirty-Sixth Annual Report of the Department of Marine and Fisheries 1903 Fisheries, p. xxxvii.
[144] Elva Scott, Jewel on the Yukon, pp. 151.
[145] Letter from J. J. McCarvell, Town Station, NWMP, to Officer Commanding B Division, RNWMP, Dawson, July 17, 1909.
[146] Letter from Silas, Moosehide Indian, Moosehide, [to the NWMP, Dawson], July 12, 1909. [Yukon Archives: Yukon government records, YRG 1, GOV 1888, f. 2019]
[147] Letter from F. T. Congdon, Dawson, to the Minister of Marine and Fisheries, Ottawa, July 14, 1910. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2801, part 1]

government to exercise control over the commercial operations.[148] The requirement for commercial fishing licences remained in effect for all people.

Fishwheels in the fisheries.

A significant change in fishing methods in the upper Yukon arrived with the stampede to the Fairbanks area in the early 1900s — the fishwheel. As Fairbanks grew in population, the demand for dried fish increased, and people began setting fishwheels in the Tanana River in about 1904. First Nation people in Alaska adopted this technology and they too set fishwheels in strategic locations.[149] One individual in Eagle in 1906 commented that the local aboriginal people used fishwheels to such an extent that the wheels were largely replacing the dip nets.[150]

Figure 29: Ed and Bella Biederman fish camp at Charlie Creek, ca. 1920s. Ed Biederman's fishwheel had 12-foot baskets and dipped 8 feet into the river. With one wheel, he usually handled 150 to 170 salmon in a 24-hour period. One year, when using two wheels, he caught 400 salmon in the same amount of time and had to stop the wheel for two days to manage his harvest.[151] [Eagle Historical Society: Briggs Collection, 0156-36]

Figure 30: Fish racks at the Biederman's camp at Charlie Creek, ca. 1920s. Ed Biederman used five 20'x20' canvas tarps over the drying racks and set three fires underneath to smoke the fish. The fish hung on 18 double-deck rows, 100 fish to a row, allowing 3,600 fish to dry at a time. At the end of the season, he bundled the fish up in 80-pound bales, selling them for 15 cents per pound to dog mushers down the river. The Biederman's took the racks down for the winter and rebuilt them in the spring. [Eagle Historical Society: Briggs Collection, 0158-35]

The fishwheel in many ways revolutionized the fisheries. With the current of the river endlessly turning the arms of the wheel, driving the baskets in and out of the water, fishwheels can scoop salmon out of the river day and night. Because they remain invisible to the fish swimming upriver, they are also well-suited to murky or opaque water such as the Yukon. In the upper stretches of the river, they function most effectively during the chum season because chum salmon tend to swim in large numbers and closer to shore where the fishwheels are located. While the Yukon River never became a focus for a large-scale fish-wheel salmon fishery — unlike, for example, the Columbia River, where massive

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[148] Letter from A. Johnston, to F. T. Congdon, M.P., Dawson, August 15, 1910. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2801, part 1]
[149] Hudson Stuck, Voyages on the Yukon and its Tributaries, pp. 112-113.
[150] Ferdinand Schmitter, Upper Yukon Native Customs and Folk-lore, p. 7.
[151] Elva Scott, Jewel on the Yukon, p. 102.

fishwheels harvested as much as 35 tonnes of salmon per day[152] — the use of fishwheels increased commerce up and down the river.

Alaskans enjoyed the efficiency of fishwheels in the early 1900s. They caught large quantities of chum and chinook salmon for personal use and for their dog teams — First Nation people in the Fort Yukon area reportedly caught up to 400 chinook salmon per day[153] — and took a number of fish to sell in mining camps in the Yukon Territory. Indeed, a few entrepreneurial fishermen secured markets in the Yukon, including in Dawson and at Fort Selkirk.[154] The men at Fort Egbert, the U.S. Army post near Eagle City, also enjoyed fishwheel technology. The fort's population reached its peak of 157 people in 1906. They operated a wheel at the mouth of Mission Creek to catch enough fish for the mess hall and for dog feed during the winter. Each season, one individual would set his tent at the creek and pass his time emptying the wheel, cleaning the day's catch and rowing his loaded boat back to the fort.[155]

Fishwheel designs.

A Canadian investigator visited the Dawson area in the summer of 1945, which turned out to be a very good fishing season. He saw three wheels from the mountain above Dawson and estimated that each wheel took approximately 2,500 pounds of king salmon during a good season. When he visited one wheel, he arrived in time to see 64 salmon taken out and learned that 81 had been pulled the previous day. He described the apparatus as follows:

"A hollow-square raft is moored in a strong current a few yards out from the bank. Each side of the raft forms a catwalk, in the middle of which is a 3-foot upright post bearing one end of the 12-foot axle. The axle and its bearings are wooden, made from spruce trunks. Bolted radially to the axle are wooden frames covered with chicken-wire, each shaped in the form of a hollow scoop, about 10 feet square. Some wheels have three or four scoops, forming the blades of the wheel. The one we examined had a pair of paddle-boards alternating with two opposite fish-scoops.

"As the wheel is slowly rotated by the current, making two or three revolutions per minute, each frame in turn dips about 6 feet under water. The concave or hollow side is downstream; and in rising again to the surface it traps any fish which happens at that moment to swim against it. As it now swings up into the air, the fish slides inwards towards the axle, and is diverted to one side or the other by sloping gutters meeting at the centre, to fall into collecting boxes placed under the ends of the axle on the catwalks."[156]

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[152] BC Aboriginal Fisheries Commission. Wheels, Weirs, Traps & Nets,p. 12.
[153] James A. Carroll, The First Ten Years in Alaska, p. 13.
[154] John Cobb, Pacific Salmon Fisheries, p. 184.
[155] Elva Scott, Jewel on the Yukon, p. 163.
[156] V. C. Wynne-Edwards, "The Yukon Territory," in Fisheries Research Board Bulletin, 1947, pp. 13-14.

Fisherfolk and government: the fish and the fisheries attract attention.

In 1899, the Minister of Marine and Fisheries in Ottawa called for the enforcement of strict freshwater fisheries regulations in the Yukon. They defined the allowable mesh size of a net, limited the total length of nets set by the licence-holder to a staggering 6,000 feet — significantly more than the 90 metres (approximately 300 feet) that domestic freshwater fishers may use today in the Yukon Territory — and required that individuals (other than explorers and prospectors) and commercial operators purchase a licence. He also authorized the North-west Mounted Police officers in the Yukon to act as "Fishery Overseers". However, in his letter to the NWMP, the Minister highlighted the fact that the salmon fisheries were exempt from these regulations.[157] The department asked the officers to provide information concerning salmon spawning so that it could develop appropriate regulations; these regulations appeared 16 years later.

With government's interest focused on the freshwater fisheries, few regulations burdened salmon fishers as they set out from Dawson or from their camps along the river to stretch 150- or 250-foot gill nets in the eddies or drift nets along the river during the gold rush years. Until 1915, they enjoyed, at the will of the fisheries inspector, the freedom to fish for salmon where, when and as much as they pleased, the only stipulation being that they must obtain a commercial licence if they intended to sell their catch. While the salmon fisheries remained exempt from the fisheries regulations, the fisheries inspector did enforce general restrictions on behaviour (e.g. not fishing on Sundays) and certain freshwater fisheries regulations that could affect the salmon runs (e.g. prohibiting people from stretching a net across two-thirds of the Klondike River).[158] At the height of the gold rush, the Canadian government's primary concern was to provide necessary public services to an itinerant population. With no great national purpose to be gained by regulating the salmon fisheries, the Department of Marine and Fisheries expressly ignored it.

The Canadian government had a number of reasons for its laissez-faire attitude toward salmon fisheries management in the Yukon Territory at the turn of the century. Recent experiences in the Pacific Coast fisheries in British Columbia and points south, together with declining fish stocks in the Fraser and the Columbia rivers, sensitized officials to whether or not Canadians were able to harvest their share of transboundary salmon. Canadian sovereignty in a region largely populated by Americans weighed heavily in the minds of policy-makers, and the fact that salmon passed through Alaska to the Yukon influenced political will in Ottawa. In 1900, the Deputy Minister of Marine and Fisheries justified the government's position concerning salmon to the newly appointed fisheries

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[157] Letter from the Minister of Marine and Fisheries, Ottawa, to the Commandant and Officers of the Mounted Police Force, Stationed in the Yukon District, March 30, 1899. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2801, part 1]

[158] Letter from H. T. McKay, Fisheries Inspector, Dawson, to R. N. Venning, Superintendent of Fisheries, Ottawa, February 22, 1910. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2801, part 1]

inspector in the Yukon: "There is no object [sic] in protecting king, or spring salmon, steelheads, dog-fish and other kinds, in the upper waters where every effort is made to exterminate them before they reach Canadian territory." While he argued vehemently for the protection of "the most valuable food fishes" — namely, whitefish, lake trout, inconnu and grayling — he concluded: "Hence all who wish to fish for salmon in the Yukon territory might be allowed to do so on payment of a license fee."[159] Three years later, it appears that the Commissioner of Fisheries in Ottawa had a similar view of the situation in the Yukon when he wrote: "A good many salmon ascend to Dawson and above; but I have always reported in favour of our people capturing all the salmon they possibly can. If we protected them it would benefit only the United States (Alaska) canneries, which adopt no protective measures whatever."[160] This get-what-you-can attitude prevailed, despite the fact that the department admittedly knew little about Yukon River salmon — the number of fish, the variety of species or where they spawned — nor about the fisheries themselves.[161]

Figure 31: "Drying salmon for dogs," Moosehide area, 1915. [Yukon Archives: Christopher Everest Webb Collection, acc. 80/87, PHO 137]

Like their counterparts in Ottawa, federal government officials in Washington, D.C. had few details about the salmon fisheries in the upper Yukon River region, nor did they have any particular reasons to investigate. Not until 1914, as interest in the commercial salmon fishery continued to grow in Alaska, did the American government deem it necessary to send a fisheries agent up the Yukon River to investigate the fisheries along its length. Shortly thereafter, governments, the fishing industry and people along the river became embroiled in negotiations that would help to shape the development of Alaska's salmon fisheries.

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[159] Letter from F. Gourdeau, Deputy Minister of Marine and Fisheries, to T. A. Stewart, Inspector of Fisheries, January 30, 1900. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2813]

[160] Memo from Commissioner of Fisheries, Ottawa, April 28, 1903. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2813] It should be noted that there were no canneries on the Yukon River or near its mouth at this time. The Commissioner's comments may reflect a more general view about canneries along the Pacific Coast, or they may strictly have been generated by his attitude toward Americans and efforts at this time to negotiate a boundary between the Yukon and Alaska.

[161] Letter from R. N. Venning, Assistant Commissioner of Fisheries, Ottawa, to H. T. McKay, Inspector of Fisheries, Dawson, June 21, 1906. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2801, part 1]

4. The interwar era.

Biological framework in fisheries management.

"As we see, a picture is obtained which diverges radically from the hypothesis which has been favoured almost down to the present time, namely that the natural reserve of fish is an inviolable capital, of which the fishing industry must use only the interest, not touching the capital at all. Our theory says, on the contrary, that a fishery and a natural reserve of fish are incompatible, and that the exploitable stock of fish is a changeable quantity, which depends on the intensity of the fishery. The more fish we take from a body of water, the smaller is the basic stock remaining in it; and the less fish we take, the greater is the basic stock, approximating to the natural stock when the fishery approaches zero. Such is the nature of the matter."

— T. I. Baranoff, Russian marine biology theorist, 1925.[162]

Even to the casual observer, it became evident during the first two decades of the 20th century that many North American fish stocks were rapidly being depleted and that fish were indeed exhaustible. On the Pacific Coast, advancements in trawling methods, a high demand for fish products, and the commercial use of fish traps and fishwheels contributed to the rapid decline of many stocks. For many years along the Columbia and Fraser rivers, people had been steadily hauling salmon out of water by the tonne to supply the canneries at the river mouths.[163] The increased level of effort required to catch fewer fish became undeniable.

Governments gradually recognized the need to manage the North American fisheries and, at the very least, to define the nature of particular stocks and the numbers of fish that could be removed annually without endangering their populations. Scientists began to explore the relationship between harvests and the size of the salmon runs, and the focus of biological studies shifted toward restricting the predation of the fish rather than seeking confirmation that the abundance of fish merely fluctuates. However, despite regularly referring to "overfishing", "conservation" and "depletion" in fisheries discussions in the early decades of the 20th century, fisheries authorities couched these words in terms of how the resource would benefit humans and, particularly, how to ensure that it was preserved for human exploitation.[164] Conservation at this time equated a *natural* resource (i.e. salmon) with the *human* use of that resource (i.e. fishing).

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[162] T.I. Baranoff, "On the Question of the Dynamics of the Fishing Industry," 1925, p. 5, quoted in: H. Scott Gordon, "The Economic Theory of a Common-Property Resource," p. 128.

[163] For a detailed description and analysis of the decline of the salmon fisheries in British Columbia, see: Meggs, Geoff. Salmon: the Decline of the British Columbia Fishery. Douglas & McIntyre, Vancouver: 1991. The decline of the Alaska salmon fisheries is covered equally well in Richard Cooley's book entitled Politics and Conservation: The Decline of the Alaska Salmon, which is frequently referred to later in this paper.

[164] H. Scott Gordon, "The Economic Theory of a Common-Property Resource," pp. 125-127.

This reflected the pervasive view that the entire natural world existed not for its own sake, but for the benefit of humankind.

Placing restrictions on the salmon fisheries has consistently proven to be a difficult task, both legally and politically. Fisheries share a key characteristic with other common-property resource industries. Fish — like trees, big game, and fur-bearing animals — are owned in common until they are harvested or captured and only then become private property.[165] A free and common fishery reflects the position that fish are a public resource held by government for the benefit of all. Court interpretation in the United States of this public right has determined, however, that both the federal and state governments can grant exclusive rights to fish in public waters under their jurisdiction by enacting specific legislation; in practice, such moves have been rare. In Alaska, with the exception of a few grants of exclusive fishing rights made to certain aboriginal groups, the doctrine of a common and free fishery has prevailed.[166] This position forbids restrictions on access (controlling the numbers of people harvesting fish), but it does allow for limitations on efficiency, quotas and seasons during which they can fish.

Managing the Yukon River salmon fisheries: canneries, governments and the people.

"An all-important event is this annual run of salmon to the numerous natives who dwell along the banks of the Yukon and its tributaries... And the supply never seems to have failed. There are no stories of years of starvation, which are only too common among the meat-eaters to the eastward of the Rockies, and as yet there are no canneries to thin out the fish on the Yukon, as has happened on most of the salmon rivers of the Pacific. Doubtless before long there will be suggestions to establish canneries, but unless the strictest regulations as to their management are enforced, there will be hard times for some of the upper river Indians. Along the Columbia and Fraser, neither of which streams were so thickly peopled as the Yukon, other means of making a livelihood were afforded to the Indians as the farming land was settled up, but there seems no likelihood of the same thing occurring on this northern river, as the country is worthless from an agricultural point of view, and if the salmon disappear, the Indian must go with them."

— Warburton Pike, 1896.[167]

For many years, the commercial packing industry in Alaska operated unencumbered by strict regulations. The first cannery was erected on the coast in 1868, joined by two more ten years later. Production slowly grew until the turn of the century. An investigation, sponsored by the federal government in 1889, called for additional legislation "to prevent the impairment of exhaustion of these valuable fisheries", but this red flag drew an ineffective response. Recognizing

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[165] H. Scott Gordon, "The Economic Theory of a Common-Property Resource," p. 124.
[166] Richard Cooley, Politics and Conservation, p. 11.
[167] Warburton Pike, Through the Subarctic Forest, pp. 213-214.

that fish could indeed be decimated — contrary to cannery owners and scientists advocating the inexhaustibility of the resource — the U.S. government passed the first legislation restricting fishing practices in the territory: it outlawed the practice of barricading or obstructing rivers in order to prevent or impede the runs of salmon to their spawning grounds. However, its inability — or, according to some researchers, the unwillingness — to adequately enforce such a law along some 3,300 kilometres (2,000 miles) of coastline rendered it useless.[168]

Reducing efficiency in the fisheries.

In theory, fisheries managers have several means by which they can control fishing activities: they can limit efficiency by restricting certain types of gear (e.g. by setting allowable mesh sizes or net lengths, or by prohibiting certain fishing methods); they can control access to the fish by limiting entry to a fishery (e.g. issuing a maximum number of permits or licences); they can create quotas (set the maximum amount any fisher can catch in a season); they can determine open and closed periods for particular fisheries; and they can identify distinct user groups (e.g. subsistence, domestic, aboriginal, commercial and sport) and apply specific regulations to each. In practice, certain management tools, while effective in controlling the number of fish harvested, may contravene principles defined in law and may be politically contentious.

Individual rights, aboriginal rights, international agreements, and federal and state laws are not necessarily guided by the same principles. For example, in Canada the aboriginal fishery is now the priority use of the salmon resource, while in Alaska the same is true for the subsistence fishery. In the latter jurisdiction, there is no regulatory distinction between aboriginal and non-aboriginal fishers.

In the early 1900s, the opening of new markets and the great technological strides in fishing and canning techniques fuelled the dynamic growth of the packing industry in Alaska. Total packs increased at a rapid rate until they fell after World War I. Wide annual fluctuations ensued, and commercial exploitation reached its peak for the period in 1936 when canneries packed 8.5 million cases.[169] In this highly competitive climate, the cannery corporations fought bitter battles over the ownership of key locations for fish traps. At river mouths, federal regulations required a certain distance between traps, making it possible for any one well-positioned corporation to, in effect, eliminate its competition.

By operating the highly efficient fish traps, the corporations played an instrumental role in shaping the course of the government regulatory program to conserve the resource in Alaska. Pressure by industry lobbyists resulted in Congress passing a series of bills that had been watered down to such an extent that they were ineffective in protecting the salmon on the Alaskan coast.[170] The Yukon River salmon fisheries proved not to be immune to these actions.

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[168] Richard Cooley, Politics and Conservation, p. 74.
[169] Ibid, p. 35.
[170] Ibid, pp. 74-75.

A number of visitors to the interior of Alaska in the mid- to late-1880s commented on the potential for a commercial Yukon River salmon fishery, but they considered such an enterprise to be impossible for a number of reasons: distances to faraway markets and the associated costs; inadequate preservation methods (drying and salting, while adequate for local uses, had commercial limitations); the unsuitability of aboriginal labour; and, because of the great width and depth of the river, difficulties in actually harvesting the salmon.[171] Generating faith in the feasibility of a Yukon River commercial fishery would require highly favourable economic and political conditions.

Benefiting from the burgeoning demand for salmon during World War I, 188 canneries on the coast of Alaska in 1917 packed more than half of the world's supply of salmon, nearly six-million cases valued at $46 million.[172] In the peak year, 1918, Carlisle Packing Company expanded its operations from the State of Washington into Alaska and established a floating cannery operation at the mouth of the Yukon River. Conditions seemed ripe for a lucrative business.

The Carlisle Packing Company years (1918-1921).

Figure 32: Carlisle Packing Company cannery, Yukon River, ca. 1919. [University of Alaska Fairbanks, Alaska and Polar Regions Archives: R. K. Woods Collection, acc. 67-23, f. 40]

The establishment of the cannery at the river mouth resulted in three years of quarrelling between those who supported it and those who opposed it. A number of local residents blamed diminishing returns of salmon on overfishing at the river mouth, while many scientists and industry supporters believed the supply was unlimited. At an informal hearing about the proposed cannery in May 1918, industry proponents contended that a "mighty stream like the Yukon ought to support a number of such establishments without detriment to the inhabitants or without injuring the future of the fishery."[173] They also disputed the significance of the salmon fisheries to residents along the river, inferring that people had little interest in the fisheries because they used such primitive means to catch the salmon.

The packing industry had strong support from key departments of the U.S. federal government. Indeed, shortly after he became Commissioner of Fisheries, Hugh Smith expressed his view that "the perpetuation of the Alaskan salmon can be achieved without any general or material curtailment of fishing operations". A

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[171] Ivan Petrof, "Report of Ivan Petrof on the Population, Resources, etc., of Alaska, 1880," in Compilation of Narratives of Explorations in Alaska, p. 144; Captain Charles W. Raymond, Report of a Reconnaissance of the Yukon River, July to September 1869, p. 39.

[172] "Report of the Governor of Alaska to the Secretary of the Interior," Washington, 1919, p. 19. Quoted in David M. Dean, "Salmon and Sermons: Archdeacon Hudson Stuck and the Yukon River Cannery Controversy, 1918-1921," p. 554.

[173] As summarized by the Bureau of Fisheries. Quoted in: Michael Carey, "A Social History of the Yukon River Fisheries Prior to Statehood," p. 9.

strong advocate of salmon propagation through the use of fish hatcheries, the commissioner set out to be a champion of the industry's interests.[174]

Meanwhile, the U.S. Congress issued mixed messages. It loosely interpreted and applied the recently popular term "conservation", and political pressure to permit a large-scale fishery in the Yukon River remained intense. The Bureau of Fisheries, admitting it knew almost nothing about the size of the salmon run at the time of the informal hearing in May 1918, decided to conduct an investigation in the lower river to better understand the condition of the salmon runs. Nevertheless, Congress did not declare changes to fisheries regulations on the river for the upcoming season. Contrary to the recommendation following the first reported investigation by the U.S. government into the Yukon River salmon fisheries in 1914, and despite the foreseen hardships on local people, the federal government paved industry's way to the fishing grounds at the river mouth in 1918.

A second hearing on the issue was held in November 1918 because of widespread complaints from people up and down the river and on both sides of the border. The Bureau of Fisheries recognized the serious problems that could arise without effective regulations governing the cannery's operations. It subsequently limited the Carlisle Packing Company's total harvest, defined the area in which the company could fish, and restricted the use of fishing methods in certain areas. The cannery responded by simply circumventing the new regulations and took more than half of its fish from waters outside of the boundaries, despite the fact that these salmon, too, were bound for the Yukon River. In 1919, its total harvest consisted of 479,949 salmon for export, and the pack consisted of 47,086 cases, 214 barrels and 47 tierces (a cask with a capacity of approximately 35 gallons or 159 litres).[175]

The poor run of Yukon River salmon in 1919 provided visible ammunition in the fight against the cannery. Leading the charge was Archdeacon Hudson Stuck, an outspoken advocate of aboriginal rights in Alaska and critic of the effects of American civilization on First Nation peoples. He wrote scathing letters and argued vehemently against the still-prevalent assumption that the salmon were inexhaustible.[176] He exercised his writing skills in an effort to bring attention to the hardships faced by the many people dependent upon the relatively few Yukon River salmon able to pass the nets and fishwheels near the river mouth. The U.S. government, on the other hand, denied that the cannery could be the sole cause of the shortage of fish. After all, it argued, high water and a lot of driftwood interfered with fishing operations, and historical precedents demonstrated that fish runs vary.

In its annual report, the U.S. Department of Commerce, within which the Bureau of Fisheries operated, restated its policy: "It is not the province of the Department

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[174] Pacific Fisherman, May 1915, p. 12. Quoted in: Richard Cooley, Politics and Conservation, p. 88.
[175] Ibid, p. 12.
[176] Hudson Stuck, Voyages on the Yukon and its Tributaries, pp. 7-8.

of Commerce in its legal relation to the fisheries of Alaska to consider as paramount the interests of any particular packing company or any branch of the fishery industry, or any class of people, but under the law it is charged primarily with the protection of the salmon fisheries." The department explained that its main concern was whether or not the salmon fisheries were suffering depletion, not who should or should not be fishing. Officials decided to send a competent team of investigators in the following year to determine the sustainable yield of fish from the Yukon River, and these men would record the true conditions in which the aboriginal people lived.[177]

The federal government held a third hearing about the Yukon River fisheries in Seattle in May 1920, before the investigators set out on their journey. It provided a forum at which concerned individuals, church groups, industry supporters and others could present their respective cases, either in writing or in person. Archdeacon Stuck attended the Congress hearings in Seattle and submitted a petition, signed by 27 people, all of whom had travelled or lived for at least 14 years along the Yukon River in the Fort Yukon area, up the Porcupine River to Old Crow and along other tributaries. Their concerns summarized those of others along the Yukon:

"If our remaining good run of salmon this coming season is intercepted at the mouth of the Yukon, we are convinced that the fishery will be permanently injured. Much distress was caused and is still felt by the failure of our fisheries, and if repeated this summer, will be felt in a greater degree, as the big game which partially replaced the deficiency is appreciably lessened. If the slaughter of moose and caribou is continued on the same scale, as the absence of salmon has made necessary the last two seasons, our large game will in a few years be exterminated.

"Perhaps it is not understood outside how necessary the dog is to our existence, or the amount of fresh meat necessary to sustain a dog. An average dog team of five dogs will consume one full-grown moose in seven or eight days, and when the number of necessary dogs is taken into consideration it will be realized how our big game is menaced. We do not wish to retard the development of any industry of this country providing it will not interfere with equally important industries.

"The fur industry is being injured and also the mining industry. The former on account of its greater dependence on the dog is being seriously crippled.

"The work in the Chandalar Mining Camp has been greatly hampered by the lack of dog salmon, and the cereals which have been substituted for fish will not keep a dog up to the standard of efficiency required.

"The trapper who has to depend on killing game for his dogs, at the time when he should be engaged on his trap line, may count on his fur production being reduced 50 percent.

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[177] United States. Department of Commerce. Bureau of Fisheries. Alaska Fishery and Fur-Seal Industries in 1919, pp. 31-32.

"The fox ranch on the Porcupine River reports a loss of several valuable foxes, through being unprepared to provide a substitute for salmon, without previous warning. One of the most deplorable features of the present contingency is the indiscriminate slaughter of pregnant cow moose and calves, which other years has been carefully avoided by both natives and whites."[178]

A number of government officials witnessed the serious problems arising from a lack of fish. Commissioner Mackenzie in Dawson told the American fisheries investigators in 1920 that, had the caribou not been abundant (thus reducing the need to use dog teams to travel great distances), the First Nation people in the Dawson area would have suffered severely. The threatening situation extended up the Porcupine River, and a police constable at Rampart House reported that there were no caribou, moose or runs of fish in October 1919. Only a successful hunt in early November offered relief to the people.[179]

Ottawa could contribute few other details to the discussion. The Canadian government made minimal efforts to learn about the fisheries or the fish populations by this time. In its summation of the territory's resources in 1916, Canada's Department of the Interior barely acknowledged the existence of salmon in the Yukon Territory: "The salmon come up the Yukon river and its tributaries about the end of July, reaching the spawning grounds in August, and are all dead by the end of that month."[180] In 1918, the same year that the Carlisle Packing Company began its operations, Ottawa eliminated the position of fisheries inspector for the territory. Under strong pressure to reduce its expenditures in such an isolated and thinly populated territory, the government transferred the responsibility of enforcing fisheries regulations in the Yukon back to the police force. In response to concerns about the proposed cannery at the river mouth, the deputy minister responsible for the fisheries explained to the Gold Commissioner in Dawson that the Royal Northwest Mounted Police were making inquiries "with a view to securing comments as to the probable effect that a salmon cannery on the lower Yukon would have on the residents of the Yukon Territory." He also noted that representations from residents of Dawson would be "gladly received" by the U.S. Commissioner of Fisheries and that the November

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[178] Letter sent to Archdeacon Stuck from Fort Yukon, March 30, 1920, signed by: A. H. Anthony, T. H. Burman, F. E. Foster, A. Linklater, W. F. Oler, A. Crane, F. E. De Mar, D. Cadgom [Cadzow?], R. L. Hainline, W. H. McCauley, O. J. Nicholson, C. Wells, J. A. Ward, D. Lord, James Hay, Frank C. White, United States commissioner; C. T. Spencer, deputy United States marshal; Grafton Parke, M.D.; Lynn Short, Louis W. Sealand, P. R. McGuire, F. H. Beaumont, N. Peterson, A. E. Pehler, Mike Smith, Joe Leugue, Lee Pate. In: United States. House of Representatives. Subcommittee of the Committee on the Merchant Marine and Fisheries. "To Prohibit Fishing for Salmon in the Yukon River," Hearings before the Subcommittee on the Merchant Marine and Fisheries, April 20, 1920.

[179] Report from Const. Annesty, Rampart House, in a letter from [?] Knight, Commanding B Division, to Commissioner, NWMP Regina, January 30, 1920. [National Archives of Canada: RCMP records, RG 18, vol. 3157, f. G1312-1021]

[180] Canada, Department of Interior, The Yukon Territory: History and Resources, 1916. No mention of Yukon salmon was made in either the 1907 or 1909 editions.

hearing would be open to interested parties.[181] Government records summarizing any findings of the RNWMP inquiries seem to be non-existent, and correspondence referring to concerns about the cannery does not suggest that Canadian officials attended the hearings.

> *"As to salmon, this is not a question in which we are interested, as they do not come up the Yukon River as far as Dawson in any very large numbers."*
>
> — G. I. MacLean, Gold Commissioner, Yukon Territory, Dec. 30, 1929.[182]

The forceful backlash from the public provoked the American government to restrict the fishery in Alaska and recognize that the supply of salmon was not infinite. The American investigators of the Yukon River salmon fisheries in 1920 urged the government to put the subsistence fisheries ahead of the commercial operations in allocating the resource. They recommended that: "... if there is any question whether the salmon in a given stream is adequate to supply the demands of commercial operators as well as the needs of the local inhabitants, the doubt should be at once resolved in favor of the people."[183] The government agreed, and Congress declared a prohibition on commercial fishing for export and maintained the ban for the next eight years.

The debate over the Carlisle cannery clearly distinguished two types of users of Yukon River salmon: there were the people along the river who depended upon it for subsistence and to support their lifestyle, and there was industry, the large commercial operators at the mouth. By barring one user group from the Yukon River fisheries, the American government had, for the first time, prioritized access to the resource.

A regulatory framework for the salmon fisheries in Alaska.

