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ALASKA'S UPPER YUKON REGION: A History

By

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Anchorage, Alaska

1982

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EDITOR'S INTRODUCTION

The U.S. Bureau of Land Management (BLM) is currently transferring title to about 145 million acres of land to the State of Alaska and Alaska Native corporations in compliance with the Alaska Statehood Act of 1958 and the Alaska Native Claims Settlement Act of 1971, respectively. A serious impediment to the conveyance of land title is the unknown acreage and location of nontidal navigable waters in Alaska.

By authority of the Statehood Act of 1958 and the Submerged Lands Act of 1953, the State of Alaska owns the beds of tidal waters and nontidal navigable waters unreserved as of the date of Statehood. Submerged land acreage of navigable waters unreserved as of the date of Statehood may not be charged against the State's entitlement under the Statehood Act; and by virtue of the fact that ownership of these submerged lands passed to the State in 1959, may not be included in conveyences of land title. On the other hand, lands underlying nonnavigable waters as well as those submerged lands in a reserved status in 1959, remain in the public domain or in trust for the riparian owner.

During the 1960s the BLM made determinations of navigability for water bodies on lands to be conveyed to the State. However, after the passage of the Alaska Native Claims Settlement Act and the subsequent promulgation of regulations requiring, among other things, the BLM to make navigability determinations for waterways on lands to be conveyed to the Native corporations and to account for the submerged land acreage, the State quickly asserted its claim to potentially navigable waters on ANCSA-selected lands by two methods. First, the State provided the BLM with its definition of navigable waterways and a set of maps

known as Water Delineation Maps illustrating waterways on ANCSA-selected lands that the State considered to be navigable. Second, the State routinely notified Native corporations in the instance of a proposed conveyance that the BLM may be attempting to convey lands underlying navigable waters owned by the State since 1959. Well aware of the differences between the BLM and State definitions of navigability, and the State's position that these differences must one day be resolved by the courts, many corporations excluded in their selection applications most waterways identified by the State as navigable. Consequently, whenever the BLM made a determination of navigability contrary to the State's claim and charged the submerged land acreage to the corporation's land entitlement, the corporation was forced to appeal to the Alaska Native Claims Appeal Board for a ruling on the question whether the submerged lands were in fact Federal lands or State lands in 1959.

In the late 1970s, as the BLM prepared to resume land conveyances to the State and to accelerate conveyances to the Native corporations, the BLM and the State agreed that there was a need for more information about the physical character and history of waterways as routes of travel and transportation. This information would satisfy BLM's need to make timely determinations of navigability; and it would facilitate the BLM's and the State's need to develop test cases of navigability for the courts. Thus, in 1977, the BLM let a major contract to the University of Alaska to research pertinent information from the literature about Alaska waterways. Completing the project in early 1979, the contractor provided BLM with a great deal of valuable information about Alaskan water bodies, information that was and is used to support determinations of navigability in the land conveyance programs. However, the contractor provided insufficient information about many minor waterways, some of them located on

lands to be conveyed to the State or the Native corporations. The need for additional documentary research and possibly field investigations was apparent.

In 1979, representatives of the BLM and the State of Alaska met several times to discuss and decide upon methods by which: 1) the BLM could make timely determinations of navigability in connection with the land conveyance programs; 2) the BLM and the State could reach agreement on what waterways were clearly navigable and nonnavigable under BLM and State criteria; and 3) the BLM and the State could identify water bodies that best reflect differences in the BLM's and the State's criteria of navigability for the purpose of litigation. The decisions that were made then are still valid today, although some have been modified as necessary to take into account unexpected developments.

Three alternatives in establishing priorities for administrative determinations of navigability were identified: 1) make determinations only for water bodies on land to be conveyed to the Native corporations and the State on a township-by-township basis; 2) make determinations for all nontidal water bodies in Alaska on a regional or subregional basis; or 3) make determinations for nontidal water bodies on a township-by-township basis as well as on a regional or subregional basis.

It was decided to adopt the third alternative. This entailed the formation of three independent but interacting teams: one in the BLM State Office to make navigability recommendations in connection with the State and ANCSA land conveyance programs; the others in the BLM State Office and State Department of Natural Resources to prepare factual reports on waterways in a region or subregion. These highly detailed reports, based upon the best information

available, are useful to the BLM in making recommendations for waterways on land to be conveyed to the Native corporations and the State. Once the final draft of the report has the approval of the State and other parties as a technically adequate document, the BLM will have the means to make reliable and consistent determinations for entire waterways. This in turn will give the State the opportunity to identify waterways that best illustrate differences in BLM and State criteria of navigability for development of test cases. As these differences are settled by the courts, the BLM and State criteria will eventually be the same. Whatever decisions are reached by the courts, the BLM will have a source document on which to rely in reviewing the validity of previous determinations in light of the court's decisions.

While the first alternative would have met the immediate need for determinations in land conveyance programs, it would have in the long run generated many problems of an administrative and legal nature. With an accelerated land conveyance program, it would have been impossible to collect and analyze a great deal of information about water bodies, much less to prepare thoroughly documented and well-reasoned rationales for determinations. The high probability that incorrect and inconsistent determinations would be made, and that disputes over the facts relating to a waterway would be taken to the courts, was all too clear. In this eventuality, the BLM would have been repeatedly forced to research and write reports to defend (or change) determinations of navigability for the use of the Regional Solicitor. On the other hand, the second alternative, which would entail the preparation of reports on a watershed, subregional, or regional basis, would not have met the pressing need for navigability determinations on State- and ANCSA-selected lands. Without a much larger staff, the BLM would not have been able to research, analyze, and synthesize a great deal of information

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into written reports needed to determine navigable and nonnavigable waters on these lands. These lands are scattered throughout Alaska, and involve many waterways--too many to be covered adequately in a short time frame. Yet it is clear that these reports will be needed more and more as questions of navigability are brought before the courts, and as land managers reviewing proposed actions on a waterway attempt to determine ownership of the submerged lands.

Alaska's Upper Yukon Region is the first such report to be issued by the BLM. Researched and written by James H. Ducker with the brief, albeit valuable, assistance of Robert Spude and Jo Antonson, the report summarizes geographic knowledge about the region and its water bodies; traces the history of explorations, mining, hunting, fishing, and trapping activities, and communities; describes in detail the development of transportation in the region; and finally summarizes the process by which the BLM reached a determination of navigability for water bodies on lands selected and/or conveyed to the State or Native corporations. The BLM has already relied upon some of the information gathered by Mr. Ducker in making navigability determinations for water bodies on land to be conveyed. However, some potentially valuable records have not been researched. The sheer volume of information available about the region, required Mr. Ducker to focus his research efforts on those records containing the largest amount of information about water bodies in the region. Later, Mr. Ducker will produce another report based on land records which pertain to those water bodies (or parts thereof) about which there is little or no information.

C. Michael Brown
Lead Historian

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INTRODUCTION

The Alaskan Upper Yukon River valley has answered man's material needs in the context of both subsistence and market economies. Athabaskan peoples took from its forests, streams, and lakes nearly everything required to feed their families, build their homes, and clothe themselves against the Arctic cold. As with similiar hunting and gathering groups, they depended on the land for the basic necessities of life. During the summer they fished in the major rivers. In other seasons they migrated to areas where caribou, moose, and other game was plentiful. This lifestyle was radically altered with the arrival of Euro-American goods and institutions. Nevertheless, Natives and many whites still obtain a substantial portion of their necessities from fish and game.

Before contact with Europeans and Americans, the Indians of the Upper Yukon region engaged in trade among themselves in other regions. However, it was not until Russians, Canadians, and Americans entered the region that a predominantly market economy was developed. This trade meant a selective and intensive exploitation of certain Alaskan resources.

Furs were the first product to prove commercially valuable. Russians began trading with middle Yukon Natives at Nulato in 1839. In 1847 the Hudson's Bay Company built Fort Yukon at the heart of the Upper Yukon Region to tap its fur resources. Americans replaced the British at Fort Yukon after the Alaska purchase and established additional trading posts. Fur trading and trapping continued through the gold rush era. Romantic, if lonely, winter-long trapping based at isolated cabins had its heyday in the 1920s when fashion-prompted demands sent fur prices soaring. Falling prices in the thirties, changing technology, the growing attractions of town life, and alternative sources of income in the post World War II era led to still less intensive fur-gathering.

Gold was the other interior Alaskan product capable of underwriting the expenses of lengthy transportation and supporting workers in a harsh environment. Mining began in the Upper Yukon Region in 1886 with the discovery of Franklin Bar along the Fortymile River. Before the strike on Canada's Klondike in 1896, prospectors made additional finds on American, Birch, and Minook creeks. These grounds and other less valuable areas were thoroughly explored at the turn-of-the-century by miners drawn north by the Dawson and Nome gold strikes. Except for the mines east of Chandalar Lake and small deposits on the Hodzana, all gold discovered by prospectors in the region lay south of the Yukon.

Gold mining in Alaska has fluctuated as a result of the cost of labor and the price of gold. World War I and the general industrial prosperty in the Lower 48 in the 1920s meant a reduction in the Alaska labor pool, increased labor costs, and consequently a decline in the Alaska mining industry. More men went to Alaska as a result of the Great Depresssion. This phenonmenon, together with the upward revision of the price of gold in 1934 brought a strong resurgence in mining. Government restrictions during World War II caused many operations to shut down. In the 1950s and 1960s inflation eroded the profitability of mining in the face of a fixed dollar value for gold. When the Federal Government allowed the dollar to find its own value in 1973, mining again enjoyed a resurgence.

The law of supply and demand, and transportation costs, have in large measure determined the course of economic developments in the Upper Yukon region. Alaskan miners, trappers, and the like could do little to affect the prices consumers were willing to pay for furs or minerals. However, they were alert to ways of cutting costs. Trappers perfected the trapline and adopted steel

traps, improved rifles, boat motors, and snowmobiles to increase their efficiency; miners quickly graduated from pans and rockers to hydraulics, dredges, and eventually bulldozers to claw more gold from the soil.

Exploiters of Alaska's natural bounty were similarly interested in efficient transportation; both to minimize the costs associated with operations in the backcountry and to bring out the resources. At least since the advent of whites in the area, the Yukon and Porcupine rivers have served as important arteries of transport. The Hudson's Bay Company shipped its furs from Fort Yukon in Russian America to Fort McPherson in Canada using thirty- to forty-foot boats. After the Alaska Purchase, steamboats began to ply the Yukon's waters from its mouth to above the Canadian border. At first this was done to supply the fur trade; later, primarily to service the mining operations of the area. The largest boats measured their capacity in the hundreds of tons.

Smaller watercraft were designed for use on tributaries of the Yukon River. A specially constructed steamer traveled up the Chandalar nearly to Caro. Gold and fur seekers frequently used poling boats and, by the 1910s, motor-powered wooden riverboats on numerous tributaries.

The Federal and Territorial governments were also instrumental in developing roads and trails in the region. When gold-seekers swarmed to the region, they either utilized already extant Indian trails or constructed their own. Army personnel explored inter-regional routes from ice-free ports in southern Alaska to the Upper Yukon and from Birch Creek to the Fairbanks area. Congress in 1905 created the Alaska Road Commission (ARC) to expand and maintain the trails and roads in Alaska. Every mining district benefited from dog and pack

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horse trails, sled roads, or wagon roads built or maintained by the ARC or the territorial road commission. The ARC also built the Steese and Taylor highways which linked major mining areas to the Alaska Railroad and the Alaska Highway, respectively.

Air transport has played an important role in the development of the Upper Yukon region. Planes provided prompt, nearly year-round access to the most remote locations. Trappers and hunters adopted them to reach untapped lands rich in animals. Planes equiped with skis or floats utilized available water bodies as landing sites. And many miners either coaxed the Territory to build landing fields or built their own.

The Alaska Statehood Act, the Alaska Native Claims Settlement Act (ANCSA), and the Alaska National Interest Lands Conservation Act (ANILCA) determined the land status of most of the Upper Yukon region. The State selected large tracts in the Birch Creek, Chandalar, and Fortymile rivers areas, including most of the known gold-bearing ground. The State also selected lands on the fringe of the Minook Creek mining district. Native lands, both Doyon Limited and village corporation selections, are concentrated around eight Native settlements: Rampart, Stevens Village, Beaver, Fort Yukon, Circle, and Eagle on the Yukon, and Birch Creek Village and Chalkyitsik on Birch Creek and the Black River, respectively. Doyon also selected land east of the Yukon River in the Kandik, Nation, and upper Black river areas. The residents of Venetie and Arctic Village chose to accept ownership of the Venetie Reserve instead of receiving the land and pecuniary settlements gained by other Natives through ANCSA.

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In the wake of ANILCA, five large federal tracts dominate the land holdings of the Upper Yukon Region. The Yukon-Charley Rivers National Preserve includes 1.7 million acres encompassing the Charley River drainage and a strip five to fifteen miles wide on both banks of the Yukon from ten miles below Eagle to about twenty miles above Circle. The White Mountains National Recreation Area includes one million acres in the upper Beaver Creek area. The Steese National Conservation Area includes 1.2 million acres along the Steese Highway. The Yukon Flats National Wildlife Refuge (8.6 million acres) dominates the center of the Upper Yukon region. This massive refuge is bounded roughly by the Dall River on the west; the divide between the Chandalar and Yukon rivers, the Venetie Reserve, and the Arctic National Wildlife Refuge on the north; the 142nd meridian on the east; and the southern edge of the flats on the south. The Arctic National Wildlife Refuge (18.1 million acres) includes the headwaters of the Middle and East forks of the Chandalar, most of the Sheenjek, Coleen, and Rapid River drainages, and the upper portion of the Porcupine River in the United States, including its southern tributaries of Rat Creek and Salmon Trout River. ANILCA also added the upper portions of the Sheenjek River and Birch and Beaver creeks and all of the Charley and Fortymile rivers to the Wild and Scenic Rivers System. The lower Sheenjek, the Porcupine, and the Lower Ramparts segment of the Yukon also are being examined for possible inclusion in the system.

This history of the Upper Yukon region is designed to furnish a body of information, broad enough in scope yet comprehensive enough in detail, to enable the Bureau of Land Management to make determinations of navigability with confidence. It draws on extensive, yet by no means exhaustive, research. The great majority of the known records of the U.S. Geological Survey has

been examined. Some manuscript field notebooks have not been checked. Many newspapers and periodicals of the early gold mining area have been researched. The Fairbanks papers for the past sixty years were not researched for lack of time. Manuscripts at Anchorage, Fairbanks, and Whitehorse, as well as copies of many documents in Washington, D.C. and Seattle made by the Arctic Environmental Information and Data Center under contract to BLM, have contributed information to the report, yet there are other collections in the Lower 48 and Canada which could prove useful. Research has been done in a variety of published work: in accounts of early explorers; gold rush era guidebooks; book- and article-length reminiscences; and numerous government reports, including those produced by the Alaska Road Commission, the State Division of Geological and Geophysical Survey, and a number of other Federal, State, and local agencies. Also, valuable information has been culled from BLM's Townsite and State and Native land selection files. Other BLM records were not researched.

The drafting of this report has been a collaborative, if not perfectly coordinated, process. Robert Spude did a great deal of the research, including archival work in Fairbanks and Whitehorse; he also composed an early draft which proved invaluable. Jo Antonson provided a draft of the first chapter, going to the much appreciated extent of working on the project after terminating her employment with BLM. C. Michael Brown has given careful direction to the production of the report. He, Dwight Tuttle, and John Cook provided essential criticism of earlier drafts. And the secretarial staff in BLM's Alaska State Office proved its skill and patience in deciphering the author's scrawl, correcting his punctuation, and putting up with his last minute alterations in the text.

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CHAPTER ONE

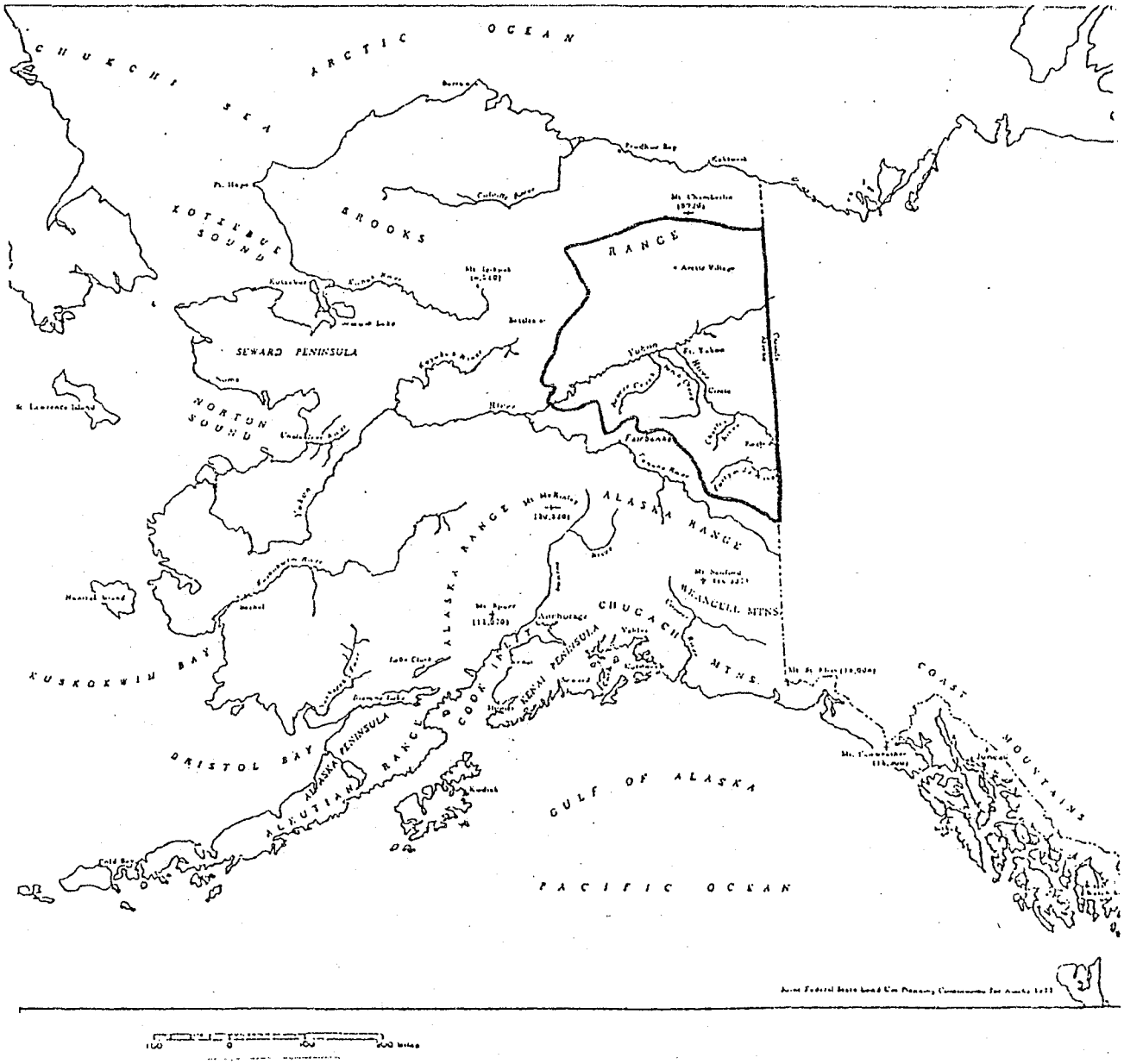
THE UPPER YUKON REGION

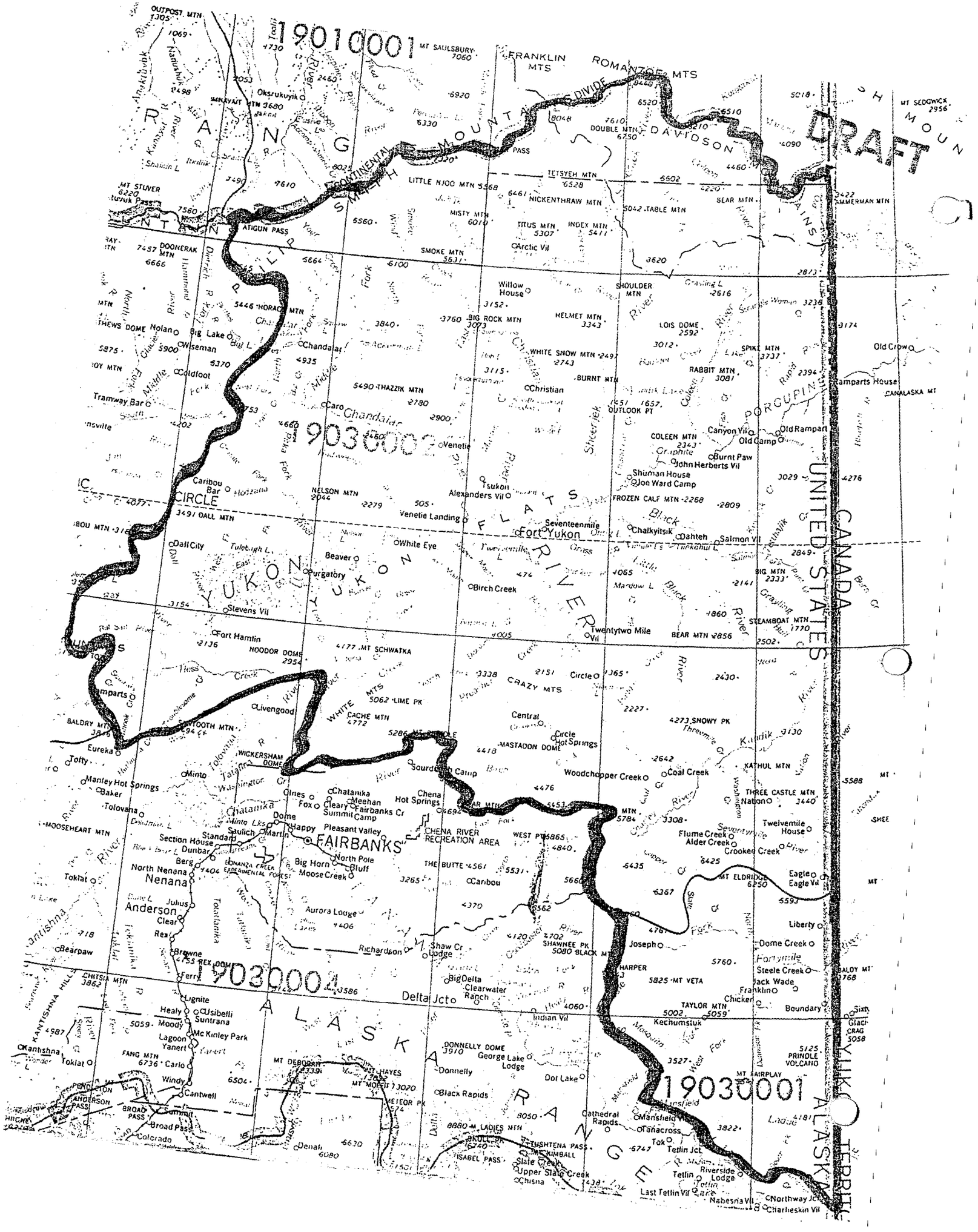
Located in east-central Alaska, the Upper Yukon region encompasses an area of 69,000 square miles. This is equivalent to approximately 44 million acres in about 2,000 townships. Alaska's largest river, the Yukon, and its many tributaries, the largest of which is the Porcupine River, drain the basin. The eastern limit is the U.S.-Canada border, the western end is the mouth of the Tanana River. Several distinct physiographic regions lie within the basin. In the center is the Yukon Flats. A portion of the Porcupine Plateau and Brooks Range rise to the north of the flats, the Rampart Trough and Yukon-Tanana Upland are to the south, the Kokrine-Hodzana Highlands loom on the west, and the Ogilvie Mountains and Tintina Valley as well as the great mass of the Porcupine Plateau lie to the east. 1/

As it enters this area the Yukon River is about a third of the way along its 1,875-mile course through western Canada and Alaska to the Bering Sea. The distance between the U.S.-Canada border and the mouth of the Tanana River is about 520 river miles. The Yukon through this area is sinuous; the air line distance between the same two points is about 325 miles. In general, the river flows in a northwesterly direction from the border to the mouth of the Porcupine and thence heads southwesterly to the mouth of the Tanana.

From the international border to the community of Circle, a 155-mile section frequently labelled the Upper Ramparts, the Yukon skirts the southwestern corner of the Ogilvie Mountains which extend about 250 miles from the heart of the Yukon Territory into Alaska on a northwest-southeast axis. These mountains reach altitudes of 5,000 feet and have deep, narrow, and steep-walled valleys.

THE ALASKA UPPER YUKON REGION




19010001
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RANGE
MOUNTAINS
DIVIDE
FLATS
RIVER
YUKON
CANADA
UNITED STATES
ALASKA
TERRITORY
FAIRBANKS
CIRCLE
Fort Yukon
Nenana
Anderson
Delta Jct
Tok
Tetlin Jct
Eagle
Dawson
Old Crow
Chandalar
Christian
Venetie
Alexanders Vil
Birch Creek
Woodchopper Creek
Coal Creek
Central
Circle Hot Springs
Chena Hot Springs
Fairbanks Cr
Pleasant Valley
Happy
Ester
Goldstream
Two Rivers
Big Delta
Clearwater Ranch
Richardson
Shaw Cr Lodge
Aurora Lodge
Healy
Lignite
Usibelli
Suntrana
Moody
Mc Kinley Park
Lagoon
Yanert
Cantwell
Windy
Broad Pass
Summit
Denali
Donnelly
George Lake Lodge
Dot Lake
Tanacross
Mentasta Lake
Slate Creek
Upper Slate Creek
Chisna
Nabesna Vil
Northway Jct
Chanlaskeskin Vil
Last Tetlin Vil
Tetlin Lodge
Riverside
Joseph
Dome Creek
Steele Creek
Jack Wade
Franklin
Chicken
Boundary
Liberty
Fortymile
Harper
Kechumstuk
Indian Vil
Taylor Mtn
Mt Veta
Mt Eldridge
Eagle Vil
Flume Creek
Alder Creek
Crooked Creek
Twelvemile House
Three Castle Mtn
Nation
Kathul Mtn
Snowy Pk
Steamboat Mtn
Bear Mtn
Twentytwo Mile Vil
Seventeenmile
Chalkyitsik
Dahteh
Salmon Vil
Joe Ward Camp
Shuman House
John Herberts Vil
Burnt Paw
Old Camp
Canyon Vil
Old Rampart
Ramparts House
Canalaska Mt
Lois Dome
Spike Mtn
Rabbit Mtn
Outlook Pt
Frozen Calf Mtn
Colleen Mtn
Graphite
Big Mtn
Marrow L
Graying
Sheenjek
Porcupine
Black River
Little Black River
Kandik
Nation
Tatalina
Washington
Tolovana
Manley Hot Springs
Tofty
Minto
Eureka
Livengood
Fort Hamlin
Stevens Vil
Beaver
Purgatory
White Eye
Dall City
Tuluksak
Caribou Bar
Nelson Mtn
Dall Mtn
Tramway Bar
Caro
Thazzik Mtn
Burnt Mtn
Helmet Mtn
White Snow Mtn
Big Rock Mtn
Thorac Mtn
Thews Dome
Nolan
Big Lake
Wiseman
Coldfoot
Doonerak Mtn
Smoke Mtn
Misty Mtn
Titus Mtn
Index Mtn
Arctic Vil
Atigun Pass
Table Mtn
Sear Mtn
Zimmerman Mtn
Nickenthraw Mtn
Tetsyeh Mtn
Little Njoo Mtn
Double Mtn
Mt Stuver
Mt Sedgwick
Outpost Mtn
Oksrukuyik
Franklin Mts
Romanzof Mts
Continental
Brooks
Endicott
Philip Smith
Sukakpak Mtn
Anaktuvuk
Killik
Nanushuk
Itkillik
Chandalar
Middle Fork
North Fork
South Fork
Hammond
Koyukuk
Kanuti L
Shaman L
Tulukh L
Dall
Tatalina
Totatlanika
Kantishna
Toklat
Bearpaw
Moose Creek
Big Horn Bluff
North Pole
Standard
Section House
Dunbar
Saulich
Martin
Minto Lks
Chatanika
Olnes
Fox
Cleary Summit Camp
Meehan
Chena
Fairbanks Cr
Dome
Berg
North Nenana
Julius
Clear
Rex
Browne
Ferry
Rex Dome
Bonanza Creek Experimental Forest
Chena River Recreation Area
The Butte
Caribou
Mastadon Dome
Wickersham Dome
Noodor Dome
Cache Mtn
Lime Pk
Crazy Mts
Schwatka
Baldry Mtn
Sawtooth Mtn
Moosehead Mtn
Chitsia Mtn
Rex Dome
Fang Mtn
Carlo
Mt Deborah
Mt Hayes
Mt Moffit
Meteor Pk
Hess Creek
Ramparts
Livengood
Tolovana
Manley Hot Springs
Baker
Minto
Tofty
Eureka
Toklat
Bearpaw
Anderson
Nenana
Healy
Lignite
Usibelli
Suntrana
Moody
Mc Kinley Park
Lagoon
Yanert
Cantwell
Windy
Broad Pass
Summit
Denali
Donnelly
George Lake Lodge
Dot Lake
Tanacross
Mentasta Lake
Slate Creek
Upper Slate Creek
Chisna
Nabesna Vil
Northway Jct
Chanlaskeskin Vil
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Mt Stuver
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Itkillik
Chandalar
Middle Fork
North Fork
South Fork
Hammond
Koyukuk
Kanuti L
Shaman L
Tulukh L
Dall
Tatalina
Totatlanika
Kantishna
Toklat
Bearpaw
Moose Creek
Big Horn Bluff
North Pole
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Section House
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Saulich
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Moosehead Mtn
Chitsia Mtn
Rex Dome
Fang Mtn
Carlo
Mt Deborah
Mt Hayes
Mt Moffit
Meteor Pk
Hess Creek
Ramparts

The Yukon River descends gradually through the mountains, flowing at a rate of six to eight miles per hour. The river broadens from a half mile at the border to two miles wide near Circle. Islands are increasingly common in the channel as one travels downriver. The Tatonduk, Kandik, and Nation rivers draining the slopes of the Ogilvie Mountains flow into the Yukon from the northeast. The Seventymile and Charley rivers enter from the west and south. These latter two streams and the Fortymile River--which empties into the Yukon in Canada although most of its drainage is in Alaska--head in the Yukon-Tanana Upland. Rounded slopes with elevations between 3,000 and 5,000 feet dominate the area. Rivers cut through the upland in narrow "V"-shaped canyons. Enroute to the Yukon the Charley and Seventymile rivers also cross the Tintina Valley. This physiographic province has lower rounded ridges and wider valleys than the upland.

Between Circle and Stevens Village the Yukon winds its way through the center of the Yukon Flats. For the first eighty miles the river trends northward. Just inside the Arctic Circle near Fort Yukon it swings southwesterly to flow 175 miles through the Flats. As it enters the Flats the river becomes shallower, braided, and quite broad, in places two miles wide. Below Fort Yukon the river follows a more sinuous course and flows through a network of shallow channels. Sloughs, oxbow lakes, and thaw lakes are numerous.

The Yukon Flats encompass 11,000 square miles--about seven million acres. It is characterized by low relief; the maximum elevation above the riverbed is about 500 feet. In this section most tributaries head in uplands and enter the Yukon after winding tortuously through the Flats. Principal tributaries include the Sheenjek, Black, and Little Black rivers, which flow into the Yukon via the

Porcupine in the eastern portion of the Yukon Flats. The Chandalar, Hadweenzic, Hodzana, and Dall rivers enter the Yukon through the northern Flats. And from the south, Birch and Beaver creeks wander indecisively before emptying into the Yukon.

North and east of the Yukon Flats is the Porcupine Plateau. Low, gently sloping ridges between 1,500 and 2,000 feet in altitude dominate the topography of this area. A few peaks reach elevations of 3,500 feet. The major river, the Porcupine, is confined in a narrow, and occasionally cliff-lined canyon. The Black, Coleen, and the upper and middle Sheenjek rivers flow through broad valleys across the plateau to the Porcupine.

The Brooks Range, which includes the Davidson and Philip Smith mountains, is north of the Porcupine Plateau. This northern extension of the Rocky Mountains extends east and west. The southern slopes are glaciated and rugged, rising between 4,000 and 6,000 feet. The Chandalar, Sheenjek, and Coleen rivers head in this range.

The Yukon-Tanana Upland lie south of the Yukon Flats. Two rugged ranges, the White Mountains and the Crazy Mountains, are within this upland and abut the Flats west of Circle. Both trend northeast-southwest. Elevations are from 4,000 to 5,000 feet. The upland, however, is predominatly rounded, even-topped ridges and free of glaciers. In the west these ridges trend east-northeast; in the east they exhibit no preferred direction. The eastern ridges, in general, are higher, ranging in altitude from 3,000 to 5,000 feet, while the western ridges range from 1,500 to 3,000 feet. Valleys are flat and up to a half mile wide.

Rivers that drain the upland and flow to the Yukon include Fortymile, Charley, and Seventymile rivers, and Birch and Beaver Creeks. Both of the creeks make sharp bends as they traverse the upland.

West of the Flats are the Kokrine-Hodzana Highlands. Ridges 2,000 to 4,000 feet in altitude are separated by more rugged mountains. The Ray Mountains trend west-northwest to east-southeast and have peaks reaching 5,500 feet. The Hadweenzic, Hodzana, Dall, and Ray rivers head in the highlands. The Ray River drains slopes of the Ray Mountains.

Leaving the Flats the Yukon River flows about 160 miles southwest through a mountain region variously called the Lower Ramparts or the Rampart Trough. The slopes adjacent to the river rise steeply to altitudes around 3,000 feet. In this section the river is confined to a single channel and flows through a valley less than a half mile wide. Short, swift streams enter the Yukon from the north and south. Marking the western boundary of the Upper Yukon basin, the Tanana River enters the Yukon at river mile 700.

The climate of the region is continental. Cold, dry winters and hot, dry summers are characteristic. The highest temperature ever recorded in Alaska was 100°F at Fort Yukon. A low of -75°F has been registered at the same station. Most precipitation falls in summer and early fall. Average precipitation is low; ten to twelve inches annually for the upland area, only six inches on the Yukon Flats. Annual snowfall averages fifty inches. The frost-free season is about four months.

The upper Yukon basin has many lakes and ponds. Although a few exceed 2,500 acres in size, most are less than 300 acres, and depths seldom exceed fifteen feet. The estimated 40,000 lakes in the Yukon Flats average twenty acres in size. Thaw lakes and oxbows are most common.

Rivers and creeks that drain the basin crest shortly after break-up, usually in late April and early May. Flooding of the lowland is almost an annual event connected with break-up. Banks and channels of rivers, lakes, and sloughs in the Yukon Flats are unstable and frequently change with a flood.

Permafrost is extensive throughout the basin. On the average, four to fifteen inches of ground thaws each summer. Because of the permafrost, low gradients, and poor drainage, the Yukon Flats are waterlogged.

River valleys and highlands to an altitude of 2,000 feet are forested. White spruce, birch, and aspen dominate; balsam poplar, black cottonwood, and tamarak also stand. The white spruce are most dense along the rivers where the soil is better drained. Although undeveloped, the stands of spruce, aspen, and birch are of commercial value. Common shrubs are Labrador tea, prickly rose, willow, and alder. Wildflowers, grasses, and sedges are numerous. In the low muskeg and bog environment of the Yukon Flats the hardy black spruce dominates. Between the upland spruce ecosystem and the mountain crests above 4,500 feet is a moist tundra environment. Low growing clusters of dwarf birch, willows, berries, sedges, grasses, lichens, and wildflowers cover the ground. Areas above 4,500 feet in the Brooks Range, the Yukon-Tanana Upland, and the Hodzana Highlands are well-drained but nearly barren of vegetation. The wildflowers and lichens that grow in this alpine tundra environment seldom exceed a few inches in height.

Caribou, moose, grizzly and black bear, Dall sheep, wolves, and wolverines are found in the upper Yukon. Two of Alaska's caribou herds, the 150,000 animal Porcupine and the much smaller Fortymile herds, graze in the basin. Dall sheep concentrate in the White Mountains. Small animals include beaver, fox, lynx, marten, muskrat, mink, weasel, river otter, red fox, and snowshoe and Arctic hares. Thirteen species of Arctic birds nest in the upper Yukon area, particularly in the Yukon Flats. They are seasonally joined by large numbers of ducks, geese, and other migratory birds. Over 130 species of birds have been identified on the Yukon Flats. Mallards, pintails, American widgeons, lesser scaups, green-winged teals, northern shovelers, and canvasbacks are most prevalent. Rivers in the basin teem with fish. Although all five species of Pacific salmon annually ascend the river, king and chum are the most numerous. Grayling, northern pike, whitefish, Arctic char, and lake trout are plentiful.

Mineral resources in the region include gold, silver, coal, asbestos, and uranium. Placer gold has been removed from a number of streams; the best known flow into Birch Creek and Fortymile River. With the exception of the area east of Chandalar Lake, no commercially exploitable gold has been found north of the Yukon. Miners have usually found silver as a by-product of the gold operations. Coal deposits near Hess and Chicken creeks and Nation River have been mined. Two areas, the southern Brooks Range and the Yukon Flats are thought to contain petroleum.

Large portions of the upper Yukon basin are reserved for wildlife and wilderness protection. The Yukon-Charley National Monument protects historic, biotic, and geologic resources in the Upper Ramparts of the Yukon and includes the Charley

River watershed. The Bureau of Land Management regulates use of 2.2 million acres in the White Mountains National Recreation Area and the Steese National Conservation Area. The Yukon Flats is reserved to protect critical waterfowl, raptor, and mammal habitat. To the north is the Arctic National Wildlife Refuge. Birch Creek, Beaver Creek, and the Fortymile River and its tributaries are designated Wild and Scenic Rivers. The National Park Service is studying the lower Sheenjek, the Porcupine and the Lower Ramparts segment of the Yukon for such designation.

FORTYMILE RIVER

Although thirty-nine of its fifty-six mile length is in Alaska, the Fortymile River enters the Yukon in Canada at river mile 1,306. A clear water stream, the river and its tributaries drain approximately 6,600 square miles of the Yukon-Tanana Uplands. From the confluence of its North and South forks the Fortymile River flows east in a sinuous course in a narrow valley nearly to the Canadian border where it turns northeast. Near the international boundary the river is confined in a narrow rock canyon. Below the canyon the river, at a more moderate grade, crosses an open valley to its junction with the Yukon River. The channel varies from thirty to sixty feet wide and the average gradient is ten feet per mile. Several stretches of rapids lie along the river's course. The streambed is composed of bedrock, gravel, and boulders up to several feet in diameter.

A number of small, short, fast streams draining the rugged mountains to the north and south enter Fortymile River below the forks. Steele, Canyon, Smith, and Moose Creeks enter from the south. They flow through steep narrow valleys on gradients in excess of forty feet per mile. Nugget Gulch, Discovery Creek, and Sam Patch Creek are near-mirror images of these streams on the north

side of the Fortymile. The longest tributary of the river below its forks is O'Brien Creek. It flows over thirty miles on an average gradient of about thirty feet per mile. It reaches the left bank of the Fortymile River forty river miles above the Yukon. 2/

South Fork Fortymile River

The South Fork of the Fortymile River, formed by the merging of Mosquito and Dennison forks, flows due east for about four miles to a point just below the mouth of Atwater Creek where the river turns sharply and flows north for twenty-three miles to its junction with the North Fork. Short, swift-flowing tributaries with steep gradients drain the hills adjacent to the South Fork. In addition to Mosquito and Dennison Forks, Franklin, Buckskin, and Butte Creeks enter the South Fork from the west. Walker Fork and Atwater, Napoleon, and Uhler creeks enter from the east. 3/

Mosquito Fork

Mosquito Fork heads on a ridge 4,000 feet in elevation. Approximately 140 miles in length, the stream flows east and then southeast to the Mosquito Flats, and thence northeast around Taylor Mountain before turning southeast to empty into the Dennison Fork. From its upper reaches to a point about eighty-five miles above its mouth, the Mosquito Fork flows in a wide valley between unnamed mountains over 4,000 feet high and crosses the Mosquito Flats, a swampy area that is a tangle of lakes and sloughs. In places the flats are twelve to fourteen miles wide. According to USGS maps, the gradient of the first fifty-five miles of the stream is about twenty feet per mile, but in the Mosquito Flats the

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gradient is only eight feet. The streambed is no more than ten feet wide; the stream itself shallow and meandering. Through the last eighty-five miles Mosquito Fork is from fifteen to forty-five feet wide, and although still shallow in most places, it has large pools that are five to ten feet deep. Kechumstuk and Gold creeks, both of which enter from the north, are the major tributaries. They are about thirty and eighteen miles in length, respectively. 4/

Dennison Fork

Dennison Fork heads on slopes 2,500 feet high. From its headwater Dennison Fork flows seventy-six miles first in a northeasterly, then in a northerly, direction to its confluence with Mosquito Fork. In its upper reaches Dennison Fork flows through a broad, flat, swampy basin. The stream has a gradient of ten feet or less over its entire length. Two substantial tributaries flow into Dennison Fork. East Fork joins Dennison Fork forty-seven miles above the mouth. West Fork enters Dennison Fork seventeen miles above the mouth. Below the mouth of West Fork, Dennison Fork broadens. Numerous small rapids are reported to be in the river's course in its lower reaches. 5/

North Fork Fortymile River

Formed by the merging of Slate and Independence Creeks, both of which rise in mountains over 5,000 feet in elevation within the Yukon-Tanana Upland, the North Fork, about fifty-five miles long, flows east, turning south near Comet Creek and, after receiving the waters of the Middle Fork, flows southeasterly to empty into the South Fork. The Middle Fork of the Fortymile, its principal

tributary, enters from the west at river mile thirty-two. Ten miles further downstream another large creek, Hutchinson Creek, enters the North Fork from the west. Other named tributary streams include Comet and Champion creeks that enter from the east, and Bullion Creek that enters from the west. These tributaries are small, shallow streams with gradients as much as 140 feet per mile. In total the North Fork drains an area of 2,120 square miles.