By 1921, after years of tumultuous debate between those for and against stricter controls in the fisheries, all interest groups in Alaska finally agreed that the salmon resource was indeed in trouble. This conclusion was long in coming, however. Territorial representatives had been pressuring the federal government to gain more control of the resources, and the governor expressed his concern over the lack of protection of the fisheries and overexploitation by corporations. Meanwhile, the federal Bureau of Fisheries, which had never undertaken a serious study to determine the proportion of the salmon run able to reach the spawning beds, was putting more energy into promoting the use of salmon to expand the market. Not surprisingly, the Bureau supported the efforts of the

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[181] Letter from G. J. Desbarats, Deputy Minister of the Naval Service, to the Gold Commissioner, Dawson, June 28, 1918. [Yukon Archives: Yukon Game Branch records, YRG 1, Series 3, GOV 1904, f. 28798]

[182] Letter from G. I. MacLean, Gold Commissioner, Dawson, to Fish and Game Investigating Committee, California, December 30, 1929. [Yukon Archives: Yukon Game Branch records, YRG 1, Series 3, GOV 1892, f. 12-8B 2/2]

[183] Charles H. Gilbert and Henry O'Malley, "Investigation of the Salmon Fisheries of the Yukon River," p. 153

packers, who had been resisting any restrictive changes, particularly as prices for salmon remained high during World War I.

A significant difference between the packers and the government was that the Bureau did acknowledge that overfishing could occur. But, instead of pursuing more of a conservation agenda, it had long contended that the problem could be avoided through hatcheries and the artificial propagation of salmon. The packers, encouraged by such beliefs, denied the legitimacy of conservation concerns. Their position changed only following the collapse of the price of salmon at the end of the war, which forced them to sell their salmon packs below the cost of production. The federal government initiated a special investigation into Alaska's salmon resource in 1919, and the biologists put forward a convincing case on the seriousness of the issue. The truth of it could not be ignored. Suddenly, everyone appeared to be on the same side.[184]

Discussions to develop a regulatory framework for the Alaskan fishery continued for several years. In 1923 and 1924, one option put forward suggested the use of fishery reserves within which the fishery would be regulated by restricting gear and the number of fishing operators. However, canneries and labour organizations challenged the proposed reservation bill, arguing that it was unconstitutional. The bill never emerged from the House Merchant Marine and Fisheries Committee.

The U.S. Congress issued the long-awaited White Act, *An Act for the Protection of the Fisheries of Alaska*, in 1924. Albeit a compromise among diverse interests — the Senate rejected more conservation-focused amendments introduced by Congress — the act resulted in the extension of the federal government's authority to regulate the fishery, and it opened the way for a definite policy on the Alaska salmon fishery.[185] With the new act, Congress sought to localize regulations according to conditions in a particular stream, and, striving to follow principles of conservation, it demanded an escapement of at least 50 percent in every stream.[186]

The government established a fine line between ensuring open access to the resource and protecting the resource. Richard Cooley summarized the situation as follows:

"*Under the Act broad powers were lodged in the Secretary of Commerce to create fishing areas in any of the waters of the territory over which the U.S. had jurisdiction, and within such areas he could fix the size and character of fishing gear, limit or prohibit fishing, make regulations as to the time, means, method and extent of fishing within each of the various areas he deemed advisable. However, every regulation had to be of general applicability within the particular areas to which it applied, and it was provided emphatically that 'no exclusive or several right of fishery shall be granted therein, nor shall any citizen of the United*

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[184] For a detailed chronology of these discussions and the positions taken, see: Richard Cooley, Politics and Conservation, pp. 74-121.
[185] Ibid, p. 103, 119.
[186] Ibid, p. 125.

States be denied the right to take, prepare, cure, or preserve fish or shellfish in any area of the waters of Alaska where fishing is permitted by the Secretary of Commerce.'"

In other words, while the Secretary could create fishing areas and apply regulations within these areas to all people, no American citizen or group could be singled out and prevented from fishing. The Secretary could also not control and regulate the amount of gear in the fishery (only its size and character). This nullified the reservation concept.[187]

Still maintaining its support for the 50-percent escapement, the Bureau of Fisheries permitted a limited commercial fishery off the Yukon River mouth in 1932, and, two years later, it opened a commercial fishery on the Yukon and Kuskokwim rivers. The reasoning behind these decisions was straightforward: the Bureau found that people were taking less salmon for dog feed by 1932, and, as the Bureau of Fisheries Alaska agent argued in 1934, the river could support at least a limited commercial harvest. Such an opportunity would help people to earn a livelihood. The government introduced a quota on the commercial harvests, targeting the handful of operators near the mouth who fished for export.[188] This was done by applying the regulations to the area in which these people fished and by applying them to all who chose to fish there. Its conservation strategy, the Bureau claimed, was still being followed.

A regulatory framework for the salmon fisheries in the Yukon Territory.

On the Canadian side of the border, while fisheries authorities apparently did not entertain the idea of harvest quotas, they did regulate the catch of fish. The government focused regulatory efforts on the commercial freshwater fishery beginning in 1899 and gradually extended the legislation to all species of fish. It determined the allowable mesh sizes according to the type of fish sought and to the waters in which people fished, and it reduced the legal gill-net lengths over the years.

The Canadian government introduced the first commercial salmon fishing regulations in the Yukon Territory in 1915. The role of the local fishery inspector in the introduction of salmon fisheries regulations is unclear, particularly since the annual reports make few references to the salmon fisheries, other than in the tables of statistics. Nevertheless, the new regulations limited the net length and mesh size for salmon generally to 100 yards of six-inch net and introduced a $5 domestic (non-native subsistence) licence fee.

One of the most significant changes in the salmon fisheries in the Yukon Territory occurred only two years after the 1915 legislation. Fishermen in the Dawson area had tried to draw the government's attention to the importance and potential of the Yukon's salmon fisheries in 1910. They resented the plentiful fishwheel harvests across the border and believed that this highly efficient technology gave their American counterparts an unfair advantage in the local

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[187] Ibid, p. 24.

[188] Michael Carey, "A Social History of the Yukon River Fisheries," pp. 39-41.

market. The fisheries inspector in Dawson submitted a fishing licence application to his superiors in which the applicant requested that he be permitted to use a fishwheel. The Department of Marine and Fisheries refused to grant the licence: "... I may say that after careful consideration of the matter, it was years ago decided by the Department to not allow the operation of a Fish Wheel in any of the different Rivers of Canada..."[189] The commercial fishers continued to put pressure on the officials in Ottawa, and their efforts paid off when, seven years after the initial application, the department finally legalized the use of fishwheels on the Yukon River, thereby eliminating a highly visible difference between fishing practices on either side of the border.

The Department of Marine and Fisheries justified the opening of a fishwheel fishery in the Yukon by arguing: (1) Alaska permits fishwheels, and conditions in the Yukon Territory are identical; (2) the demand for fish in the Yukon Territory far exceeds the supply because imported foods cost so much, because prospectors use dogs for transportation, and because fox farms require large quantities of dried fish imported from Alaska; and, perhaps the most curious rationale, (3) so many fish decaying along the banks of the river were going to waste under the existing regulations, and these fish could be "saved" and "serve to meet to a grant [sic] the requirements of this Territory in that respect". People could use fishwheels between July 1 and October 15 on the Yukon and its tributaries upon payment of a $30 licence fee, a sum that reflected the efficiency of the technique for catching salmon.[190] Apart from the licensing of fishwheels, the Canadian government introduced no major changes to the Yukon's 1915 salmon fishing regulations until 1961.

Evolution of the upper Yukon River fisheries: shifts in purpose, approach and intensity.

Decline of the commercial fishery.

The commercial salmon fishery along the upper Yukon River gradually declined in Alaska during the interwar era. Some of the biggest buyers of Yukon River salmon in Alaska were the men delivering mail with their dog teams, but this niche in the market began to shrink in 1928 with the arrival of airplane service, which provided better access to more remote locations. An American fisheries investigator who regularly travelled the Yukon River remarked in his 1928 report that regular flight service between Fairbanks and Nome, in addition to airplanes

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[189] Letter by W. A. Found, for Superintendent of Fisheries, to H. T. McKay, Inspector of Fisheries, Dawson, August 11, 1910. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 328, f. 2801, part 1]

[190] Motion by the Clerk of the Council, "To His Excellency: The Governor-General in Council: The Memorial of the Commissioner of the Yukon Territory in Council," passed on April 23, 1917. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 995, f. 721-4-27]

connecting a number of other towns, replaced many dog teams. Indeed, none of the traders would contract for any fish during the fall of that year.[191]

In the Yukon Territory, dog-drivers continued to deliver mail between Eagle and Dawson, and trapping remained strong until the mid-1940s. The demand for dog feed helped to keep the commercial operators active. Some Alaskans successfully competed in the Canadian market for many years, even after the Canadian government legalized the use of fishwheels in 1917. Chappie Chapman, a former employee of the Northern Commercial Company in Dawson, recalled tonnes of dog food and about 50 barrels of salted fish being brought up from the lower river each year.[192] One Alaskan selling fish to the Canadians in 1926 was H. L. Holmgren of Old Hamilton, near the mouth of the Yukon. He sold a few barrels of salt fish to the Northern Commercial Company, which in turn shipped them to Dawson and Mayo.[193] One of the best years for commercial fishing operations in the Yukon was 1935 when the output was valued at $20,735.

Figure 33: The Anderson's three-tiered racks laden with chum salmon at Forty Mile, 1930s. [Yukon Archives: Claude Tidd fonds, #8411]

"A. P. Shultze in from his fish camp on Wednesday and reported a very poor catch so far this Season... S. P. Anderson reported that his catch of Salmon this year will run over two ton, he having an exceptionally good catch. John Olson at Cassiar Creek and Percey [sic] DeWolfe at Halfway also report a record catch this year."

— A. F. Unia, RCMP, Forty Mile, July 29, 1935.[194]

"S. P. Anderson arrived in from his fish camp on Sunday, reporting that the Salmon are slacking off now... S.P. Anderson brought his fish wheel in on Sunday ending his fishing for this season reporting a catch of approximately 3 ton."

— A. F. Unia, RCMP, Forty Mile, August 5, 1935.[195]

By 1945, the prospects for the commercial fishery were relatively poor in the Yukon, according to the fisheries investigator who came north to complete a survey. He remarked that it appeared to be cheaper to supply the needs of the booming town of Whitehorse from British Columbia or from Alaska via Skagway than to bring salmon up from Dawson. The Northern Commercial Company's freezer in Dawson could only hold about 3,500 pounds of fish, and only about

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[191] C. F. Townsend, [Report for 1928], quoted in Michael Carey, "A Social History of the Yukon River Fisheries," p. 29.
[192] Chappie Chapman, personal communication, Whitehorse, November 1983, in: N. Seigel and C. McEwen. A Historical Overview of Fishing in the Yukon, p. 97.
[193] Michael Carey, "A Social History of the Yukon River Fisheries," p. 37.
[194] Forty Mile Detachment diary entry. [Yukon Archives: YRG 1, Series 7, GOV 2841, vol. 39, f. 34580, part II]
[195] Ibid.

250 pounds was sold fresh at a price of 13¢ to 15¢ per pound. The salmon fisheries on the upper river supplied the local market and, according to the investigator, there was little hope in ever expanding the business in the Yukon to include an export market.[196]

The number of fishwheel licence-holders reflected the gradual decline in the commercial fishery. In 1944, the RCMP issued 11 fishwheel licences, and this same number again in 1947. Over the next 10 years, the number of licences issued gradually dropped, and by 1957, only three people purchased licences. Regular licence-holders for most of these years included Percy DeWolfe, S. P. Anderson and James Hughes — all of whom obtained at least two licences each year — and James Wood, Charlie Mason and Dave Taylor. At least one person from Moosehide always had a fishwheel licence.[197] It is not clear how much of the fishwheel harvests were sold.

Figure 34: Hauling a fishwheel to the site, ca. 1930s. The wheel dipped 8 feet and had 8-foot to 10-foot baskets. Because they are only efficient in certain types of water, fishwheels have never entirely replaced gill nets in the salmon fisheries. Not only are they seldom considered worthwhile during the chinook salmon runs in the upper river, but they are labour-intensive due to driftwood and other materials that wreck havoc on the baskets, thereby demanding constant repairs. In 1920, the American fisheries investigators who travelled up the river estimated that a wheel cost $50 to construct.[198] [Eagle Historical Society: Beck Collection, 0140-28]

The evolving aboriginal fishery.

Despite the visible changes and economic trends along the length of the river, the land, water and resources continued to draw a number of aboriginal families away from their communities, from Marsh Lake and Teslin to Old Crow and Circle. While many First Nation people adopted a less nomadic lifestyle, they retained a pattern of seasonal activities in which salmon fishing played an important part, and this pattern could not simply be adjusted to suit the desires of outsiders.

In 1921, Rev. J. Hawksley, the Superintendent of Indian Affairs for the Yukon, repeatedly commented on his lack of success in interesting First Nation people in agriculture. He gradually came to appreciate why: "Again just as the growing crops need attention the salmon run commences and they make use of their opportunity. All go off fishing to procure a stock of dried salmon for winter use for themselves and their dogs. They consider this far more important than growing

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[196] V. C. Wynne-Edwards, "The Yukon Territory," in Fisheries Research Board Bulletin, 1947, pp. 14-15.

[197] "Statement of Yukon Territory Licences issued [1947-1959]." [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 29, f. 710-13-12, vol. 2]

[198] Charles H. Gilbert and Henry O'Malley, "Investigation of the Salmon Fisheries," p. 143.

potatoes and such like which they find difficult to keep from being spoiled by the frost and perhaps they are wise."[199] The value of salmon was abundantly clear.

Some researchers have argued that First Nation people in the Dawson area began to rely less on salmon after the Klondike gold rush.[200] As they adopted a less nomadic lifestyle, a number of families were seen to travel less frequently to traditional fish camps situated far from settlements. They may have fished irregularly, given other employment opportunities taking them away from their camps.

In the 1940s, aboriginal people, like the non-native people, adapted to the decline in the trapping industry and may have kept fewer dogs, and this in turn reduced the need for salmon. In 1964, an researcher referred to this trend when he commented on the declining use of fishwheels in the Dawson area since the 1930s. Local people told him that the decrease was not due to fewer salmon; rather, they attributed it to there being so few aboriginal trappers in Dawson, the men who primarily used the fishwheels in order to get adequate supplies of fish for their dog teams.[201]

Fort Selkirk, 1914: "*The fall months are always very quiet owing to the absence of the majority of the Indians, and this I fear is no exception to the rule. The chief occupations on these excursions are hunting and wood-cutting for the white people at various camps, with a continued preference for the latter. The inevitable result is that a decreasing supply of meat and fish is laid up, and so both Indians and their canine friends suffer.*"

— *Northern Lights*, Chooutla Indian School, Carcross: November 1914.

Catharine McClellan observed a similar shift in the aboriginal fisheries in the 1940s in the Teslin area. She noted that Teslin Tlingit people only fished for salmon in the Teslin River near Johnson's Crossing. There, people drifted gill nets for about half a mile, attracting the fish using lanterns strung between two boats and making about four runs over the course of an evening. They caught and dried salmon for themselves and for their dogs, whereas the people who did not fish in the river relied entirely on lake fish, meat and commercial feed for their dogs. At the time of McClellan's visit, nobody fished in the Nisutlin River, where, just below the mouth of the Wolf River, their ancestors used to set fish traps to catch king salmon in July and August.[202]

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[199] Report from St. Andrew's, Selkirk, in *Northern Lights*, Anglican Church, vol. IX, no. III, August 1921, p. 3.

[200] J. R. Crow & P. R. Obley. "Han," in: J. Helm, ed., Handbook of North American Indians, vol. 6, pp. 506-513.

[201] Adrian Tanner, Trappers, Hunters and Fishermen, pp. 61-62.

[202] Catharine McClellan, My Old People Say: An Ethnographic Survey of Southern Yukon Territory, pp. 194-195, 219.

Changes in technology.

Up the Porcupine River, elders in the early 1960s compared the communal sharing of fish caught in former times using the fish traps with the contemporary style of owning one's fishing technology and one's catch. With the steady import of twine, they no longer used the communal fish traps; instead, they set several nets that they checked several times a day. They no longer organized large fish camps, preferring to work individually or to establish partnerships or small camps to share the workload of running the nets and bringing in supplies. Elderly men in particular fished throughout the summer, and they were whom others recognized as always having fish. Not everyone in the Old Crow area valued salmon fishing to the same degree, and some felt that it was simply not worthwhile.[203]

Figure 35: "Old Steamboat. Loucheux Indian making a fish net, Old Crow, Yukon," August 10, 1946. [Canadian Museum of Civilization: J. D. Leechman, #100597]

Few aboriginal people in the Yukon Territory appear to have used fishwheels for subsistence use until the 1940s. In 1945, the Canadian fisheries investigator reported that aboriginal people fishing near Dawson for themselves set short gill nets of six- to eight-inch mesh in eddies. They used fishwheels primarily, if not entirely, for the commercial fishery.[204] A combination of factors may explain these observations. While they could harvest fish for their own use without a permit, First Nation people had to buy a commercial licence in order to sell fish and another to use a fishwheel. Many could simply not afford to purchase such licences, particularly if the salmon runs did not warrant the expense.[205] Meanwhile, the Canadian government distributed gill nets to aboriginal people at no cost.

Other highly practical reasons may also help explain why some aboriginal people more commonly used gill nets for subsistence harvests. To construct a fishwheel was an expensive project, and it appears to have become increasingly costly. In 1964, one person seen constructing a fishwheel in the Dawson area suggested that the declining use of this technology may in part be due to the difficulty in salvaging construction materials, particularly wire netting and cables that, 15

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[203] Asen Balikci, Vunta Kutchin Social Change: A Study of the People of Old Crow, Yukon Territory, pp. 83-84.

[204] V. C. Wynne-Edwards, "The Yukon Territory," in Fisheries Research Board Bulletin, 1947, p. 14.

[205] Letter from G. Binning, A/Supt., Department of Indian Affairs, Dawson, to the Secretary, Department of Indian Affairs, Ottawa, September 20, 1935. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 995, f. 721-4-27]; Letter from Superintendent T. B. Caulkin, Inspector of Fisheries for the Yukon, Dawson, to the Deputy Minister, Department of Fisheries, November 20, 1935. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 995, f. 721-4-27]; Extract from letter from G. A. Jeckell, Comptroller, Dawson, Yukon, in a letter from J. M. Wardle, Deputy Minister of the Interior, Ottawa, to W. A. Found, Deputy Minister, Department of Fisheries, December 3, 1935. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 995, f. 721-4-27].

years earlier, were easily salvaged from abandoned steamboats and fox farms in the area.[206] And, as Frederica de Laguna explained in reference to fishing further downriver, important reasons made the gill nets valuable, particularly as wage employment attracted a number of First Nation men away from fish camps in the summer and fall months: "Nets could be made and used by old people or women alone, while the fish wheel needed a man, preferably two, to make and position it. Also it was hardly worth constructing one without a wife and family to handle all the fish it caught."[207]

Figure 36: Making fishnets, Pelly River area, ca. 1930s. [Yukon Archives: Claude Tidd Collection, acc. 77/19, #7271]

Figure 37: Lucy Van Bibber cutting salmon at Mica Creek, ca. 1948-49. [Yukon Archives: Van Bibber Collection, acc. 87/80, PHO 349, #10]

Despite years of change and adaptation in many parts of their lives, First Nation people continued to be drawn to the river to be with families and to harvest the returning salmon. Non-native people who travelled or lived in the remote communities often referred to the role of salmon fishing in the First Nation people's seasonal rounds. The missionary at Fort Selkirk commented in August 1921 that: "The Indians are nearly all away now for a last moose hunt before the salmon run begins about the middle of this month. Then they will all go away to their fish camps to dry their fish for winter use."[208] Twenty-five years later, another missionary, Father Maurice Bobillier, also enjoyed the local flavour as he travelled up and down the river between Whitehorse and Dawson in the summer months, stopping at the various fish camps. He noted that Carmacks was practically deserted during the fishing season, and he would find encampments of families at places such as Big Eddy, near the village at Big Salmon River. When he was there on August 18, 1946, Father Bobillier clearly enjoyed visiting with the four families, including Big Salmon Harry, Mrs. Woodruff and "la Vieille McGinty". Their camp consisted of five tents and was situated on the bluff with hundreds of salmon hanging from the poles.[209] Father Bobillier also found fish camps up the Teslin River and in sloughs and backwaters of the Yukon year after year. The river during salmon-fishing season was full of activity, and Father Bobillier was never far from the next camp. As their ancestors had done for generations, many First Nation people harvested thousands of pounds of chinook salmon in the main Yukon River and its tributaries, selling or trading what they did not need.

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[206] Adrian Tanner, Trappers, Hunters and Fishermen, pp. 61-62.
[207] Frederica de Laguna, Tales from the Dena, pp. 8-9.
[208] Report from St. Andrew's, Selkirk, in *Northern Lights*, Anglican Church, vol. IX, no. III, August 1921, p. 4.
[209] Marcel Bobillier, Journal d'un Missionnaire au Yukon. [Yukon Archives: Microfiche #65, acc. 88/46]

Mabel Henry: "*My dad used to fish with a fish wheel down behind Dog Island. He used to catch about 100 fish a day.*"

Percy Henry: "*He used to go down by boat and pole back. He did that until he was…*"

Mabel Henry: "*He was 87 when he quit.*" *[Mabel Henry later said that she thought he was actually 92.]*

Percy Henry: "*He would have kept going but Tommy wouldn't take him. He didn't have the balance any more. Tommy cut him off fishing. Oh, he was mad.*"

Percy Henry: "*…[Joe Susie] was by himself mostly [at Deadwood Creek]. Most people had their own camps. Happy Jack had his own camp. This one they called Happy Jack Island. Dave Taylor used to fish on this island.*"

Mabel Henry: "*That was way back in the 40s. Before my time.*" [210]

Figure 38: "Old Steamboat, Loucheux Indian from Old Crow, Yukon, stunning salmon taken from net, July 27, 1946." [Canadian Museum of Civilization: J.D. Leechman, 100562]

"*On approaching Old Crow from the west along the Porcupine River, we first encountered fish nets three or four miles away from the village. These were made of white man's cotton twine, each about fifty feet long, and were set in quiet eddies at right angles to the bank, one end floating free or moored to a stone let down to the bottom. They were intended to catch king salmon. When there is no convenient eddy, one may be made artificially at a suitable place on the river-banks where the current is gentle. This is done by driving willow stakes, two or three inches thick, in a line straight out from the bank for six feet or so, and using them to retain a little dam or break-water of brush, stones, and mud piled against the upstream side. The upstream end of the net is fastened to the outermost stake, and the net, in this case, floats down stream parallel to the bank. On one occasion when Balaam and I were going upstream in a motor boat owned by Robert Bruce, Steamboat asked if he might come with us. He loaded his little canoe into our boat. It was the usual tiny affair that seems to be preferred in this district. Both Balaam and Steamboat brought rifles and ammunition with them. Steamboat's reason for coming was to inspect his fish nets which were on the south side of the river, two or three miles upstream from Old Crow. They were set parallel to the river bank just below a small artificial eddy constructed in the manner described above.*

A man's right to set his nets in a certain eddy seems to be recognized. Thus Balaam, Steamboat, Margaret Black Fox, and Robert Bruce always set their nets

[210] Percy and Mabel Henry, interviewed by Jake Duncan and Sally Robinson, September 5, 1997, in: Jake Duncan, Summary of Streams in the Tr'on dëk Hwech'in Traditional Area, p. 90. And pers. comm. with Mabel Henry, March 14, 2001.

in the same place. Whether this right is capable of being passed on to another by inheritance or by sale, I did not discover.

His first catch was an awkward chunk of driftwood which had entangled itself in the net. Next came a large red salmon about three feet long, which he stunned by repeated blows on the back of the 'neck' with a hickory slat from an old tobaggan. Another salmon, full of fight and even larger, followed, and then a third, smaller and already dead. Steamboat worked silently and patiently at getting the salmon out of the net, untangling and freeing it from the side of his canoe on which it snagged again and again. He gave one of the salmon to Robert Bruce in payment for his ride up to his nets.

Fish nets have to be 'run' or inspected daily, or oftener, to collect any fish that may have been caught or to free the nets of driftwood, which, if not removed, might drag them downstream. Sometimes a rise or fall in the water, which takes place suddenly and frequently, will necessitate shifting a net to a new position. Almost every family has a net set at all times when fish are running."[211]

— Douglas Leechman, 1946 (written in 1954).

[211] Douglas Leechman, Vanta Kutchin, pp. 11-13.

5. *Post-World War II politics, resource development and Yukon River salmon.*

New approaches to resource development in the north.

The threat of a military invasion of North America via Alaska and the Yukon Territory during World War II helped to rekindle political and economic interest in the region. The U.S. army constructed the Alaska Highway in 1942 and the Canadian government took tentative steps toward building the infrastructure required for industry to access the untapped resources. None of this development could occur without having some impact on the fish and wildlife upon which many local people depended.

The post-war period marked a significant shift in Ottawa's approach to administering and managing natural resources in the north. The Canadian government assumed the responsibility of investing in key infrastructure projects formerly in the hands of the private sector. By the 1950s, governments and industry envisioned megaprojects that would vastly expand existing economic activity, and they entertained ideas such as aluminum smelters and massive hydroelectric developments. Many people believed that the mining industry, particularly in the central Yukon Territory, would benefit from such projects.

One proposed scheme that first attracted interest in the late 1940s consisted of a series of dams at points along the upper Yukon River and one within the Taku River system. The goal of the project was to connect the two river systems by redirecting sections of the upper Yukon River watershed so that Marsh Lake would flow into Tagish, then into Atlin Lake and, finally, the Taku River. The proposal evolved over several years and, off and on, incorporated an array of plans, including: building a dam on Lake Laberge, moving the City of Whitehorse, damming the Teslin River, diverting water from the Teslin to Marsh Lake, and diverting water from the Dezadeash River to the Takhini River. The scheme was officially shelved in 1958, but separate plans were already in the works by this time to construct a dam at the Whitehorse rapids.

A federal election in 1957 introduced a Canadian government committed to speeding up northern development as a national objective. The new policy focused on investing in the north in order to increase potential development, rather than strictly focusing on projects that government could immediately justify. For example, it introduced the road-to-resources programme, which helped to make remote areas accessible to mineral exploration.[212] While Ottawa wished to make the region more productive and to develop the north for northerners, trying to achieve these goals would require more staff and a great deal of research.

The government's focus on economic issues created a difficult climate for people with environmental and social concerns to effectively provide input. In the early

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[212] K. J. Rea, The Political Economy of the Canadian North, p. 243.

1950s, as developers and government departments were swept up in the idea of developing the north, people with an interest in protecting the Yukon River salmon runs received negligible support. For example, in 1952 and 1953, Public Works of Canada rebuilt the Lewes River dam at the outlet of Marsh Lake. During the planning phase of the project, the Department of Fisheries requested that a temporary fishway be installed because the new design of the dam might block salmon migration. The department also requested that additional hydraulic data be obtained in order to construct an appropriate permanent fishway. When the biologists visited the site in July 1954, they saw that the temporary fishway had not been constructed as specified, nor was it in the correct location, nor was it operative.[213]

During these same years, the federal government also heard from several people in the Mayo area concerned about the "protection of the salmon industry". The idea of installing a fish ladder had been raised in the years preceding the construction of a dam on the Mayo River in 1952. The government heard both sides of the argument that followed. The Mayo Chamber of Commerce argued that the salmon run was significant,[214] while the local RCMP officer explained that, because they had little (if any) commercial value, the salmon in the Mayo River did not warrant the expense of building a fish ladder.[215] The government decided not to install one, and in the first year of operation, people were quite vocal about the consequences. As William McComb explained, development (hydroelectric or mining) had serious impacts on fish populations:

"*We have complained to the Dominion Government for a considerable time but nothing has been done about this, while at least two sources of the salmon spawning grounds [in the McQuesten River] have been destroyed by cyanide and mill tailings [from the nearby mine]. The second matter is the Mayo River which joins the Stewart River here at the town of Mayo Landing. This river also has been the grounds for heavy runs of salmon. In 1952 the Dominion Government completed a Dam and Power House in the Canyon of the Mayo River, more than 100 feet high, with no preparations made for the salmon to get by on their way to spawn. The salmon get as far as the Power Dam and there they die in their fight to surpass this Dam. There is a spill-way at this Dam that can be shut off for three minutes, but no longer. Sometimes the operators at the Power House shut off this gate for this short time, and men who are ready, jump in and scoop out the fish as fast as they can and get many hundreds of pounds of fish during this short period of shut off of the water.*"[216]

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[213] Jody Cox, Salmon in the Yukon River Basin, Canada, p. 9.

[214] Letter from the Mayo Chamber of Commerce, Mayo, to the Department of Game and Publicity, Whitehorse, June 13, 1952. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 847, f. 719-12-3]

[215] Letter from Insp. J. R. Steinhauer, RCMP, Whitehorse, to the O.C. "G" Division, RCMP, Ottawa, November 3, 1952. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 847, f. 719-12-3]

[216] Letter from William McComb, Mayo Landing, to Bureau of International Fisheries, October 10, 1955. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 847, f. 719-12-3]

Public complaints and concerns in the Mayo and Keno areas about the salmon populations helped to lure the Department of Fisheries back to the territory. The field investigation to this area was one of a series by the department, and, less than five years later, the department assigned a fisheries officer to the territory.

In December 1956, the Department of Fisheries in Vancouver discovered that a contract had been let to build a dam at Whitehorse Rapids for the Northern Canadian Power Commission.[217] The department immediately began to investigate the potential impact of the project on the fish. Its role was strictly to mitigate the effects of the project; opposing it was apparently not an option. The situation resulted in a frenzied attempt to salvage the first salmon run following the dam's construction in 1958. Biologists tried in vain to net the hundreds of salmon unable to pass the fishway en route to tributaries of Marsh Lake. Between August 7th and 27th, they caught 225 chinook salmon and transported the fish around the dam.[218] The First Nation families who netted and set fish traps in the McClintock River area cooperated in the effort to see as many salmon as possible reach the spawning grounds.[219] Until some years prior, they usually caught 300 to 400 salmon per family; in 1958, the families caught only about 30 salmon.[220] A fish ladder was operational by the following season.