The North Fork is confined to a single channel thirty to fifty feet in width. The average gradient is ten feet per mile. In the upper reaches small rapids are numerous. There are two major stretches of rapids along the course of the North Fork, one immediately below the confluence of Middle Fork and the other at "The Kink." About three miles below the mouth of Hutchinson Creek the river in its natural state followed a 2-2/3-mile meander known locally as "The Kink." In the first years of the twentieth century a channel was blasted through the sharp rock ridge 100 feet high and about 100 feet wide that was at the neck of the meander. The scheme was to divert the stream and to drain the meander for placer mining. At this place the river now drops seventeen feet in 100 feet. 6/

The Middle Fork Fortymile River, seventy-eight miles long, drains an area of 1,110 square miles. It originates in a small, flat valley. The headwater tributary streams are small and meandering. The Middle Fork has numerous small stretches of rapids along its course. Its average gradient is sixteen feet per mile. Throughout its length the river is confined to a single channel. Above river mile thirty-seven the stream meanders through flat marshes. The lower stretches of the Middle Fork are confined to a narrow, timbered valley. 7/

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MISSION CREEK

Draining an area of 170 square miles, Mission Creek, about twenty-seven miles long, heads in mountains over 4,000 feet in elevation and empties into the Yukon at river mile 1,278. The creek flows swiftly in a northeasterly direction to Excelsior Creek, and thence southeastward eight miles to join the Yukon River. Seward and Excelsior creeks are the largest tributaries to flow into Mission Creek from the west. They drain the slopes of Mount Eldridge. 8/

American Creek

American Creek, ten miles in length, is the major tributary of Mission Creek; it enters from the south almost a mile above Mission Creek's mouth. The creek and its tributaries flow in narrow V-shaped canyons. 9/

SEVENTYMILE RIVER

The Seventymile River heads on the eastern slopes of a high, rugged divide in the Yukon-Tanana Upland separating the Seventymile basin from the Charley River watershed. The stream drains 684 square miles and flows easterly for most of its seventy-five mile course before turning sharply north about four miles above its mouth to flow into the Yukon River at river mile 1,237. 10/

The river and its tributaries are swift, clear-water streams with numerous stretches of rapids. The Seventymile's gradient is approximately thirty feet per mile. A waterfall is said to be located twenty-eight miles above the mouth. 11/

In 1910, USGS investigators C. E. Ellsworth and G. L. Parker reported that the river dropped nine feet in less than 200 feet at the falls. 12/

The major tributaries are Granite Creek (river mile 45), Mogul Creek (river mile 23), and Bryant Creek (river mile 17). Tributaries draining the slopes to the north are considerably shorter than those in the south. 13/

TATONDUK RIVER

The Tatonduk River, about sixty miles long, rises in Canada. Only the lower eleven miles of the river lie in the United States. Just west of the international boundary, the river enters a straight, narrow gorge between fifty and 100 feet wide with sharply rising walls of up to several hundred feet. Continuing on its generally westward flow, the Tatonduk gradually leaves the canyon and becomes markedly braided in a wide valley three miles before emptying into the Yukon. Near its mouth the river is a half a mile or more wide. 14/

NATION RIVER

The Nation River heads in the Ogilvie Mountains of Canada. The lower forty-two miles of its sixty-mile course are in the United States. In this lower section the river flows through several channels. It trends westward from the border for eight miles. Below Jungle Creek it turns southwest to enter the Yukon River from the north at river mile 1,222. A number of short creeks that drain the 4,000-foot slopes adjacent to the river feed into the Nation. The larger creeks, Ettrain, Waterfall, and Hard Luck, enter the Nation River from the east at river miles thirty, twenty-one and nine, respectively. A moderately swift-

flowing stream, the river falls at a rate of fifteen to twenty feet per mile in the U.S. In its lower reaches and at the mouth, the Nation River is braided. 15/

KANDIK RIVER

The Kandik River, sometimes called Charley Creek, heads in three streams draining the Ogilvie Mountains in Canada. The lower eighty miles of the Kandik River's 112-mile course is within U.S. territory. The river empties into the Yukon at river mile 1,192. It meanders in a southwesterly direction on an average gradient of about ten feet per mile. Above Johnson Gorge, the Kandik flows between hills in a flat valley a half mile wide. Below the gorge the valley broadens to a mile wide. Above the gorge the two longest tributaries, Big Sitdown Creek and the Indian Grave Creek, enter the Kandik River from the southeast. In the lower reaches of the river the larger tributaries enter from the northwest. These include Judge, Mardow, and Threemile creeks. 16/

CHARLEY RIVER

From its headwaters in the Yukon-Tanana Uplands, the Charley River follows a sinuous northward course for 107 miles to enter the Yukon River at river mile 1,179. This clear-water stream is swift and has an average gradient of thirty-one feet per mile. A number of creeks flow into Charley River from both the east and west. Among them are Highland, Hanna, Bonanza, Copper, and Crescent creeks. Above Crescent Creek (river mile 59), Charley River is a small, braided stream. In its middle section the river is broader, up to seventy-five feet wide, deeper, and confined to a more narrow valley than in its upper reaches. In the lower reaches the current slackens and the river meanders across a V-shaped valley. 17/

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SAM CREEK

Sam Creek has its source in the Yukon-Tanana Uplands and flows to the northeast for about twenty miles to empty into the Yukon. It flows in a single channel and has an overall gradient of fifty to sixty feet per mile. Sam Creek has few and generally short tributaries. 18/

COAL CREEK

Coal Creek roughly parallels Sam Creek to its east and Woodchopper Creek to its west. Like its neighbors it flows northeasterly in a single channel from the Yukon-Tanana Uplands to the Yukon River. The creek is about twenty-eight miles long. Its overall gradient is about 100 feet per mile; in its lower fourteen miles the gradient is fifty-three feet per mile. 19/

WOODCHOPPER CREEK

Woodchopper Creek roughly parallels Coal Creek to its east. Like Coal Creek it flows in a northeasterly direction out of the Yukon-Tanana Uplands to within a few miles of the Yukon where it swings north to its mouth. The stream is unbraided and has only small tributaries. National Park Service personnel who visited the mouth of the creek in 1976 described it as "wetlands with very thick brush and alder/willow thickets". Woodchopper Creek is about twenty-seven miles long and has an overall gradient of approximately 130 feet per mile. However, in its lowest eleven miles the gradient is fifty feet per mile. 20/

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PORCUPINE RIVER

Finding its source in Canada, the Porcupine River is about 555 miles in length. Of this distance, less that half of the river (214 miles) is located in Alaska. The Porcupine drains a total area of 46,200 square miles; about half of which is in Alaska. In Alaska, the river flows southwesterly to the Yukon at Fort Yukon, and receives the waters of numerous tributaries, the most significant being the Rapid, Coleen, Sheenjek, and Black rivers. These tributaries drain the slopes of the high, rugged Brooks Range and the Porcupine Plateau.

In Alaska the Porcupine flows through four physiographic areas first defined by Gerald FitzGerald of the USGS in 1944: the Upper Ramparts, Coleen Lowland, Lower Ramparts, and Yukon Flats. As this clear water river crosses the international boundary it is confined to the narrow valley bordered by cliffs as high as 500 feet. In this Upper Ramparts section the river flows in a single channel for thirty miles and falls 100 feet. Below Howling Dog Canyon the river enters the Coleen Lowland. The cliffs and hills recede from the Porcupine's banks and islands and gravel bars split the river. In this section the Porcupine drops about fifty feet in thirty-five miles. Near the mouth of Rat Creek the river enters the Lower Ramparts. At this point the surrounding hills come close to the river, first on the south, and then on the north. Marshy areas border the river in the Lower Ramparts. The Lower Ramparts give way to the Yukon Flats at river mile 131. The Porcupine abruptly changes character. It enters a timbered flat and the channel becomes replete with loops, sharp turns, and sloughs. A number of large tributary streams join the Porcupine River in this lowland area. The Sheenjek River empties from the north at river mile 48. Black River enters from the south at river mile 25. Five miles above the

confluence with the Yukon River, Sucker River empties into the Porcupine River from the southeast. The Porcupine River flows into the Yukon River through two main channels; the upper mouth at river mile 1,032 and the lower mouth at river mile 1,027. 21/

Rapid River

From its source in mountains in Canada, Rapid River flows south forty miles to enter the Porcupine River at river mile 194. The lower forty-five miles of the river are within Alaska. In a report of his 1940 travels on the Porcupine, Gerald FitzGerald of the U.S. Geological Survey noted that stretches of rapids were frequent in the lower miles of the river and that many large boulders were located in the river channel. The lowest two miles of the Rapid pierces through a portion of the Upper Ramparts to reach the Porcupine. In the twenty-six miles above that the river flows through a flat marshy land. The uppermost seventeen miles of the stream in Alaska flows through a hill country. 22/

Coleen River

The Coleen River heads in the Davidson Mountains of the Brooks Range and follows a generally southerly course for 165 miles. It is braided throughout its entire course and has many sand or gravel bars. Its overall gradient is fifteen feet per mile. The Coleen, which drains a total area of 4,300 square miles, enters the Porcupine at river mile 150. 23/

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Sheenjek River

The Sheenjek rises in the shadow of 7,000-foot high mountains in the Brooks Range. Leaving these heights the river flows south 241 miles through the Porcupine Plateau and into the Yukon Flats. The river drains an area of 4,800 square miles. In its first twenty miles through the mountains the river drops an average of seventy-two feet per mile. At that point the Sheenjek enters a low flat valley where it mingles with scores of lakes and flows at a gradient of only fourteen feet per mile to Monument Creek (river mile 143) where it leaves behind the lake country. For the next thirty-four miles the river flows through a constricted valley and has a gradient similar to that in the lake country. At river mile 109 the Sheenjek enters the Yukon Flats through which it twists and turns on its generally southerly journey to enter the Porcupine at river mile 48. Through the Flats it falls at a rate of only 5.5 feet per mile. 24/

Black River

The Black River heads in low mountains averaging 2,000 feet high that border the Yukon River. It follows a winding course northward for 169 river miles to the mouth of Salmon Fork where it pivots to the westward. The river continues for 141 more river miles before its main distributary enters into Black River Slough at mile 9 and via this slough into the Porcupine River at river mile 25. Another significant channel flows into another channel of the Porcupine near the latter's river mile 40.

Black River drains 6,470 square miles, nearly all of it in Alaska. It flows in a wide, flat, lake-dotted valley. Above the village of Chalkyitsik (river mile 82),

the river traverses the southern portion of the Porcupine Plateau and has a gradient of 6.5 feet. Below Chalkyitsik it tortously winds its way through the Yukon Flats and falls barely a foot a mile. 25/

The river's major tributaries are Wood River (river mile 271), Grayling Fork (rivermile 225), and Salmon Fork (river mile 148). Wood River flows westerly twenty-six miles from uplands of 2,500 feet through a flat swampy valley. Its course meanders wildly through this valley. The Grayling Fork heads in the Ogilvie Mountains in Canada, and its lower eighty-six miles within the United States continues westerly to the Black River. It has a gradient of about seven feet per mile and winds through a marshy valley. The valley is as much as five miles wide at the confluence of its major tributary, Bull Creek, at river mile 46. The Salmon Fork also heads in the Ogilvie Mountains and enters Black River from the east. The lower seventy-four miles of Salmon Fork are within U.S. territory and have a gradient of 5.5 feet per mile. Like Grayling Fork, Wood River, and Black River, much of the Salmon Fork twists its way through a flat marshy valley. 26/

Little Black, Grass, and Sucker Rivers

The Little Black River and its distributary, the Grass River, combine to total 230 miles in length. The Sucker River, another distributary, is about 100 miles long. This river system drains 2,200 square miles, mostly in the Yukon Flats area lying east and south of Fort Yukon. The Little Black River wanders through marshy lands and drains surrounding hills which rise only a few hundred feet above the river. It trends northward through the Porcupine Plateau and the Yukon Flats. Two large tributaries enter Little Black River. Paddle Creek

enters at mile 164 draining the area southwest of Little Black River. Big Creek flows north for sixty-two miles to join the Little Black River at mile 59. Just below the entrance of Big Creek, the two distributaries begin their separate twisting odysseys to the Porcupine; the Grass River wandering for sixty miles and the Sucker for 100 miles in order to cover about forty or fifty air miles. 27/

CHANDALAR RIVER

The Chandalar River begins where the West and North Forks converge and flows 116 miles to enter the Yukon River at river mile 1,008. The Chandalar trends eastward for about seventy miles in a flat valley. From its source to near the abandoned town of Caro the stream is a single channel with only occasional islands. Lakes dot the surrounding land. Below the site of Caro the Chandalar becomes more braided and marsh land becomes more prevalent. Its gradient to the confluence of the East Fork (river mile 75) is thirteen feet per mile. Ten miles below this tributary the river begins to enter the Yukon Flats. The gradient decreases; below Venetie (river mile 48) it is about three feet per mile. Through the flat the stream meanders wildly amid sloughs and oxbow lakes. 28/

North Fork Chandalar River

Several short streams that drain the southern slopes of the Brooks Range converge to form the North Fork of the Chandalar River. The North Fork flows southeasterly from its headwaters for about fifty miles and then turns south-southwesterly for forty miles. Finally it turns southeast for twenty miles

to its confluence with the Middle Fork. In its first twenty-three miles the North Fork tumbles out of the mountains in a single channel with a gradient of approximately sixty feet per mile. It then becomes braided and enters a lake-dotted valley about two miles wide. About forty-five miles above its mouth the North Fork flows through Chandalar Lake which is eight miles long and one to two miles wide. Below this lake the river becomes less braided. From the beginning of its braided and lake area to its mouth, the North Fork's gradient is ten feet per mile. 29/

West Fork Chandalar River

The West Fork Chandalar River flows eighteen miles to the North Fork. This small stream drains a low lying area between the Chandalar and the South Fork of the Koyukuk, as well as ridges to the south rising 2,000 feet above the valley floor. 30/

Middle Fork Chandalar River

The headwaters of the Middle Fork of the Chandalar River are on the 7,000-foot slopes of the Philip Smith Mountains in the Brooks Range only a few miles south of the Continental Divide. The river flows south then southwest to its confluence with the Chandalar. On its 110-mile course the river drains 1,776 square miles. It is braided over most of its length. It drops 1,000 feet in its first ten miles. In the next forty-three miles down to the mouth of Your Creek the gradient is thirty feet per mile. Below this the gradient is only seven feet per mile. 31/

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East Fork Chandalar River

Heading on slopes of the Brooks Range that reach 6,500 feet in elevation, the East Fork of the Chandalar flows south-southwesterly in a braided channel for 199 miles to enter the Chandalar River at river mile 75. The East Fork drains an area of 4,800 square miles. For its first forty miles the river is extremely braided and has a gradient of forty feet per mile. As it leaves the mountains the river becomes more twisting but less braided. It flows through a flat, lake-dotted area to a little below Arctic Village. Its gradient decreases to about ten feet per mile through this section of the river. Below Arctic Village the fork becomes slightly more braided and has fewer lakes near its course. It continues to fall at about ten feet per mile. The East Fork has an asymmetric drainage. All its important tributaries--Junjik River (river mile 201), Crow Nest Creek (river mile 163), Smoke Creek (river mile 159), Wind River (river mile 151), and the North Fork of the East River (river mile 98)--enter from the west. 32/

Christian River

The Christian River, which drains 2,700 square miles, trends generally south for 167 miles to enter the Chandalar River via Cutoff Slough. The clear-water stream heads in the Porcupine Plateau and crosses the northern Yukon Flats, approximately seventy river miles below its source. Before reaching the Flats it flows through a single channel in a mile-wide flat, marshy valley. Its gradient in this section is twenty-three feet per mile. Upon entering the Flats the river becomes more sinuous and braided and the gradient decreases to five feet per mile. 33/

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BIRCH CREEK

The headwaters of Birch Creek are in the Yukon-Tanana Upland. Eagle and Ptarmigan creeks, two small clear-water mountain streams that head on slopes 3,500 feet high, converge to form Birch Creek. From this point the river flows south about fifteen miles where Harrington Fork joins from the west. The river then flows east. The South Fork enters about forty-five miles downstream (river mile 291). Thirty miles further the river turns and tortuously meanders northward for the remainder of its journey to the Yukon River. At river mile 89 Birch Creek splits into upper and lower mouths which flow into the Yukon River at river miles 998 and 978, respectively. The upper mouth enters the Yukon River via a short, wide, unnamed slough that the creek joins at mile 1.7. The lower mouth flows into Birch Creek Slough and thence into the Yukon. In total, Birch Creek is 314 miles long and drains an area of 3,776 square miles.

In its first eighty miles the creek flows through a valley which cuts through rolling hills and low mountains of the upland. It meanders moderately and is not braided after the first thirty miles. The gradient above Harrington Fork is thirty-seven feet per mile; from Harrington Fork to the uppermost extension of the Yukon Flats (river mile 283) it is only thirteen feet per mile. In the Flats Birch Creek widens. At times the course of the creek is difficult to distinguish in the maze of channels, sloughs, and bog lakes. Topographical relief is minimal. The gradient of the distributaries is less than three feet per mile. 34/

HADWEENZIC RIVER

The Hadweenzic River flows into the Yukon River from the north. It originates in the Kokrine-Hodzana Highlands but for most of its eighty-one mile course it crosses and drains the northwestern section of the Yukon Flats. The river course is sinuous, generally bearing east then southeast into an anabranch that in turn enters the Yukon River at river mile 974. 35/

HODZANA RIVER

The Hodzana River drains a large portion of the northeastern Kokrine-Hodzana Highlands. From the confluence of its headwater tributaries, the river flows east and a little north. In this upland section it is joined by Granite Fork and Pitka Fork from the north and Mud Fork from the south. Leaving the highlands the river turns southeast to wind its way through the western Yukon Flats to the Yukon River. The stream enters the Yukon via Hodzana Slough. Hodzana River enters the slough at mile 2.7; the slough enters the Yukon at river mile 922. In total, the river is 105 miles long and drains an area of 1,293 square miles. 36/

BEAVER CREEK

Draining the White Mountains, Bear and Champion creeks merge to form Beaver Creek. The clear non-glacial stream follows a sinuous course for 298 miles to enter the Yukon River via Beaver Slough at river mile 938. In all, Beaver Creek drains an area of 5,360 square miles.

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In its upper reaches, Beaver Creek is slightly braided and flows in a valley 1,000 to 1,500 feet below surrounding mountains. The creek trends west around the southern extremity of the White Mountains. At river mile 259 Beaver Creek turns abruptly and heads northeasterly as a slightly braided stream.

Near the mouth of Victoria Creek (river mile 182), Beaver Creek enters the Yukon Flats. The channel becomes more winding and the gradient, which had been over ten feet per mile above the creek's big bend and seven feet from that point to Victoria Creek, drops to less than three feet per mile. 37/

DALL RIVER

The Dall River heads amid the 2,500 feet high Hodzana uplands. It flows about seventy-seven miles and drains nearly 1,200 square miles north of the Yukon. For its upper-most twenty-two miles it trends southward. Above the West Fork (river mile 67) it is a single-channel stream tumbling through a narrow valley at a rate of over eighty feet per mile. Below the West Fork the valley widens, oxbow lakes become frequent, and the gradient slackens. The river swings to the east at approximately river mile 55. Almost simultaneously it flows out of the hills and into the Yukon Flats. Through most of the Flats the Dall maintains a single channel as it tortously winds its way amid numerous small lakes. The river in the Flats has a gradient of about two feet. At river mile 29 the Dall accepts the waters of the The Forks, a major tributary draining a large segment of the Flats between the Dall and the Hodzana. At about the same point the river turns south to enter the Yukon at river mile 853. 38/

LITTLE DALL RIVER

The Little Dall River flows about sixty miles, first east for nearly ten miles and then south, to enter the Yukon River about four miles downstream from the Dall River. It drains an area of hills west of the Sussaymin Lakes before entering the Flats and the southern Sussaymin Lake. Below the lake the river winds its way on a tortuously twisting route amid bog lakes and oxbow lakes. The current is almost imperceptable since the gradient is barely one foot per mile. 39/

RAY RIVER

Draining a portion of the Ray Mountains, the Ray River flows sixty-nine miles to empty into the Yukon River at river mile 826. From its headwaters on slopes over 2,400 feet in elevation, the clear-water river trends northeasterly for nine miles through a steep valley and falls at a rate exceeding 100 feet per mile. Near the Ray River Hot Springs the stream turns east and flows through a wider valley. At river mile 34 scattered oxbow lakes appear and at river mile 29 the Ray starts to head southeast to meet the Yukon. In its lowest ten miles the Ray flows through a marsh land. The gradient below the Hot Springs is eight feet per mile. 40/

Based on an aerial examination of the stream in July 1974, Grumman Ecosystem Corporation described the entire length of the river as one with meanders, sand shoals, bank erosion, sweepers, and snags. Pools and riffles are common. The stream bed is gravel; the banks are cut. The region adjacent to the river is rugged. The corporation estimated that Ray River drains 680 square miles. 41/

HESS CREEK

The North and South Forks of Hess Creek, each about twenty miles long, head in the northwestern foothills of the White Mountains and converge to form Hess Creek. The main stream winds in a westerly direction for ninety-one miles to enter the Yukon River at river mile 795. For its first thirty-five miles the creek makes its way through a relatively narrow valley. At about river mile 55 the stream enters a flat boggy valley with occasional oxbow lakes. In this valley which continues to the Yukon, Hess Creek meanders wildly and falls as a rate of only four feet per mile. In 1974 Grumman Ecosystems Corporation noted that Hess Creek was characterized by cut banks and gravel bars. Some stretches were only fifteen feet wide, while some straight stretches were up to eighty feet wide. At its mouth the creek was fifteen feet wide. The corporation estimated that the river drained 1,206 square miles. 42/

MINOOK CREEK

Minook Creek heads on the northern side of Eureka Dome and flows twenty-five miles north to enter the Yukon River at river mile 770. In total, the creek drains 198 square miles. It flows in a single channel through a nearly straight valley in its course to the Yukon River. Its valley is very narrow; through most of its course ridges on both sides of the creek rise 500 feet within a half mile of the stream bed. Minook Creek's gradient exceeds fifty feet per mile. The creek's tributaries--the most important of which are Hoosier, Little Minook and Hunter--are short and have characteristics similar to Minook's. 43/

YUKON FLATS LAKES

The Yukon Flats contains about 40,000 lakes. The following table is derived from a U.S. Fish and Wildlife study. Agency personnel landed floatplanes on these lakes to take measurements in July 1962. Since the agency only visited lakes on which their plane could land, these lakes are somewhat larger than the norm. 44/

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Lakes in the Yukon Flats

Name	Location (all Fairbanks Meridian)	Length (in miles)	Width (in miles)	Depth (in feet)
Twelvemile	T. 19 N., R. 10 E.	2 1/2	3/4	52
"Middle"	T. 16 N., R. 9 E.	2	1 1/4	6-8
Twin Island	T. 16 N., R. 9 E.	2	1 1/4	
Chloya	T. 16 N., R. 9 E.	2 3/4	1 1/4	14
Discovery	T. 16 N., R. 11 E.	1	3/4	3-5
Hat Lie	T. 18 N., R. 10 E.	2	1	17-18
Ninemile	T. 19 N., R. 13 E.	3/4	1/2	6
Veh Tenjerlow	T. 25 N., R. 8 E.	1 1/4	1/2	6
Tivehvun	T. 23 N., R. 11 E.	2 1/4	1/2	18
Vunzik	T. 23 N., R. 5 E.	1/2	1/2	5
Tony	T. 19 N., R. 3 E.	1 3/4	1 3/4	14

Name	Location (all Fairbanks Meridian)	Length (in miles)	Width (in miles)	Depth (in feet)
George	Ts. 18 and 19 N., R. 2 E.	2 1/4	1/4	13
Nelson	T. 19 N., R. 1 W.	2	1	5
Adam	T. 20 N., R. 1 W.	1	3/4	5-7
Big	T. 18 N., Rs. 1 W. and 1 E.	3 1/2	1	7
Moon	T. 15 N., R. 7 W.	2	1/4	6
Sussaymin "A"	T. 15 or T. 16 N., R. 10 W.	1	1	14
Fishnet	T. 16 N., R. 6 W.	3	1/4-3/4	4
Savayeit	T. 17 N., R. 8 W.	1 1/2	1/2	4
Flat	T. 17 N., R. 5 W.	1 1/4	1	7
Tanjoga	T. 17 N., R. 5 W.	2 1/2	1 1/4	6-7

Name	Location (all Fairbanks Meridian)	Length (in miles)	Width (in miles)	Depth (in feet)
Tulebagh	Ts. 17 and 18 N., R. 5 W.	2 1/2	3/4	6
Geese	T. 16 N., Rs. 7 and 8 W.	1 1/2	1/2	4

Chapter One--The Upper Yukon Region

1. The overview of the upper Yukon region is derived from Clyde Wahrhaftig, Physiographic Divisions of Alaska, U. S. Geological Survey Professional Paper 482 (Washington, D.C.: Government Printing Office, 1965), pp. 21-25; Lidia L. Selkregg, Alaska Regional Profiles: Yukon Region (n.p. University of Alaska and Arctic Environmental Information and Data Center, n.d.), pp. 2, 6-7, 20-21, 31-33, 98-100, 133, 141, 156, 189, 192-95, 197-217; Grumman Ecosystems Corp., Report on the Navigability of Streams Tributary of the Yukon River, Alaska (Anchorage, Alaska: Army Engineer District, 1975), pp. 2-27, 2-32, 2-49, 2-124-2-126. Throughout this chapter river distances and mileage are derived from U. S. Geological Survey inch-to-mile maps.

2. Selkregg, Alaska Regional Profiles, p. 133; Grumman, Report on . . . Navigability, pp. 3-95 - 3-103; USGS, Eagle Quadrangle, 1:250,000 map, 1957; USGS, Eagle Quadrangle, A-2, B-1, B-2, C-1, 1:63,360 maps, 1956.

3. Grumman, Report on . . . Navigability, pp. 3-103 - 3-104.

4. Ibid., p. 3-96; C. E. Ellsworth and R. W. Davenport, Surface Water Supply of the Yukon-Tanana Region, U. S. Geological Survey Water-Supply Paper 342 (Washington, D.C.: Government Printing Office, 1915), p. 70; USGS, Tanacross Quadrangle, D-4, D-5, D-6, 1:63,360 maps, 1956; USGS, Eagle Quadrangle, A-4, A-5, 1:63,360 maps, 1956.

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5. Grumman, Report on . . . Navigability, pp. 3-96 - 3-97; J. B. Mertie, Jr., A Geologic Reconnaissance of the Dennison Fork District Alaska U. S. Geological Survey Bulletin 827 (Washinton, D.C.: Government Printing Office, 1931), p. 5.

6. Grumman, Report on . . . Navigability, pp. 3-99 - 3-102; Selkregg, Alaska Regional Profiles, p. 133; USGS, Eagle Quadrangle, A-2, A-5, A-6, B-3, B-4, B-5, C-3, 1:63,360 maps, 1956.

7. See footnote 6.

8. Ellsworth and Davenport, Surface Water Supply of the Yukon-Tanana Region (Bull. 342), pp. 120-21; E. A. Porter, "Water Supply of the Fortymile, Seventymile, and Eagle Districts" in Mineral Resources of Alaska 1911, U. S. Geological Survey Bulletin 520 (Washington, D.C.: Government Printing Office, 1912), p. 236; USGS, Eagle Quadrangle, C-2, D-1, D-2, 1:63,360 maps, 1956.

9. USGS, Eagle Quadrangle, C-1, D-1, 1:63,360 maps, 1956.

10. Selkregg, Alaska Regional Profiles, p. 133.

11. Ellsworth and Davenport, Surface Water Supply of the Yukon-Tanana Region (Bull. 342), pp. 131-32; USGS, Eagle Quadrangle, D-1, D-2, D-3, D-4, 1:63,360 maps, 1956.

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12. C. E. Ellsworth and G. L. Parker, "Water Supply of the Yukon-Tanana Region, 1910" in Mineral Resources of Alaska 1910, US Geological Survey Bulletin 480 (Washington, D.C.: Government Printing Office, 1911), pp. 213-14.

13. USGS, Eagle Quadrangle, D-1, D-2, D-3, D-4, 1:63,360 maps, 1956.

14. J. B. Mertie, "The Tatonduk-Nation District, Alaska" in Mineral Resources of Alaska 1930 U. S. Geological Survey Bulletin 836 (Washington, D.C.: Government Printing Office, 1933), pp. 351-52.

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17. U. S., Bureau of Outdoor Recreation, Alaska Task Force (hereafter BOR-ATF), "Charley River and Tributaries, Alaska: A Wild and Scenic River Analysis," May 12, 1973 with September 9, 1973 updating, Charley River file, Wild and Scenic Rivers project, National Park Service, Anchorage, Alaska; Grumman, Report on . . . Navigability, p. 3-110.

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19. USGS, Charley River Quadrangle, A-5, A-6, B-5, 1:63,360 maps, 1956.

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32. Ibid.; USGS, Artic Quadrangle, 1:250,000 map, 1956; USGS, Christian Quadrangle, 1:250,000 map, 1956; Selkregg, Alaska Regional Profiles, p. 133.

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35. Ibid.; USGS, Fort Yukon Quadrangle, B-6, C-6, 1:63,360 maps, 1956; USGS, Beaver Quadrangle, 1:250,000 map, 1956.

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42. Ibid.; 2-54, 4-7 - 4-10, 8-3; USGS, Livengood Quadrangle, C-3, C-4, C-5, C-6, 1:63,360 maps, various years.

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CHAPTER TWO

EXPLORATION

On June 18, 1847, the Pioneer, a boat under the command of Alexander Hunter Murray, shoved off from LaPierre House on the Bell River, a tributary of the Porcupine River. Murray led a Hudson's Bay Company attempt to establish a fur trading post near the mouth of the Porcupine on the unexplored Yukon River. The boat, drawing two feet of water when loaded with a year's provisions and trade goods as well as Murray's small party, slipped down to the Yukon River within seven drizzly days. Shortly after arriving the frontiersmen began construction of Fort Yukon, the first white settlement on the Upper Yukon River. 1/

Fort Yukon constituted one link in the chain of Hudson's Bay Company trading posts along the Mackenzie River and across the Rocky Mountains into the drainage of the Yukon. John Bell was the first of his firm's agents to enter the Yukon River basin of Russian America. In 1842 he explored the Bell and possibly the Porcupine rivers in Canada. Prompted by its desire for furs, the company again dispatched Bell to the area. On May 28, 1845, he left Fort McPherson on the Peel River, crossed the Richardson Range and descended the Porcupine in a canoe to its confluence with a river which the Indians called the "Youcon". Unaware of the significance of his discovery, he returned to Fort McPherson via the Bell River portage. The British traders, using Sir John Franklin's observations of longitude on the Mackenzie as a reference, strongly suspected that Bell's Youcon was in Russian territory. However, the attraction of a promising

fur country was too much of a temptation and the Hudson's Bay Company ordered Alexander Murray to establish Fort Yukon. 2/

Upon arriving at the site of what would be the most westerly of the Hudson's Bay Company outposts, Murray laid out a ten-foot-high picket log fort with two corner towers. He considered this, "the best and strongest [trading station] . . . between Red River and the polar sea" -- a necessity, he felt, in view of a possible confrontation with the Russians. 3/ However, Murray's fear of the Russians was unnecessary. In 1839, the Russian-American Company had established a fur trading post at Nulato, nearly 550 miles downriver from where Murray built his fort. The Russians regularly traded with the Natives at this post. Yet at the time of the founding of Fort Yukon Navy Lieutenant Lavrentiy Alekseyevich Zagoskin's 1843 exploration of the Yukon to a point between the Melozitna and Nowitna was the farthest Russian penetration of the great river. Doubtlessly, the Indians informed the Russians of the presense of the Hudson's Bay post, but Russians never challenged the British trading center. 4/

The British, too, were eager to avoid a direct conflict with the Russians. Hudson's Bay Company Governor Sir George Simpson wrote of Fort Yukon in December 1850 that "we should carry on operations there without reference to the movements of the Russians, until we ascertain to a certainty that we are on their territory and are warned off by them . . . ; in the meantime we must make the most of our opportunities in that new and valuable country, working our way inland rather than towards the coast, where there is a chance of meeting the Russians." Possibly in line with this strategy of consolidating but not expanding its position toward the Russian frontier, Simpson in 1815 ordered Robert Campbell to descend the Pelly River from Fort Selkirk. 5/

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Robert Campbell had discovered the Pelly after portaging from the Frances Lake area of the Laird river in 1840. In 1842 he built the Hudson's Bay post on Frances Lake, and in 1848 he established Fort Selkirk at the confluence of the Pelly and Lewes. Campbell believed the Pelly to be the same stream as the Yukon, an opinion Murray felt was confirmed when he heard Indians visiting Fort Yukon describe Campbell's 1844 exploration of the Pelly. Governor Simpson, who had believed at least as late as 1844 that the Pelly flowed into the Gulf of Alaska, may have been persuaded to change his view by his explorers. In any case, Campbell eagerly accepted his order to proceed on his westward exploration. Not long after midnight on June 5, 1851 he and a small party departed Fort Selkirk. He had brief cordial encounters with Indians on the river and arrived at Fort Yukon on June 8. Campbell was the first westerner to travel the Yukon above Fort Yukon, though he made only superficial observations of the region. 6/

In the nearly two decades in which the Hudson's Bay Company maintained its post at the juncture of the Yukon and Porcupine, the firm's agents had to gather little geographical knowledge beyond the banks of the two major rivers in order to prosper. The fort's contingent usually numbered only a few whites and they seldom left the post to trap or hunt. Rather, nearby Indians supplied meat and Natives in the region brought furs to trade after break-up when the annual supply boat arrived. After trades were made the Hudson's Bay men pressed the furs into bundles and started them on their long boat route up the Porcupine, over the portage to the Peel, down that river, and up the Mackenzie River toward southern Canada. Not until 1862 or 1863 when Hudson's Bay trader Strachan Jones floated down the Yukon as far as Nowikaket, an Indian

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village at the mouth of the Nowitna, did this routine appear to vary. Jones' pioneering journey on the stretch of the Yukon between Fort Yukon and the Russian frontier, which shortly preceded Russian-American Company agent Ivan Simpson Luken's 1863 ascent of the river to the Hudson's Bay post, helped inaugurate British trading at Nuklukayet. In the years just prior to the American occupation of Fort Yukon, the British traders shortly after break-up regularly traveled from the fort to this trading rendezvous at the mouth of the Tanana River. The Russians also visited Nuklukayet from Nulato, still their farthest inland post on the Yukon. 7/

During the 1850s and 1860s, Fort Yukon played host to a number of scientists, missionaries, and other adventurers whose subsequent writings added to the outside world's understanding of the region. In 1860 and 1861 Robert Kennicott, a zoologist, lived and traveled with Fort Yukon area Natives studying their life-style and the wildlife. He collected more than a ton and a half of animal specimens and clothing and implements of the Indians for his sponsors at the Smithsonian Institution but wrote little of the area's geography. 8/

In 1862 the Church Mission Society of London followed up the brief missionary work of Reverend William W. Kirkby at Fort Yukon in 1861 and 1862 by sending Reverend Robert McDonald to teach the Kutchin Indians of the area about western religion and the alphabet. He mastered the Kutchins' language and by traveling and conversing directly with them learned much about the land. So far as is known, he was the first white man to explore Birch Creek. On July 15, 1863, he left Fort Yukon in a canoe with two Natives to investigate a sacred place the Indians called "Kotlo". The Indians claimed land fell in mud slides while the earth screamed like a human voice. A little over forty miles up

the Yukon from the fort they crossed a portage to "Birch River" (Birch Creek), descended that stream two miles to a "craggy and shoaled" tributary called "Kootlonjok". Ascending that stream, they reached "Kotlo," a 100-foot-high hill with a waterfall, crumbling earth, and an abundance of fossils. While at "Kotlo" McDonald noticed flakes of gold in a nearby stream. He and his guides left July 22 and arrived back at Fort Yukon the following evening. Within a decade, Frederick Whymper and William Dall would allude to McDonald's journey in their books about Alaska, but nothing came of the clergyman's discovery of gold on Kotlo, traditionally believed to have been on Preacher Creek, for thirty years. 9/

The outside world first obtained considerable knowledge of interior Alaska as a by-product of an aborted Western Union Telegraph Company venture. For two years prior to the successful laying of the Atlantic cable, Western Union planned for a telegraph connection of Europe and America via Alaska and Siberia. The company hired pioneers such as Kennicott, who died at Nulato before the project got well underway, Lukin, the Russian-American Company agent, the Hudson Bay fur trappers Frank Ketchum and Michael Lebarge, and a number of Native guides. In the summer of 1866, Lukin, Ketchum, and Lebarge ascended the Yukon River from Nulato to Fort Yukon in a three-hole bidarka and during the following winter the last two sledded from Nulato back to Fort Yukon. 10/

More ambitious Western Union exploratory work continued in 1867. William Healy Dall, a former Smithsonian Institution scientist, led a party including Frederick Whymper over the same portion of the river covered the preceding year by Lukin, Ketchum, and Lebarge. In the meantime Ketchum and Lebarge boated from Fort Yukon to the by then abandoned site of Fort Selkirk and then returned.

All of this territory had already been traversed by whites. However, Dall and Whymper proved to be exceptionally competent observers. Their books provided the first extensive discussion of the upper Yukon basin.

Prior to Dall's and Whymper's accounts, knowledge of the upper Yukon was very rudimentary. This was reflected in an 1867 map compiled by the U.S. Coast Survey. It showed the general courses of the Yukon and Porcupine. Otherwise the cartographer could do little to fill the void in the east central area of the United State's newest possession. The map maker drew the Tanana entering the Yukon approximately at the correct location but he showed it flowing from the southwest rather than the southeast. This bit of misinformation came from a map in Sir John Richardson's Arctic Searching Expedition published in 1851. Richardson got his impression of the Tanana from Murray, who doubtlessly derived his information from discussions with Natives visiting Fort Yukon. Only one other tributary to the Yukon appeared on the Coast Survey's map (probably the Tatonduk) and the map displayed no topography in the region. 12/

For his 1870 volume, Alaska and its Resources, Dall prepared a map that remained the standard reference for a decade and a half. Dall rendered the Porcupine and upper Yukon in a generally accurate manner and from Native accounts, he was able to correct the U.S. Coast Survey's sketch of the Tanana. He showed few tributary streams and the headwaters of these were largely guesswork. Whymper River (Hess Creek), Dall River, and Birch Creek were the only ones drawn below Fort Yukon. Birch was depicted as a short stream and instead of flowing into it, Rev. McDonald's Kotlo River was drawn entering the Yukon. Although Hudson Bay traders at Fort Yukon must have known of the numerous

rivers dropping into the Porcupine, Dall sketched in only two and made no note of the Chandalar River. Dall identified one river as Antoine River, named by Robert Campbell after Fort Yukon interpreter Antoine Houle. This may be the present-day Kandik River. Dall located the Yukon Flats and he ringed the flats with unidentified "low hills" to the west, south, and east. He called the mountains in the distant north the "Romantzoff Mountains". Despite Dall's encouragement for other expeditions ("the interior everywhere needs exploration"), most of the map's voids would remain blank until the gold rushes of the 1880s, 1890s, and early 1900s. 13/

Captain Charles P. Raymond was the first U.S. Government official to lead a party to east-central Alaska. The primary purpose of his 1869 voyage, on which he inaugurated steamboat travel on the river in the fourty-nine-foot-long Yukon, was to determine if Fort Yukon was in the territory acquired from Russia and to order the British traders out if they were on American soil. Raymond astronomically confirmed that the fort was in American territory and consequently the Hudson's Bay Company relocated its trading post at Rampart (Old Rampart) about 170 miles up the Porcupine. Raymond also astronomically recorded the course of the Yukon to the fort and indicated more upper Yukon tributaries, or rather mouths of tributaries, than had Dall. Although it is not certain in each case, the streams probably were the Porcupine, Chandalar, Birch, Dall, Little Dall, Ray, Hess, and Minook. He did not proceed above the fort and so contributed no new findings on the vast eastern end of the upper Yukon. 14/

For more than a decade, the upper Yukon was left almost exclusively to Natives and fur traders. At various times in the 1870s and early 1880s American-financed

traders manned posts at Tanana, Fort Yukon, Belle Isle (present-day Eagle), and Fort Reliance on the Yukon in Canada, while the Hudson's Bay Company continued to operate out of Rampart. 15/

Yet, as in other American frontiers, gold prospectors were not far behind the fur seekers. In 1874 over a thousand men rushed to the new strikes in western British Columbia's Cassiar district and in 1880 the rich paydirt of Juneau was uncovered. More adventurous, if less immediately successful, men traveled even farther afield. Prospectors penetrated as far north as the Laird River by 1871 and a group headed by Leroy N. "Jack" McQuesten and Arthur Harper prospected in the Fort Yukon area in the summer of 1873. And in 1880, prompted by white prospector's frustration with Indian opposition, U.S. naval officers intimidated the Chilkat and Chilkoot bands to permit use of the relatively direct route to the upper Yukon provided at the north end of the Inside Passage by the Chilkoot Pass. The first year the pass was open, twenty-five gold-seekers crossed to the Yukon's headwaters. 16/

The likelihood of increasing numbers of Americans entering interior Alaska along with the enthusiasm for exploration of General Nelson A. Miles, army commander for the district, prompted two mid-1880s military expeditions. In 1885, Lieutenant Henry T. Allen touched the perimeter of the upper Yukon in stopping at Tanana on a route which took him into the Copper, Tanana, Koyukuk, and lower Yukon valleys. Somewhat more importantly for the upper Yukon, Miles ordered Lieutenant Frederick Schwatka's 1883 reconnaissance mission. Schwatka went over the Chilkoot Pass, explored the sources of the Yukon in Canada, and floated downriver to St. Michael. He provided the most reliable information on the Chilkoot Pass then available, sketched a useful map of about 500 miles of the Canadian Yukon

previously uncharted, and located several Native villages on the river within Alaska. Finally, he helped publicize the territory once he returned to the States. Nevertheless, the voyages of Allen and Schwatka did nothing to end the outside world's ignorance of the lands which lay out of eyesight of the Yukon's banks. 17/

However, when Allen was completing his exploration, the Alaskan Interior was on the verge of a period of revolutionary change. In 1886 prospectors edging into the region from the Yukon's headwaters struck gold on the Fortymile River. A small rush to the area occurred the following year and, reinforced by discoveries on Minook and upper Birch creeks in 1893 and on American Creek two years later, over a thousand men were scouring the American upper Yukon drainage for gold by the mid-1890s. Then in 1896 George Carmack found the enormously rich Klondike paydirt fifty miles east of the Alaskan-Canadian boundary. Along with the Nome discovery of 1899, and other smaller finds, the Klondike attracted thousands of men to the North. By 1900 Alaska's population had doubled from its 1890 total to 64,000; the vast majority of the newcomers arriving in the years just prior to the end of the century. And early in the twentieth century more men were attracted by the Fairbanks strike of 1902 and by other new mining districts scattered throughout Alaska south of the Brooks Range, including the Chandalar, the last important field discovered in the upper Yukon in 1906. 18/

The repercussions of this flood of gold rushers were manifold. To supply the miners, the White Pass and Yukon Route in 1900 completed a railroad link from Skagway to the Yukon's headwaters. Scores of steamboats churned along the Yukon where prior to 1886 only three steamers worked on the river. In the

upper Yukon region these boats docked at Rampart, Beaver, Circle, Eagle, and less permanent supply points which sprang up on the river at places most convenient to the various mining districts. 19/

These developments dictated greater government activity in Alaska. To settle the ownership of the gold streams in the Fortymile and Sixtymile river area, the boundary with Canada needed to be more precisely determined. The Army had to establish a presence to keep order in the face of thousands of ill-prepared prospectors flooding to the region. In 1899 military posts were placed at Eagle and the mouth of the Tanana, but these had to be linked by good communication and transportation routes to serve effectively. Morever, to aid in the exploitation of Alaska's resources, prospectors had to have a better idea of the Interior's geography, travel routes had to be improved, and scientific geological investigations had to be undertaken. All of these activities required and led to greater knowledge of the geography of the upper Yukon. 20/