Harnessing the power of the Yukon River did not escape the attention of other proponents of hydroelectric development in the 1960s. The proposed Rampart Dam, set in the Rampart Canyon in Alaska, would have been massive, far grander in scale than other projects identified as possible producers of low-cost power for the upper Yukon River region.[221] The Canadian government and the U.S. Department of the Interior both finally opposed the Rampart proposal, identifying the impossibility of protecting the fish populations as one major reason for their decision. The Department of the Interior stated that its opposition was not purely economic: "To the native living along the River, whether Eskimo or Athapascan, the annual fish camp and the drying of salmon in racks for himself and his dogs represents a link with his traditional way of life — a time when he is free of unemployment relief and other benefits of white man's civilization. It would be difficult to underestimate the sociological consequences

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[217] Letter from C. H. Clay, Chief Engineer, Department of Fisheries, to the Deputy Minister of the Department of Fisheries, Ottawa, December 1956. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 1226, f. 721-11-7, part 2]

[218] Memo from R. A. Crouter, Biologist, Department of Fisheries, to R. E. McLaren, Biologist, September 9, 1958. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 1227, f. 726-11-7 part 8]

[219] "Survey of King Salmon in Yukon River (Assistance to Dept. of Fisheries)," by J. B. Fitzgerald, RCMP Whitehorse Detachment, October 26, 1957. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 1226, f. 726-11-7, part 3]

[220] Memo from R. A. Crouter, Biologist, Department of Fisheries, to R. E. McLaren, Biologist, September 9, 1958. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, vol. 1227, f. 726-11-7 part 8]

[221] One proposed project was the relatively minor Yukon-Taiya project, which would have diverted much of the Yukon River through the Chilkoot Pass to tidewater in Skagway.

of eliminating this [kind] of self-respect and independent living."[222] The impact of such a development on the people as well as the natural environment outweighed the desire for potential industrial developments.

By the 1970s, the approach to resource development in the Yukon and Alaska had begun to shift away from the dominant world-view centered on expansionism, in which economic development focused almost exclusively on the perceived economic benefits of large-scale projects. Competing views emerged with more of a focus on environmental issues, and aboriginal issues in Canada also became fixtures on the national stage. Governments began to increasingly examine a number of social, economic and environmental factors when considering potential development schemes. With a wider range of interests on the playing field, relationships among people, governments, the river, the salmon and the fisheries became that much more complex.

Managing the upper Yukon River salmon fisheries.

Vulnerability of salmon stocks.

The anadromous nature of salmon means that they are highly susceptible to commercial exploitation, to overfishing, to habitat degradation and to environmental changes. After a period of time in the ocean, each salmon must try to bypass a number of obstacles in order to spawn in the stream in which it originated.

The number of fish that successfully reach their destinations in the Yukon River system depends on several factors that may be beyond human control, including the amount of precipitation, water levels, marine survival, log jams, weather and so on. Activities that may be regulated include the amount of fishing effort, fishing efficiency, and industrial development (e.g. road-building, mining, forestry) and other activities that may reduce salmon populations, impact habitat, and pollute the waterways. Furthermore, biologists now know that, while the number of fish reaching their destinations is important, the quality of the escapement must also be good to produce a healthy supply of salmon. For example, researchers have determined that there must be an adequate ratio of females and males and not, for example, 20 percent females and 80 percent males.[223]

In the Yukon Territory.

The first salmon fisheries regulations in the Yukon Territory, introduced in 1915, stipulated that prospectors, travellers, surveyors and explorers, while doing these activities, could fish for themselves without a licence. All non-native people otherwise fishing for their own use required a domestic licence, which cost $5,

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[222] Stephen H. Spurr et al. Rampart Dam and the Economic Development of Alaska, vol. I, Summary Report, p. 48.

[223] Pers. comm. Bonnie Borba, Alaska Department of Fish and Game, Fairbanks, February 11, 2000.

and had to respect rules regarding net lengths and mesh sizes. Domestic salmon fishers were limited to 100 yards of six-inch mesh. The domestic fishing category remained in effect until 1961, at which time the government argued that its elimination was justified by dwindling licence sales and because, it was believed, the new Indian food fish permits would suffice. It reintroduced the domestic licence in 1974 because of renewed interest in domestic fishing by non-aboriginal residents.[224]

Restricting the use of certain gear and setting quotas provides governments with an effective means of managing the fisheries. For example, some people believed in the 1950s that the fishwheels caught too many fish and suggested the setting of quotas as a means to control the harvests. In 1960, when questioned about the number of fishwheels operating in the Yukon — a total of six rather than two in the previous year — the Department of Fisheries responded by saying that it was closely monitoring the salmon catch: "The reason that no limits have been set on the catch stems from the fact that the present Canadian catch of the salmon of this international river is very small in comparison to the American catch. Also, there is insufficient information available about the extent of salmon spawning in Canadian and American territory to determine whether or not the present catch is excessive."[225] With the demand for fishwheel licences declining since the 1930s, the government reduced the $30 licence fee to $10 in 1961. At the same time, it restricted the use of fishwheels to the Yukon River downstream from Dawson and charged $10 for a commercial gill-net licence.[226] The government later amended these regulations and specified that operators could install fishwheels on the main Yukon River from just below the confluence of Tatchun Creek to the border. Other areas were then defined where all commercial and domestic fishing was banned.

The 1961 regulations followed soon after the appointment of a fisheries officer in the territory and reflected a desire to design regulations specifically for the region. The new regulations defined the new position of Area Director for the Department of Fisheries. This individual could determine allowable fishing methods, could call for fishery closures for conservation purposes and could make other area-specific decisions. In the 1970s, some of these powers were also granted to fisheries officers. By giving a certain amount of control to local officials, the federal government's goal was to see regulations developed that more closely reflected local situations and needs.

Significant changes also occurred in the monitoring of the aboriginal fishery in the Yukon Territory. Few regulations applied to First Nation subsistence fishers before the 1970s. Only in 1961 did the regulations require aboriginal people to

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[224] N. Seigel and C. McEwen. A Historical Overview of Fishing in the Yukon, p. 59.
[225] "Report on Meeting with Representatives of Yukon Organizations Held in the Occidental Hotel, Dawson City, on September 12, 1960," [Department of Fisheries representatives from Vancouver touring the Yukon]. [National Archives of Canada: Department of Fisheries and Oceans records, RG 23, box 78, f. 721-4-27, part 4]
[226] *Fisheries Act: Yukon Territory Fishery Regulations*. Ottawa: November 1961.

obtain a subsistence fishing licence, known as an Indian food fishery permit. Before this time, fisheries managers had no accurate numbers for the number of aboriginal people fishing nor for the amount of fish that they caught. The data gathered by issuing subsistence fishery licences only to First Nation people helped to bring the harvest numbers closer to reality. The data remained inaccurate, however, because of non-compliance, unawareness of the licensing requirement, and also because families or small groups jointly used these licences.[227]

In addition to amending regulations to better monitor the harvests over the years, the Canadian government revised the Yukon's fisheries regulations with regard to methods of aboriginal fishing. In 1947, it had introduced a clause stating that no river or stream could be obstructed by any kind of dam or trap for the purpose of killing fish.[228] It modified this section in the 1954 regulations by specifying that aboriginal people "may continue to use their aboriginal traps to take fish for food".[229] The 1961 regulations stated that the Area Director for the Department of Fisheries could specify the methods that aboriginal people could use, yet they also stated that no person could fish using certain technologies to actually kill the fish, including gaffs and hand nets.[230] Today, the question of methods that aboriginal people may use is the subject of negotiations in First Nation land claims.

Five years after Elijah Smith, the Chief of the Whitehorse Indian Band, told Department of Indian Affairs officials that Yukon First Nation people wanted their land and their rights, the land claims process formally began in the Yukon Territory. In 1973, the Yukon Native Brotherhood presented to the federal government a pioneering document, *Together Today For Our Children Tomorrow*, which convinced the government to begin comprehensive claims negotiations with Yukon aboriginal people. After years of negotiations, the federal government recognized that it had a fiduciary responsibility for First Nation people in Canada, and that it had a legal obligation to respect aboriginal rights.

The federal Department of Fisheries now gives priority to the aboriginal subsistence fishery over all other uses of the resource, but conservation of the salmon comes first in the allocation process. The Umbrella Final Agreement (UFA, Chapter 16.4.4) ensures that Yukon First Nation people have the right to give, trade, barter or sell salmon (caught under their basic needs level allocation) among themselves and with beneficiaries of adjacent transboundary agreements in Canada for domestic purposes. This has long been a traditional practice of First Nations, regardless of regulations in effect since 1915 stating that selling any salmon requires a commercial licence. An anthropologist in the Carmacks area in the 1960s observed that: "Despite the tight control of the government, some [aboriginal] people sell fresh fish, along the road, during the summer, or

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[227] Gordon Ennis, Yukon River Basin Study, pp. 6-7.
[228] *Special Fishery Regulations for Yukon Territory.* Ottawa, Oct. 1, 1947.
[229] *Yukon Territory Fishery Regulations*. Ottawa, March 31, 1954.
[230] *Fisheries Act: Yukon Territory Fishery Regulations*. Ottawa: 1961.

some dried fish, during the winter, to Indians who have not fished or who live in Whitehorse. In any case, the total revenue from these sales never exceeds $50.00."[231]

Prior to the adoption of the Umbrella Final Agreement in 1995, the Department of Fisheries and Oceans developed a series of management strategies for the commercial and domestic fisheries. In 1982, the department revised its existing strategy by establishing performance criteria for commercial licences and by determining openings according to the strength of the runs.[232] The department would only issue licences to people who held a licence in the preceding year.[233] Discussions with individual operators resulted in only 45 licences being issued. The fishers in Dawson later requested the institution of a poundage requirement, that each operator must land 750 pounds annually to keep his/her commercial fishing licence. [234] Another new performance criterion stipulated that fishers must fish two out of every three seasons. As a result, the number of licences issued to commercial operators dropped over subsequent years, and, due to attrition, the Department of Fisheries and Oceans only issued 30 licences in 1996, a decrease of about 33 percent since 1982.[235]

A significant outcome of the Umbrella Final Agreement has been the establishment of a number of boards and committees (on which First Nation representation is guaranteed) charged with a wide range of responsibilities in fish and wildlife use and management. Renewable resource councils established in each traditional territory make recommendations to the federal Minister of Fisheries and Oceans on issues such as the harvest allocation for the commercial salmon fishery and for other uses of salmon. They also make recommendations to the Fish and Wildlife Management Board on harvest requirements, salmon management plans and other issues (UFA, Chapter 16.6.10).

The Salmon Sub-Committee of the Fish and Wildlife Management Board is the main instrument of salmon management in the Yukon. The Umbrella Final Agreement states: "The Sub-Committee, acting in the public interest and consistent with this chapter and taking into account all relevant factors including recommendations of the [Renewable Resource] Councils, may make recommendations to the Minister and to Yukon First Nations on all matters related to Salmon, their habitats and management, including Legislation, research, policies and programs." (UFA, Chapter 16.7.7.11) It can recommend policies for salmon and salmon habitat management, including management measures for commercial uses of salmon, the need for and positions to be

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[231] Bernard Arcand, Ethnographie des Tutchone, p. 79.
[232] Gordon Ennis, Yukon River Basin Study, p. 6-14; Pers. comm. Gerry Couture, Dawson, Feb. 2, 2000.
[233] *Fisheries Act, Yukon Territory Fishery Regulations, amendment*," September 23, 1982, Canada Gazette, part II, vol. 116, no. 19.
[234] Pers. comm. Gordon Zealand, Department of Fisheries and Oceans, Whitehorse, February 17, 2000.
[235] Pers. comm. Gerry Couture, Dawson, February 2, 2000; Hugh J. Monaghan, A Review of the Yukon River Commercial Salmon Fishery, p. 7.

adopted on transboundary agreements affecting the use of salmon resources, and the allocation of salmon to users (both the quantity of fish and locations for fishing) (UFA, Chapter 16.7.17.12). As outlined in the agreement, the minister is accountable for decisions made concerning recommendations from the Board and Sub-Committee, and final decisions must be guided by the principle of conservation.

Another aspect of the Umbrella Final Agreement subsequently affecting the commercial salmon fishery came into play in 1997. The land claims agreement requires the creation of new licences for First Nation people. It states that 26 percent of the number of commercial licences at the time of the agreement's ratification must be created and issued to Yukon First Nations whose traditional territories include part of the Yukon River drainage basin. With 30 commercial licence holders in 1996, the Yukon River Commercial Fishermen's Association became concerned about the prospect of the number jumping to 38 if the First Nations activated the eight new licences.[236] The association's reasoning was two-fold: more competition for the resource, which in turn would threaten the viability of each operator, and the conservation of the resource because the association's members felt that the number of fish reaching Canadian waters was declining. Deciding that the salmon runs could not support more than 30 fishing operations, the association proposed to the Salmon Sub-Committee that the government institute a voluntary buy-back program for eight licences.[237] The Sub-Committee followed this proposal up with a one-year study, and it then recommended a buy-back program to the minister. In the intervening time, three licences had lapsed because the operators did not comply with the performance criteria. The Department of Fisheries and Oceans made the buy-back offer to the fishers; five came forward. With the government purchasing these licences, it reached the target of eight licences no longer in effect.[238]

As previously stated, the aboriginal fishery is the priority use of salmon after conservation needs have been met. Each First Nation may work with the local Renewable Resource Council and the Fish and Wildlife Management Board to establish methods to administer basic needs level harvests, including the issuance of permits, licences or tags, and the setting of fees (UFA, Chapter 16.5.1.4). The Tr'ondëk Hwëch'in in Dawson, for example, is granted a number of communal licences, and it issues licences to its members.

A five-year study is currently underway to determine the basic needs allocation for the Yukon River drainage basin in Canada. This total allocation would then be divided among the affected First Nations. If scientific research, surveys and special knowledge of First Nation people show that the sustainable yield requirements for salmon cannot be met, the Salmon Sub-Committee may recommend to the minister that the department establish, remove or modify the

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[236] Hugh J. Monaghan, A Review of the Yukon River Commercial Salmon Fishery, p. 7.
[237] Pers. comm. Gerry Couture, Dawson, February 2, 2000; Hugh J. Monaghan, A Review of the Yukon River Commercial Salmon Fishery, p. 2, 8.
[238] Pers. comm. Gerry Couture, Dawson, February 2, 2000; pers. comm. Gord Zealand, Department of Fisheries and Oceans, Whitehorse, February 17, 2000.

total allowable catch for salmon in the river basin (UFA, Chapter 16.10). The minister may only restrict the aboriginal fishery if conservation or public health and safety are threatened, or to meet requirements of agreed-upon management plans.

The primary role of conservation in the management of the Yukon River fisheries became evident in 1998, when the number of salmon passing the Yukon/Alaska boundary was so low that conservation of the resource was at stake. The Yukon Salmon Sub-Committee recommended that the commercial, domestic and sport fisheries be closed in order to satisfy the aboriginal harvests. The Sub-Committee requested that First Nations also reduce their harvests. According to the Umbrella Final Agreement, the minister is the final authority in restricting the aboriginal salmon fishery, but the process that must be followed involves rigid timelines, consultation with the affected First Nations and the Salmon Sub-Committee, and efforts at reaching consensus (UFA, Chapter 16.8.5 and 16.8.6). Following the Salmon Sub-Committee's request, the Teslin Tlingit Council, for example, voluntarily imposed fishing restrictions in response to low chinook returns. The First Nation supported the conservation effort in 1998 and indeed prohibited their people from fishing.[239] Their harvest in that year — on average approximately 1,800 chinook salmon — was 278.[240] The overall Canadian aboriginal fishery for the Yukon River usually totals about 8,500 fish. In 1998, First Nations harvested just over half of that average, 4,668 chinook salmon.[241] The emergency intervention of the minister was not necessary, despite the grave situation.

As for all other categories of the Yukon River salmon fisheries, the aboriginal harvests in the Dawson area have fluctuated drastically. Over the past 15 years, they have been as low as 50 chinook and 20 chum salmon in 1982, to as high as 1,684 chinook and 4,394 chum salmon in 1994. In 1995, for example, the Tr'ondëk Hwëch'in issued 80 aboriginal licences; 13 members subsequently participated in the fishery. The estimated total for the aboriginal fishery in the Dawson area was 1,047 chinook and 89 fall chum salmon.[242] The Yukon River total for the aboriginal fishery (not including the Porcupine River) was 7,945 chinook and 1,099 fall chum salmon.[243] In comparison, the commercial catch for the year was 11,146 chinook and 39,012 fall chum salmon.[244]

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[239] United States/Canada Yukon River Joint Technical Committee, Yukon River Salmon Season Review for 1998 and Technical Committee Report, p. 17.
[240] Pers. com. Mary Ellen Jarvis, March 21, 2000.
[241] United States/Canada Yukon River Joint Technical Committee, Yukon River Salmon Season Review. Attachment 1.
[242] Jane Wilson, A Summary of Aboriginal Fishery Catches of Salmon in the Yukon/Northern British Columbia Division, 1995, p. 7, and appendices 3 and 4.
[243] Ibid, p. 9.
[244] United States/Canada Yukon River Joint Technical Committee, Yukon River Salmon Season Review. Attachment 1.

Graph 1: Department of Fisheries and Oceans Fishwheel (White Rock and Sheep Rock) Daily Catches of Chinook Salmon: 1999 vs. 1989-1998 average.

Graph 2: Department of Fisheries and Oceans Fishwheel (White Rock and Sheep Rock) Daily Catches of Chum Salmon: 1999 vs. 1989-1998 average.

In Alaska.

The regulatory process in Alaska evolved under very different circumstances than in Canada. As discussed on p. 66, the doctrine of a free and common fishery has prevailed since 1924 when the U.S. Congress explicitly stated in the White Act that "no exclusive or several right of fishery shall be granted therein". Article VIII of the Alaska State constitution reaffirmed it by stating that "no exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the state".[245] In other words, ownership of the Alaska salmon resource cannot be a privilege of a particular group, individual or company, nor can anyone lay claim to a portion of the resource.

Federal authorities, following up on investigations during the Carlisle Packing Company era (1918-1921), ordered that subsistence would assume the priority position over all other uses of the fishery.[246] This policy has passed from generation to generation of government departments responsible for the salmon fisheries. Because federal subsistence laws do not distinguish between aboriginal and non-aboriginal fisheries, no particular group of people is given priority. In discussions leading to the *Alaska Native Claims Settlement Act* (ANCSA) in 1971, the U.S. Congress acknowledged the importance of subsistence hunting and fishing to Alaska First Nation people but provided no specific protection. By the end of the decade, the U.S. government deemed it necessary to protect subsistence activities — by native and non-native people — in the state.

In 1980, Congress established the framework for protecting subsistence uses in Title VIII of the *Alaska National Interest Lands Conservation Act* (ANILCA). Under the federal subsistence regulations, residents of rural areas — the upper Yukon River region is defined as a rural area — may harvest fish and wildlife if a recognized consistent and traditional subsistence use of that species exists. Meanwhile, the State of Alaska managed subsistence harvests on all lands, despite its constitution guaranteeing equal access to resources by state citizens. The Alaska Supreme Court finally ruled in 1989 that Alaska's constitution violated the rural residency preference required by federal law. Years of court battles and decisions followed this decision, in turn striking down and upholding the rural residency requirement for subsistence participation, and alternately allowing and disallowing the creation of non-subsistence areas. The state has

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[245] Douglas Pope, The Freshwater Salmon Fisheries, p. 62.
[246] Ibid, p. 69.

still been unable to bring its regulatory framework back into compliance with ANILCA.

Since 1990, the federal government has managed subsistence fish use on non-navigable and pre-statehood withdrawn waters. Rural residents may harvest fish under the federal government's subsistence regulations if a recognized customary and traditional subsistence use of that species exists. A stretch of the Yukon River falls within the Yukon-Charley Rivers National Preserve, created in the wake of ANILCA. Rural Alaska residents of the Yukon area fishing in the area between Twenty-Two Mile Slough and the Canadian border are required to obtain a subsistence permit if they fish under federal subsistence management regulations. Others may fish in these waters in accordance with Alaska Department of Fish and Game regulations.[247]

Figure 39: Alaska fisheries management districts.

The federal government has ruled that the subsistence fishery is the paramount use of the resource, and that the federal subsistence law can apply off of federal land if there are not enough fish for subsistence users. Other than the regulations stating that the fisheries may be closed for conservation purposes, no harvesting restrictions limit households to a certain quantity of fish for their own use in the upper Yukon River region.[248] Subsistence salmon harvesters fishing from just below Stevens Village to the Canadian border used to be able to more or less count on the fishery being open seven days a week throughout the fishing season.[249] Since 1993, however, poor runs and conservation concerns have resulted in numerous exceptions to this pattern.[250]

The commercial fishery on the upper Yukon River in Alaska was largely a sporadic and unstable activity that supplemented the subsistence economy until 1974. Fisheries legislation focused on the intensive commercial fishery in the lower river, particularly at the river mouth where quotas and limited seasons had the most impact. Restricting this commercial fishery proved to be the most effective means of protecting the subsistence fishery along the length of the river.

Whereas the Canadian government has never established quotas in the Yukon, the U.S. government used this tool for decades to restrict its much larger commercial fishery. In 1934, the federal Bureau of Fisheries legalized commercial fishing on the Yukon, setting a quota of 100,000 chinook salmon, of which no more than 50,000 could be taken beyond the river mouth. Two years later, the Bureau reduced the quota to 50,000, of which no more than half could be taken beyond the river mouth. In 1954, the U.S. Fish and Wildlife Service,

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[247] Pers. comm. Bill Knauer, U.S. Fish and Wildlife Service, Subsistence Management, Anchorage, February 14, 2000.
[248] Pers. comm. David Andersen, Department of Fish and Game. Subsistence Division, Fairbanks, October 27, 1999.
[249] Management of this stretch of river has been unlike most other sections of the Yukon River where the subsistence fishery openings are closely tied to those of the commercial fishery.
[250] Pers. comm. David Andersen, Department of Fish and Game, Subsistence Division, Fairbanks, February 9, 2000.

having assumed responsibility for the salmon fisheries, created three subdistricts, each with its own quota. Above the mouth of the Anvik River, commercial fishers could take 5,000 of the total 65,000 chinook salmon allowed for the Yukon River.[251] The quota for the upper Yukon remained small until 1974.

Commercial fishers in Alaska may have found themselves limited by quotas before 1974, but they were not required to purchase a gear licence, and they could register an unlimited number of wheels under one fishwheel registration number. This situation changed under the new regulations in 1974, which demanded that commercial operators could only register one fishwheel per registration number. At the same time, the government liberalized the commercial fishery and, in a notable change that attracted a number of people to the fishery, it legalized the sale of roe from subsistence-captured salmon. The legalization of selling roe from subsistence harvests remained in effect until 1977.[252] Beginning in 1978, only commercial fishers along the upper Yukon could extract and sell salmon roe, but the stripped carcasses could be used to meet subsistence needs.[253] Today, the fisheries along the Yukon River noticeably shift from being a subsistence/commercial blend in the middle and lower sections of the river, to a predominantly subsistence fishery along the upper river. Indeed, no more than three commercial fishers currently operate out of Circle at the peak of the season, and none set out from Eagle.

The government can close the Yukon River commercial fishery or, in extreme conditions, close waters to all fishing throughout the Yukon River system. The closure of the subsistence fishery occurred in 1998 when biologists estimated the fall chum run size to be less than 450,000. The management plan for the Yukon River fisheries states that the Department of Fish and Game must close the commercial, sport and personal use fisheries (fishing for personal consumption but not for dog feed) if the assessed return is below 600,000 chum salmon. In mid-August, the sport fishery and the personal use fishery near Fairbanks were closed. By the end of the month, the department estimated the returns to be below 450,000 fall chum salmon, in which case the department was required to manage the subsistence fishery to achieve the minimum 350,000 escapement level for the entire drainage. The subsistence harvest for the drainage ranges between 100,000 and 200,000 fall chum salmon in most years, and it therefore became evident that the subsistence fishery must be restricted by reducing the fishing periods. In the Circle and Eagle areas, the subsistence fishery was placed on one 24-hour period per week schedule effective September 22.[254] The 1998 season, similar to that in 1993 and 1994, resulted in many subsistence households not meeting their needs for both human and dog food. In 1998, the Alaska government arranged for the collection and transport of salmon from other parts of the state to those communities along the Yukon River

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[251] Michael Carey, "A Social History of the Yukon River Fisheries," pp. 55-57.
[252] Douglas Pope, The Freshwater Salmon Fisheries, pp. 22, 70.
[253] Bonnie M. Borba & Helen H. Hamner, Subsistence and Personal Use Salmon Harvest Estimates Yukon Area 1998, p. 6.
[254] Ibid, pp. 21- 22.

needing fish, including 656 pink salmon to Circle and 5,469 pink salmon to Eagle.[255] Commercial salmon fishing was prohibited in the fall season.

Managing with science: progress and limitations in fisheries management.

With the various types of commercial fisheries — to sell roe, and whole and processed fish — and the overlap with the subsistence fishery, fisheries managers find it extremely difficult to gather accurate data in the Yukon River basin. In the upper Yukon region, data collection is somewhat easier than elsewhere along the river because there is little commercial fishing activity. Furthermore, the subsistence fishery in Alaska is permitted between the upstream mouth of Twenty-Two Mile Slough and the Canadian border. Subsistence-fishing households must obtain a permit prior to actively fishing and must return the permit at the end of the season with a record of the harvest. Alaska's Department of Fish and Game uses the information collected from these households to document the total harvest.[256] On both sides of the border, this harvest data helps fisheries managers reach their escapement goals. For the Canadians, there are two numbers that they must examine closely: one is the escapement of fish across the border, which tells them whether or not the numbers are strong enough to meet the expectations of the fishers; and the second is the spawning escapement, the number of fish that can pass the nets and fishwheels and reach their spawning beds.[257]

Governments on neither side of the Alaska/Yukon boundary have perfect records in managing the Yukon River salmon and the fisheries. Before statehood in Alaska, the federal government made some resource management decisions that adversely affected the health of the subsistence and commercial fisheries. Not until the Alaska salmon fisheries were admittedly in crisis in the 1950s — in 1953, President Eisenhower declared parts of Alaska to be disaster areas because of the economic distress of fisheries workers[258] — did the United States government recognize the effects of an intensive and poorly regulated open-access fishery on the coast. Meanwhile, officials in Ottawa, responsible for developing Yukon Territory fisheries regulations, knew little about the salmon spawning in Yukon waters in the early 1900s. From 1900 to 1918, they relied primarily on the efforts of one individual to oversee the freshwater and salmon fisheries in the entire territory, and then they eliminated that position. Twenty-seven years later, the Fisheries Research Board of Canada initiated a survey of all fisheries for purely scientific reasons and to formulate regulations for the territory.[259] With the exception of this investigation in 1945, the Canadian government sent no fisheries personnel to the territory between 1918 and 1954 to obtain information about Yukon River salmon. Adding fuel to the fire, neither the Canadian nor the American governments has always fully appreciated that

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[255] Ibid, pp. 12, 46.
[256] Ibid, p. 4.
[257] Pers. comm. Pat Milligan, Department of Fisheries and Oceans, Whitehorse, January 5, 2000.
[258] Richard Cooley, Politics and Conservation, pp. 186-187.
[259] Wynne-Edwards, "The Yukon Territory," in Fisheries Research Board Bulletin, 1947, p. 6.

damage to spawning grounds of a particular stream — from poor mining practices or hydro development, for example — could eliminate an entire stock of fish.

The 1950s marked the beginning of a more intensive research phase by both the American and Canadian federal departments responsible for managing the Yukon River salmon fisheries. Both governments were under increasing pressure to allocate more staff and funding to study the basic requirements for salmon propagation and to consider the social, economic and cultural values of the fisheries. To make decisions on the use of the resource, fisheries officials recognized the need to have better data — in biological literature, this management approach was often hailed as the "new theory" or "modern formulation"[260] — and managers shifted their attention toward measuring the quantity of fish caught, rather than simply restricting the means by which it could be caught.

Prompted by the discussions about massive hydro projects in the Yukon Territory and public complaints about pollution from mining activities in the Mayo and Keno areas, Canada's Department of Fisheries initiated surveys of the salmon fisheries and the salmon populations in order to suggest mitigative measures. Meanwhile, the U.S. federal government — and, after its creation in 1959, the State of Alaska government — invested more resources to study and monitor the salmon fisheries of the Yukon River, including surveys in the Canadian waters. The U.S. and Canadian governments recognized the importance of fish habitat and of understanding the spawning patterns of the salmon outside their respective jurisdictions. Officials in both governments conceded that they knew very little about the salmon of the upper Yukon River basin.

Today, despite still having incomplete (albeit better) information about the number of returning salmon, the migration patterns and the effects of regime shifts in the marine environment, fisheries managers must nevertheless try to regulate the human use of the resource in a sustainable manner. They must estimate how many fish enter the river, how many fish are caught, and how many make it to their spawning beds.

Figure 40: Jake Duncan and Jay Farr, Chandindu River weir, operated for the first time in 1998 and funded by the Yukon Restoration and Enhancement Fund, August 1999. [Jody Cox, personal collection]

Figure 41: Chandindu River weir, August 1999. [Jody Cox, personal collection]

The Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service and the Canadian Department of Fisheries and Oceans conduct ongoing investigations — including monitoring the escapements of the various salmon species (the number of fish able to bypass the myriad of obstacles in the Yukon

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[260] H. Scott Gordon, "The Economic Theory of a Common Property Resource," p. 128.

River system to reach their spawning beds) — and gather information on the fish themselves. A number of strategies assist in this effort. For example, biologists string a net and determine a catch per unit to determine the strength of the run at certain points along the river. (See graphs on p. 85.) Selecting the mesh size of the nets determines the size of fish to be caught and the scale samples identify the age of the fish. With this data, the biologists calculate the brood year of the run and estimate the size accordingly. In other words, by calculating the percentage of returning fish in a certain age group and by reviewing the data from the year in which those fish hatched, biologists can estimate the size of the returning fish population for the current year. As well as operating test net projects utilizing set gill nets, fisheries biologists contract fishers to operate fishwheels along the river or conduct drift gill-net sampling to gather similar information.[261]

Figure 42: Canada's Department of Fisheries and Oceans fishwheel near the Alaska/Yukon border, August 1999. [Jody Cox, personal collection]

Researchers also use sonar equipment to collect information on the salmon runs. However, while it can be effective on small and clear tributaries to the Yukon River, the nature of the mainstem itself — and the large number of fish species that frequent it — prevent sonar from being the most useful technique to monitor the runs. Sonar technology picks up signals of passing fish, and it "sees" everything, including driftwood. It does not distinguish between the various species of salmon that frequent the Yukon River. The ever-shifting river bars have also blocked sonar counts, further skewing the numbers collected.[262]

While the tools with which biologists track the fish and forecast the strength of the runs have improved in many ways, the relationship between the escapement and the size of future runs is not entirely clear. It is believed that the likelihood of realizing high returns increases with good parent-year escapements. In recent years, however, the marine survival of salmon has not been good, and this phenomenon illustrates that even by ensuring a good return of salmon to their spawning grounds, we cannot guarantee their return from the ocean in high numbers. Furthermore, nature appears to have some kind of natural compensatory system, meaning that marine survival may be greater in the event of a low spawning season; yet higher marine survival could never compensate for continued low returns.[263] Ongoing studies show that fish do not necessarily

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[261] Pers. comm. Bonnie Borba, Alaska Department of Fish and Game, Fairbanks, February 11, 2000.
[262] Pers. comm. Randy Brown, U.S. Fish and Wildlife Service, Fairbanks. October 25, 1999.
[263] Pers. comm. Gerry Couture, Dawson, January 2, 2000.

return in expected numbers.[264] As a result, the opening and closing of fisheries in response to estimated escapements and the anticipated level of fishing effort is an educated guessing game.