Beginning in 1887 and continuing in the next three years, Canadian and American surveying parties astronomically determined and marked the boundary where it was intersected by the Yukon and Porcupine rivers. These surveyors also made hasty expeditions up the Tatonduk and along the boundary from about forty miles south of the Porcupine to the Arctic Ocean. However, the geographic knowledge gained from this was minimal. These expeditions were otherwise notable for introducing steamboat transit on the Porcupine when the second Yukon in 1889 transported an American surveying party to within forty miles of the 141st parallel where it was stopped by low water. As a result of observations made on this trip, the Hudson's Bay Company post on the Porcupine was forced to move about thirty miles farther upriver. 21/

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The Army's initial goal in the Interior during the Klondike Gold Rush Era was to maintain order. Captain P. H. Ray and Lieutenant Wilds P. Richardson entered the region in the late summer of 1897. Their reports to superiors over the following year described the disorderly and destitute conditions which prevailed and Ray's recommendations led to the building of forts Egbert and Gibbon at the mouths of Mission Creek and the Tanana River, respectively, in 1899. To maintain these posts and even more importantly to aid the region's development, the Army set out to explore and establish a route from an ice-free port on the Gulf of Alaska to the Yukon River. Such a route would serve as an alternative to the St. Michael route which ice closed for most of the year and the Chilkoot and White Pass routes which require transit through Canada. 22/

In 1898, the Army dispatched expeditions to scout such a route from bases at Belle Isle, Valdez, and Cook Inlet. The detachment assigned to begin at Belle Isle never reached the Interior, having become stalled at Dyea. Captian E. F. Glenn sent several parties under his Cook Inlet command to examine the Kenai Peninsula, and the Susitna, Matanuska, and Tanana valleys. Only Lieutenant P. G. Lowe under Captain W. R. Abercrombie's Valdez command explored in the Upper Yukon Region. On July 13, Lowe's party succeeded in ascending the Valdez Glacier and by late August it crossed the Tanana. From near the mouth of the Tetlin River, Lowe made for the Fortymile River, reaching Dennison Fork on September 5 and Moose Creek on the Fortymile on September 20. The next day the party bought a boat. Leaving one man behind to guide the horses overland to the Yukon, the rest of Lowe's detachment on September 21 floated down to the town of Fortymile. Lowe had no time to make detailed geographical

observations on his journey since he was most concerned with getting his men safely to the Yukon before winter set in. A number of the group's pack horses failed to survive. However he did note the inadequacy of the cartography of the region to that date; he mistook Dennison Fork for Walker Fork because Dennison was not yet on the map. 23/

In 1899 the Army undertook more exploration. Three expeditions traveled in the upper Yukon. Second Lieutenant George McManus spent most of April reconnoitering an overland route from Circle to the Tanana River. Traveling on foot with reindeer as pack animals, he went about 145 miles out of Circle toward the Tanana where fear of being caught on the Tanana after break-up caused him to turn back. Nevertheless, as a result of his trip he drew a map of the South Fork of Birch Creek and a trail leading from it to the Tanana. 24/

Two other expeditions traversed the Fortymile country. On June 16, Quartermaster's Clerk John F. Rice, his three-man command, and seven horses left Valdez reaching the Tanana on July 16 via Keystone Pass, Copper Center, and Mentasta Pass. Topographer C. E. Griffith departed Knik Arm on June 9, and traveled through the upper Copper River Basin before hitting the Mentasta Pass trail. Griffith followed this trail and ferried across the Tanana on August 2. The two parties, one two weeks behind the other, traveled similar routes in the upper Yukon going to Eagle via Kechumstuk Creek, Mosquito Fork, and Franklin, Steele, O'Brien, and Mission creeks. Rice returned to Valdez the way he had come, while Griffith traveled by boat down the Yukon, made an excursion to Nome, and then by sea back to Cook Inlet. 25/

In 1900 Congress passed legislation which set the military to constructing a telegraph system to connect its posts throughout the territory. By the end of 1901 a line extended from St. Michael on Norton Sound to Fort Gibbon at the mouth of the Tanana and from Valdez into the Copper River Basin. The following year Lieutenant William "Billy" Mitchell completed the laying out and building of the line from Eagle to Tanana Crossing where it connected with one which was extended from Valdez. The last gap lay between Fort Gibbon and the Eagle-Valdez line. In 1900 and 1901 four Army expeditions had failed in their attempts to blaze a route along the southern part of the Yukon Flats. Little is known of the travel of these parties although at least one of them produced a sketch map of the area. Consequently, the army chose to connect the system via the Tanana drainage. In the winter and spring of 1903 one detachment worked up the Tanana from Fort Gibbon while another came from Kechumstuk over a divide and down the Goodpaster, completing the line on June 27. 26/

Reacting to the need for better and more secure transportation to the Interior, Congress in the appropriations bill of April 23, 1904 provided for a survey of an All-American wagon road from Valdez to Eagle. Until a road from an ice-free port to the Interior was built, the only year-round overland route for heavy freight was the railroad through the White Pass. But this went through Canadian territory and might be shut during times of tense relations and at all times involved customs costs. In the summer of 1904 Army Engineer J. M. Clapp placed four surveying parties in the region between Valdez and Eagle. The two groups detailed to work on the southern half of the route arrived at Valdez on June 11; the first spent its summer surveying the route from Valdez to Tonsina while the second began at Tonsina and worked north. The other two parties traveled to Eagle via the White Pass. The group headed by civil engineer and

surveyor E. G. Hunt charted a route along the ridges and valleys up American Creek, down Champion Creek to the North Fork of the Fortymile, up Hutchinson, Confederate, and Humbug creeks, and thence down Willow and Gold Creek. From here Hunt proceeded along the north side of Mosquito Fork to Kechumstuk Creek. A. Wold, another engineer, headed the party which worked south from Kechumstuk. For twenty-four miles his survey largely paralleled the extant trail along the Mosquito Fork. Wold then crossed the Kechumstuk Hills into the Tanana River valley where he met the surveyors working north from Tonsina. However, no road resulted from this survey, primarily because Fairbanks, the new settlement in the heart of a rich gold field, became the more desirable terminus for a road to the interior. 27/

The 1904 appropriations bill which called for the survey of the Valdez to Eagle route also mandated the Army's only expedition north of the Yukon in the Upper Yukon Region. Presumably to assist mining operations, Congress directed the Army to survey "the shortest and most practicable route" between the Yukon and Coldfoot, a center for the upper Koyukuk gold mines discovered six years earlier. O. A. Piper undertook this mission in the summer of 1904. After accompanying two of Clapp's groups to Eagle, Piper continued down the Yukon to Fort Hamlin which he reached on June 21. Three days later he and his party of five with pack horses left the Yukon two miles above Fort Hamlin and traveled along a ridge to the west of Dall River. After reaching Dall City Piper's trail went north and west along the crest of a ridge dividing the river's two major forks and between the headwaters of the Kanuti and Hodzana rivers. It subsequently crossed the headwaters of Fish and Bonanza creeks and Jim River to Sitkum Pass which it surmounted before descending Slate Creek to

Coldfoot. Like the Valdez to Eagle survey, the Coldfoot survey did not presage construction work; Piper discouraged development saying that the current scale of mining on the Koyukuk did not justify the large expenditure a trail would require. 28/

Along with the Army the U.S. Geological Survey was very active in exploring Alaska. The USGS's goal was to accumulate geological information to assist miners in locating and exploiting mineral resources. However, before geological mapping could be accomplished the Survey first had to provide itself with geographically accurate base maps. Moreover, prospectors demanded good topographical maps to guide them through Alaska's vast wilderness. Therefore, the first USGS party to visit an area normally included an expert topographer. 29/

With the exception of I. C. Russell's participation with the Coast and Geodetic Survey's boundary expeditions in 1899, the first Geological Survey activity in the Upper Yukon Region was that of Josiah Edward Spurr, Harold Goodrich, and Frank C. Schrader. Responding to a Senate resolution, they concentrated their efforts on the important American gold fields on the Fortymile River and American, Birch, and Minook creeks. Having crossed the Chilkoot Pass, Spurr's party in June 1896 floated in an eighteen-foot-long boat christened Skookum from Lake Lindeman high in the Canadian Rockies to the town of Fortymile at the mouth of the stream by the same name. It was only through great effort that the men were able to track the Skookum through riffles and rapids to where the North and South forks converge. Beyond that the boat would not go. On the way up the Fortymile, the men stopped to pack into gold producing streams on Canada's Sixtymile River. Once at the forks, the three explorers

walked up to the bonanza find at Franklin Creek. From here they scattered, Spurr taking a trail (doubtlessly blazed by prospectors) over a ridge to the Chicken Creek mines. Based on a map on which the routes traveled by the men were sketched, his compatriots appear to have hiked along Franklin and Napolean creeks. 30/

Returning to Fortymile on the Skookum, the trio floated down to the mouth of Mission Creek. The next day they tramped over a pack train trail to the placers on American Creek. One of his subordinates continued up the Mission Creek valley to Twelvemile Creek. They then walked back to the Yukon and recommenced their journey. 31/

The party stopped next to examine the Birch Creek district. They hiked from Circle City to the creek on what "was called a wagon road, the brush and trees having been cut out sufficiently wide for a wagon to pass," but Spurr commented that, "taken as a footpath, . . . it was just fair." A boatman ferried them across the stream to a roadhouse where they spent the night. The next two days they followed a well-traveled swampy trail, which was said to be excellent for winter uses, to a roadhouse at the mouth of Hog'em (Deadwood) Creek where another trail led off to other gold producing streams. From this point the trio again split up to cover as much ground in the area as possible. Spurr tramped along Hog'em, Independence, and Mammoth creeks before returning to Circle via Central House. His assistants examined portions of Mastodon, Eagle, Harrison, and Porcupine Creeks. 32/

On August 21, the party again clambered into their boat, and floated down the Yukon to Minook Creek. After camping overnight near its mouth, Spurr,

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Goodrich, and Schrader took separate routes into the interior. Spurr walked three miles up Little Minook Creek while his partners probed other parts of the valley including Hunter Creek. After only two days of hiking, the group boarded Skookum and floated to Nulato where they caught a steamboat to St. Michael. 33/

This was the first extensive scientific investigation of the Yukon's southern tributaries in Alaska. In a series of maps prepared to accompany their reports, Spurr's party gave their rough impressions of the geology of the four mining districts they visited. However, their maps made clear that not only were many of their geological determinations guesswork, but so also was their sketching of those tributaries which they had not traveled. For example, although they rendered a good map of the mining area along the South Fork of the Fortymile, they showed no tributaries to Walker Fork and their rendition of the North Fork was considerably distorted. Spurr's map showed the Tatonduk, Porcupine, and Rapid rivers accurately, thanks no doubt to the work of the boundary plotting parties of 1888-90. Spurr also placed the Kandik, Nation, Charley, Black, and Dall rivers and Beaver and Hess creeks in the correct areas, though their courses were almost entirely conjectural. His maps left a blank in the area north of the Yukon between the Dall and Porcupine. This omission probably was due to the difficulty of locating the mouths of the Hodzana, Hadweenzic, and Chandalar among the sloughs and islands of the Yukon Flats and to the failure of prospectors to locate any gold on those streams. 34/

The clearest single indicator that the U.S. Geological Survey would surpass the military as the prime map-making agency in Alaska came in 1898. At the same time that Lieutenant Lowe's men struggled north from Valdez, a Geological

Survey party led by E. C. Barnard entered the Fortymile via the Chilkoot Pass and the Yukon River. The men made a careful stadia survey of a quadrangle bounded by the border on the east, the 142nd parallel on the west, and the 64th and 65th degrees of latitude on the south and north. This work was designed as a base upon which to later make an accurate geological map of the area. The party used three canoes to get to camps at Eagle and ascend the Fortymile to Nugget Creek, but otherwise, they hiked about the countryside to accomplish their survey. By mid-September, they finished their travels which led to the first detailed map of a portion of the upper Yukon. Other USGS parties in the coming decades would visit the Fortymile to study its geology and water supply, but Barnard had provided all the crucial topographical data. 35/

In the summer of 1902 Alfred Hulse Brooks led a USGS exploration and mapping expedition to the upper Yukon RIver. Beginning at Cook Inlet, Brooks followed the Skwentna River and the west side of the Alaska Range to the Tolovana drainage. From the Tolovana his expedition entered the valley of Little Minook and followed a trail along it and Minook Creek to Rampart. Despite the rapidity and hardship of travel which necessitated the destruction of nine of the expedition's twenty horses, a member of the party maintained a continous survey throughout the trip. 36/

In the same year, USGS geologist Arthur J. Collier and two assistants floated down the Yukon from Canada in a canoe and a rowboat to examine coal producing areas. Presumably this was to assist in analyzing and exploiting this resource required by river steamboats. In the Upper Yukon region, he found only two locations, one on Nation River and another opposite the mouth of Hess Creek, to have been mined. Yet, Collier visited coal fields on American, Washington, Coal, and Minook creeks. 37/

A map issued by the USGS dated 1903 revealed how much had been learned in the half decade since Spurr's map. The 1903 map included the extensive topographical information gathered in 1903 by the Survey's T. G. Gerdine who mapped an area of the headwaters of the Fortymile and Charley rivers and Birch Creek in a journey, much of it virtually on the heels of Billy Mitchell, from Kechumstuk to Fairbanks and then on to Circle. Although only Barnard, Brooks, and Gerdine had done scientific mapping south of the Yukon, the 1903 USGS map, doubtlessly borrowing from foot traverses by its own and military parties, showed in a generally accurate fashion the course of every major southern drainage into the Yukon. In the following years other Survey topographers, principally D. C. Witherspoon, completed the scientific mapping of this area. And over several more decades USGS employees, most notably Louis M. Prindle and John B. Mertie Jr., continued a careful study of the region's geology. 38/

In the first years of the twentieth century, much of the land area north of the Yukon River remained unexamined. With the exception of the boundary surveys in the late 1880s, only one other expedition probed this area of the Upper Yukon region before the turn of the century. In 1899, probably in response to the gold strike in the Koyukuk drainage a year earlier, Frank C. Schrader of the U.S. Geological Survey and six other men ascended the Chandalar River, and portaged to the Koyukuk. In three Peterboro canoes and "a big blue boat named Betsy," the party departed Fort Yukon on June 22 to track, wade, paddle, and pole up the Chandalar. The Betsy proved a hindrance and the men abandoned it thirty miles up the river. Schrader and his associates had to portage around the rapids eight miles below Chandalar Lake. Otherwise they

found the river navigable for their canoes for close to 200 miles to a little above a creek emptying into the river from the south in T. 35 N., R. 6 W., Fairbanks Meridian. At this point "the gradient became torrential." From here the men portaged into the Koyukuk basin via Roberts Creek. Schrader's journey resulted in an accurate map of the Chandalar from its mouth to far up its North Fork by topographer T. G. Gerdine. 39/

Two years later, Walter C. Mendenhall headed a USGS party designed to fill in other gaps in the knowledge of Alaska's interior. The group, composed of seven men in Peterboro canoes, arrived in the area via Skagway and Whitehorse. They spent much of June 1901 surveying the Yukon's course through the Flats. For the next ten days they continued mapping up the Dall River to a set of deserted cabins called Dall City. Occasionally they made short portages around log jams. Mendenhall's expedition arrived at Dall City on June 27 and portaged into the Koyukuk drainage by July 3. Over the next two and a half months the men crossed this drainage via the Kanuti and Alatna rivers and then descended the Kobuk River to Kotzebue Sound. 40/

In the next two and a half decades, the USGS sent three other missions to map the unsurveyed portions of the Chandalar basin and the highlands surrounding it and the Dall. In the summer of 1909, Alfred G. Maddren with an assistant packed from Fort Hamlin to the upper Dall, and thence to Coldfoot. From that place they headed eastward to the Chandalar River, and followed that river to Fort Yukon. The expedition, coming on the heels of a gold stampede to the area in 1906, filled in much of the upland geography and geology unexamined by Schrader and Mendenhall. In July 1923 John B. Mertie, Jr., two subordinates, and seven pack horses traveled the government road from Beaver on the Yukon

to Caro on the Chandalar. They then took a trail to the mining district near Little Squaw Creek and visited much of the Chandalar's Middle, North, and West forks before returning to Caro via the divide between the Chandalar and the Hodzana and Hadweenzic. Mertie added his own findings on geography and geology to earlier maps. Finally, in 1927, Mertie returned to the area, along with topographer, Gerald FitzGerald, in an expedition which traveled by dogsled, motorized canoe, and on foot up the East Fork of the Chandalar to Arctic Village. From there, they explored the upper portions of both the Sheenjek and the East Fork of the Chandalar. 41/

The Porcupine basin along with the drainages of the Kandik, Nation, and Tatonduk attracted the fewest miners and, not coincidentally, remained the least known area of the upper Yukon. After the boundary survey's mapping of the Porcupine and Tatonduk in 1889 and 1891, explorers ignored the area until 1906. In that year, E. M. Kindle made a survey of the Porcupine. His report to the Geological Society of America included a rough sketch map of the geology along the river's banks from the Lower Ramparts east to the boundary. 42/

That same year, Samuel J. Marsh, a prospector-geologist, bankrolled by eastern capatalists, led a party from the Arctic into the headwaters of the Sheenjek, Coleen, and Old Crow where they did extensive prospecting from May through August. They traveled on foot until in mid-September they built two rafts on which they floated the Sheenjek -- an experience, Marsh said, could "only be described by the word Hell in pronounced capitals." Later that year, Marsh sent a map of the area he covered and a short report of its geology to Alfred H. Brooks, the USGS geologist in charge in Alaska. 43/

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The first boundary survey had located but had not adequately marked the border. This task was left to the International Boundary Commission, which made several expeditions along the eastern edge of the Upper Yukon region. After setting markers in the well-known Fortymile vicinity in 1907-08, they began their work farther north. In 1909, they marked a forty-mile strip north of the Yukon. The following year, working with pack horses from a base camp at the mouth of the Tatonduk, they mapped a length of over 100 miles from the Yukon northward across the Black River's Salmon Fork. In 1911, this work continued northward using the Tatonduk, Nation, and Kandik rivers as supply routes from the Yukon to the surveyors. Some supplies also were packed southward from Rampart House at the border on the Porcupine. In 1912, surveying and marking continued in the upper Black River basin using that stream and its Salmon Fork as a supply route. In the same year, another party followed the 141st parallel to the Arctic, using launches and poling boats to ascend the Old Crow River within Canadian territory. 44/

For all its travels the boundary commission only surveyed a four- to six-mile strip along the 141st parallel, leaving about 25,000 square miles of the upper Yukon unmapped until the late 1920s when John B. Mertie Jr. entered the area. On June 6, 1926, Mertie and three others left Fort Yukon in two Peterboro canoes equipped with outboard motors. They ascended the Porcupine to the Sheenjek River and canoed up that river 160 miles before injuries to two of the men, including the topographer, forced abandonment of the expedition. The following year, Mertie continued his examination of the Sheenjek in conjunction with his exploration of the Chandalar. Half of Mertie's four-man crew brought supplies to Arctic Village over a winter trail from Fort Yukon in March and April. In June and July Mertie with one other party member canoed up the

Chandalar and its East Fork to Arctic Village. On July 19, Mertie's united crew set off from Arctic Village. Besides each carrying a sixty-five pound backpack, six dogs packing about 150 pounds accompanied them on a 200-mile four-week excursion past Old John Lake, through the Koness River valley, up the Sheenjek to Old Woman Creek, and back to the upper Chandalar. They then descended the East Fork in skin boats and canoes and arrived at Beaver on September 9. The result of the two expeditions was a precise topographic and geologic mapping of the areas traveled. Mertie also can be credited with the first attempt at a geographic and geological study of the Tatonduk and Nation rivers. However, as he readily admitted, the result of his 1930 exploration in that area did not include much more than a crude portrayal of the courses of the rivers. 45/

The next effort to fill in unsurveyed portions on the map of the Upper Yukon Region took place in 1939. On June 13, Gerald FitzGerald, who had done the Chandalar and Sheenjek mapping for Mertie in 1927, began what would be the last major ground survey conducted by the USGS. He and two assistants ascended the Porcupine from Fort Yukon in a twenty-two-foot boat equipped with a twenty-two-horsepower motor. Once they reached the border, they turned around and began mapping as they went down the Porcupine. Unusually low water prevented them from taking this boat up the Coleen. Instead FitzGerald and one of his assistants used a Peterboro canoe up this river. They had great difficulty tracking and pulling the canoe up the Coleen. Despite their trials, they maintained a plane table survey seventy-five miles upstream when stormy weather dictated they return to the Porcupine. The first two weeks in August were then spent mapping the Porcupine down to the Black River. Both the boat and the canoe were utilized in a 100-mile excursion up the Black which

lasted until August 30. The party then returned to the Porcupine and continued its survey of the river to Fort Yukon. As a result of his expedition, FitzGerald's report contained a map detailing the topography of much of the northeastern area of the Upper Yukon region. 46/

As FitzGerald canoed and boated through the Porcupine drainage, aerial photography began to supplant land exploration as the dominant mapping technique. In 1939 and 1940, the Army Air Force photographed much of the territory covered by FitzGerald. Also in 1940, the USGS began a long-range program by photographing the Yukon from Circle to Fort Yukon. However, it was not until the mid-1950s, more than a century after John Bell first probed the Alaskan Upper Yukon, that aerial photogrammetry finally produced the first complete and accurate map of the region. 47/

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CHAPTER THREE

HUNTING, FISHING, AND TRAPPING

Both the subsistence Native culture and the Western economy with its accompanying institutions and innovations have affected the exploitation of wildlife along the upper Yukon. For centuries the region served the needs of various Indian bands. Beginning in the 1840s, whites entered the area and bargained with the Natives for furs of beaver, marten, mink, lynx, fox, and other animals. The outer world's desire for these furs shifted Indian society away from subsistence and toward a market economy and altered the calls upon the Yukon's animal resources. Beginning in the late 1880s, whites came in overwhelming numbers. The culture they brought produced revolutionary changes in the life-styles of upper Yukon residents. Some changes made hunting, fishing and trapping easier; others made them less attractive.