[264] Pers. comm. Pat Milligan, Department of Fisheries and Oceans, Whitehorse, January 5, 2000.

Part 3 — People and their fisheries at the turn of the 21st century.

Over the course of the 20th century, interest in the upper Yukon River salmon fisheries has ebbed and flowed dramatically. The intensity and the success of people's salmon fisheries are influenced by a number of factors, some of which are beyond their control: the number of returning salmon, market demand, access to the market, people's ability to process or freeze the harvests, other economic opportunities drawing them away from fishing, and government regulations. The subsistence fishery and the commercial fishery depend on many of these variables. It also corresponds to lifestyles and activities such as running dog-teams that require substantial supplies of fish. As in the past, these factors continue to influence the amount of all fishing activity seen along the river today. Like the runs of fish in the river, the fisheries are always changing and adapting to change. As a result, the people fishing must do so also. This is the one true constant in the salmon fisheries.

The next three chapters illustrate how fishers are facing some of the issues affecting the upper Yukon River fisheries in both Alaska and the upper Yukon. Chapters 6 and 7 describe the particular situations on two stretches of river — between Circle and the Alaska/Yukon border, and between the border and Dawson City. Chapter 8 briefly discusses the sense of ownership in the fisheries, and what it has entailed.

6. Between Circle and the U.S./Canada border.

The subsistence fishery in Alaska began to revive in the 1970s after years of decline. Although a number of people along the river had replaced their dogs with snow machines and other modes of transportation, the 1970s marked the beginning of a shift in lifestyles in the upper Yukon region. This occurred for three main reasons: between 1974 and 1977, Alaskan subsistence fishers could sell the salmon roe from their subsistence catch; living a rural lifestyle along the upper sections of the river became desirable for a number of people; and the number of dogs increased beginning in the early 1980s due to a renewed interest in the recreational use and racing of sled dogs.[265]

Historical surveys in Alaska show that the 1998 subsistence harvest of Yukon River fall chum salmon was 41 percent below the 1993-1997 average. This average includes numbers from the 1993 and 1994 seasons, when emergency orders reduced fishing opportunities during the fall-season fishery. With subsistence fishing only allowed during one 24-hour period per week beginning on September 22, the total harvest is the lowest on record since 1979.[266]

Table 4: 1998 subsistence fishery in the Circle, Central and the Eagle areas.[267]

			Estimated harvest (pieces)				Primary gear used	
	Fishing house holds	Dogs	Chinook	Summer chum	Fall chum	Coho	Set nets	Fish-wheels
Circle	7	80	685	1	37	0	1	6
Central	6	22	170	1	0	0	6	0
Eagle	32	218	2,473	52	543	132	24	8

* Although it is not located along the Yukon River, Central is only a 35-mile drive from Circle, and the majority of salmon harvested in the area come from the Yukon River based out of Circle.

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[265] Bonnie M. Borba & Helen H. Hamner, Subsistence and Personal Use Salmon Harvest, p. 1.
[266] Ibid, pp. 17, 22.
[267] Ibid, p. 25. These figures do not include the harvests by people who live in other communities (e.g. Tok and Northway) who may have fished in this area.

Table 5: 1991 subsistence fishery in the Circle, Central and Eagle areas.[268]

			Estimated harvest (pieces)				Primary gear used	
	Fishing house holds	Dogs	Chinook	Summer chum	Fall chum	Coho	Set nets	Fish-wheels
Circle	15	113	1,720	51	6,340	5	12	3
Central	2	20	151	0	73	0	2	0
Eagle	27	130	1,193	607	7,985	0	24	3

The commercial chinook harvest on average (1993-1997) between Stevens Village and the Canadian border is 479 fish. As mentioned earlier, no commercial licences are issued in Eagle, and as many as three commercial fishers operate out of Circle. Only one fisherman in the Circle area has a licensed processing facility with a large walk-in freezer, allowing him to manage a larger volume of fish.[269]

Fishing in the Eagle area in the 1970s.[270]

Helge Boquist. Interviewed by Dan O'Neill and William Schneider, Circle, November 1, 1991:

Mrs. Boquist explained that everybody used to make salmon bellies. They would just cut out the bellies and add them to brine for two to three weeks. Then they would put the bellies in new brine and save them. They would put the salted fish in water to remove most of the salt before cooking. People also smoked salmon, and dried salmon lasts forever.

Gordon Bertoson. Interviewed by Dan O'Neill and William Schneider at his trailer in Central, November 1, 1991:

Mr. Bertoson used to pack mail, and he said that there was good fishing across from the Kandik where Mr. Beiderman was. Mr. Bertoson had a big fish rack, two wheels and lots of dogs. He had a tram that pulled fish up the hill to where he would hang the fish and set a smudge fire to keep the flies off the fish. According to Faye Chamberlain, Mr. Bertoson's fishwheel had 12-foot by 12-foot baskets, and he would put the fishwheels in the river himself.

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[268] Daniel J. Bergstrom et al. Annual Management Report Yukon Area, 1991, p. 73.
[269] Pers. comm. Mike Sager, Eagle City, June 8, 1999; pers. comm. Bonnie Borba, Alaska Department of Fish and Game, February 11, 2000.
[270] Oral history recordings. [University of Alaska Fairbanks, Elmer E. Rasmuson Library, Alaska and Polar Regions Department: National Parks Service Collection]

Ray Bell. Interviewed by Dan O'Neill and William Schneider, October 31, 1991:

Mr. Bell had a place at Central and then moved along the river. He had an entry permit (a commercial licence) and sold fish in the summer. He used to kipper the salmon and can them, selling the fish wherever he could. He made enough to get by, but this style of commercial fishing became too much of a hassle because the Health department required him to have a full-fledged cannery to process the fish. He then sold his fish permit and got out of the business.

Jean Boone. Interviewed at her hardware store, Eagle, August 27, 1991:

Mrs. Boone came to Eagle in 1973 and had a fish eddy near Calico Bluff. Referring to the permit requirement to subsistence fish in the area, Mrs. Boone stated that she did not believe that anyone should be able to prevent them from getting 20 cases of fish a year. Her family used to make kippered fish, smoked strips, canned fish and so on. The fish constituted a key part of the protein in their diet.

Dave Evans. Interviewed by William Schneider, in Anchorage, November 11, 1991:

Salmon became a staple of Mr. Evans' family's diet, and without it, they would have starved. Salmon enabled them to have dogs, and travelling was key to subsistence because the ability to travel farther and more often meant that a person could harvest and trap more. People used dogs every day to pack things and travel. Having dogs tied his family down in the summer months because they had to fish, but the animals liberated them in the winter.

Steve Ulvi. Interviewed by Dan O'Neill, Rasmuson Library, Fairbanks, April 9, 1991:

Mr. Ulvi moved to Eagle in 1974. His family used chinook salmon for making strips and canning. He usually had five or six dogs, each dog requiring 150 fish. It took about 1,500 fish to get them through the year. His family prepared 400 or 500 salmon, splitting and drying them early and hanging them on racks on the beach when it was windy and there were no flies. They mixed rice and tallow with the fish for dog feed. Mr. Ulvi did not commercially fish at the time. There were only about three commercial licences in the area. Making strips and squaw candy was the major use for chinook salmon, and they fished for chum salmon in September.

Steve Ulvi built a fishwheel in 1980 with some other people, but it did not prove successful. The wheel was labour intensive. With two nets, he would get 250 chum salmon a day, but he found that there was hardly any work harder than running them and checking them two or three times a day.

Mr. Ulvi and his family spent about five years fishing intensively, catching all the chum salmon they could get. He explained that it was exhilarating to work on the river in that way, putting up the last few hundred fish. The earlier fish were a bit tainted, but the dogs loved them. He would hang the fish by their tails — six or so on a pole that was one inch thick and two feet long — and put a tarpaulin over them. The skin and the gills would dry, reducing the chance of flies laying eggs in the moisture. His family would haul the chum salmon heads and guts up the bank, and then dump them all into trenches in the garden.

7. In the Dawson City area

Similar to the pattern in Alaska, a rural lifestyle that involved harvesting fish drew a number of non-native people to the river on the Canadian side of the border in the 1970s. The government began to issue domestic licences in 1974 in response to the growing demand, and some people turned to commercial fishing to earn an income. Commercial chinook harvests in particular increased quite steadily in the 1970s, and fall chum harvests grew significantly beginning in 1979.[271]

Making a living in the commercial fishery.

In 1960, the commercial fishwheel harvest totalled 4,085 chinook and 5,493 chum salmon, while the gill-net commercial catch totalled 400 chinook. Six years later, fishwheels caught 3,932 chinook and only 4,418 chum; gill nets produced 36 chinook.[272] In 1969, the fisheries officer attributed the continuing downward trend in the commercial fishery to the movement of many First Nation people to urban centres.[273] The decline reversed in the 1970s as more non-native people set their nets and fishwheels, and as new opportunities in the fishery appeared.

Between 1978 and 1982, the commercial fishery showed a marked increase with an average of 19,458 pieces of salmon, of which 57 percent were chum salmon. The major motivator in the commercial salmon fishery in the Dawson area came in 1980 with "Moosehide II River Transports". This business set out to overcome the long-standing obstacle in the commercial salmon fishery by operating a fish-packing barge that bought salmon from commercial fishers on the river. Until that time, inadequate long-term storage facilities confined the selling of Yukon salmon to local buyers — RCMP posts, mining camps or local restaurants.[274] Moosehide II River Transports folded two years later, but was replaced by a fish-processing plant. Han Fisheries Ltd. set up operations in Dawson City through a joint-funding arrangement between the First Nations in Dawson and Old Crow, the Council for Yukon Indians and the federal government. The plant could freeze up to 10,000 pounds of fish daily and store 100,000 pounds of fish. During the 1982 season, it processed approximately 128,000 pounds of chinook and chum salmon.[275]

The Han Fisheries provided considerable impetus to the commercial salmon fishery on the Canadian stretch of the Yukon River. The plant cleaned the salmon, allowing the fishers to fish continuously rather than try to clean and preserve the fish as they went. The fishers met the buyer's truck where the road

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[271] United States/Canada Yukon River Joint Technical Committee, Yukon River Salmon Season Review. Attachment 1.
[272] Letter from J. A. Summers, Whitehorse, to Director, Pacific Region, Department of Fisheries, December 9, 1966. [Department of Fisheries and Oceans, Whitehorse: FISS Support files.]
[273] "Yukon Fish Catch Statistics – Salmon (pieces) 1960-61," no author. [Department of Fisheries and Oceans, Whitehorse: FISS files]
[274] N. Seigel and C. McEwen. A Historical Overview of Fishing in the Yukon, p. 39.
[275] Ibid.

ends near Forty Mile. The prices depended on the value of the fish at the southern market transaction point (Vancouver, B.C. or in the State of Washington),[276] but the fishers could earn a reasonably steady income from their harvests. As one fisherman claimed, the gravy during the years of the Han Fisheries operations came by selling the salmon roe: 200 pounds of roe per day at $4.50 per pound, while expenses only amounted to 30 cents per pound.[277] In 1987, 80 percent of the Yukon River salmon caught under commercial licences was sold to Han Fisheries.[278]

Since the processing plant in Dawson shut down in the mid-1990s, commercial fishers in the Yukon Territory have again had to rely primarily on local Yukon buyers to purchase their salmon. Selling salmon roe — in some cases smoked caviar[279] — from the chum salmon proved to be a short-lived venture as the main buyers, the Japanese, developed their own means of filling this niche market. Nevertheless, as well as freezing whole salmon to sell to local restaurants, hotels and individual buyers, some fishers from Dawson are delivering value-added products, such as salmon filets, salmon jerky and salmon strips, and efforts to find export markets continue.

Making a living from the commercial salmon fishery along the upper river is complicated by a number of factors. A number of poor escapements in recent years have limited harvests, most noticeably in the upper Yukon River where openings are based on the escapements of fish that make it past the multitude of nets and wheels operated by people fishing in the lower and middle sections of the river. Guaranteeing a broker a certain volume of fish per year becomes impossible when the fishers themselves do not know much time they will be able to spend on the river fishing, nor can they predict their catches. Poor salmon returns have an immediate impact on all people fishing. Some worry about how they will earn enough income that year; some worry about how they will feed their dogs; some worry how they will fill their own freezers; most, if not all, want to be on the river and retain their lifestyle.

In the disastrous year of 1998, the total Canadian Yukon River commercial catch of 390 chinook salmon was the lowest recorded since 1904. During the first two-day opening in mid July, 12 fishers caught a total of 173 chinook. In the second opening, which lasted 36 hours, 11 fishers caught a total of 212 chinook salmon. The low escapement of chinook salmon resulted in the department closing the commercial, domestic and sport fisheries. The fall chum salmon returns were also poor. The run-size indicators in the middle and upper Yukon River in Alaska ranged from 54 to 90 percent below average. This was the first year that the Canadian commercial fishery was closed during the entire fall chum season due to conservation concerns.[280]

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[276] DPA Group Inc. Economic Development Strategy for the Yukon Fishery, p. 10-1.
[277] Pers. comm. Gerry Couture, Dawson, June 4, 1999.
[278] DPA Group Inc. Economic Development Strategy for the Yukon Fishery, p. 10-1.
[279] Pers. comm. Christine Ball, Dawson, June 5, 1999.
[280] Daniel J. Bergstrom et al. Annual Management Report Yukon Area, 1998, pp. 31-33.

In addition to the uncertainty of harvests, the nature of upper Yukon River salmon limits certain opportunities in the marketplace. Chinook salmon are not uniform in size. They can range from four pounds to 70 pounds, whereas farmed salmon from the coast are predictable and uniform. Buyers interested in whole fish also want to see "typical" salmon, fish that their customers recognize as being true salmon — fish that are shiny, silver, firm-fleshed and smooth. Salmon swimming to the upper reaches of the Yukon River do not necessarily fit this description. Unless the fishers also process their fish by, for example, smoking it or making strips to tantalize outside buyers, fierce competition in the export market will continue to hinder their opportunities.

Yukon River salmon and the marketplace.

Salmon cease feeding as soon as they are in fresh water, at which time they undergo a rapid physiological change. Some species develop a hook on their snout or enormous canines, while others turn bright red. In addition to metabolizing their oils for energy, they reabsorb the actual material of which their scales are composed.[281] The once silvery scales become dull and appear to be flaking off, and in some cases, their flesh may be hanging in strips by the time they reach their upriver spawning beds. As a result, the further the salmon swim, the more they disintegrate and, in the marketplace, become less appealing.

Yukon River salmon have, however, one particularly redeeming feature. It is believed that because many of the chinook salmon must travel such long distances to spawn, they have a very high oil content. As mentioned earlier [see p. 16], the high fat content creates a flavour highly valued in the export market.

Figure 43: Chinook salmon drying at the fish camp of Tim Gerberding and his family, Cliff Creek, Yukon, August 1999. [Jody Cox, personal collection]

Rather than attempting to sell whole fish, commercial operators who process their harvest find that Yukon River salmon serve them well in the Yukon Territory. While the salmon at the river mouth are very oily and silver in colour, those that continue upstream metabolize the oil and develop a chewy texture as they mature.[282] Turning chinook salmon into salmon strips by smoking and seasoning them produces a world-class product made from utility-grade fish. Again, the problem for these commercial fishers is trying to get their product into the export market.

[281] Pers. comm. Bonnie Borba, Alaska Department of Fish and Game, February 11, 2000.
[282] Pers. comm. Gerry Couture, Dawson, June 4, 1999.

8. Rights and ownership in the salmon fisheries.

"Every family move to their own eddy along the river where they can catch salmon and dry it for the winter. They dry fish for about one month. They catch maybe much as ten fish a day, twenty fish a day, maybe. That adds up fast when you dry it. That they have to divide it between three or four, five families each camp. One eddy to supply all these people."

— Roddy Blackjack, Carmacks-Little Salmon Elder, 1995.[283]

The question of who has the right to harvest Yukon River salmon is one that people fishing at the Klondike River and in the Forty Mile area raised at the turn of the century, and it is one that people continue to ask today. The question asked a hundred years ago was whether or not non-native people could obtain an exclusive right to harvest fish at a certain location. A limited number of fishing sites contributed to the competition among the fisherfolk, and, as is evident in correspondence from this period, relations between the native and non-native people did not facilitate a resolution; indeed, poor relations probably exacerbated — or indeed instigated — the debate. [See p. 38].

Today, many people fishing find themselves competing with each other, on both sides of the border. They are still competing for a valuable, limited and unpredictable resource. However, the question of who has the right to harvest Yukon River salmon has become that much more complicated by the additional question of who owns how much of the fish. In describing fisheries management in the Yukon Territory in recent years (see p. 79), we saw how land claims agreements are designed to address certain issues about harvesting rights. On the international level, representatives from Alaska, the Yukon Territory, the corresponding federal governments and the countries fishing on the high seas attempt to negotiate agreements to rectify other problems concerning harvesting rights and related issues. The Pacific Salmon Treaty process is lengthy, complex, and not the topic of this paper. It is important to note, however, that the sense of ownership of the resource — or at least the desire to ensure one's access to it — is not new. People have demonstrated this by occupying certain fishing sites, by passing valuable fishing grounds to the next generation, and by buying and selling fishing licences.

Approaches to ownership of the resource and of sites become evident in a couple of examples in the Yukon Territory. In describing the salmon fisheries in the Carmacks area in the 1960s, an anthropologist observed that: "There is no required fishing permit, and in principle, all territory may be freely used. In fact, the people using a fish camp have a sovereign right to it that is recognized. When the place is abandoned, it becomes free to use; but it is most impolite to take over a fishing site without asking permission from the old owner, and we have noted some friction on this subject. In contrast — and as it was in the case

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[283] Yukon Department of Renewable Resources and Environment Canada. Yukon State of the Environment Report 1995, p. 72.

of trapping activities — the river banks near the village are common property. Many people staying at the village for different reasons look after the nets there."[284] The same could be said today in, for example, the commercial fishery near Dawson.[285] People who fish for their livelihood have informal arrangements about who fishes where. People know whose eddies are whose, and, for the most part, that person's place on the river is respected.

The situation becomes somewhat tangled in view of the fact that commercial fishery openings in the Yukon Territory are limited usually to a few days a week if the run is strong. Commercial licence holders near Dawson have bought the right to fish during the openings and to sell the fish. There have been times when a subsistence fisher who fishes in a particular eddy where a commercial fisher sets a net will simply pull his/her gear for the opening.[286] At other times, competition arises between the subsistence and commercial fishers. All of these people want to harvest the same fish, as do the commercial, personal use and subsistence fishers on the other side of the border. The pie must be divided; the problem remains unsolved.

Figure 44: A net set upstream from Yukon/Alaska border, August 1999. [Jody Cox, personal collection]

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[284] Bernard Arcand, Ethnographie des Tutchone, p. 79. [translated from]

[285] On the Alaskan side of the border, a similar situation exists as to where one fishes. Almost all of the fishing activity between Eagle and Circle is for subsistence purposes so there is no competition with the commercial fishery. Informal arrangements secure one's fishing site, and a subsistence permit ensures access to the resource.

[286] Pers. comm. Gerry Couture, Dawson, June 4, 1999.

Conclusions

As a transboundary waterway draining 528,000 square kilometres (approximately 330,000 square miles) of land, the Yukon River system flows across the border of two countries, draws water from the traditional territories of dozens of First Nations, and passes by hundreds of native and non-native settlements and camps. The river is a transportation corridor; it provides critical habitat for fish and wildlife; it is a resource in itself. Aboriginal people have strong cultural ties to it, and many native and non-native people have lifestyles that depend on it.

Thousands of Pacific salmon travel staggering distances from the ocean back to their spawning beds, despite a wide array of obstacles and annual variations in the river system that affect them. Some of the variations in salmon-run size are directly linked to environmental conditions such as water temperature or log jams blocking the passage of returning fish, but other changes are the result of human activities, including population growth, industrial development and the number of fish caught in nets and fishwheels. In latter years, the number of migrating salmon has also been influenced by efforts to regulate harvests, with the ultimate goal of achieving a target escapement of fish. The number of salmon in the river and the level of effort and means by which people harvest them are ever-changing variables, and they have repeatedly changed the face of the salmon fisheries in the upper Yukon. Similarly, these variables have influenced and often altered people's relationship with the salmon.

For generations prior to the Klondike gold rush era, the role of Yukon River salmon in the lives of First Nation people utilizing them remained steady. Although families adapted their activities to the availability of different foods and to conditions of the day, salmon regularly drew them to the riverbanks. People developed fishing techniques specific to certain places and to particular conditions of the river, and, while some materials used to make equipment changed as they traded with Europeans, the methods themselves appear to have remained the same for generations. First Nation people — as well as the early traders and prospectors — relied to some degree on salmon as a food staple: it added variety to a limited diet, it was reasonably reliable and abundant, and it was nutritious. Salmon also had a recognized value that made it a useful item in the trade and barter economy. If the runs were poor, pressure on families and individuals would have mounted, but they would try to gather enough other foods to carry them through the winter months. Salmon fishing helped to shape the seasonal rounds of people using the Yukon River and its tributaries. As an activity and means of obtaining valuable food, it was a constant. In the last 100 years, however, the salmon fisheries along the upper Yukon have been in a state of constant change.

In the years leading up to the Klondike gold rush, a handful of people focused their attention on salmon as a commodity. While many continued to enjoy the

benefits of salmon fishing for their own use, others saw a business opportunity. With the Klondike stampede came a new type of fisherfolk, a group that a Dawson fisherman in 1909 called "professional salmon fishermen".[287] These individuals froze or processed salmon to sell it to the growing population and to restaurants, hotels, prospectors and, later, mining corporations in the region. They found, however, that they could not depend entirely on their fisheries for income because of conditions over which they had no control: they required strong runs and a large enough market in which to sell their product. They competed with aboriginal people for places to fish, and, in Canada, they competed with Alaskans in the local marketplace. The Canadian fishermen also had to convince officials to allow the use of more efficient fishing technologies — namely, fishwheels. For people all along the river, such unstable conditions eliminated any hope of a reliable cash income derived exclusively from a commercial salmon fishery.

As more people came to the upper Yukon at the turn of the century, changes also became visible in the subsistence salmon fishery. Many First Nation people put away their fish traps and rarely made weirs; instead, they picked up fishnets. New fishing methods reflected and contributed to changes in social, economic and cultural patterns. Reminiscent of how hunting patterns changed with the introduction of firearms, fishing gradually became more of an individualized activity. Setting a fishnet did not demand the communal effort that was required to build, install and operate a fish trap and weir. The Yukon River also attracted non-native trappers, fur-farmers and homesteaders, many of whom had hungry dog teams or fur-farm animals to feed. Fishing was a necessary part of life for these people, and, with large-scale commercial operations at the river mouth threatening the salmon runs in 1918, it became a right for which they would fight.

Government involvement in the Yukon River fisheries resulted in regulations defining what people could and could not do; hence, governments, too, affected the relationship between fisherfolk and the fish. Before the early 1900s, whether the fishers along the upper Yukon River lived in the Yukon Territory or in Alaska, few regulations restricted those who wanted to feed their dogs, or dry and smoke fish for domestic use. People who wanted to fish could, for the most part, do so when, how much, and how they wanted. This freedom gradually diminished as competition for the resource increased and as the conservation principle influenced policy decisions and contributed to tighter fisheries regulations. These regulations in turn helped to shape the development of the salmon fisheries by managing the activities of the fishers to try to ensure healthy salmon populations.

During the first decades of the 1900s, the term "conservation" well-suited the primary objective of governments with regard to the fisheries in Alaska — namely, to maintain the maximum sustained yield of salmon for human use. Agencies responsible for the fisheries in the United States (the U.S. Fish Commission and then the Bureau of Fisheries) sought regulative policies of a "conservation" nature. In Alaska, the debate on the Carlisle Packing operations

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[287] Letter to the editor by Jack Lee, in *Dawson Daily News*, June 8, 1909.

between 1918 and 1921 finally helped to bring changes to the regulatory policies of the salmon fisheries and to draw further attention to the Yukon River. When the proposed Rampart dam project came up for discussion in the 1960s, a number of government departments opposed the development, which, they argued, would destroy the salmon and the salmon fisheries in the upper Yukon.

Until the 1950s, the Canadian government maintained a laissez-faire attitude toward the salmon fisheries. As the Canadian government assumed a prominent position in the Yukon Territory at the turn of the century, it did not consider upper Yukon River salmon as a viable factor in economic development, unlike on the Columbia River or on the west coast where salmon played a starring role. Indeed, even in the 1960s, some officials were still dismissing Yukon salmon as an insignificant resource, unworthy of protection. Nevertheless, a policy shift in the 1950s similar to that in Alaska influenced Ottawa's approach toward protecting the salmon resource and safeguarding the interests of resource users. In debates on whether or not to construct fish ladders in the Whitehorse and Mayo areas to bypass hydro projects, the simple acknowledgement of the existence of fishery resources that certain industrial developments would impact reflects a clear change in attitude. As in Alaska with the Rampart dam proposal, approaches to hydro developments in the Yukon Territory illustrate a major step toward balancing resource development with resource conservation and social, economic and cultural factors.

Discussions about the conservation of Yukon River salmon, which began in the 1920s in Alaska, coincided with the politicization of the Yukon River fisheries. By publicly acknowledging the need to safeguard the interests of subsistence fishers and to restrict the commercial fishery at the river mouth, the Alaskan government prioritized the users and, therefore, the uses of the resource. Although salmon fishers in the Yukon Territory were somewhat insulated from this debate over commercial versus subsistence uses and the right to fish, governments in both jurisdictions made clear distinctions between the subsistence and commercial fisheries, recognized the value of subsistence fishing, and applied separate regulations to each type of activity. These distinctions continue to have a significant influence on the use of the river and the fish.

Since the turn of the century, discussions on resource management and resource allocations have expanded to factor in a wide variety of considerations, including, for example, international agreements, land claim agreements, and social, cultural, environmental and economic costs and benefits. Incorporating such a broad spectrum of concerns into the decision-making process has resulted in more complicated relationships between people and the river, and between people and the resources. Government departments responsible for the fisheries in the Yukon and in Alaska manage the salmon fisheries in order to ensure adequate salmon runs for human use and, ultimately, for conservation. They also endeavour to better understand the characteristics, requirements and habits of individual species and runs of fish. Each jurisdiction has its priorities in managing the fisheries. In Alaska, the Department of Fish and Game manages

fishing districts and will restrict the commercial fishery in each. If conservation of the resource is threatened, it may close the commercial fisheries entirely and, at last resort, close the subsistence fishery. On the Canadian side of the border, the federal government must respect First Nation land claims and has prioritized the aboriginal fishery over all other fisheries. As in Alaska, the commercial fishers are the first to feel the effects of low salmon returns, followed by the domestic, sport, and, finally, the aboriginal fishers.

Fishing has long been political and ideological. In his description of the Columbia River salmon fisheries, Richard White wrote: "It is about staking a defensible social claim to a share of the catch and calling that claim a defense of nature: the fewer the fish, the more intense the fight."[288] The same could be said about the Yukon River salmon fisheries. Competing interests in a limited resource have led to various attempts to prioritize access to the fish. The number of fish returning to the Yukon River and its tributaries has an immediate effect on the people fishing: governments intervene to allow reasonable opportunities to harvest fish throughout the river system, and fewer fish mean smaller catches. In addition, Yukon River salmon are transboundary — they spawn and pass through two countries — and each jurisdiction must abide by domestic regulations and international accords. As fishers and fisheries managers in recent years will attest to, politics and the salmon fisheries are intertwined: people cannot fish along the Yukon River without feeling the consequences of government policies, nor can resource managers regulate the fisheries independent of individual and/or aboriginal rights and of agreements made in other forums. All of these factors have created a particular climate — economic, political, social, cultural and environmental — in which people fish.

For reasons similar to why First Nation people valued the salmon before the Klondike gold rush, people today also hold Yukon River salmon in high esteem: reliability, abundance, nutrition, and versatility. Salmon nourish dog teams, feed extended families, and provide a source of income. As well as being a link to the past and the way things used to be done, salmon fishing continues to be a way of life today. When the salmon returned in despairingly low numbers in 1998, few people loaded their boats with gear and roared off to their fish camps along the river. Plumes of smoke were seldom seen rising from under tarps or smokehouses, and most fish racks lay bare. Bears and other wildlife were rarely seen along the shoreline feeding on salmon carcasses. As one upper Yukon River fisherman observed, it was deathly quiet without the salmon running.

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[288] Richard White, The Organic Machine, p. 91.

Selected Bibliography

Adney, Tappan. The Klondike Stampede. UBC Press, Vancouver: 1994.

Alaska. Department of Fish and Game. Annual Management Report Yukon Area, 1998. Regional Information Report No. 3A99-26. Anchorage: June 1999.

Arcand, Bernard. Ethnographie des Tutchone: Organisation Socioéconomique et processus acculturatif. M.A. Thesis, Department of Anthropology, University of Montreal. 1966, p. 18.

BC Aboriginal Fisheries Commission. Wheels, Weirs, Traps & Nets: Selective Fishing in BC. BC Aboriginal Fisheries Commission. 1998.

Balikci, Asen. Vunta Kutchin Social Change: A Study of the People of Old Crow, Yukon Territory. Department of Northern Affairs and National Resources, Ottawa: 1963.

Bergstrom, Daniel J. et al. Annual Management Report Yukon Area, 1991. Regional Information Report No. 3A92-26. Alaska Department of Fish and Game, Anchorage: December 1992.

Bergstrom, Daniel J. et al. Annual Management Report Yukon Area, 1998. Regional Information Report No. 3A99-26. Alaska Department of Fish and Game, Anchorage: June 1999.

Bobillier, Marcel. Journal d'un Missionnaire au Yukon. 1939-1969. Yukon Archives: Microfiche #65, 88/46.

Borba, Bonnie M. & Helen H. Hamner. Subsistence and Personal Use Salmon Harvest Estimates Yukon Area, 1998. State of Alaska. Alaska Department of Fish and Game. Regional Information Report 3A99-27. Anchorage: June 1999.