The upper Yukon has long served as the home for Athabascan Indians. Based on linguistic evidence, anthropologist James W. Vanstone has postulated that all modern Athabascans are descended from peoples who began to disperse through most of present-day Canada and part of the contiguous United States sometime after 700 B.C. Almost nothing is known about their ancient history and we have little more than glimpses of their existence until just prior to white contact. 1/

Nine bands roamed the Alaskan upper Yukon in the mid-1800s when the Hudson's Bay men first entered the area. Six were Kutchin groups which whites usually associated with the territories they inhabitated--the Old Crow Kutchin, who roamed from the Old Crow River in Canada westward to the mouth of the Coleen;

the Black River Kutchin, who lived along that river; the Chandalar Kutchin who concentrated along the East Fork of the Chandalar but at least by the turn of the century roamed westward through all the Chandalar drainage; the Dihai Kutchin, who inhabitated the North, and possibly the Middle forks of the Chandalar as well as the upper reaches of the Koyukuk; the Birch Creek Kutchin, who resided on that stream; and the Yukon Flats Kutchin who centered around what became Fort Yukon. The Han made their homes in four different settlements on the banks of the Yukon approximately between present-day Dawson and Circle. Koyukon-speaking Natives lived along the Yukon below the Lower Ramparts. And a Tanana Indian band may well have inhabited the Middle Fork of the Fortymile. Of these, the Birch Creek and Dihai Kutchin disappeared before whites could learn much about them; disease killed off the former in the 1860s, while remnants of the latter merged with the Chandalar Kutchin in the late nineteenth century after warfare, disease, and famine had reduced them almost to extinction. In all, the population of the Alaskan upper Yukon numbered about 1,000 in 1847 when Alexander Murray built Fort Yukon. 2/

Each band followed a seasonal routine extracting food and clothing from the environment. Murray in 1848 described the annual subsistence cycle of the Yukon Flats Kutchin which reflected in general outline that followed by all upper Yukon bands:

> They spend the summer principally in fishing, and make a supply of dried trout [salmon] and white fish for winter. . . . In fall and winter they live on rabbits and moose. . . . Towards spring most of them repair to the Carribeax [sic] lands to make a supply of dried meat, but more particularly to procure skins for clothing, etc. Comparatively little of their time is devoted to hunting furs.

Elsewhere, Murray pointed out that dried salmon served as their major source of sustenance for the winter. If this was true, the Fort Yukon Natives were the exception to the rule since most of the Indians of the upper Yukon relied primarily on big game. Schwatka noted in 1883 that the Han at Charley Village near the mouth of the Kandik River depended primarily on moose while Robert McKennan, an anthropologist who lived among the Chandalar band in the 1930s, pointed to caribou as the most important food among pre-contact Indians of the Chandalar basin. 3/

The upper Yukon Natives spent part of the spring and early summer preparing themselves for the salmon run which normally commenced in July. The bands spread out along the Yukon, Porcupine, or a tributary in groups of about a dozen. In the early 1860s, Strachan Jones, a Hudson's Bay employee, observed the two most common fishing methods. One was to build a fence in a stream to funnel fish into a basket. Once in the basket a man could stun and kill them. Another technique called for band members on shore to sight large salmon swimming upstream and direct a fisherman in a boat to a point where he could dip a net in the path of the fish and catch them. On shore women would dress, wash, and dry the catch. Dried fish provided an important source of food, both for humans and dogs. 4/

All the upper Yukon Natives hunted small and large game. Dull-pointed arrows were used for grouse, ptarmigans, ducks, geese, rabbits, owls, and other small game. Snares caught deer, rabbits, and lynx. Bears were killed by plunging a spear into their throats at close range. Irving M. Reed, a one-time Alaska Game Commissioner, stated to McKennan in the early 1930s that Chandalar River Natives hunted muskox until the animals became extinct in the area in the 1890s

(there is no other account to substantiate this claim). Indians took moose by snares or by stalking them with bows and arrows. Dogs sometimes assisted by surrounding and holding a moose until the hunters could kill it. Whymper witnessed downriver Natives in canoes killing moose as the animals clumsily swam the Yukon. Twentieth century ethnographers tell us that the Old Crow Kutchin killed caribou in a similar manner. In all probability this technique also was practiced elsewhere on the upper Yukon. 5/

Caribou was the most important big game food of most if not all bands in the pre-contact period. Different herds migrated each spring and summer along fairly predictable routes. One major herd confined itself to the region east of Circle, wintering southward to the Kechumstuk Hills and the Tanana uplands. Another roamed from south of the Porcupine in Canada and Alaska to the summer calving grounds on the Arctic slope. Kennicott noted that Indians hunted caribou in the Chandalar highlands in the spring. The Old Crow Kutchin intercepted them from the Bell River in Canada to the Coleen as the caribou swam the Porcupine. The Han seem only to have gone after caribou in the autumn when most if not all the bands made their major caribou hunt. Most caribou were taken in surrounds. Kennicott described one he saw in April 1861 as,

> a rude fence, enclosing a funnel-shaped space, the mouth usually enclosing the base of a mountain, over which the deer are known to make a road. At the narrow end of the enclosure snares of twisted babbiche (small raw-hide lines) are placed in great numbers, as well as a few throughout the fence forming the barrier.

Some Indians cut off the caribou's line of retreat at one end of the surround, while those at the other end killed the trapped animals with arrows. The surround in the Kechumstuk Hills attracted the attention of many Gold Rush Era miners and explorers. Those in the Crow Flats did not fall into disuse until sometime after 1904. Less elaborate sets of snares were used into the 1920s. 6/

Upper Yukon Indians used caribou hides as well as the furs of other wildlife for clothing. Moreover, even in aboriginal times, furs were a prime trading item. Murray noted that the Chandalar visited the Arctic coast to trade with the Eskimos. This trade may have been conducted with wolverine, wolf, and fox which anthropologist Robert Spencer claimed interior Eskimos traded coastal Eskimos farther west. Reverend Hudson Stuck found in the early twentieth century that Chandalar Kutchin bartered wolf and wolverine pelts for the Eskimo's white and polar bear furs. 7/

Possibly, interior Natives began to pay more attention to fur trapping even before whites reached their region. Prior to the establishment of Fort Yukon, trade and curiosity brought Alaskan Natives to the Hudson's Bay posts in Canada and some upper Yukon Indians traded directly or indirectly with the Russians at Nulato. 8/

The persistent white demand for furs introduced innovations which gradually transformed Indian society. The Natives' desire for beads, guns, ammunition, steel traps, tea, flour, tobacco, sugar, clothing, and a variety of utensils soon matched the world's desire for fur. The Indians, who in the aboriginal period had spent relatively little time searching fur-bearers which had minimal food

value, changed their habits to devote more time to trapping beaver, fox, and marten. And those closest to Fort Yukon may also have spent a significant amount of time and energy acting as fur trading middlemen between more distant bands and the white traders. The white man's goods allowed and, indeed, were designed to facilitate such a transition. White foods gradually supplemented the harvest of the hunt, clothes freed Natives of the need to spend as much time hunting caribou skins, and improved technology allowed for more efficient hunting, fishing, and trapping. 9/

The most revolutionary innovation was the gun. At the time Murray arrived on the Yukon's banks, about a dozen of the ninety Yukon Flats adult males had guns. By the 1880s most Indians had either double-barrel shotguns or repeating rifles. The gun increased the supply of meat so that anthropologist Cornelius Osgood has contended that less emphasis may have been placed on fishing, despite the introduction of cotton fishnets. McKennan, however, has countered that the advent of the fish wheel after the turn of the century brought more fishing relative to hunting. The gun also allowed the Athabascans more personal independence. A gun could bring down sufficient game to feed a man, his family, and his dogs. There was less need to congregate along the river banks with the rest of the group to fish or resort en masse to the mountains to kill caribou in the surrounds. Most of the bands began to spend more time in family groups hunting and trapping. 10/

From the outset the upper Yukon proved a profitable center for white fur traders. Murray collected twelve packs of beaver as well as some deer skins in his first year at Fort Yukon. His primary complaint was that he lacked enough trade goods to gather more furs. Dall estimated that in 1866 Fort Yukon took in $50,000 worth of furs, primarily fox and beaver pelts. 11/

New firms were quick to enter the trade after the Alaska purchase. The Pioneer Company, founded in 1868, lasted one year on the Yukon, possibly establishing a trading post near Nuklukayet. In 1869, Parrott & Company took over Fort Yukon and built another post at the mouth of the Tanana. The same year Hutchinson, Kohl & Company erected a competing post near Nuklukayet. In 1870 this firm changed its name to the Alaska Commercial Company and bought out Parrott & Company. Dislodged from Fort Yukon, the Hudson's Bay Company promptly instituted a new center on the Porcupine at Rampart House, which it erroneously considered to lay within Canadian territory. In 1874 ACC employees Leroy "Jack" McQuesten and F. Barnfield established Fort Reliance on the Yukon six miles below the mouth of the Klondike to tap the furs on the upper stretches of the river. In 1877 the Western Fur & Trading Company initiated its six-year challenge to the ACC in the upper Yukon by placing a trading center at the mouth of the Tanana. They followed this up in 1880 with an outpost at what would soon be called Belle Isle, close to the Han of David's village. In 1892 the ACC placed a post at the same location. 12/

Except for the one at the mouth of the Tanana, none of these were permanent trading centers. Fort Reliance was briefly abandoned in the early 1880s due to expected Indian troubles, Belle Isle (Eagle) had to await the flood of gold seekers to gain permanency, the Hudson's Bay Company relocated Rampart House twice, the last time in 1890 when it was discovered to be on American soil, and Fort Yukon was deserted in the 1870s. 13/

The fur companies used steamboats to supply these posts when they were in operation and to trade with Natives at fishing camps when they were closed. The first steamer on the river was Parrott and Company's Yukon, which

Lieutenant Raymond used to ascend to Fort Yukon in 1869. This small vessel, which the ACC inherited, towed supply barges upriver each year for a decade before the Western Fur & Trading Company's St. Michael entered the river in the summer of 1879. Four years later the trading partnership of Jack McQuesten, Arthur Harper, and Alfred Mayo acquired the New Racket, from Ed Schieffelin, the rich early prospector of Minook Creek, and used to supply their operation. These early Yukon steamers shifted the fur trade route of the upper Yukon. Except for those collected at Rampart House, furs now left the territory, not up the Porcupine as they had in the Hudson's Bay days, but downriver through the port of St. Michael. 14/

Until the late 1880s, whites in the Alaskan upper Yukon, had been a small, if influential, population. Raymond in 1869 noted that the whites of Fort Yukon numbered three of four, a situation unaltered when Jack McQuesten arrived at the post, then in ACC hands, in 1873. Francois Mercier counted ten whites in all the upper Yukon in 1874 and near the end of the decade each of the eight trading posts on the entire Yukon had only one resident white trader. 15/

This changed when the trickle of prospectors who occasionally examined the area beginning in the 1870s discovered paying quantities of gold on the Fortymile in 1886. Hundreds were drawn by the news and thousands would follow, especially in the wake of the Klondike boom. Indian bands were minimally touched by the gold rush in isolated areas such as the Porcupine valley where no gold and few prospectors resided. At the other extreme were the Han in the Fortymile and Klondike areas who were immediately and profoundly affected by the influx of whites. Robert P. Porter in 1890 noted that Natives in the Fortymile area were beginning to build and live in log cabins with stoves, utilize boats of sawed

lumber instead of birch bark canoes, wear clothing shipped from San Francisco, and consume a portion of the alcohol which flowed about the mining camps. Some worked for wages as boatmen, packers, or as wage labor miners. Others mined for themselves. To the extent they depended on wage labor, they hunted and trapped less. Yet some upper Yukon Natives hunted more with the influx of whites. Indians near trading posts had long gained a little income by supplying the whites with meat. Now numerous areas in Alaska's interior were filled with outsiders who did not always take time from gold panning to kill their own game or fish. Natives also gained income by selling dogs to miners desperate for transportation and then sold them meat and fish to feed the voracious animals. The Han and other bands also gained income chopping wood for river steamers, by supplying the military at Fort Egbert at Eagle and Fort Gibbon at Tanana, and by producing handicraft for sale to the white market. In 1900 John White, a crew member of the Revenue Cutter Nunivak, observed that after prospectors entered the region, Natives near the Dall River almost abandoned trapping as a means to get white goods, instead trading moosehide moccasins and mittens and moose meat to the gold seekers. 16/

Miners increased the hunting and fishing demands on the countryside. The first party of sixteen prospectors on the Fortymile in 1886 killed forty caribou to last the winter. In 1894 (before the Klondike Rush) the miners in the Fortymile area killed more than 5,000 caribou. Although entrepreneurs drove cattle to the Fortymile from Dawson in the first decade of the twentieth century, the venture failed because prospectors easily bought game or, more commonly, killed their own. In 1914, long after the gold rush had died out, the miners of Fortymile killed over 160 caribou to supplement food bought from stores or Natives. 17/

Moreover, the new white population required fish for their dog teams. Missionary and explorer, Hudson Stuck, described the central importance of fish to all the upper Yukon's industries by saying, "it is not possible to hunt the big game, it is not possible to trap furs, it is not possible to prospect for gold, without a dogteam; and there is no other food comparable in compact transportable nutriment to dried salmon." To meet this need Natives and whites scattered along the banks of the Yukon and some of its tributaries, to await the annual run of salmon. The first king salmon usually reached Rampart in late June or early July with other varieties arriving two to three weeks later. The kings ran for about a month; the silver and dog salmon lasted for about two months. Nets and, by the end of the first decade of the twentieth century, fish wheels utilized by one man or a group of men or families took in the fish, though after 1906 nets and fish wheels were only allowed on the Yukon and Porcupine. 18/

The best information about fishing in the region stems from the operation of a cannery by the Carlisle Packing Company in the mouth of the Yukon River from 1918 to 1921. This development set off a storm of protest from Stuck and others and prompted government investigations of fishing along the Yukon. 19/ In 1918 Christian L. Larson made an investigation in the upper Yukon designed to measure the impact of the cannery. Larson traveled in a rowboat along the Yukon from the boundary above Eagle to the village of Tanana and Fort Gibbon and counted ninety-one fish wheels and 136 nets varying in length from sixty to ninety feet. The size of the fish camps ranged from Abe Royal's one-net operation near the mouth of Shieffelin Creek (T. 5 N., R. 19 W., Fairbanks Meridian) and Frank Swanson's fish wheel eight miles above Eagle to the ten wheels and nineteen nets employed by about thirty residents of Stevens Village. In 1918 one-man operations such as Royal's and Swanson's rarely produced more

than a ton of dried salmon while the communities of Eagle, Circle, Fort Yukon, Beaver, Stevens Village, and Rampart yielded five to more than ten tons of dried fish each. How representative these yields were of earlier or later years is uncertain. John B. Powers, a resident of Eagle since the turn of the century, said that the salmon runs had been in decline ever since 1904, but there are no statistics to corroborate this. Virtually all those questioned by Larson stated that there had been poor catches of salmon in recent years. They blamed the cannery and waste oil dumped from steamboats. The oil killed fish and also hung on the fishing nets causing salmon to avoid them. At almost every stop Larson heard of dogs which over the previous year starved to death or were killed by their masters because of the shortage of dogfood. Such shortages could ultimately have destroyed the Interior's economy. Larson documented how the fish taken at the operations he visited were used. Natives used them to enable them to get to hunting and trapping areas. The Biederman family, which had a cabin near the mouth of the Kandik River, sold some of its fish to travelers on the winter trail along the Yukon. Some of the fishermen used the salmon for their own winter freighting activities. Miners throughout the region depended on the fish for their own dogs' food. E. S. McConnicle who had a wheel and a net below Rampart sold a large quantity of dried fish to the mail contractor at Tanana and Abe Royal sold to the military at Fort Gibbon. 20/

Charles H. Gilbert and Henry O'Malley in 1920 visited the fisheries along the entire Yukon as part of the Bureau of Fisheries investigation of the effects of the Carlisle cannery. They concluded that salmon runs on the Yukon varied widely and unpredictably in size and that adverse conditions such as high water had decreased salmon catches in previous years. They also were struck by the central importance of the salmon catch to the Yukon people's way of life. In

years of poor runs they stated that the operation of a cannery could seriously affect the salmon harvest upstream. They advised outlawing canneries on the river, a recommendation which was carried into effect after the 1921 fishing season. 21/

Prospectors also affected trapping. As the mining booms subsided in the twentieth century, many men who had been attracted to the golden glitter of the north began to compete with the Natives in trapping to supplement or substitute for mining incomes. Some men supported their mining activities with their trapping incomes. The occupations were seasonal and complemented each other well. These men borrowed survival and hunting techniques from the Natives. Traplines were known on the Yukon at least as early as the 1870s, but little is understood about them until whites adopted the trapline life. They were the most efficient manner to trap and, in a time of growing numbers of fur gatherers, served as an institution defining a man's exclusive territory which he could rent, sell, or bequeath. 22/

James Carroll serves as an illustrative example of a white who turned to fur trapping in the early twentieth century. He came to Alaska in 1910 and cooked for a mining camp in the Birch Creek district. The following year he went to Fort Yukon, the largest trapping center on the upper Yukon. To it came furs from the Flats, from the Chandalar and Christian rivers, and from the massive and rich Porcupine basin. 23/ Young Carroll and an oft-times drunken partner, "Black Jack" Ingels, bought a trapping outfit from a local trader plus a square-stern boat, a toboggan, and two strong dogs. They poled, tracked, and pulled the boat up the Porcupine and forty-six miles up the Sheenjek to an island where they built a 12' x 14' cabin. They set traps within a twenty-five mile

radius of the cabin once snow fell and they harvested enough furs to afford a visit to Fort Yukon. Here they sold some furs and partook of the Christmas celebrations which annually attracted trappers to town. After buying two more dogs they sledded back to their traplines where they remained until gathering their traps and sledding the rest of the winter's catch to Fort Yukon in mid-April. 24/

Except for one year on the Old Crow Flats in Canada, Carroll trapped until 1922 along the Sheenjek. Black Jack quit trapping after the spring of 1913 but Carroll, like many trappers, married a Native woman, who with their children would accompany him on future winters on the trapline. Carroll caught lynx, mink, marten, and, when on the Old Crow Flats, muskrat. A round-trip with dogs and toboggan checking the traplines usually consumed four days to a week. In the season of 1915-1916 Carroll's line was circular, about a hundred miles long, and ranged ten miles up and down stream from his cabin. Carroll's closest neighbor was twenty-five miles up the Sheenjek. 25/

Besides lynx, which was a palatable meat, Carroll lived on moose, rabbit, bear, and fish while on the line. He gaffed hundreds of salmon from a pool near his cabin in the fall, dried them, and fed them to his dogs through the winter. In 1917 he eased the trials of getting to and from the cabin by purchasing an outboard motor, an invention adopted by numerous trappers. Also like many trappers, white and Native, Carroll acquired a cabin in Fort Yukon in which he and his family lived during the summers. 26/

Not much is known about prime versus poor trapping areas within the region. This may be because the region was so uniformly rich in furs. Dimitri Shimkin indicated this to have been the case in the 1940s in the trapping area tributary to Fort Yukon. Most ponds and sloughs had muskrat and beaver; marten and lynx inhabitated almost all uplands. Trappers working out of Beaver had their lines in the drainages of the Yukon, Hodzana, Hadweenzic, Chandalar, Beaver and Birch. Men from Stevens Village and Rampart covered the areas farther west. Only near Eagle and the Fortymile country did there appear to be comparatively poor trapping. Records of the Alaska Game Commission in the late 1920s when fur prices were high show very poor yeilds for white trappers in the area. Reports by game wardens in the region paid little attention to trapping. Area fur gatherers instead concentrated their efforts north, northwest, and east of Eagle, regularly hunting and trapping in the Ogilvie Mountains in Canada. 27/

Hunting and trapping catches of the upper Yukon have varried for many and complex reasons. Three of the more important furs--lynx, mink and muskrat--are tied to predator/hunted cycles of about seven to ten years. Lynx fed primarily on rabbit, and mink consumed many muskrat. When rabbits and muskrats were plentiful, lynx and mink had good hunting and flourished. But the predators eventually decimated their prey and would themselves perish due to lack of food, making it easier for the rabbit and muskrat populations to recover and thus start the cycle over again. These cycles determined the trappers' harvest. For example, in 1929, Game Warden George W. Taylor of Fort Yukon claimed that mink were nearly extinct and trappers had brought in relatively few, but that prospects for an upswing were good because muskrat were abundant. The following year he noted that the mink population was up 50 to 75 percent. The

results were registered in the number of furs purchased by a local trader. The mink caught grew from 97 in 1930 to a peak of 782 in 1933. Muskrats had hit a high of over 28,000 in 1931 and dropped only slightly the following year. But in 1933 they fell under 10,000 and leveled off at about 5,000 to 6,000 from 1934 to 1937. Simultaneously the number of mink brought in dwindled gradually; in 1938 there were only 137. 28/

The caribou harvest in any area depended on complex, long cycles in their populations and their migratory routes. Though generally following predictable routes, the herds strayed often enough to cause Natives hardship or, until relatively recently, starvation. In 1898 Chandalar Kutchin, who had had plenty of meat the preceding year, came into Fort Yukon destitute because the caribou had not taken their normal route south that fall. The caribou migration had an indirect effect on the number of moose. In 1931, Game Warden Taylor noted an increase in moose around Fort Yukon. He attributed this to the Natives' lack of interest in hunting them because the previous winter there had been a very successful caribou harvest. And conversely the failure of caribou to cross the Yukon near the local Indians' traditional hunting place near Circle in the mid-1930s resulted in a drop in the moose population. 29/