Bowen, Richard. "Incidents in the Life of the Reverend Richard John Bowen Among Natives, Trappers, Traders, Prospectors and Gold Miners. In the Yukon Territory Before and after the Gold Rush of the year 1898," [1950].

Canada. *Fisheries Act: Yukon Territory Fishery Regulations*, in The Canada Gazette. Part II. Statutory Orders and Regulations 1961. Ottawa: November 1961.

Canada. *Special Fishery Regulations for Yukon Territory*. Ottawa, Oct. 1, 1947, in The Gazette, in Statutory Orders and Regulations Consolidation 1949, vol. II, Ottawa: 1950.

Canada. *Yukon Territory Fishery Regulations*. Ottawa, March 31, 1954, in The Gazette, Statutory Orders and Regulations Consolidation 1955, vol. II. Ottawa: 1955.

Canada. Department of Marine and Fisheries. Thirty-Sixth Annual Report of the Department of Marine and Fisheries 1903 Fisheries. Sessional Paper No. 22, Ottawa: 1904.

Canada. Department of Marine and Fisheries. Forty-Seventh Annual Report of the Department of Marine and Fisheries: 1913-14. Fisheries. Ottawa: 1914.

Canada. Department of Marine and Fisheries. Forty-Third Annual Report of the Department of Marine and Fisheries: 1909-1910. Fisheries. Ottawa: 1910.

Canada. Department of the Interior. The Yukon Territory: History and Resources. Ottawa: 1916.

Canada. Department of the Interior. Annual Report of the Department of the Interior for the Year 1897. Ottawa: 1898.

Canada. Department of the Naval Service. Forty-Eighth Annual Report of the Fisheries Branch, Department of the Naval Service: 1914-15. Fisheries. Ottawa: 1915.

Canada. North-west Mounted Police. NWMP Annual Report 1894. Ottawa.

Canada. North-west Mounted Police Report of the Commissioner of the North-west Mounted Police Force 1896. Sessional Papers No. 15. Ottawa: 1897.

Canada. North-west Mounted Police. Annual Report of the North-west Mounted Police, 1898. Ottawa: 1899.

Canada. North-west Mounted Police. Report of the North-west Mounted Police, 1899. Ottawa: 1900.

Canada. North-west Mounted Police. Report of the North-West Mounted Police, 1903. Ottawa.

Canham, T. H. "The Diocese of Selkirk: its work and workers," in Church Missionary Intelligencer, vol. 23, 1898.

Carey, Michael. "A Social History of the Yukon River Fisheries Prior to Statehood," in: Pope, Douglas. The Freshwater Salmon Fisheries: findings, conclusions and recommendations regarding the effects of controlling commercial entry into the upper Yukon and other freshwater salmon fisheries in the state. To the Eleventh Alaska Legislature. Anchorage: February 22, 1980.

Caroll, James A. The First Ten Years in Alaska: Memoirs of a Fort Yukon Trapper 1911-1922. New York: 1957.

Coates, Ken S. Best Left As Indians: Native-White Relations in the Yukon Territory, 1840-1973. McGill-Queen's University Press, Montreal: 1991.

Cobb, John. Pacific Salmon Fisheries, Appendix to the Report of the Commission of Fisheries, Third Edition, 1921. Washington: 1922.

Cooley, Richard. Politics and Conservation: the Decline of the Alaska Salmon. Harper & Row, Publishers, New York: 1963.

Coutts, Robert. Yukon Places & Names. Gray's Publishing Limited, Sidney, B.C.: 1980.

Cox, Jody. Salmon in the Yukon River Basin, Canada — a compilation of historical records and written narratives. Prepared for the Yukon River Panel. January 1999.

de Laguna, Frederica. Tales from the Dena: Indian Stories from the Tanana, Koyukuk, & Yukon Rivers. University of Washington Press, Seattle: 1995.

De Windt, Harry. Through the Gold-Fields of Alaska to Bering Straits. Chatto and Windus, London: 1898.

Dean, David M. "Salmon and Sermons: Archdeacon Hudson Stuck and the Yukon River Cannery Controversy, 1918-1921," in Journal of the West, vol. IX, no. 4, October 1970.

Denison, Merrill. Klondike Mike: An Alaskan Odyssey. William Morrow & Co., New York: 1943.

DPA Group Inc. Economic Development Strategy for the Yukon Fishery. Prepared for Yukon Renewable Resources and Economic Development Mines & Small Business. Vancouver: April 1988.

Drucker, Philip. Indians of the Northwest Coast. McGraw Hill Book Company, Ind., New York: 1955.

Duncan, Jake. Summary of Streams in the Tr'on dëk Hwech'in Traditional Area: A Search for Candidate Streams to Support a Program Based on a Klondike Area Central Incubation/Outplanting Facility. Dawson, November 7, 1997.

Ennis, Gordon (Chair). Yukon River Basin Study. Fisheries Work Group Program Report. Vancouver: June 1984.

Gilbert, Charles H. and Henry O'Malley. "Investigation of the Salmon Fisheries of the Yukon River," in: United States. Department of Commerce. Bureau of Fisheries. Alaska Fishery and Fur-Seal Industries in 1920. U.S. Government Printing Office, Washington: 1921.

Gordon, H. Scott. "The Economic Theory of a Common-Property Resource: the Fishery," in Journal of Political Economy, 62, 1954.

Hare, Greg & Ruth Gotthardt. A Look Back in Time: The Archaeology of Fort Selkirk. Whitehorse: 1996.

Harris, Arland S. Schwatka's Last Search: The New York Ledger Expedition Through Unknown Alaska and British America. University of Alaska Press, Fairbanks: 1996.

Hayne, M. H. E. and H. West Taylor. The Pioneers of the Klondyke: Being an Account of Two Years Police Service on the Yukon. Sampson Low, Marston and Company, London: 1897.

Heller, Herbert L., ed. Sourdough Sagas: The Journals, Memoirs, Tales and Recollections of the Earliest Alaskan Gold Miners, 1883-1923. World Publishing Company, New York: 1967.

Helm, June, ed. Handbook of North American Indians, Vol. 6, The Subarctic. Smithsonian Institution, Washington: 1981.

Helmer, J.W., S. Van Dyke and F. J. Kense, eds. Problems in the Prehistory of the North American Subarctic: The Athapaskan Question. University of Calgary Archaeological Association, Calgary: 1977.

James, James Alton. The First Scientific Exploration of Russian America and the Purchase of Alaska. Northwestern University, Chicago: 1942.

Jewell, Parkason James. "Letters from the Yukon," in Pacific Northwest Quarterly, vol. 81, no. 1, January 1990.

Jones, Strachan. "The Kutchin Tribes," in Smithsonian Institution Annual Report, 1866, Washington, DC.

Kirk, Robert C. Twelve Months in Klondike. William Heinemann, London: 1899.

Leechman, Douglas. Vanta Kutchin. National Museum of Canada, Ottawa: 1954.

Leinweber, Martin. "Years on the Yukon," in The Alaska Sportsman, April 1944.

Lewis, Adam. Salmon of the Pacific. Raincoast Book Distribution Ltd., Vancouver: 1994.

Livermore, Carol. "Percy DeWolfe 'Iron Man of the Yukon'", in The Beaver, outfit 308, no. 2, Autumn 1977.

McCandless: McCandless, Robert G. Yukon Wildlife: A Social History. University of Alberta Press, Edmonton: 1985.

McClellan, Catharine. My Old People Say: An Ethnographic Survey of Southern Yukon Territory. National Museums of Canada, Ottawa: 1975.

McClellan, Catharine. Part of the Land, Part of the Water. Douglas & McIntyre, Vancouver: 1987.

McPhee, John. Coming into the Country. Farrar, Straus and Giroux, New York: 1978.

McQuesten, Leroy M. Recollections of Leroy N. McQuesten: Life in the Yukon 1871-1885. Yukon Order of Pioneers, Dawson: 1952.

Milligan, P. A. et al. The Distribution and Abundance of Chinook Salmon (*Oncorhynchus tshawytscha*) in the Upper Yukon River Basin as Determined by a Radio-Tagging and Spaghetti Tagging Program: 1982-1983. Department of Fisheries and Oceans, Canadian Technical Report of Fisheries and Aquatic Sciences No. 1352. 1985.

Milligan, P. A. et al. The Distribution and Abundance of Chum Salmon (*Oncorhynchus keta*) in the Upper Yukon River Basin as Determined by a Radio-Tagging and Spaghetti Tagging Program: 1982-1983. Department of Fisheries and Oceans, Canadian Technical Report of Fisheries and Aquatic Sciences No. 1351. 1986.

Mitchell, Bruce, ed. Resource and Environmental Management in Canada: Addressing Conflict and Uncertainty. Oxford University Press, Toronto: 1995.

Moore, J. Bernard. Skagway in Days Primeval. Vantage Press, New York: 1968.

Murray, Alexander H. Journal of the Yukon, 1847-48. J. J. Burpee, ed. Publications of the Public Archives of Canada, Ottawa: 1910.

Ogilvie, William. "Down the Yukon and Up the Mackenzie," in The Canadian Magazine, vol. 1, no. 8, October 1893.

Ogilvie, William. Early Days on the Yukon & the Story of its Gold Finds. J. Lane, London: 1913.

Osgood, Cornelius. The Han Indians: A Compilation of Ethnographic and Historical Data on the Alaska-Yukon boundary Area. Yale University Publications in Anthropology. Number 74. Department of Anthropology, Yale University, New Haven: 1971.

Pike, Warburton. Through the Subarctic Forest: a record of a canoe journey from Fort Wrangel to the Pelly Lakes and down the Yukon River to the Behring Sea. Edward Arnold, London: 1896.

Pope, Douglas. The Freshwater Salmon Fisheries: findings, conclusions and recommendations regarding the effects of controlling commercial entry into the upper Yukon and other freshwater salmon fisheries in the state. To the Eleventh Alaska Legislature. Anchorage: February 22, 1980.

Raymond, Charles W. Report of a Reconnaissance of the Yukon River, July to September 1869. Government Printing Office, Washington, DC: 1871.

Rea, K. J. The Political Economy of the Canadian North. University of Toronto Press, Toronto: 1968.

Reid, J. R. My 4 1/2 Years in the Klondike. Shaughnessy Heights Golf Club, Vancouver, BC: [1956].

Ross River Dena Council. Dene Dechen Tah Néde' Living in the Bush: Traditional Lifestyles of the Kaska and Mountain Slavey People of Ross River. [n.d.].

Schmitter, Ferdinand. Upper Yukon Native customs and Folk-lore. Smithsonian Miscellaneous Collections, vol. 56, no. 4. Washington: May 1910.

United States. Congress. Senate. Committee on Military Affairs. Compilation of Narratives of Explorations in Alaska. Senate Report No. 1023. Government Printing Office, Washington, DC: 1900.

Schwatka, Frederick. A Summer in Alaska. J.W. Henry, St. Louis, MO: 1894.

Schwatka, Frederick. Report of a Military Reconnaisance in Alaska Made in 1883. Government Printing Office, Washington: 1885.

Scott, Elva. Jewel on the Yukon: Eagle City. Eagle Historical Society & Museums, Eagle City, Alaska: March 1997.

Seigel, N. and C. McEwen. A Historical Overview of Fishing in the Yukon. Prepared for the Department of Fisheries and Oceans, June 1984.

Sola, A.E. Ironmonger. Klondyke: Truth and Facts of the New El Dorado. Mining and Geographical Institute, London: [1897].

Spurr, Edward. "From the Coast to the Golden Klondike," in Outing, Sept. 1897, Vol. XXX, no. 6.

Spurr, Josiah Edward. Through the Yukon Gold Diggings. Eastern Publishing Company, Boston: 1900.

Spurr, Stephen H. et al. Rampart Dam and the Economic Development of Alaska. Volume I, Summary Report. University of Michigan, Ann Arbor: March 1966.

Stewart, Hilary. Indian Fishing: Early Methods on the Northwest Coast. Douglas & McIntyre, Vancouver: 1977.

Stuck, Hudson. Voyages on the Yukon and its Tributaries: A Narrative of Summer Travel in the Interior of Alaska. T. Werner Laurie, Ltd. London: 1917.

Tanner, Adrian. Trappers, Hunters and Fishermen: Wildlife Utilization in the Yukon Territory. Department of Northern Affairs and National Resources, Ottawa: February 1966.

Tollemache, Hon. Stratford. Reminiscences of the Yukon. William Briggs, Toronto: 1912

United States/Canada Yukon River Joint Technical Committee. Yukon River Salmon Season Review for 1998 and Technical Committee Report. Whitehorse: November 1998.

United States. Department of Commerce. Bureau of Fisheries. Alaska Fishery and Fur-Seal Industries in 1919. U.S. Government Printing Office, Washington: 1920.

United States. Department of Commerce. Bureau of Fisheries. Alaska Fishery and Fur-Seal Industries in 1920. U.S. Government Printing Office, Washington: 1921.

United States. House of Representatives. Subcommittee of the Committee on the Merchant Marine and Fisheries. "To Prohibit Fishing for Salmon in the Yukon River," Hearings before the Subcommittee on the Merchant Marine and Fisheries. Sixty-Sixth Congress, Washington: May 4, 1920.

Wells, E. Hazard. Magnificence and Misery: a First-Hand Account of the 1897 Klondike Gold Rush. Doubleday, New York: 1984.

White, Richard. The Organic Machine: The Remaking of the Columbia River. Hill and Wang, New York: 1996.

Wilson, Jane. A Summary of Aboriginal Fishery Catches of Salmon in the Yukon/Northern British Columbia Division, 1995. Prepared for the Department of

Fisheries and Oceans. Yukon/Northern B.C. Division. Whitehorse: November 1995.

Wynne-Edwards, V.C. "The Yukon Territory," in Fisheries Research Board Bulletin, no. 72, 1947.

Yardley, Joyce. Yukon Riverboat Days. Hancock House, Surrey, B.C.: 1996.

Yukon Department of Renewable Resources and Environment Canada. Yukon State of the Environment Report 1995. February 1996.

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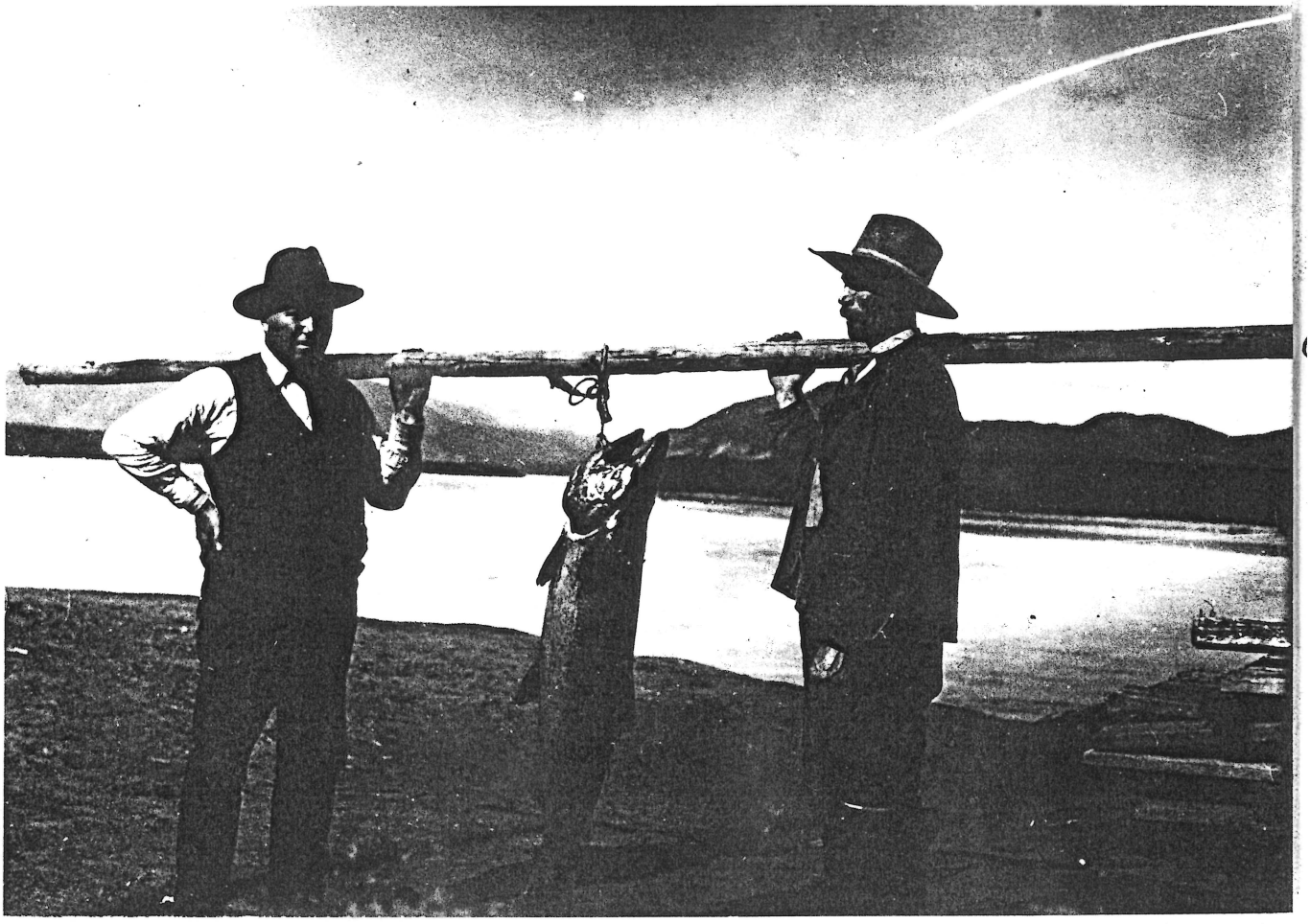

Figure 1

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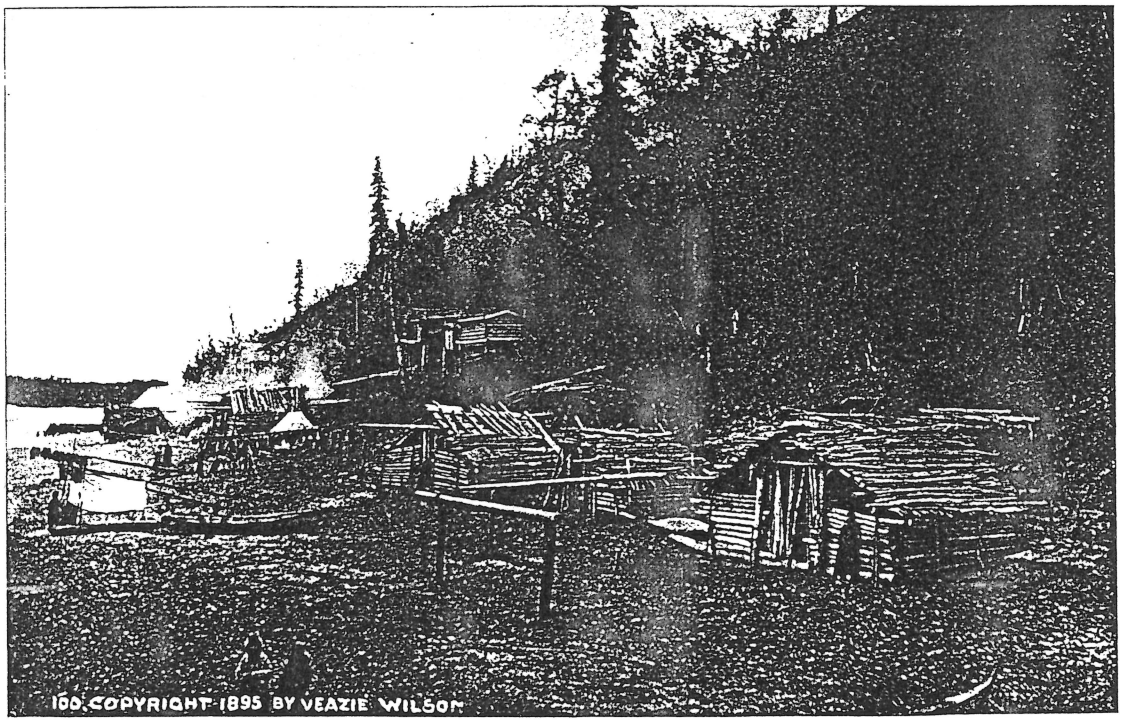

INDIAN FISHING VILLAGE. Lower River. The Lower River natives, excepting those of the missions, are filthy, degraded, and loathsome.

Figure 6



Figure 7



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Fishing Camp above Eagle, n.d

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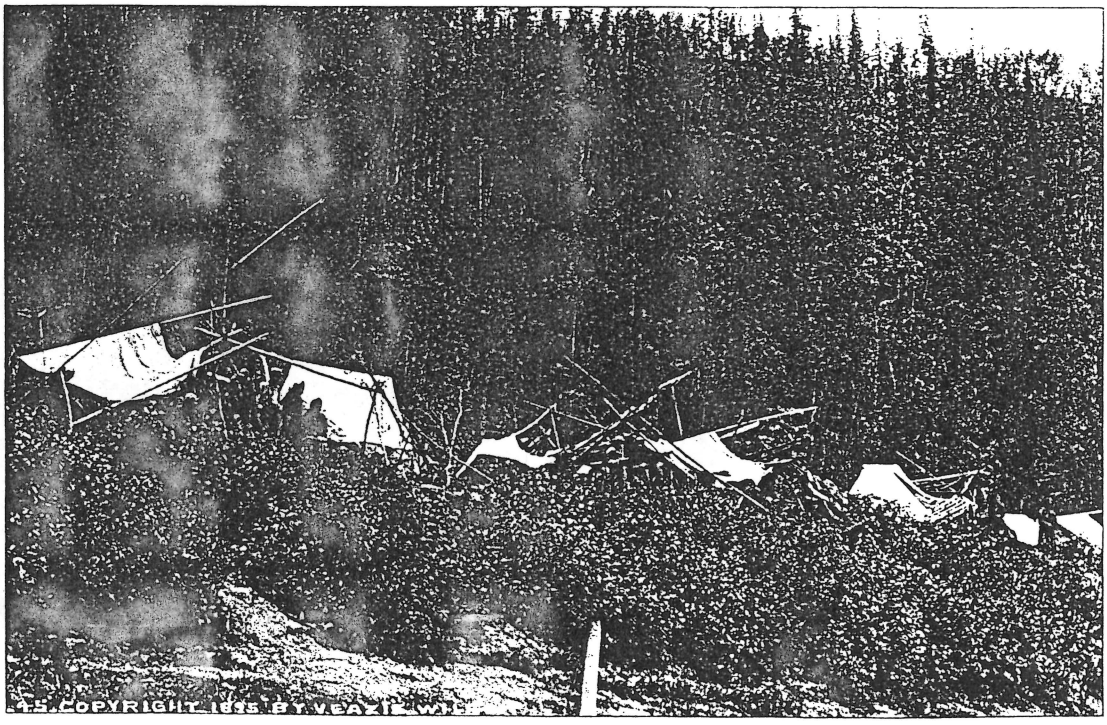
A Fish camp down river from Dawson c.1900

Figure 8

Figure 9
- in Helena's
comparison



INDIAN FISHING CAMP. Showing method of drying fish. The fish are suspended from poles, and are in the sun. They are cured without salt.

Figure 10

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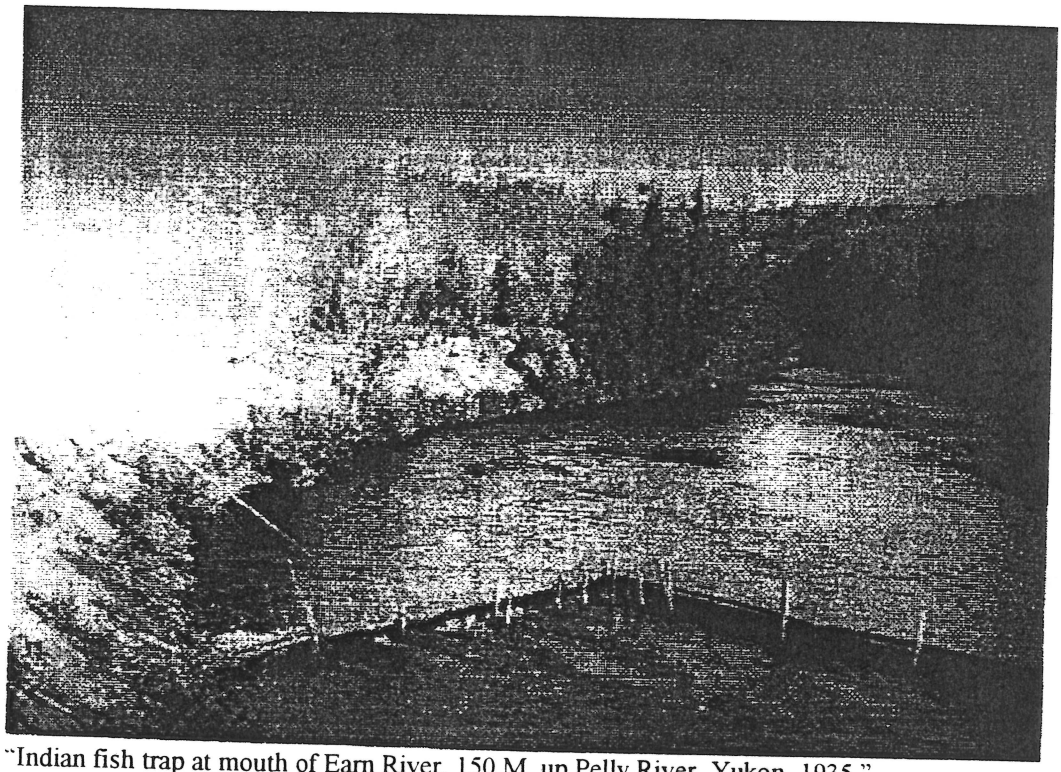


"Indian fish trap at mouth of Earn River, 150 M. up Pelly River, Yukon, 1935."
[Canadian Museum of Civilization: J. R. Johnston, 98-99]

generally a squaw, standing in front of the cabins, hears the approach of a fish, perhaps a half-mile down the river. Never more than one fisherman starts. Paddling out to the middle of the river, he guides his canoe with his left hand, as the voices from the shore direct, and with his right dips his net to the bottom. Upon his careful adjustment of this [net] depends his success. Failures are rare. As the fish swim near the bottom, I do not understand how they are detected in the muddy water of the river." Jones has already explained, and Schwatka's theory on the subject I shall present later.

Schmitter (1910: 10) casually refers to the "frames for fish-nets" (dipnets) being made of birch wood, while Walter said the netting was made of line cut from bull caribou skin.

Henry Harper at Moosehide in 1932 reported that basket traps made of willows tied with spruce-root line were used in the side streams of the Yukon. The diagram drawn at the time shows a weir set all across a stream, with three baskets, openings upstream, set in the angles, but there might be more (Fig. 7). The fish proceeding upstream would be swung sidewise at the weir and turned back into the trap. Each man had a basket, or sometimes two men would share in one as a basket sometimes caught so many fish that it would break unless regularly tended. The installation of the weir was undertaken by all those concerned in the fishing.

Slobodin (1963a: 6) also supplies a sketch of a weir with a fish trap after a drawing by Simon McLeod whose father had helped to build such equipment (Fig. 8). It should be noticed however, that in this case the opening of the basket is set against the current next to or near an opening of the weir which crosses a side stream. The traps are said to have been made of spruce wood [splints] and spruce-root line. Again we have a confirmation from Slobodin (1963a: 6): "During fish runs, the traps had to be attended constantly; otherwise the weight of captured fish would break the trap."

At this point we might note that the native name of the Klondike River, crudely spelled "thron-duik" with many variants, has sometimes been translated as

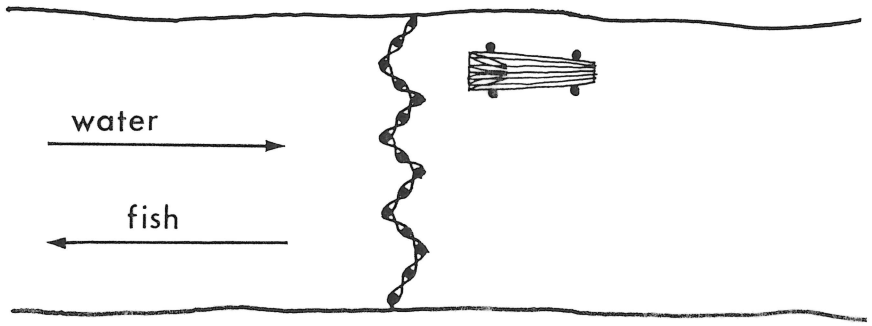
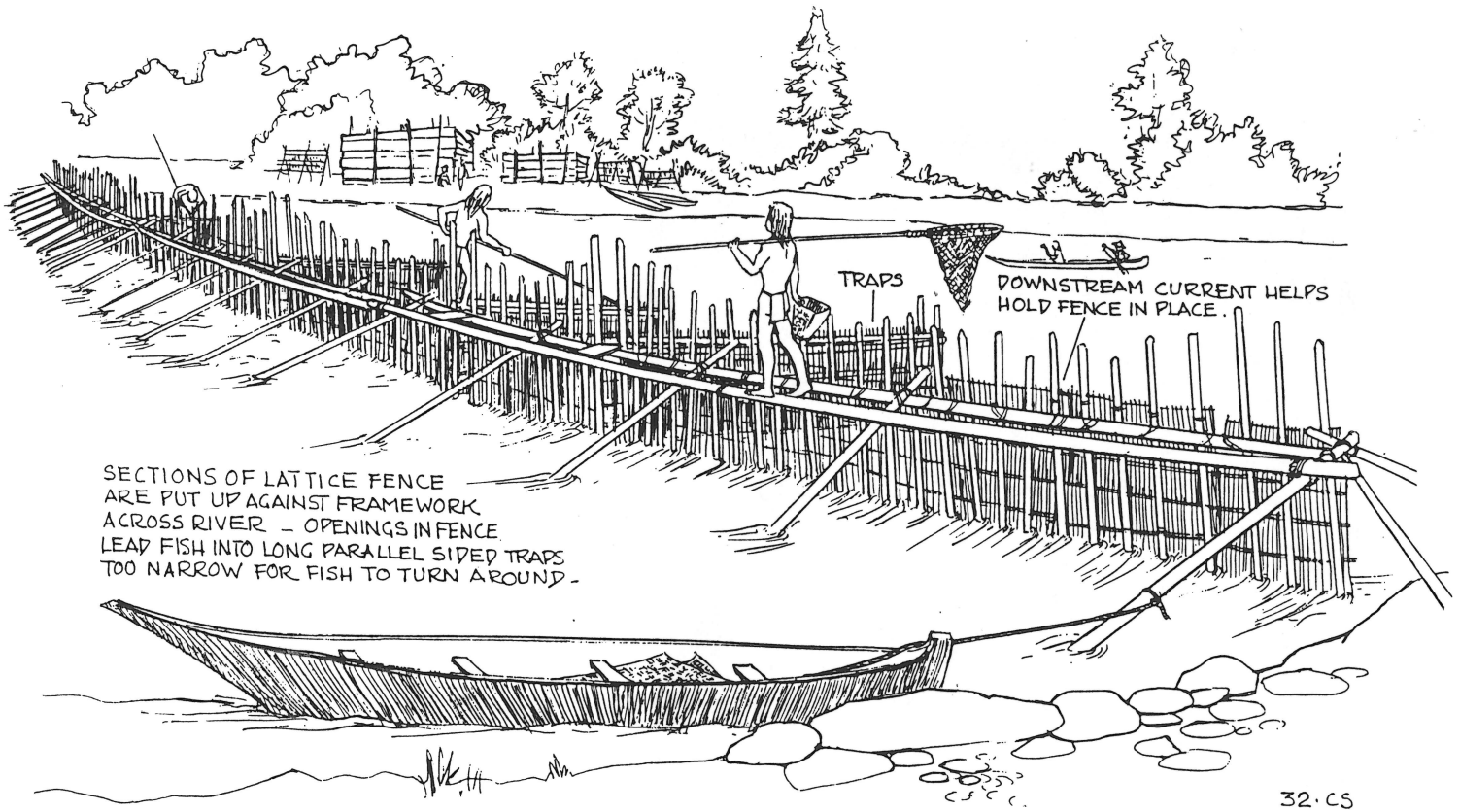


FIG. 7. Diagram of salmon trap.