In the twentieth century excessive trapping and hunting have had a major impact on the wildlife of the upper Yukon. To protect the game legal limits were placed on some animals. Among furbearers, marten and beaver were particularly vunerable to over-trapping. Taking of them was outlawed for a number of years around WWI and intermittently thereafter. In general these laws proved successful in reviving marten and beaver though there were constant complaints in the 1910s and 1920s that Dan Cadzow's post on the

Porcupine just inside Canadian territory received huge quantities of American marten and beaver caught during closed seasons. 30/

Moreover, game wardens claimed that the Natives who engaged in this illegal trapping also took excessive numbers of caribou and moose. As early as the 1880s white observers worried that Indians equipped with firearms would eliminate moose from Alaska. By the second quarter of the twentieth century game wardens complained that large numbers of caribou were shot annually to provide dog food. White and Native trappers were said to each take thirty to sixty caribou a year for dog food in the 1930s. Some whites killed animals solely for sport and left them to rot. This became especially prevalent at points where the Fortymile caribou herd migrated across the Fairbanks to Circle auto road. Beginning in the 1930s, revived mining and the increased use of airplanes to hunt further depleted moose and caribou. The Fortymile herd in 1914 was estimated at over 100,000. In the 1950s it numbered less than 50,000. In 1969 it numbered 20,000 and it fell to only 4,000 in 1975 before beginning to regain its vitality; today it is estimated at 12,000 to 14,000 animals. 31/

It is uncertain how many trappers there were in the upper Yukon. The Alaska Game Commission counted between one and three dozen white trappers based at each of the trading villages during the heydey of the fur industry in the 1920s. Natives were not enumerated by the Alaska Game Commission, but they outnumbered white trappers at Fort Yukon by four or five to one in 1928. 32/

Local traders from the outset had been crucial to the fur industry. Some twentieth century trappers dealt directly with fur exchanges in the States or with buyers who sledded or floated through the area each year representing

American or European firms. But until the 1940s when these middlemen successfully utilized the airplane, the vast majority of trappers exchanged their year's work for cash, credit, and supplies at trading posts in the river fur towns. As it was for gold, the fur market required access to downriver steamers. Consequently, the important fur centers--Rampart, Beaver, Fort Yukon, Circle, and Eagle--were on the Yukon. 33/

Trappers' income varied not only with availability of animals but also with the demand for furs. When James Carroll sold his furs in 1913 he got four to six dollars for each lynx and marten. He and his partner made $600. Four years later prices for lynx had risen to eight dollars and marten more consistantly sold at six dollars. Carroll brought in $1,828, helped by a huge lynx harvest. There was a drop in the prices early in the 1920s; four dollar muskrats early in 1920 drew Carroll to the Old Crow Flats, but when he went to sell his muskrat the following spring he got only $1.50 each. The later 1920s was the heydey for trappers. An excellent marten skin brought fifty dollars and a prime lynx reached twice that amount. Even average marten and lynx were worth thirty and sixty dollars, respectively, at the peak market of 1929. Most Black River Native trappers earned $7,000 annually; far more than all but a handful of gold-rushers of the 1890s. Prices declined by half in the 1930s, rising to the level of the 1920s again during WWII. The late 1940s ushered in another price drop which continued through the 1950s. Prices rose again by the 1970s. 34/

Since the decline of the fur boom of the late 1920s, the number of whites involved in hunting, fishing, and trapping in the Alaskan interior has dropped. However, white innovations and institutions continue to influence the Natives' way of life.

One of the most marked of these changes has been the amount of time the Indians spend in their villages. The fall of fur prices in the thirties may account for some inclination not to trap vigorously. More important, though, was the establishment of government-run schools. Unlike mission schools, they did not offer to board and house pupils after school hours. Parents would have to be in town to care for their children. Recent studies of Beaver and Chalkyitsik have pointed to the establishment of schools in 1928 and 1941, respectively, as crucial to their development. Finally, the introduction of technological innovations in transportation have made it more feasible to abandon predominantly trapline living for that of the village. As mentioned earlier, James Carroll acquired an outboard motor in 1917. Yet outboard motors were not universally adopted even after WWII; most Natives on the Black River did not acquire them until the 1960s. Whites and Natives of the upper Yukon have also adopted the airplane to resupply trapper cabins and take furs out during mid-winter and to fly hunters and trappers to distant areas of plentiful wildlife. John Fredson, a Native teacher at Venetie in the late 1930s, wrote that "planes are rapidly changing the methods of trapping." He cited the experience of two men who flew into the area and in a very short time got 100 marten. Because he felt this toll could not be kept up for long without undermining his people's way of life he suggested an Indian reserve. The result was the Venetie Reserve formally established in 1943. 35/

White transportation innovations also gradually lessened the demand for salmon. In December 1924 the government expanded its 1921 ban on canneries in the Yukon to include the area just outside its mouth. However, in December 1931, the Bureau of Fisheries lifted the 1924 restriction arguing that the demand for dried salmon had greatly lessened in the previous few years because aircraft

had replaced dogs in carrying the winter mail. A 1934 law allowed Natives and "bona fide permanent white inhabitants" to enter into commercial fishing including canneries, although the total catch was limited. The commercial export operations resulting from this were all along the lower Yukon. Most fish were still taken by the various small camps along the river. However, beginning in 1940, war-related employment drew many Natives and whites from their fish wheels and nets during the salmon runs. It is doubtful whether the large amount of subsistence fishing described by Larson in 1918 ever resumed. In 1953 George W. Warner of the U. S. Fish and Wildlife Service stated that the demand for dried salmon was declining due to a fall off in trapping, increased use of airplanes, and the introduction into many villages of prepared dog foods. He reported that "it is said in most villages that the number of fish taken for dog food is less than half of what it was years ago." More recent studies of Chalkyitstik and Beaver point to even less concern with fishing as snowmobiles replaced dog teams. 36/

The introduction of the snowmobile in the last fifteen years has had the most direct impact on the winter trapping life. They are more powerful than dogs. Consequently Natives have built longer and wider toboggans for them to pull. They are also faster. A snowmobile can travel an entire 100 mile trapline in a single twelve hour day. It is no longer necessary for fur gatherers to spend much time in isolated trapline cabins. Traps should be checked every four to ten days so trappers have to make frequent visits. However, they seldom stay out longer than two weeks at a time. Most Chalkyitsik lines in 1969-1970 involved only one or two days away from home. In the early 1970s a trapper from Beaver checked his line by snowmobile and returned home in a single day even though his traps were all over fifteen miles from town. 37/

The snowmobile has also contributed to a change in the trapping season, at least at Beaver. Many villagers had traditionally reached and returned from their traplines by boat. However, with the snowmobile, overland transport is much easier than going by water. Consequently, trappers work only on very nearby traplines until the rivers and streams have frozen and they end their season while the ice is still sound. This cuts short the time available for trapping. An exception to this is the muskrat season which begins shortly before break-up and continues afterwards with the trappers then using boats. 38/

Year-round residence in villages and innovations in transport have altered hunting and fishing techniques and habits. In the early decades of the twentieth century most hunting was done to lay in a supply of meat at the isolated trapping cabins. Now men orient their hunting to supply their villages. Therefore, most animals are killed closer to town if available. While the rivers are free of ice the hunting of moose and all other types of game is done along rivers and streams where easy motor-powered boat transport is available. Reflecting this hunting strategy, selection of river frontage has been a high priority for many upper Yukon villages under the Alaska Native Claims Settlement Act. In the winter snowmobiles are used; snowshoes are rarely worn. The snowmobile has also replaced the dog team. As a result there has been a dramatic drop in the amount of fishing. Natives who added gaffing and gill nets to fish traps and wheels to gather salmon and whitefish, now fish only sporadically. It is easier to kill off surplus dogs than to fish for sufficient food for them. 39/

In the late 1970s the more isolated Native villages of the upper Yukon still acquired more than half their food through hunting and fishing. Caribou was the most important food at Arctic Village and possibly at Venetie. Elsewhere, moose dominated the diet. However, while technological advances have made hunting, fishing, and trapping easier, other recent developments have made it less attractive. Very few follow the entire subsistence and trapping cycle common fifty years ago. The schools that attracted to town parents of a generation ago had by the 1960s educated their children to a world quite different from the subsistence life. Many of the young wish to stay near their families and the homes they grew up in, but the upper Yukon offers few jobs to exercise their school-learned skills. Alcohol continues as a serious problem in the villages. Some do take seasonal jobs in Fairbanks, Anchorage, or in firefighting throughout Alaska. During the oil pipeline boom interior Alaska Natives constituted about 10 percent of the project's labor force, though a disproportionate number came from urban areas. The vast majority of Chalkyitsik Natives, young and old, questioned from 1969 to 1971 considered wage labor far easier and preferable to the subsistence round. Many also lean on government welfare programs. In 1949 about a fourth of Fort Yukon's residents took some government assistance. Since then the dependence on various welfare programs has grown dramatically. In 1972 Bureau of Indian Affairs welfare, State of Alaska welfare, and federal food stamps were each serving at least 40 percent of the households in the Yukon Flats area. 40/

Chapter Three -- Hunting, Fishing and Trapping

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40. Neilson, "Focus on Interior History," pp. 374, 376; U.S., Department of the Interior, Yukon Flats National Wildlife Refuge, pp. 93, 101; Schneider, "Beaver, Alaska," pp. 54, 242-44; Richard K. Nelson, Hunters of the Northern Forest, pp. 150, 293-96; Shimkin, "The Economy of a Trapping Center," p. 228.

CHAPTER FOUR

MINING

Although miners have taken coal and silver from the Alaskan upper Yukon and the region holds promise for asbestos, tungsten, and oil and gas, mining in the area has been synonymous with gold. It has yielded over 1,300,000 ounces of placer gold, roughly 5 percent of Alaska's total product. Mining has been a major economic activity, causing the establishment of local trade centers and the construction of a network of roads and trails. The entire region has been prospected but production has come only from two major districts, Fortymile and Circle, and three lesser areas, Rampart, Eagle, and Chandalar, in that order.

The first recorded discovery of gold in the region occurred in 1863, but mining on a scale worthy the name began in 1886 on Franklin Bar along the Fortymile River. This discovery was the first one in the Alaskan interior and had been preceded by the Cassiar strike of 1871 in British Columbia which brought miners northward, the strike at Juneau in 1880 which reinforced this movement, and the opening of the Chilkoot Pass in 1880 which permitted easier access to the upper Yukon. In 1887 prospectors fanned out into the creeks surrounding the Fortymile and then into adjacent drainages. Other discoveries in the upper Yukon which led to mining occurred in 1893 along Birch Creek (Circle district) and on Minook Creek (Rampart), in 1895 on American Creek (Eagle district), and finally, in 1906 in the Chandalar River drainage. In the early years prospectors used small scale equipment, usually a gold pan, shovel, rocker, and sluice boxes, making enough for an annual spree or grubstake. This volatile population rushed along the river beds and over the mountains from one strike, rumored or real, to another, in search of their elusive fortune always lying just beyond the next ridge.

In July 1863, Reverend Robert McDonald found specks of gold on a Birch Creek tributary while collecting fossils and visiting a sacred Indian site called "Kotlo." Learning of McDonald's discovery, Strachan Jones, a Hudson's Bay Company employee at Fort Yukon, wrote his parents in Toronto:

> "There is a small river not far from here that the minister . . . saw so much gold on a year or two ago that he could have gathered it with a spoon. I have often wished to go, but can never find the time. Should I find gold in paying quantities I may turn gold-digger, but this is merely a last resort when I can do no better."

Although Jones and other Hudson's Bay men may have sought McDonald's gold, they never found a large payload. 1/

The first group of serious prospectors may have read Frederick Whymper's book, which alluded to gold near Fort Yukon, or, more likely, heard the tales of gold on the Yukon from Hudson's Bay employees in Canada. In 1873 two groups of four men each traveled the Hudson's Bay route descending the Mackenzie River and proceeding down the Porcupine River to Fort Yukon. These men included Arthur Harper, Frederick Hart, Leroy Napolean "Jack" McQuesten, and Alfred H. Mayo. A Native at Fort Yukon showed a piece of copper said to be from the White River which sent Harper and two others scurrying up the Yukon to that river. They were the first to prospect the area but found nothing. McQuesten, Mayo, and two partners prospected with similar lack of success around the mouth of Birch Creek. 2/

In 1874 Francois Mercier signed McQuesten, Mayo, and Hart as Alaska Commercial Company employees. That year McQuesten and Frank Banfield established Fort Reliance six miles below present-day Dawson. Fort Reliance would become, besides a fur trading post, the outfitting center for prospectors in the surrounding country. Harper and two partners spent 1874 prospecting around Nuklukayet. The next year Harper joined the ACC trading at Fort Reliance. Harper, though, continued to prospect, finding gold on both the Fortymile and Sixtymile rivers in 1875. However, he was unable to retrace his steps because of the demands of his job as trader. Harper and McQuesten persisted in prospecting out of Fort Reliance. In 1878 or 1879 McQuesten "found gold in all the bars" of Sixtymile, but felt they were not rich enough to justify further work. In 1881 Harper, accompanied by a man known only as Bates, travelled via the Fortymile River to the headwaters of the Tanana River, and descended that stream to its mouth. They found little gold on the Tanana, but claimed to have unearthed good paydirt near the mouth of the Fortymile's North Fork. On a return trip in search of this gold, Harper found that the good gravel he had panned had been carried away by the ice in a break-up since his 1881 trip. 3/

The activities of McQuesten and Harper became known in San Francisco when they told of their discoveries to steamship crews at St. Michael. Against the background of gold finds in British Columbia and, in October, 1880, in Southeast Alaska, these tales from the Yukon prompted Edward Schieffelin, the discoverer of the silver mines of Tombstone, Arizona, and his brother Effelin to outfit a party at San Francisco. Arriving at St. Michael in July, 1882, the brothers and three others began churning up the Yukon in the New Racket, a steamboat they had transported from San Francisco. "The reason we built the little steamer," Schieffelin later wrote, "was because in that country all traveling has

to be done either on foot or with canoes, and to get around with canoes . . . is hard and slow work . . . . The New Racket was built to take the place of a mule." They unearthed some gold in the Rampart area, but were disenchanted with their find and left the country in 1883. 4/

While the Schieffelins ascended the Yukon from its mouth, a more popular prospectors' route had begun to be used. A prospector first crossed the Chilkoot Pass from the Inside Passage in the mid-1870s and by 1880 the Tlingit opposition to white men crossing the pass had been removed. In subsequent years increasing numbers of prospectors utilized the route and floated down-river. Working out of Fort Reliance and Belle Isle they prospected the Stewart, Sixtymile, and Fortymile rivers. Between 1883 and 1885 they made a number of gold strikes on tributaries of the Yukon River, all of them in Canada. 5/

Howard Franklin's 1886 gold find on Franklin Bar some thirty miles up the river and barely into American territory was the first big strike in interior Alaska. During the winter of 1886-1887 news spread up the Yukon River to Juneau and beyond. Consequently, in 1887 there was a stampede to the Fortymile. In March Frank Buteau claimed Bonanza Bar five miles upstream from Franklin Bar and cleared $3,000 in three weeks, the biggest strike of the season. Franklin meanwhile discovered Franklin Creek, the first gulch diggings in the Yukon basin. 6/

In the summer of 1893 two men of mixed Russian and Native blood, Pitka Pavloff and his brother-in-law known only as Cherosky, started the second significant mining rush in interior Alaska. They prospected and hunted moose in the hills at the head of Birch Creek, an area generally ignored by earlier prospectors, and brought out $400 in gold from a location they named Pitka Bar. News spread quickly to the towns of Tanana, Fortymile, and Juneau. Circle City was

founded on the Yukon as the most convenient access point to the new mining district. By the fall of 1893 prospectors found the rich gold beds of Mammoth and Deadwood creeks and by 1896 the flood of miners, numbering 700 to 900 at the peak of the boom, had picked an estimated $900,000 in gold from the Birch Creek area. 7/

From Birch Creek, the pioneers spilt over into Fourth of July, Washington, Beaver, Hess, Woodchopper, and Coal creeks and Charley and Seventymile rivers. John Minook, brother of Pitka Pavloff, found gold on Minook Creek in the late spring of 1893. However, the bar proved to be of too low a grade and the area did not boom until the overflow of men from the Circle district arrived and discovered richer claims at Little Minook and Hunter creeks. The ensuing rush gave rise to a new mining district with the town of Rampart as its supply point. Similarly, miners found that prospects on Mission and America creeks justified further work and by 1896 still another gold district came into being. 8/

Miners were initially drained from these upper Yukon districts when still richer quantities of gold began to glisten in the pans and sluice boxes on the Klondike in 1896, Nome in 1899, and around what became Fairbanks in 1902. But in the backwash many of the more than 100,000 men to enter the area flowed into the districts pioneered in the 1880s and early 1890s. Others struck out to find pay dirt in new regions. Stampeders coming to the Klondike by way of the old Hudson's Bay Company route down the MacKenzie and Porcupine rivers to the Yukon vainly tested the streams along the way. The Dall, Ray, Hodzana, and Chandalar rivers draining southeast to the Yukon River were tested as well. The Chandalar showed color but it was not until 1906 that prospectors coming from the Arctic Coast as well as from the Koyukuk district located the rich diggings at Big Creek. During the winter of 1906-1907 stampeders mushed

north to the new diggings. The town of Caro sprang into existence as a supply center and the Northern Commercial Company sent the steamboat Koyukuk loaded with goods for a new store. The boat could only reach fifteen miles below Caro so the NCC started its own town of Chandalar Station. However, the Chandalar placers opportunities were limited and soon the district was largely abandoned. 9/

There would be other gold rushes in the upper Yukon but none resulted in substantial mineral production. Rather, subsequent mining developments stemmed from the use of advanced technology and large amounts of outside capital and reacted to world wars and the American economy. Larger amounts of money upgraded placer mining by launching scraper, hydraulic, and dredge operations in the upper Yukon districts before WWI. By the 1930s draglines and bulldozers were clawing at the soil. The only efforts at the expensive undertaking of lode mining have been in the Chandalar region. 10/

During WWI Alaska reflected the worldwide depression in gold mining. Operating costs were too high and men were more readily able to find work in the Lower 48 in the Army or war plants. During the 1920s continued opportunity for good wages in the burgeoning factories discouraged mining activity. Only with the depression did gold mining on the last frontier prove attractive and the number of miners increase. Gold mining received a tremendous boost when the dollar was revalued in 1934. Then capital flowed into the territory and production increased to an all-time high of over $18 million in 1940. Measured in ounces of gold it was the largest production since before the U.S. entered WWI and twice the amount extracted annually during the 1920s. In 1941, though, construction of airports and other facilities in Alaska provided such high wages that mining suffered for lack of workers. The following year the labor market was even more strained and the military appropriated the placer operations, bulldozers,

draglines, and grading machinery. Finally, in October the War Production Board declared gold mining a non-essential industry, effectively shutting down the bulk of it. 11/

After WWII Alaskan gold mining rebounded quickly from 58,000 ounces in 1945 to 221,000 the next year. However, the post-war peak has been 277,000 in 1950, barely a third of the production of 1940. Since 1950 Alaskan mines yielded continually diminishing quantities, bottoming out at a reported 7,100 ounces in 1973 (lack of full reporting suggests that total production in 1973 was somewhat above 10,000 ounces). Since then, the end of a fixed dollar value for gold has spurred a revival. In 1980 Alaskan miners dug out approximately 70,000 ounces. 12/

In writing about the Yukon, geologist Philip S. Smith stated that "gold has been reported from almost every stream in the entire basin." 13/ He might have added that as a by-product, miners have regularly acquired smaller quantities of silver throughout the region. Economic mining, however, has been limited to the following tributaries.