Figure 11

FENCE WEIR FOR SALMON

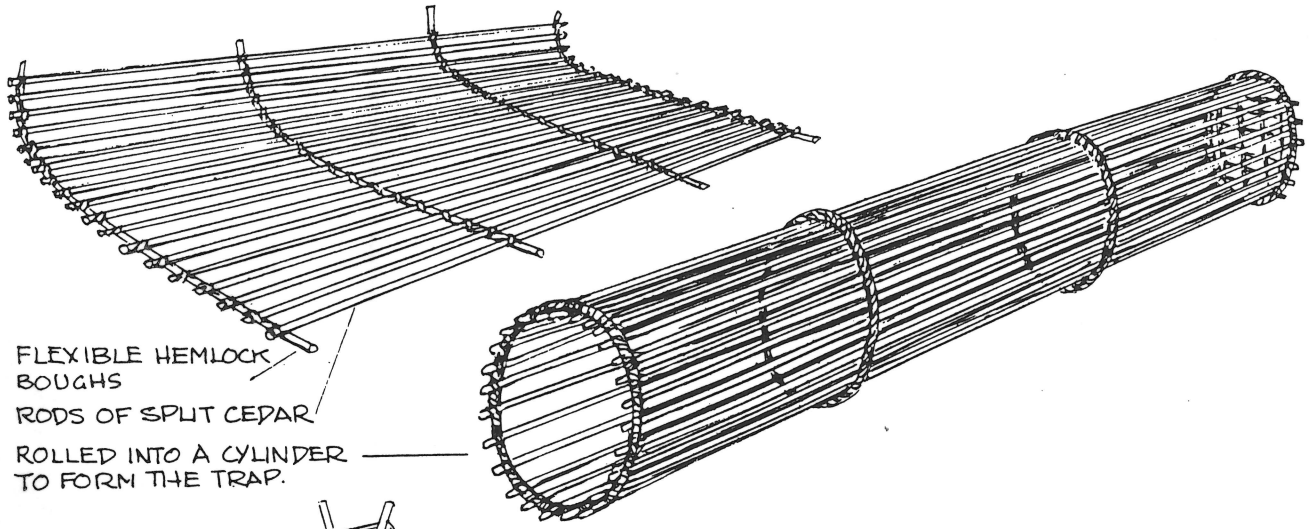


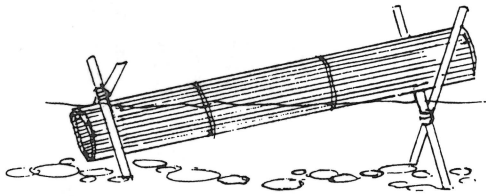
ADAPTED FROM OLD PHOTO OF COWICHAN RIVER 11·CS

Figure 12

From Hilary Stewart Indian Fish ng, p.103

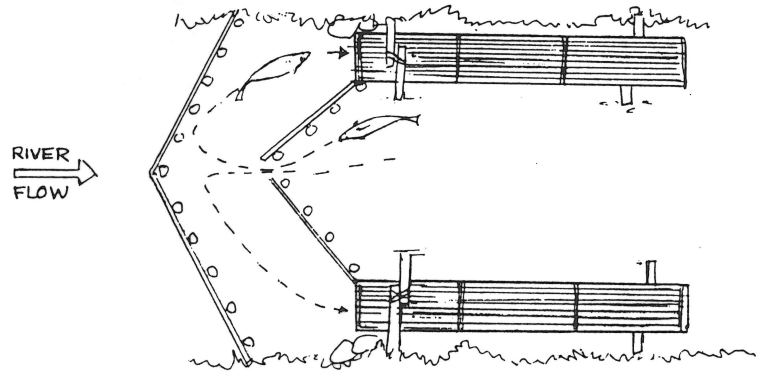
RIVER TRAPS

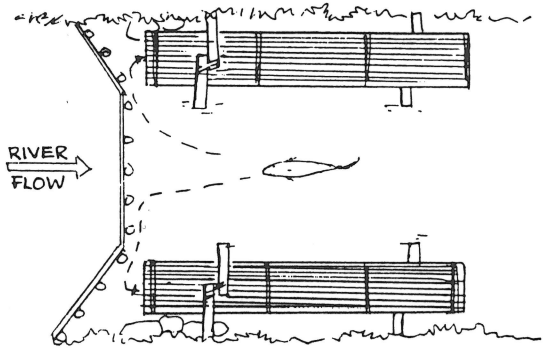




MOUTH OF TRAP SECURED DOWN, END RAISED UP ON SHEARS.

BASIC TRAP OF THE NOOTKA USED IN A VARIETY OF WAYS IN COMBINATION WITH FENCE WEIRS IN SHALLOW RIVERS - 29·NK



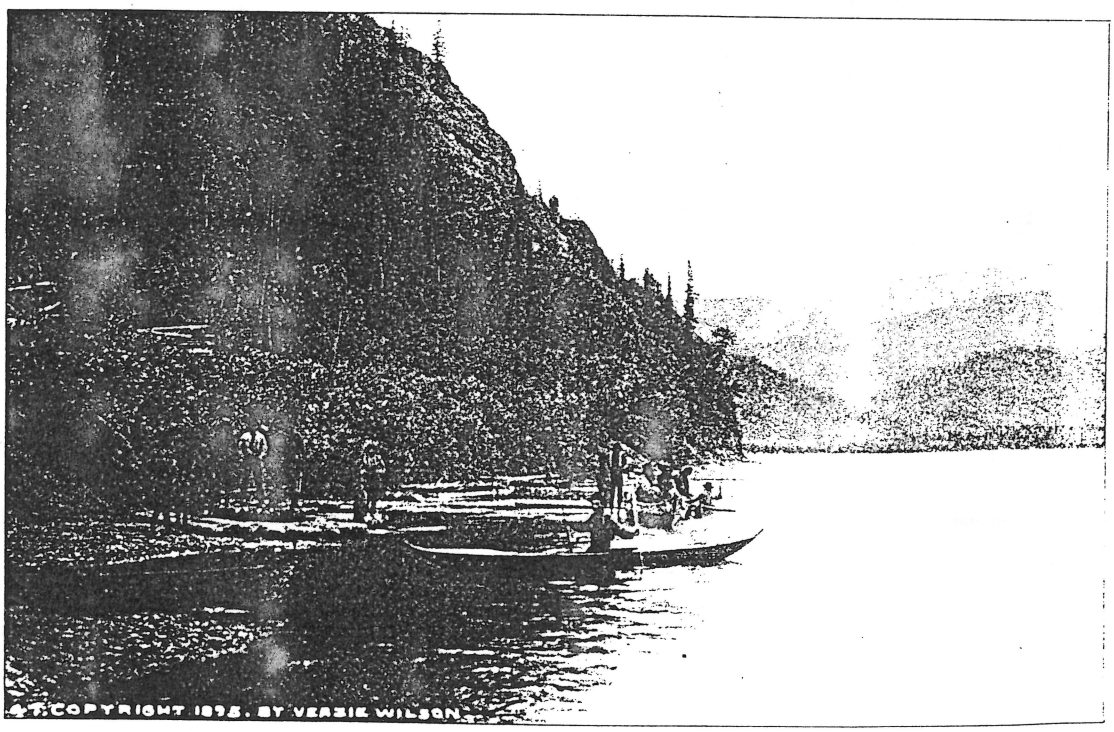


From Hilary Stewart, Indian Fishing, p. 115

Figure 13

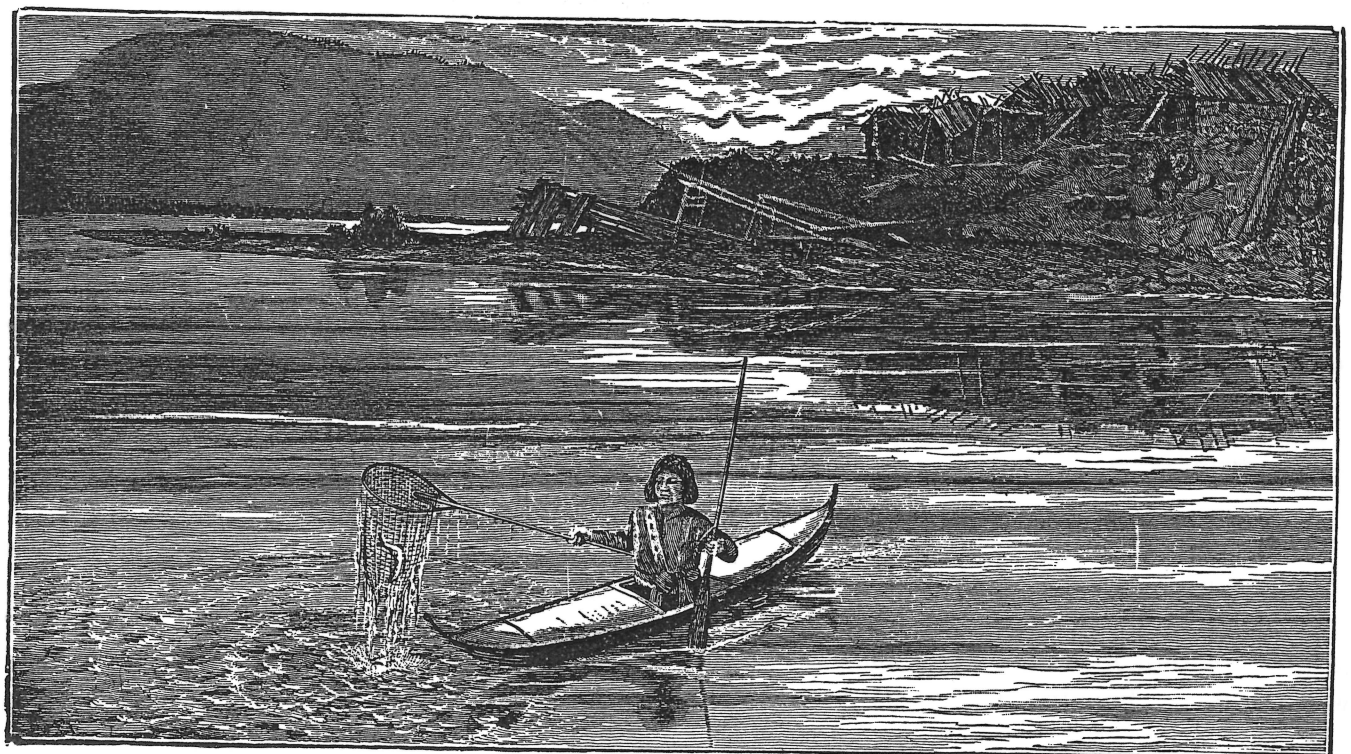
Figure 14

In Helene's Compil



INDIAN CAMP. Upper Yukon. The Indians make themselves useful in many ways about the trading posts. The mortality of these tribes is very great.

Schwatka. Along Alaska's Great River
P. 253



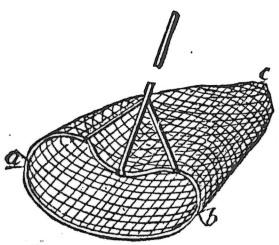
KLAT-OL-KLIN′ (JOHNNY'S) VILLAGE (LOOKING UP THE YUKON RIVER)

Indian catching Salmon

Figure 15

est trace of the movements to which their attention was called. Under the skin roofs of their log-cabins and on the scaffoldings upon the gravel beach were many hundred salmon that had been caught in this curious way. The only plausible theory which I could evolve within the limits of the non-marvelous, was, that the salmon came along near the top of the water, so as to show or indicate the dorsal fin, and that as it approached the canoe, the sight of it, or more likely some slight noise, made with that intention, drove the fish to the bottom without any considerable lateral deviation, whereupon they were inclosed by the net. But my interpreters told me (and I think their interpretation was correct in this case, roundabout as it was), that this superficial swimming did not take place, but that the motion of the fish was communicated from the deep water to the surface, often when the fish was quite at the bottom.

The nets used have already been partially described. The mouth is held open by a light wooden frame of a reniform shape, as shown in the figure on this page, and as one may readily see, this is of great advantage in securing the handle firmly by side braces to the rim of the net's mouth as shown, that being undoubtedly the object sought. Further down the river (that is, in the "lower ramparts"), the reniform rim becomes circular; thus of course increasing the chances of catching the fish; all the other dimensions, too, are greatly increased. When the salmon is netted, a turn is immediately given to the



KLAT-OL-KLIN FISHING NETS.
Scale, 1-30.

handle, thus effectually trapping the fish below the mouth of the net, and upon the dexterity thus displayed no little of the fisherman's success depends. Two salmon were lost upon this occasion after they had actually passed into the net, owing to lack of agility in this operation. When fully entrapped and brought alongside, a fish-club, as shown, is used to kill the salmon immediately by a hard blow over the head, for the struggles of so large a fish might easily upset a frail canoe.



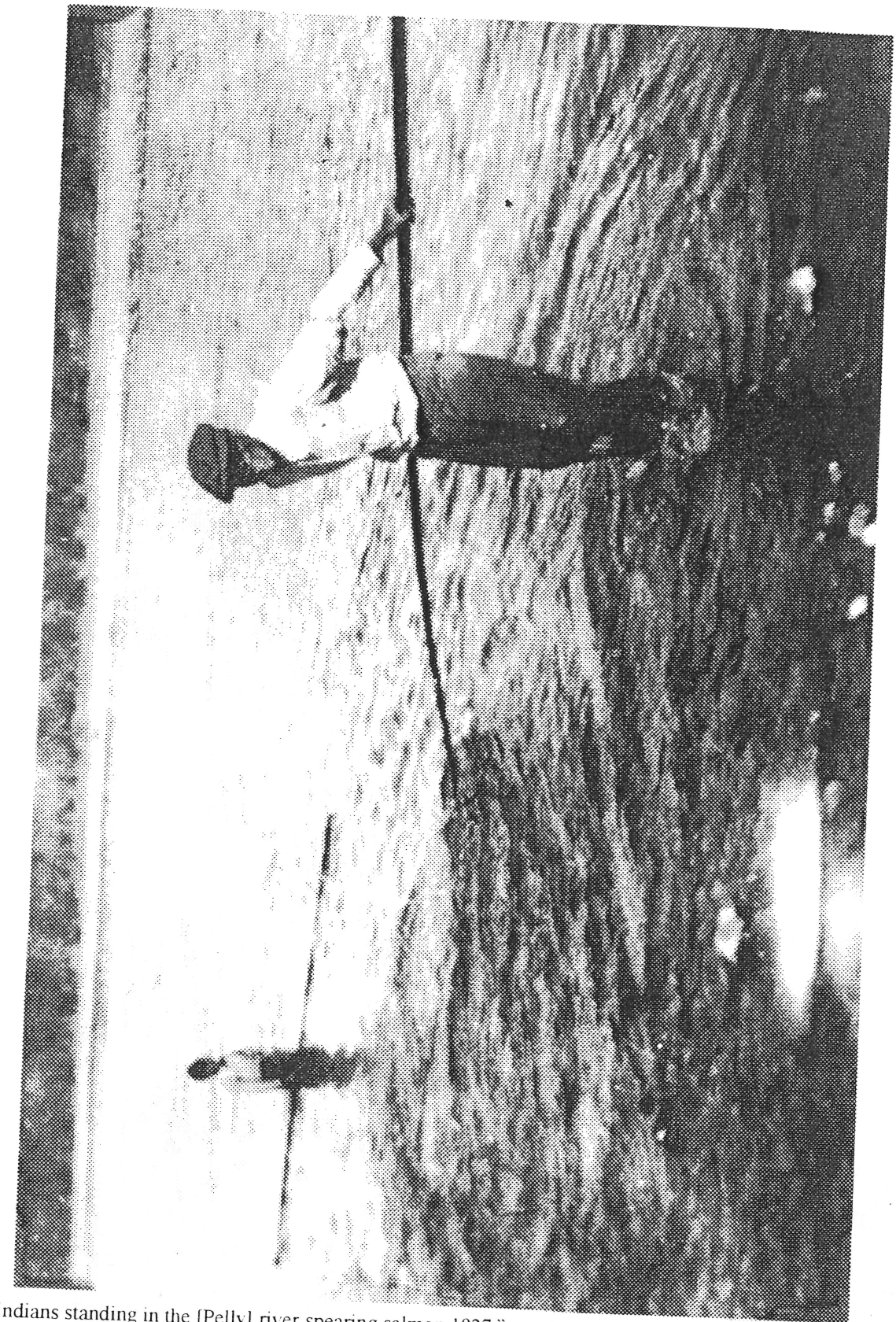
SALMON-KILLING CLUB.

Up to this time the birch-bark canoes on the river had been so fragile and "cranky" that my Chilkat Indians, who were used to the heavy wooden canoes of their country, felt unsafe in employing them for all purposes, but these were so much larger and stronger in build, and our old Tahk-heesh "dug-out" so thoroughly worthless, that we felt safe in buying one at this village, but for a number of days "Billy" and "Indianne" paddled very gingerly when making excursions in it.

A few Hudson Bay toboggan sledges were seen on scaffolds at and near the village; they seem to be the principal sledges of this part of the country. The snow shoes of this tribe differed from those of the Chilkats by trifling modifications only, being a sort of compromise between the hunting and packing snow shoes of the latter.

About a mile or a mile and a quarter below Klat-ol-klin', and on the same side of the river, is a fairly constructed white man's log cabin, which had once been used as a trading store, but was now deserted. We afterward learned that this trading station was called Belle Isle,

Figure 18



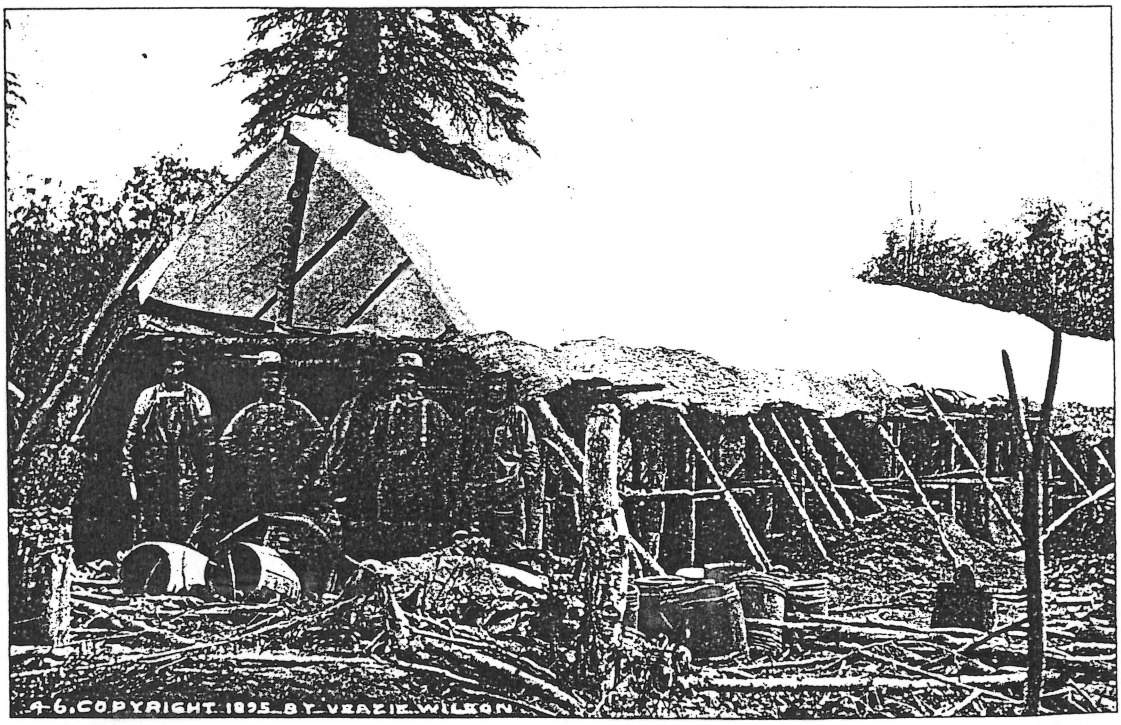
"Two Indians standing in the [Pelly] river spearing salmon 1927."
[Yukon Archives: Claude Tidd Coll., acc. 77/19, #7084]

Figure 19



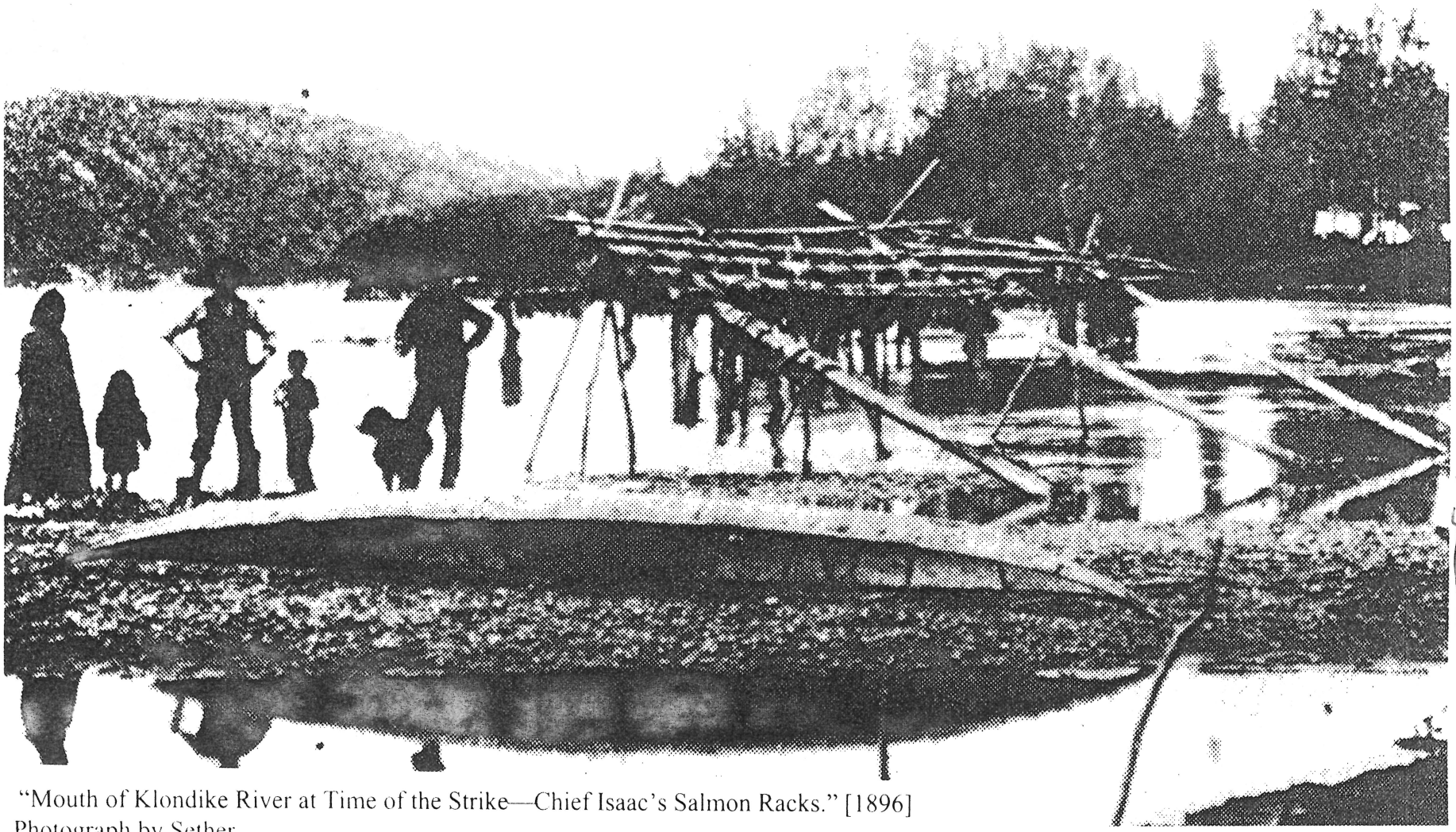
At Fort Selkirk, ca. 1920s. [Yukon Archives: A. Thornthwaite Coll., acc. 83/22, #63]

Figure 20



FRITS FISHERY. Showing a white man's method of drying fish.

ArchivalPLUS

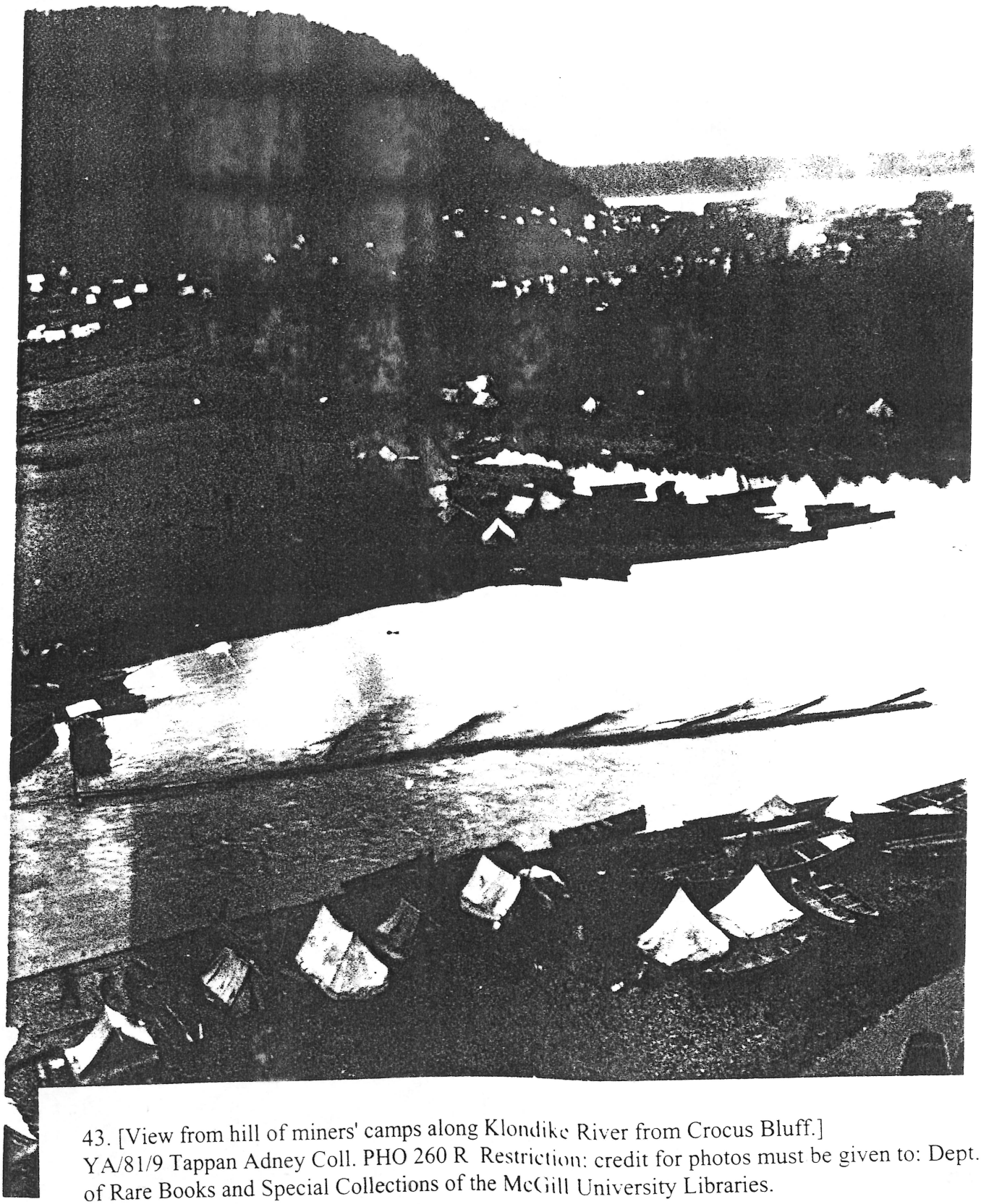


"Mouth of Klondike River at Time of the Strike—Chief Isaac's Salmon Racks." [1896]
Photograph by Sether.
from: Tappan Adney, *The Klondike Stampede*, p. 280. YA 971.921 Adn 1900

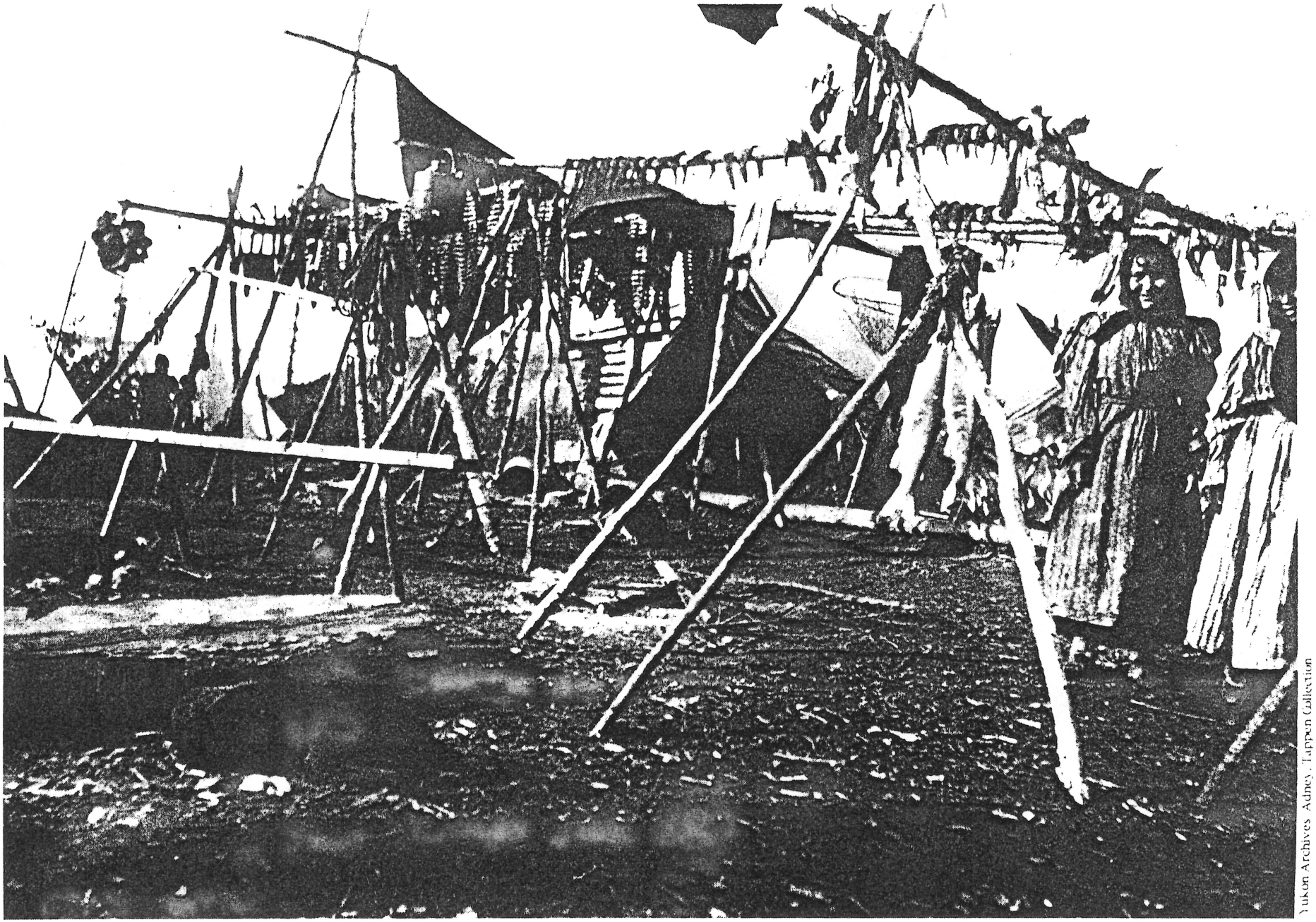
Figure 21 In Helene's Comp

Figure 22

In Helene's Compilation



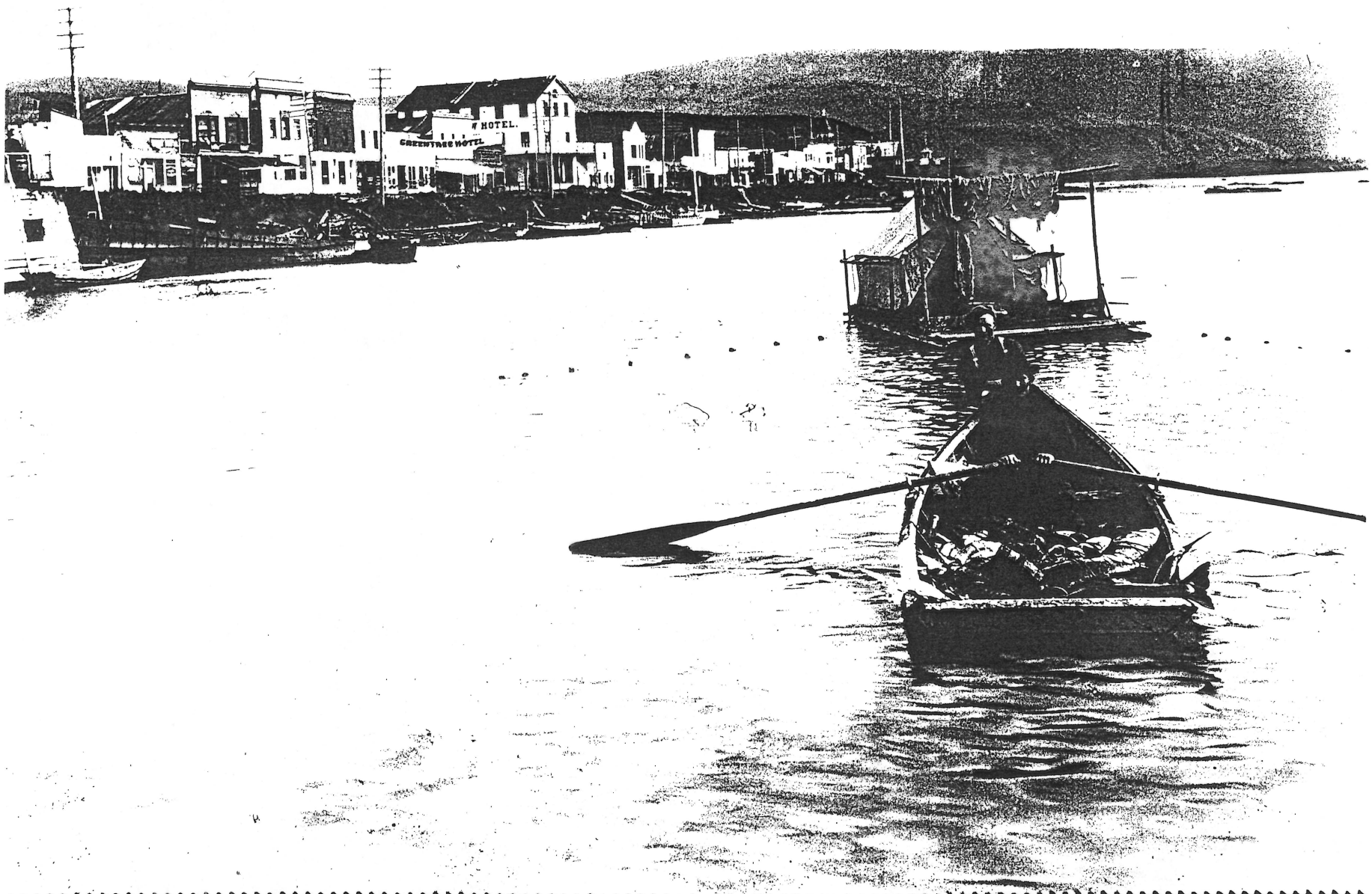
43. [View from hill of miners' camps along Klondike River from Crocus Bluff.]
YA/81/9 Tappan Adney Coll. PHO 260 R Restriction: credit for photos must be given to: Dept. of Rare Books and Special Collections of the McGill University Libraries.



Yukon Archives Adney, Tappan Collection

Moosehide Indian Village

Figure 23
In Helene's
compilation



SALMON FISHING IN THE YUKON JULY. 17. 1913. WOLFE PHOTO DAWSON Y.T. '13. 181½

Figure 24

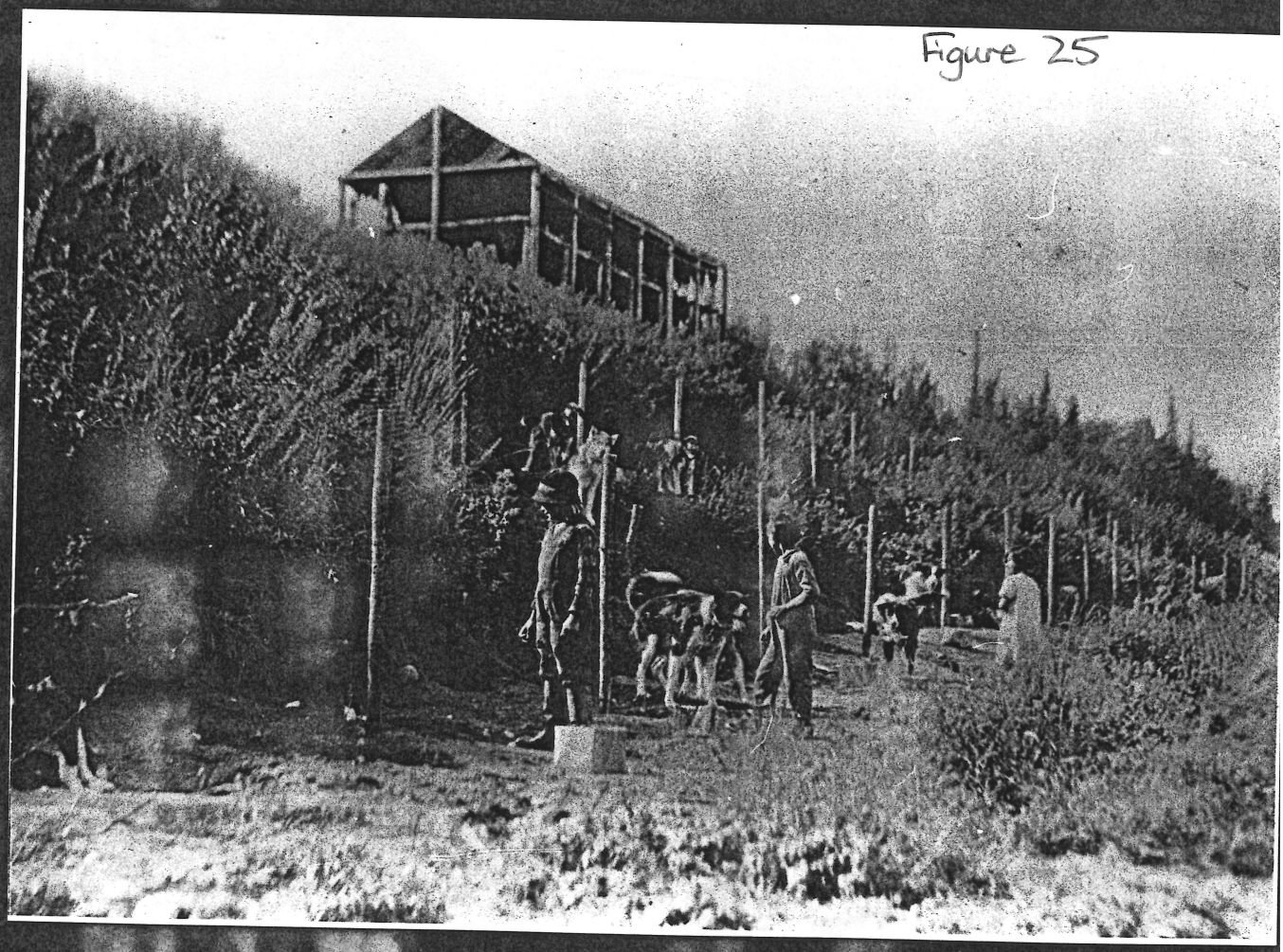


Figure 25

Figure 26



Percy DeWolfe feeding his sled dogs, Forty Mile, 1938. [Yukon Archives: Claude Tidd Coll., acc 77/19, #8372]

Figure 27

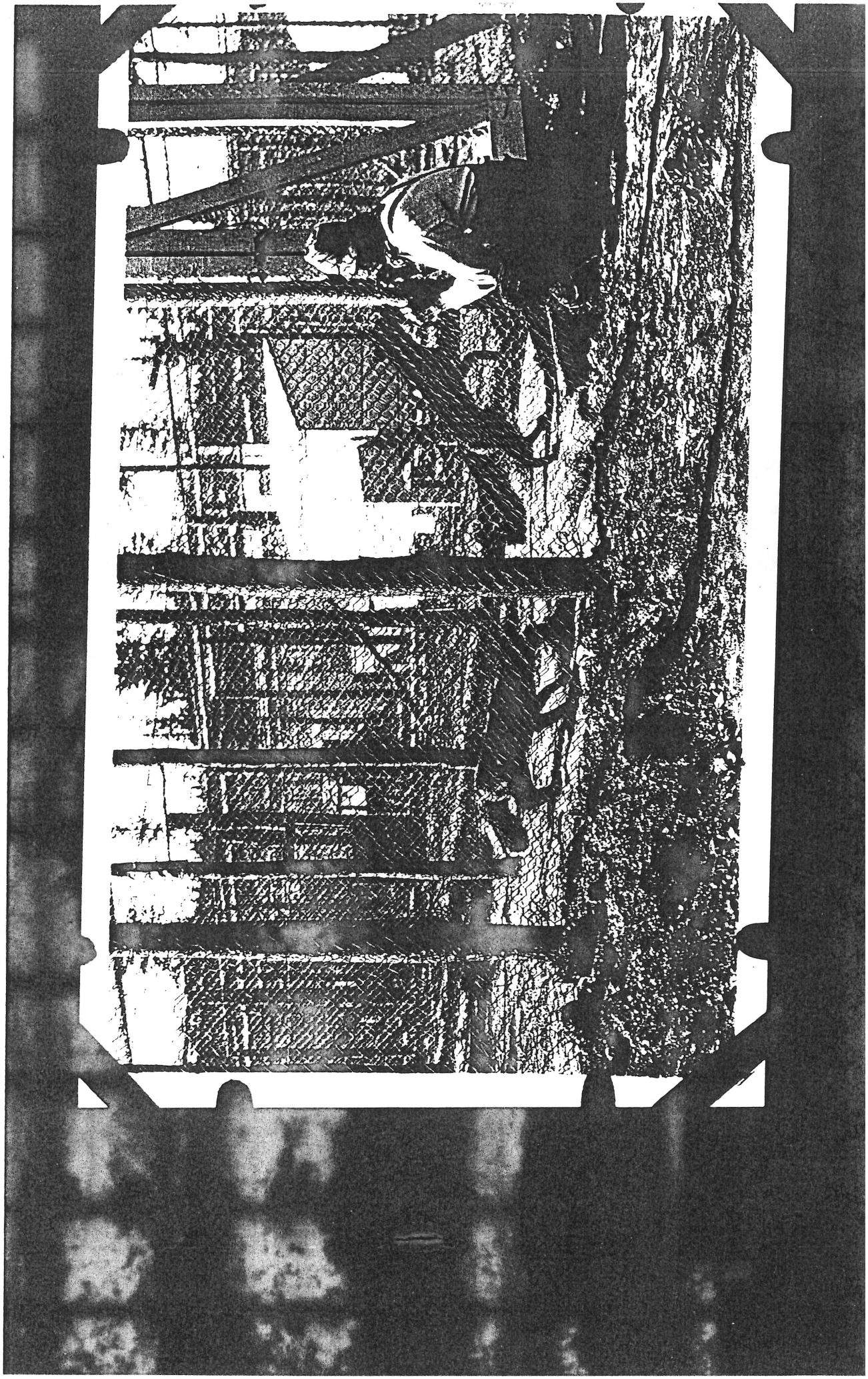




Figure 28

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Figure 29

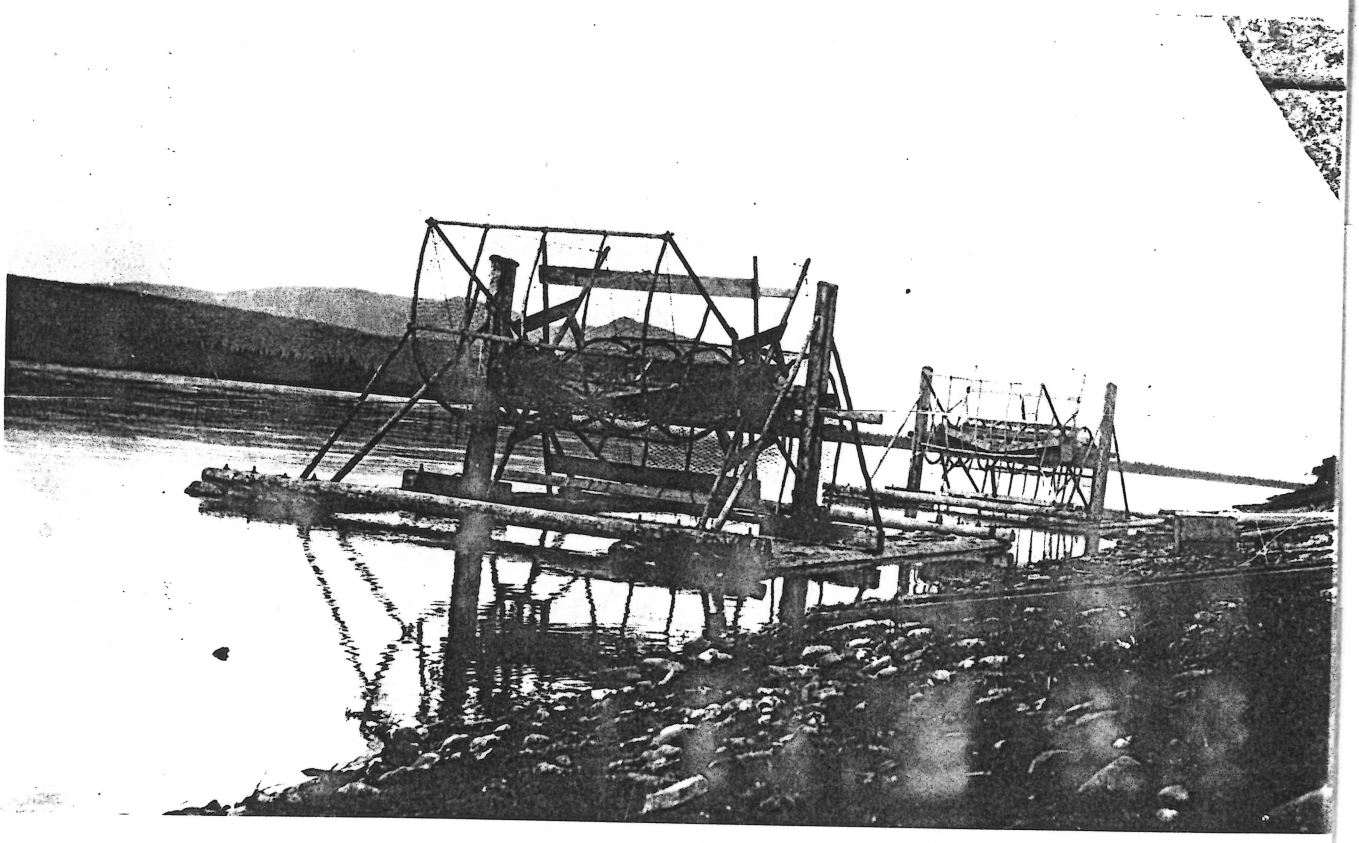
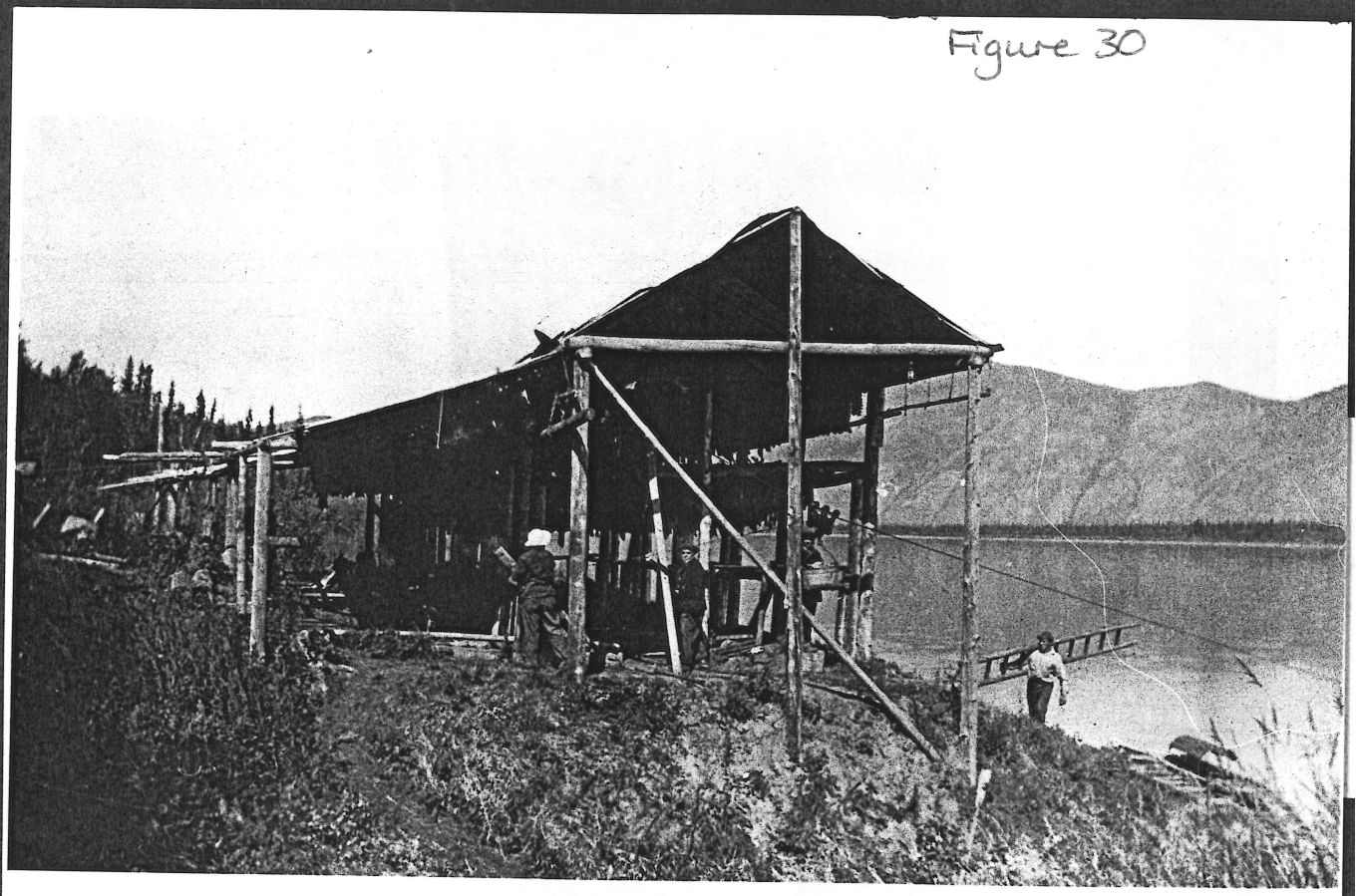


Figure 30



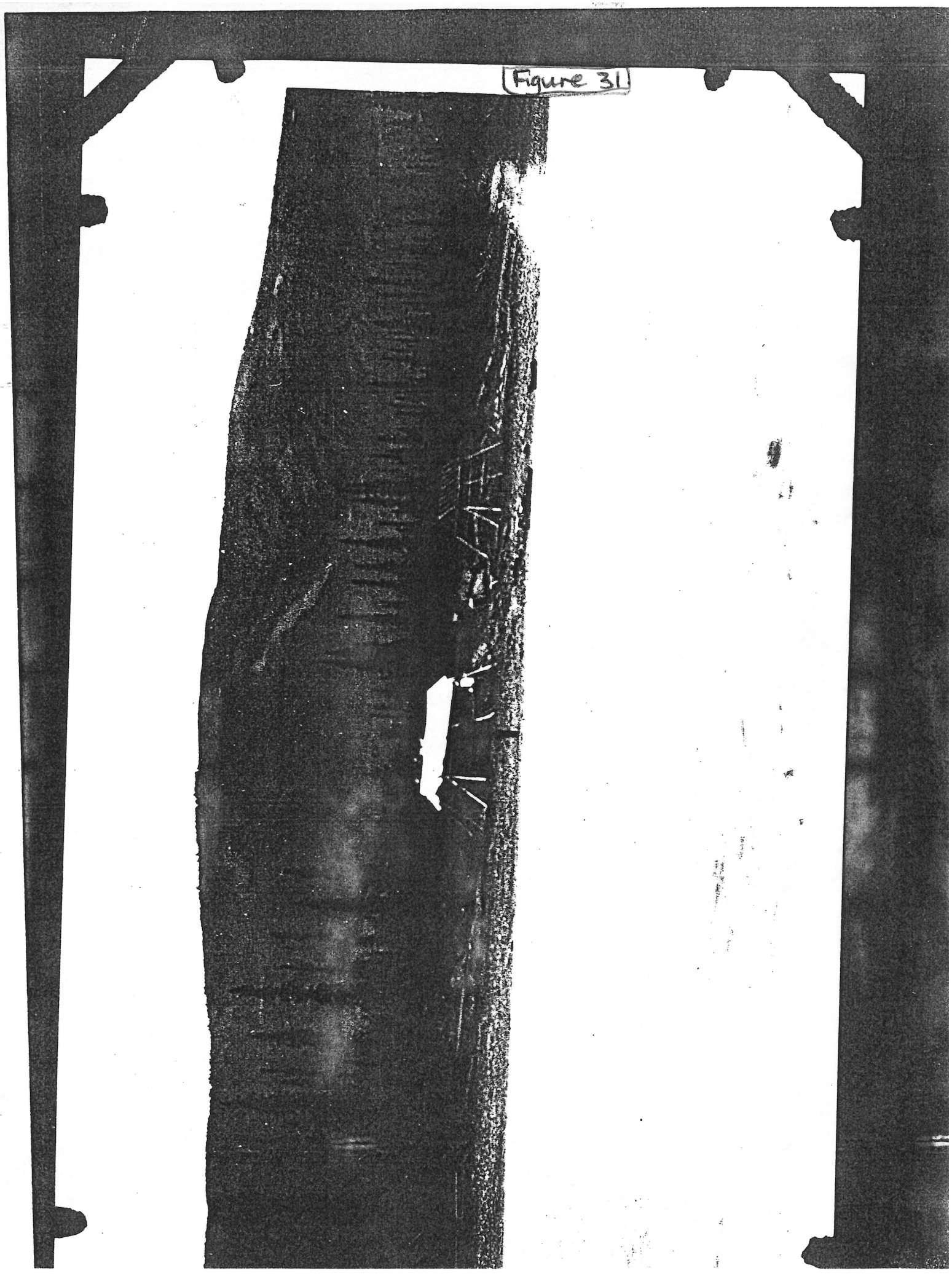
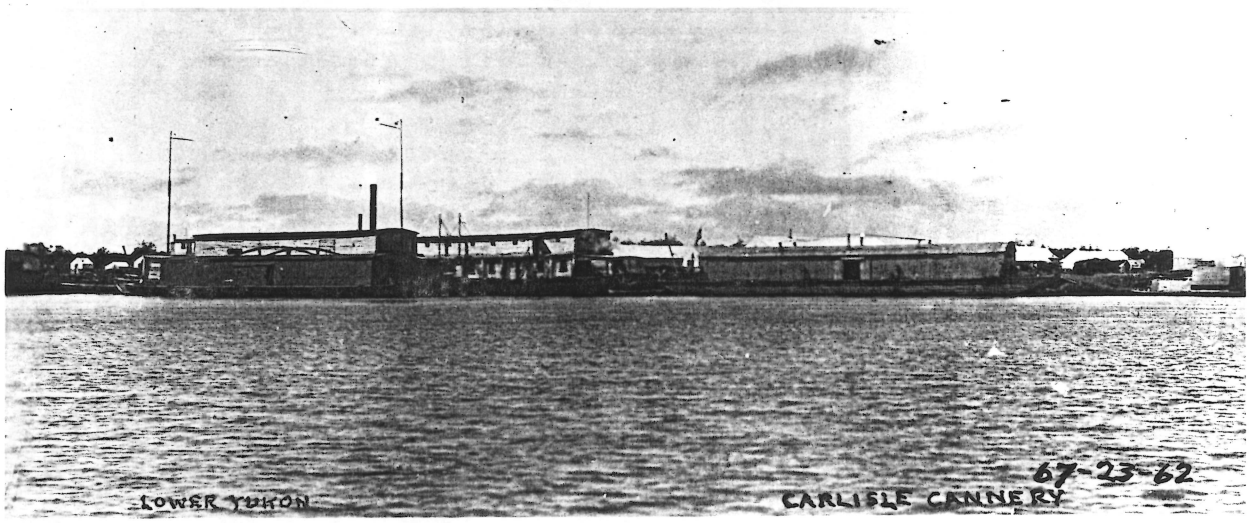


Figure 31

Figure 32



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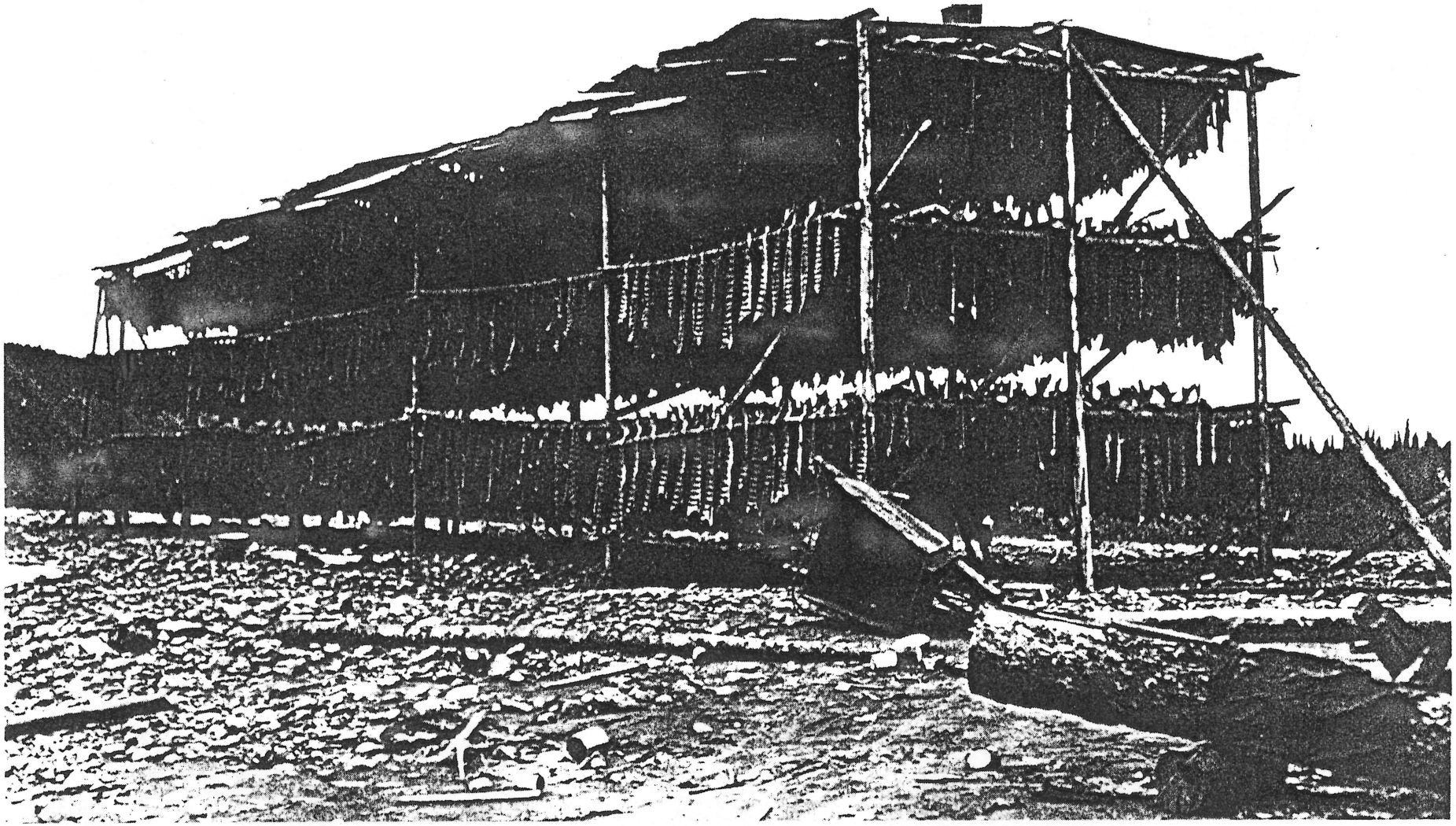


Yukon Archives-Claude R. Tidd Collection

The Anderson's large 3-tiered drying rack with thousands of fish hanging to dry near Fortymile c.1930

Figure 33 In Helenes Compilation

Figure 34

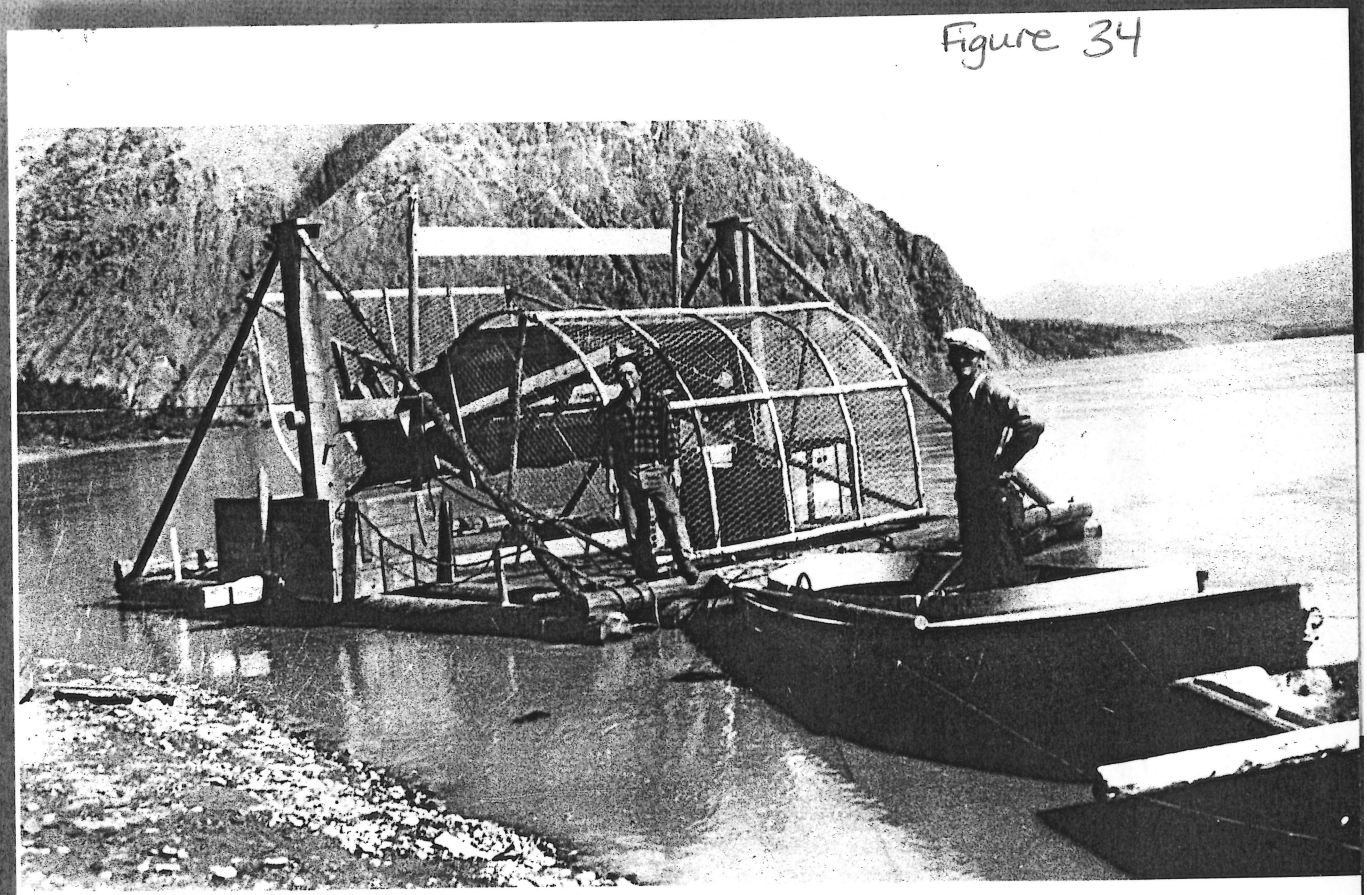


Figure 35
In Jody's Collect
on from CMC



"Old Steamboat, Loucheux Indian making a fish net, Old Crow, Yukon."
August 10, 1947. [Canadian Museum of Civilization: J. D. Leechman, #100597]

6

Figure 36



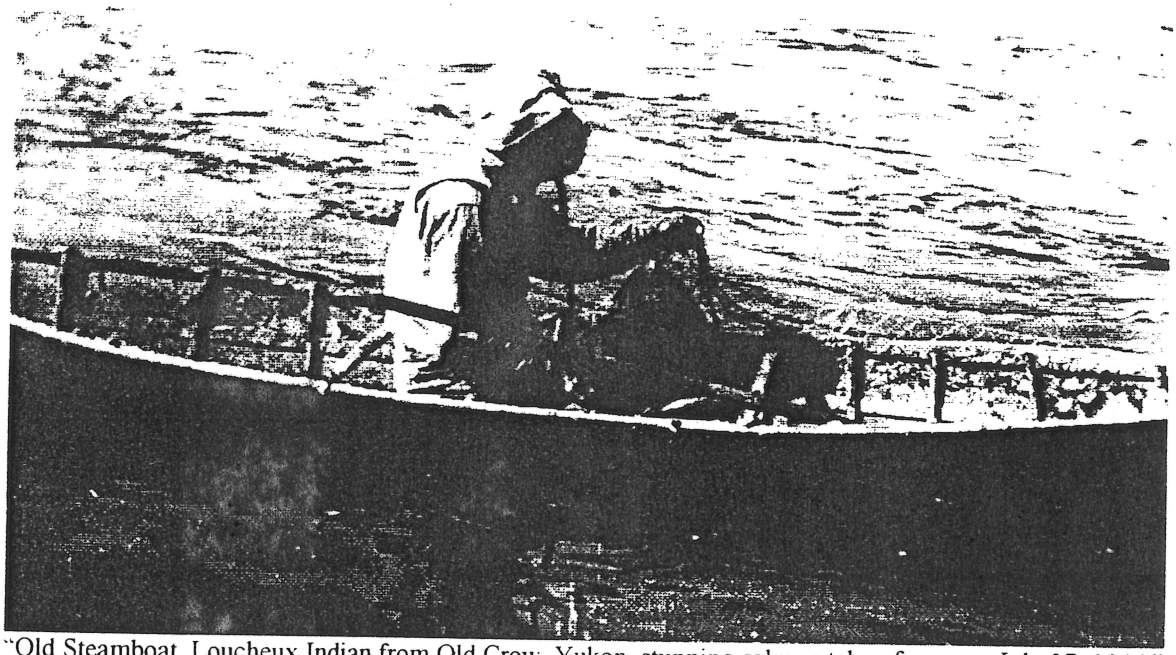
[Pelly River area, ca. 1930s]. [Yukon Archives: Claude Tidd Coll., acc. 77/19, #7271]



Figure 37

Lucy Van Bibber cutting salmon at Mica Creek, ca 1948-49. [Yukon Archives: Van Bibber Coll., 87/80, #10]

Figure 38



"Old Steamboat, Loucheux Indian from Old Crow, Yukon, stunning salmon taken from net, July 27, 1946."
[Canadian Museum of Civilization: J. D. Leechman, #100562]

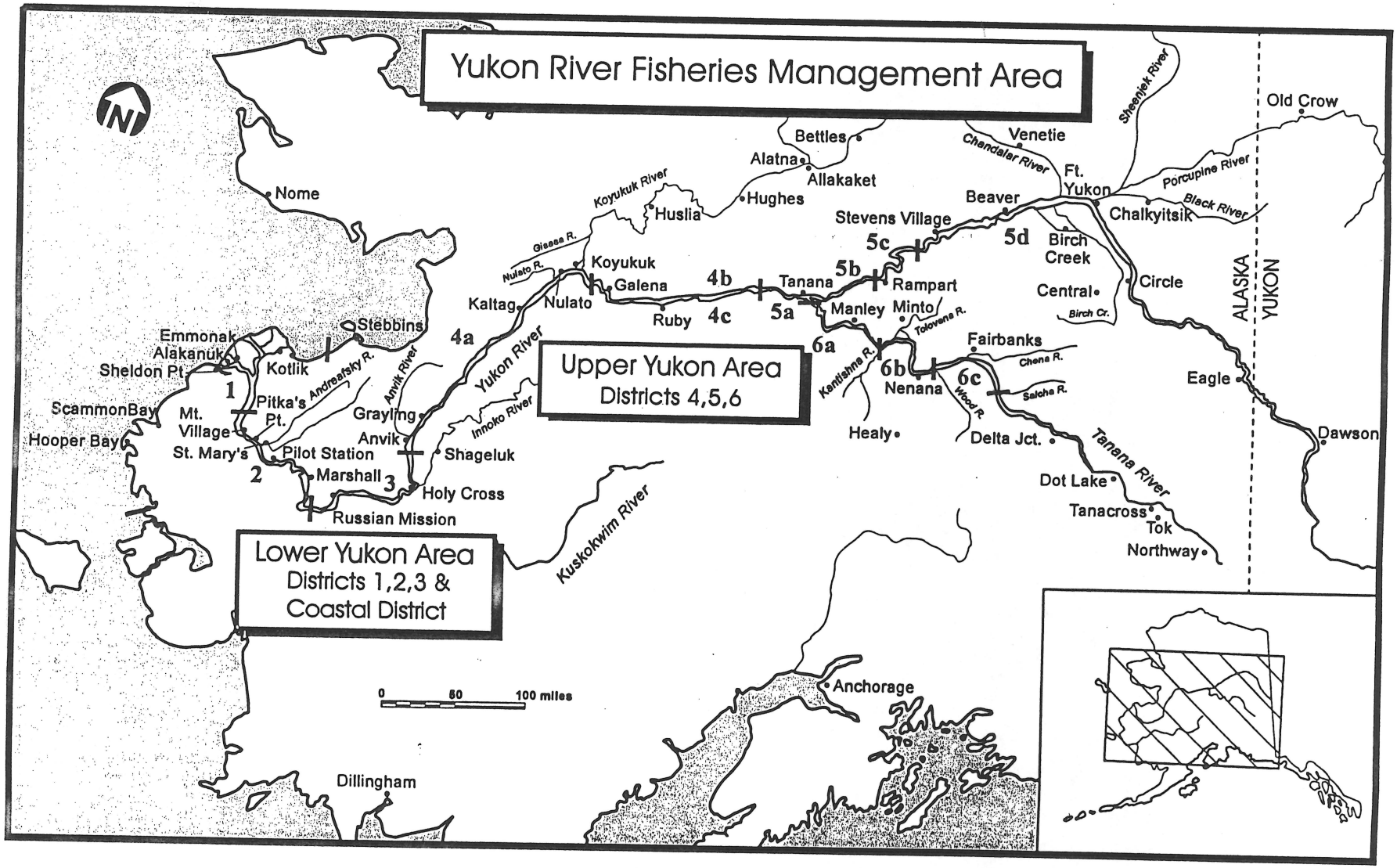


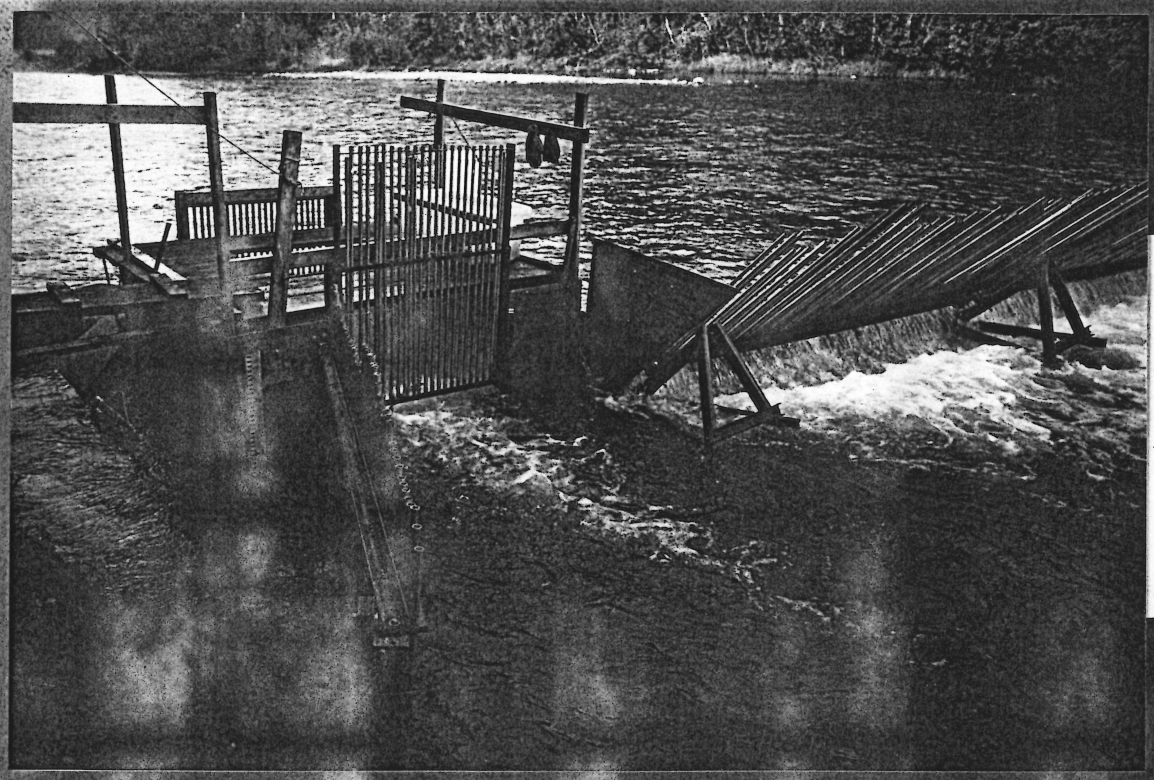
Figure 1. The Yukon Area showing communities and fishing districts, 1998.

Salmon Harvest Estimates Yukon Area, 1999, Alaska Dept. F+G. June 1999.

Figure 39



Figure 40



~~Figu~~ Figure 41

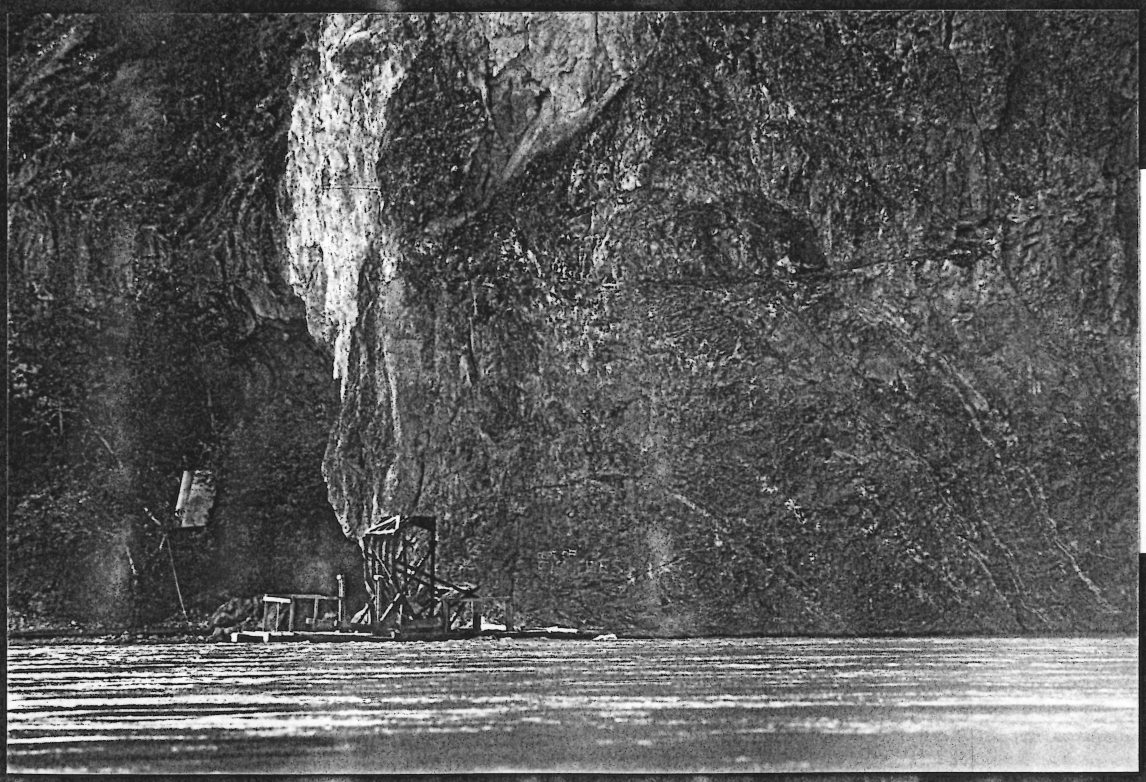


Figure
42

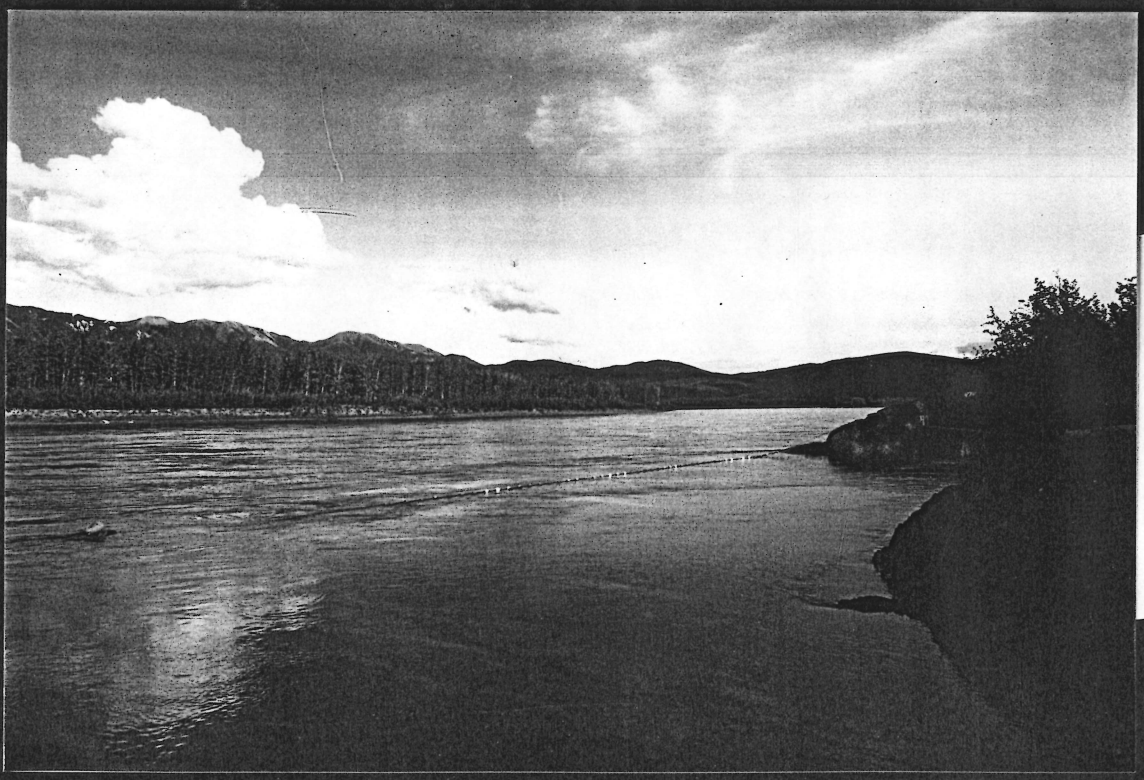
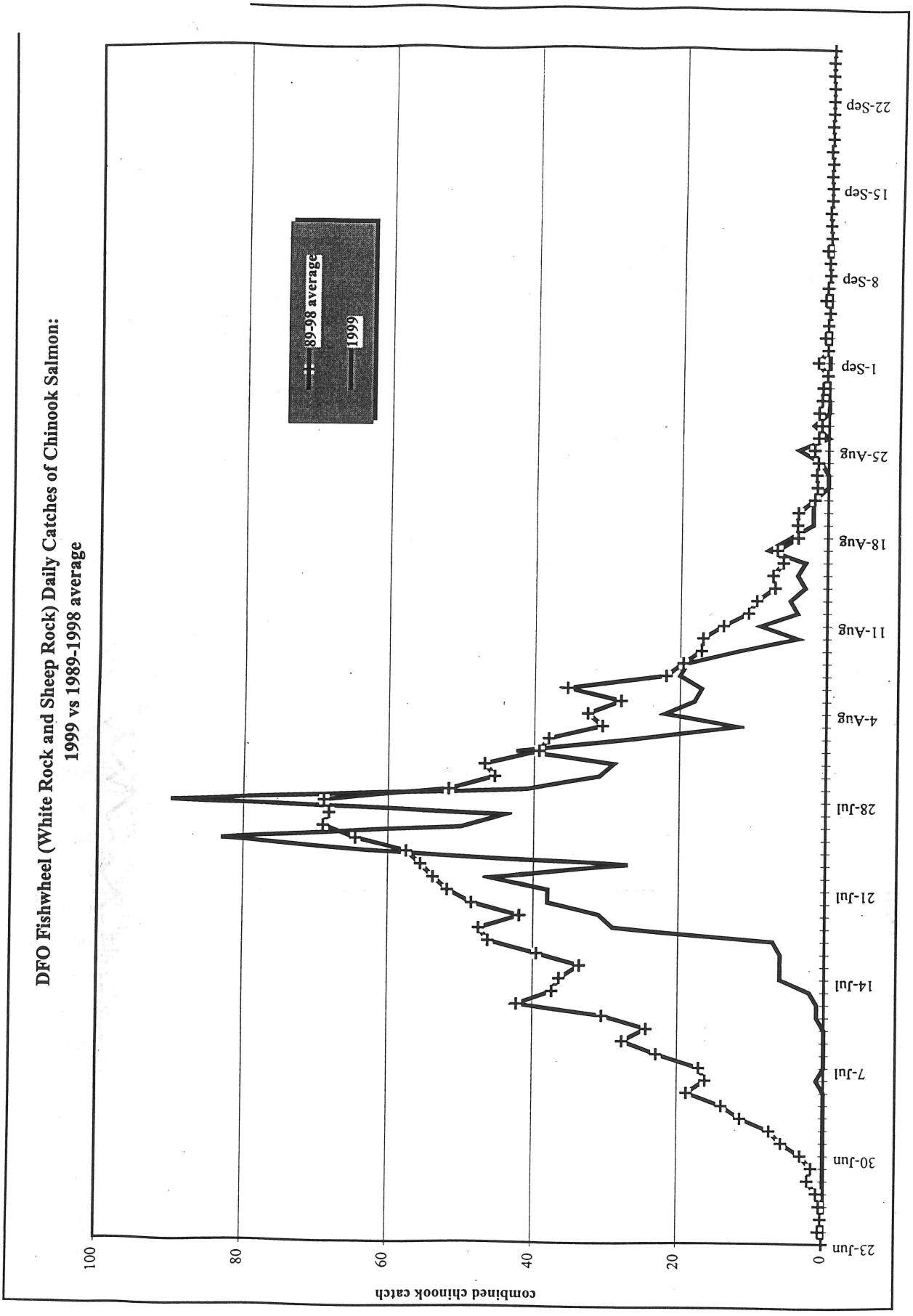


Figure
44

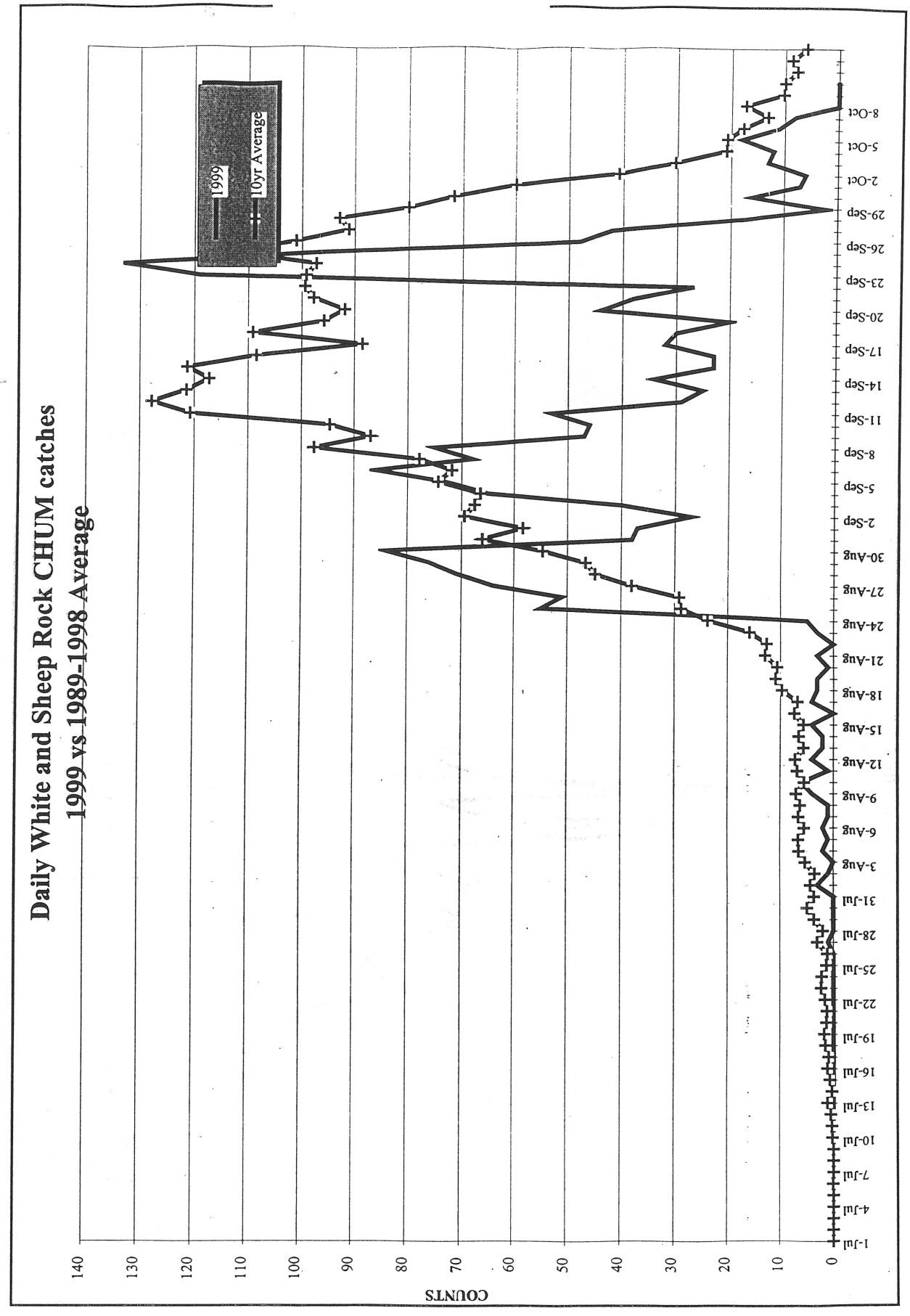


Figure
43

Graph 1


DFO Fishwheel (White Rock and Sheep Rock) Daily Catches of Chinook Salmon:
1999 vs 1989-1998 average
combined chinook catch
100
80
60
40
20
0
89-98 average
1999
23-Jun
30-Jun
7-Jul
14-Jul
21-Jul
28-Jul
4-Aug
11-Aug
18-Aug
25-Aug
1-Sep
8-Sep
15-Sep
22-Sep

Graph 2


Daily White and Sheep Rock CHUM catches
1999 vs 1989-1998 Average
1999
10yr Average
COUNTS
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
1-Jul
4-Jul
7-Jul
10-Jul
13-Jul
16-Jul
19-Jul
22-Jul
25-Jul
28-Jul
31-Jul
3-Aug
6-Aug
9-Aug
12-Aug
15-Aug
18-Aug
21-Aug
24-Aug
27-Aug
30-Aug
2-Sep
5-Sep
8-Sep
11-Sep
14-Sep
17-Sep
20-Sep
23-Sep
26-Sep
29-Sep
2-Oct
5-Oct
8-Oct