FORTYMILE

The Fortymile River valley not only produced the first gold rush in interior Alaska, it has remained one of the prime mining districts on the Yukon. It yielded approximately $10 million dollars in gold (417,000 ounces) from 1886 through 1961, after which date statistics for the district are no longer available. 14/ More recently, the U.S. Bureau of Mines has found high potential areas for asbestos, lead, zinc, copper, and antimony in the valley. 15/

Most of the Fortymile district's gold has been found on the river's tributaries. Although Franklin first located gold in the lower stretches of the river not far above the Canadian border, compared to its Mosquito and Walker forks the Fortymile below the confluence of its North and South forks has yielded little mineral wealth. Between 1904 and 1907 the river bars produced no more than 5 percent of the Fortymile district's gold. In 1907 a dredge began operations on the river at the boundary. A small dredge continued to work near the boundary about a half mile below Moose Creek in 1910 and 1912. Cable scrapers installed in 1910 generated sizable activity on Squaw Gulch, a tributary of Canyon Creek, through much of the decade. In 1936 nine men continued to mine Canyon Creek. However, from the 1920s to 1940 the only significant operation on the Fortymile below the North and South forks was a hydraulic plant initiated on Dome Creek in 1921. Hydraulicking or substantial open cut work continued on Dome Creek in the late 1930s and in 1940. In 1940 and 1941 the Boundary Dredging Company ran a dredge near the headwaters of Canyon Creek before WWII curtailed the operation. 16/

Mining resumed after the war. A dredge operated by the Yukon Placer Mining Company dug at Canyon Creek again in 1949, recovering 81 percent of the gold reported to have been extracted from the Fortymile district that year. In the 1950s a small scale hydraulic, bulldozer, or suction dredge mined Canyon Creek. From 1959 through 1965 Jack Wilke's Squaw Creek Mining Company ran a non-float operation on Canyon Creek. This operation was connected by trail and unimproved dirt road to the boundary spur road to the Taylor Highway. From the mid-1970's to the present suction dredges have been active along the main stem of the Fortymile. They utilize jet motors on their boats. 17/

Mosquito Fork

Though boosting tributaries called Bullion and Gold creeks, mining activities on Mosquito Fork has concentrated on the less pretentiously titled Ingle, Lost Chicken, and above all, Chicken creeks. Bob Matheson first found paying quantities of gold on Chicken about 1893, but not until richer deposits were found in early 1896 did larger numbers of miners abandon other Fortymile streams to flock to Chicken. In 1901 prospectors uncovered gold on the west bench of Lost Chicken Creek. It is not known when gold was first taken from Ingle Creek. Ever since the late 1890s the lower Mosquito Fork has been one of the most productive areas on the Fortymile. In 1903 Louis Prindle of the USGS estimated there were eighty miners at Chicken. In 1905 Chicken, Lost Chicken, and Ingle accounted for over 40 percent of the gold taken out of the Fortymile basin. 18/

In the early twentieth century, summer mining along the Mosquito Fork was by open cutting and by drifting, men using hand, horse, and steam powered hoists to bring the pay dirt to the surface. During the winter, miners steam drifted to gather a supply of pay dirt. In the spring, this soil was sluiced for gold. By the 1920s miners began using hydraulic techniques. In 1928, the USGS reported that work on Chicken Creek extended approximately between the mouths of two gold bearing tributaries--Stonehouse Creek and Myers Fork. Open cut and drift mining was employed on Chicken Creek, open cut alone on Stonehouse and Ingle creeks, while hydraulicking occurred on both Myers Fork and Lost Chicken. This type of mining persisted through the 1930s, and though on a much reduced scale, into WWII when hydraulic and bulldozer operations on Chicken Creek and Lost Chicken Hill were among the largest on the Fortymile. Those enterprises which revived after the war normally consisted of bulldozers and hydraulics to deliver gravel to the sluice boxes now

coupled with a dragline to remove and stack the tailings. The Franklin Mining Company's claim on Chicken Creek produced the most gold anywhere on the Fortymile in 1952 and 1953. Other operators during the 1950s worked claims on Myers Fork, Stonehouse and Ingle creeks, and Lost Chicken Hill. Open cut mining continued on a diminished level through the 1960s. In 1970, two men working separately on Chicken Creek and Lost Chicken Hill accounted for all the gold mining reported on Mosquito Fork. However, by 1975 surging gold prices had increased activity to three bulldozer operations on Chicken Creek and two others on Ingle using hydraulics. 19/

Dredging began on the Mosquito Fork in 1936. The Alaska Gold Dredge Corporation established its operations on the fork just below the mouth of Chicken Creek. However, after only two years the dredge ceased operation. In 1939 the United States Smelting, Refining and Mining Company (USSR&M) bought the dredge, planning to put it into operation in 1941. WWII quashed this plan. In 1959, a USSR&M dredge transported from Pedro Creek in the Fairbanks district began working Chicken Creek. In 1964, it was the second most productive dredge in the state. However, in 1967, due to unsatisfactory gold production, USSR&M shut down this operation. 20/

Walker Fork

Placers on Walker Fork have been concentrated on its headwaters and on Wade, Poker and Davis creeks. Miners on Franklin Creek stampeded to Davis Creek, in 1888. In the following year prospectors filed claims on nearby Poker Creek and the headwaters of Walker Fork, though these were not exploited until 1896. Men struck the richest of the Walker Fork's pay dirt, that of Wade Creek, in 1895. These creeks remained good producers through the Klondike Gold Rush era. In 1900 over 200 men mined Wade Creek. Between 1904 and 1907 Walker

Fork and its tributaries were the leading gold producers on the Fortymile; the USGS's Louis M. Prindle estimated that Wade alone yielded between a third and a half of the district's mineral wealth. Nearly 100 men worked on the fork, most of them on Wade. 21/

Dredging came to Walker Fork in 1907. The first dredge was freighted up the Fortymile from Dawson in the winter of 1906-07 and began work the following season at the Walker Fork tributary of Twelvemile Creek. Another dredge commenced work farther up the fork in 1908. In 1909, Walker Fork produced $130,000 of the little over $200,000 retrieved from the entire Fortymile. However, there were problems acquiring wood for the steam engines and the dredges were both moved off the Fork by 1913. 22/

Meanwhile ground sluicing and open cut work, some using horse or steam powered scrapers, took place on Davis, Poker, and Wade creeks. Hydraulics were operated on Wade before 1903, but only on a small scale. In 1922, an attempt was made to use a hydraulic on Wade Creek but a lack of water forced a resort to scrapers. However, by the mid-1920s Charles Martin succeeded in making this three nozzle operation effective. Besides Martin's plant, open cut and winter drift mining occurred on Wade Creek in 1928. In that year the Walker Fork Gold Corporation had the major operation in the area. At a point a mile and a half below the mouths of Davis and Poker creeks the firm used a hydraulic to deliver gravel within reach of a Bucyrus steam shovel which in turn dumped the soil into nine sluice boxes. The company owned fourteen miles of claims on Walker Fork and employed twenty men. In the following year, it was the largest producer in the Fortymile thanks to use of a dragline scraper. 23/

During the 1930s Walker Fork activity reflected the stimulus given to gold mining by the Depression and the higher dollar value of gold. By far, the greatest portion of the new production stemmed from the resumption of dredging. In 1934, the Walker Fork Gold Corporation assembled a dredge and began operation on the fork. The next year the original dredge on the fork which had been removed in 1909 was transported by tractor and sled over the ice to Wade Creek. It went into operation in 1936. Fuel problems again plagued the dredges. In 1937, the fork dredge experimented with using coal mined near Chicken Creek. Production did not justify expenses and the machine was thereafter left idle. The USGS 1956 map shows that this dredge left tailings from a couple hundred yards up Poker and Davis creeks, down the fork nearly to the mouth of Cherry Creek. A similar fate befell the Wade Creek dredge which solved its power needs by installing a diesel engine in 1941 but then experienced problems with its digging ladder and gave up operation at the end of the year. The Wade Creek dredge worked again in 1945 before shutting down forever. Today it is viewed by tourists traveling the Taylor Highway. 24/

In the late 1940s two bulldozer operations on Walker Fork and Jack Wade dominated Fortymile mining. In 1950 and 1951 these companies shut down. However, other bulldozing operations stepped into the voids and continued working Wade Creek and the upper fork. By 1970, these amounted to only a one-man operation in both areas, but five years later there were five mines working in the Walker Fork drainage. 25/

South Fork

The South Fork and its tributaries, Franklin and Napolean creeks, were among the earliest streams mined on the Fortymile. Franklin Creek was a center of placer operations in 1887 and gold was being extracted from Napolean Creek by

1893. Between 1904 and 1907 Franklin Creek, worked in the summer by shoveling in and in the winter by drifting, and the river bars each produced no more than 5 percent of the district's gold. One of the first dredges in the Fortymile valley was placed on the South Fork two miles below Franklin Creek in 1907. The Atwater dredge clawed at the South Fork near the mouth of Buckskin Creek in 1912. In 1917 a small dredge was again working the South Fork near Franklin. The USGS reported that four men mined Napolean Creek in 1936. These men and most other South Fork miners from the 1920s to 1940 used little machinery. They regularly worked the river bars with rockers. 26/

During WWII there was a hydraulic and bulldozer operation on Uhler Creek. In subsequent decades there have been small-scale hydraulic, bulldozer, or suction dredge mining on Napoleon and Uhler creeks and along the Fortymile, especially in the vicinity of Atwater bar, located a short distance above the mouth at Franklin Creek. 27/

North Fork

Very little mining has been done on the North Fork. About the turn of the century there was extensive exploration and some gold found on upper Hutchinson Creek, Gold Run, and near the Kink, a sharp bend in the fork downstream from the mouth of Hutchinson. A Danish-backed venture blasted a new channel of the fork at the Kink, exposing the large bend. However, the gravel so obtained proved of too low a quality. In 1903 Prindle counted only six miners on the entire North Fork drainage. There is no evidence of mining on Gold Run after WWI and very minimal evidence of activity on Hutchinson Creek or in the area around the Kink. In 1936 Jim and Paul Bytell, Steve Cox, Steve Euvitz, and J. William Duval were the only ones mining the North Fork. Slate Creek has recently become the focus of interest in asbestos mining since the

USGS found a deposit in the area in 1968. Considerable exploratory work has taken place and the Doyon Regional Corporation which lays claim to the area is presently engaged in evaluating the feasibility of mining the deposit. 28/

AMERICAN CREEK

Prospectors found pay dirt on American Creek at least by 1895. The following year the area boomed until the bulk of its miners turned their attention to the Klondike. Up to near the end of the first decade of the twentieth century American Creek and its tributaries, the richest being Discovery Fork, yielded the most gold in the Eagle district which also included Seventymile River and Fourth of July Creek. However, this was a relatively poor district; its total yield to date is only about 45,000 ounces.

In 1896, American Creek miners found $15,000 in gold compared to $460,000 for Fortymile miners. In 1914, its most productive year, the entire district got only $50,000. Until WWI American Creek supported a dozen to a score of miners. Technology was limited, though hydraulicking was first used on the creek in 1903. In 1910, two automatic dams were in use. By the 1910s American Creek production fell behind that of other streams in the area. With the exceptions of a two-man operation in 1969, a bulldozer camp begun by the mid-1970s, and an operation reported on the headwater stream of Teddy's Fork in 1977, the written record gives no evidence that anyone seriously mined American Creek for gold after WWII. 29/

There have been minor efforts at extracting other mineral resources. About the turn of the century there were two unsuccessful efforts at coal mining near where the Valdez-Eagle trail crossed American Creek. In the mid-1960s there was development work on a projected nickel lode mine on Eagle Bluff about one mile from the mouth of American Creek on Mission Creek. 30/

SEVENTYMILE RIVER

Gold was discovered on the Seventymile about the same time as on American Creek. Although its mining activity was initially less important and grew slower than on American Creek, Seventymile mines persisted longer into the twentieth century than did those of any other stream in the district. Besides the bars of the river, the tributaries of Crooked, Fox, Barney, Alder, and Flume creeks have been important gold producers. Hydraulic mining occurred on most of these before WWI by which time the Seventymile drainage was the primary gold producer in the Eagle district. In the early 1910s twenty to thirty-five men worked the Seventymile; after the war this number dropped. In 1936 John B. Mertie Jr. of the USGS counted twelve men mining the stream and its tributaries. Mining has been by hydraulic or open cut methods. In the late 1940s and early 1950s the only mining was by hydraulics and bulldozers operated on Crooked and Alder creeks. Barney Hansen began using bulldozers on Crooked Creek in 1953, obtaining 176 ounces of gold that year, and subsequently 300 to 400 ounces of gold a year until 1958. There may have been an operation on Alder Creek during the 1960s and at least in 1975 Roy Miettienen ran a bulldozer mine on the same creek. In 1977 a BLM easement task force examining the Eagle Village area in connection with Native land conveyances noted that claims were being worked at Fox and Crooked creeks. 31/

NATION RIVER

Although prospectors undoubtedly probed the Nation River drainage, no gold is known to have ever been discovered. Only coal has been mined, and this not very successfully. In 1897, the Alaska Commercial Company began mining on the Nation River about one mile above its mouth to feed the company's fleet of steamers and supply the Dawson market. At times employing nearly a score of

men and working at a rate of sixteen to twenty hours per day the company took 2,000 tons out of the mine and sledded it to the Yukon. However, the coal was in irregular deposits and did not justify the expense of the operation. It was abandoned after only two years. In the late 1970s the U.S. Bureau of Mines determined that the Nation River basin, along with much of the area east of Fort Yukon, has potential for oil and gas development. 32/

FOURTH OF JULY CREEK

Placer mining on Fourth of July Creek was concentrated on the upper reaches of that stream nine to eleven miles from the Yukon. First discovered in 1898, small amounts of gold were extracted from Fourth of July Creek almost annually for half a century. The stream yielded no more than $30,000 through 1906. In 1910 a dozen men garnered $6,000 from the creek through a combination of drift and open cut mining. Preparations for working a hydraulic on Fourth of July were underway in 1916 but it is unknown when a hydraulic first washed the stream's soil. During some of the interwar years Fourth of July Creek led production in the Eagle District. Richard Baver's six man camp on the creek was the largest operation in the district in the mid-1930s. Beginning in 1949, a bulldozer scraped along the stream. Though it yielded nearly $50,000 of gold the operation was abandoned after 1951. USGS maps made in 1956 indicated placer tailings over a one mile stretch on the upper portion of the stream. 33/

WASHINGTON CREEK

Very little gold mining occurred on Washington Creek. By 1906, about eight years after its bed was first worked, the stream had produced no more than a few thousand dollars in gold. It was, however, the scene of an elaborate failure in coal mining near the turn of the century. N. B. LaBrie discovered

coal on the creek in 1897 and numerous claims were subsequently filed. By 1902 dog teams had sledded a test load of five tons down a winter trail which paralleled the creek to the Yukon. The coal rendered satisfactory service on the steamer Sarah and USGS geologist Arthur J. Collier suggested that it would be easy to construct a railroad from the mine to the river. Instead, a Dr. Ryan of San Francisco brought in a large tractor to pull in supplies and pull out coal. By 1906 the entire operation had been abandoned. 34/

SAM CREEK

Around the turn of the century, Alfred and Sandy Johnson came to Ben Creek, a tributary of Sam Creek. These men and Martin Ademic and Max Drews mined Ben Creek and trapped the area until WWII. Sandy Johnson prospected nearly all of Ben Creek. In winters he trapped and drift mined. Barney Hansen bought Sandy Johnson's claim in 1945 but worked it only for a year or two. During the late forties, Barney and Jim Hansen used a cat to mine. Near the mine they built an airstrip 3,200 feet long and capable of handling a DC-3. Barney Hansen sold the claim in 1961 to Jim Layman who worked it during summers at least into the mid-1970s. The airstrip was still used routinely at that time. 35/

COAL AND WOODCHOOPER CREEKS

The history of mining in these twin streams running parallel on either side of Mount Kathryn to the Yukon is inextricably intertwined. Claims were staked on both about 1898 in the wake of the Klondike Gold Rush. However, almost no work occurred on them until after 1900. Through the first third of the century the total number of miners seldom exceeded a score on either creek. Placers were located about five miles up each stream. In 1906, three or four claims

were worked on Coal Creek. Six years later ten to twenty men mined Coal Creek and its tributaries, Boulder and Rose creeks. In 1906 Mineral Creek, a tributary of Woodchopper, produced $18,000 in gold. Four-fifths of this output came from winter mining with steam points to thaw the ground. During the summer eighteen men worked Mineral Creek, where simple shoveling techniques predominated, though there was a small hydraulic. For more than two decades beginning in 1902, one set of owners claimed the four miles of producing creek bed six miles up the Woodchopper and worked it with pick, shovel, and sluice. 36/

In the second half of the 1930s a higher gold price prompted the introduction of dredges which made Woodchopper and Coal Creeks two of the larger producers in the entire Yukon basin. In 1936 Gold Placer, Inc. moved a dredge to Coal Creek. Its success convinced Alluvial Golds, Inc., a sister company, to follow suit on Woodchopper the next year. These operations ran annually through 1942. During World War II the War Production Board allowed the Woodchopper dredge to operate in 1943 and the Coal Creek dredge to run in 1945. Both resumed regular digging in 1946. In 1949 the managers of these operations began working the dredges in alternating years. While one ran, buldozers stripped land in front of the other dredge to take advantage of solar thawing. Through the 1950s one or the other dredge ranked as the top producer in the Circle district (which included the Birch Creek drainage). A USGS map compiled in 1956 indicated tailings from three to 7.7 miles above Coal Creek's mouth and from 4.7 to 7.5 miles up Woodchopper. The Coal Creek dredge shut down after the 1957 season; the one on Woodchopper, after ranking in the top ten producers in the state in the late 1950s and early 1960s, ceased operations seven years later. 37/

With the sharp rise in gold prices in the mid-1970s, mining recommenced. In 1975, the Coal Creek dredge resumed operation while Joseph Vogler used a D-8 caterpillar on Woodchopper Creek. In 1981 a fifteen to twenty-man crew on Coal Creek worked an open cut sluicing operation and a churn drill. To date, Woodchopper and Coal creeks have produced over 100,000 ounces of gold each, most coming from their dredging heyday. 38/

CHANDALAR RIVER

In the vast Chandalar River drainage only a small area east of Chandalar Lake has produced exploitable quantities of gold. And these quantities have always been small. The Chandalar has contributed only 25,000 to 30,000 ounces to Alaska's total gold production, easily the poorest district in the upper Yukon. 39/

Prospectors explored the river as early as 1897; they probably had been lured there by its proximity to the upper Koyukuk on which gold was discovered in 1893. Before June in 1898, a party of twenty-one men went up the Chandalar to its headwaters prospecting for gold. The following year, USGS geologist, Frank C. Schrader, found four miners working placer ground they had discovered two years earlier on Big Creek east of Chandalar Lake. In 1904 and 1905 gold was retrieved from Trail and Monarch creeks. Still the Chandalar basin generated little interest until 1906. Then Thomas G. Carter made a discovery on Little Squaw Creek and a group of men from the nearby Koyukuk district extracted rich paydirt from Big Creek. This prompted a stampede to the Chandalar in 1907. The swarms of gold seekers found colors in the East and Middle fork valleys. However, most wealth came from the North Fork tributaries east of Chandalar Lake, principally Big Creek, Squaw Creek, Little Squaw Creek, and Tobin Creek. This placer mining proved unrewarding, and the stampeders soon

departed. By 1909 the district's miners produced only 250 ounces; a fifth of what had been extracted in each of the previous years. 40/

Despite disappointing placers, some men attempted lode mining. In 1907 miners discovered a quartz lode in the hills east of Chandalar Lake. Lode operations began in 1910 when T. S. Haynes and E. W. Griffin erected a three-stamp mill near their Gold King claims on Big Creek. The mill worked just a little in 1910 and not at all thereafter. Simultaneously the Alaska-Chandalar Mining Company shipped a four-stamp mill to Beaver. In the next two decades attempts were made to transport it to the mines using the Beaver-Caro road which company backers had urged the Alaska Road Commission to build. However, only some pieces of the 28-ton machinery made it to the mines; the rest still lies scattered along the route. Not until the early 1970s did lode mining resume on the Chandalar. 41/

Through most of the 1910s little gold came from the Chandalar. In 1912 there were only one or two placers and they acquired about $1,000 in gold. By 1916 production grew to $9,000 from the ten men in the district. There was a considerable boom in the early 1920s after encouraging discoveries were made on Squaw and Big Creeks in 1919. It peaked in 1922 when over $80,000 was produced. Subsequently, mining slumped again to a handful of operations. Yields varied from $3,000 to $18,000 a year in the 1930s, dropped to non-existent during World War II, and then resumed their depression era scale until the mid-1950s. For a few years 1,000 to 2,000 ounces were scraped from placers. In early 1959, $30,000 of equipment including mine cars were landed on the ice of Chandalar Lake and hauled by a tractor eight miles to the mines. In the 1960s the Office of Minerals Exploration aided in development work and by 1970 the Chandalar Gold Mining and Milling Company had its mill ready to treat ore taken from the Mikado vein at the head of Tobin Creek. It worked for only a couple

of years. In the mid-1970s no mining occurred in the Chandalar district. Presently, both placer operations on Tobin Creek and quartz development work at the Mikado Lode is underway in the Chandalar district. 42/

A range of techniques were utilized in the Chandalar district. Although drift mining was the predominant means in the 1920s and 1930s, hydraulicking and open cut mining also were practiced. Open cut and hydraulic operations have been used since WWII. As recently as the mid-1950s open cut operations included a one-man hand shoveling camp on Big Creek, though bulldozers had by then long established themselves as the primary means of open cutting. 43/

BIRCH CREEK

Tin, antimony, uranium, and zinc have been found in the White and Crazy mountains from which Birch Creek and its tributaries flow. 44/ However, to date only gold and by-product silver have been extracted. The Birch Creek drainage has been the richest in the upper Yukon, having yielded approximately $12 million (735,000 ounces) from 1893 to 1961. 45/ This wealth came from a score of small tributaries, particularly Eagle, Mastodon, Deadwood, Miller, and Independence creeks. Birch Creek itself has yielded little gold. Pitka and Cherosky may have made the initial gold discovery in the district on a Birch Creek bar in 1893. In 1906 the USGS reported that rockers had been used at some point in the stream during periods of low water. No other information on gold mining on Birch Creek proper has been found. In the last few years a Houston firm has been exploring the promising tungsten deposits in the upper Birch Creek area. 46/

Eagle Creek

Following the 1893 gold find in the Birch Creek drainage, prospectors probed numerous tributaries. In 1895 they found colors on Eagle Creek. The Klondike lured many miners away, but after 1900 men returned to Eagle Creek and particularly to its Mastodon Fork. About a score of men using open-cut methods produced $15,000 to $18,000 worth of gold in the summer of 1903 and took out more in the winter by drift mining. The latter was the primary means of gold production on Eagle Creek. By 1906 Eagle Creek and Mastodon Fork had yielded $600,000 in gold. In 1909 hydraulics began washing gold from Eagle Creek. This hydraulicking operation continued to work in succeeding years. In the 1920s, when run by the Berry Holding Company, it was one of the biggest producers in the Circle district. This operation ceased in the 1930s. However, in 1940 the Berry Holding Company used a bulldozer on their Eagle Creek property. In 1949, 1953, and 1955 the Bureau of Mines reported bulldozers and hydraulics on Eagle Creek. Mining virtually ceased in the area in the 1960s. But with the boom in gold prices in the 1970s considerable operations, most using buldozers, revived on Eagle Creek. 47/

Gold Dust Creek

In 1898 Sam Dunham of the Bureau of Labor noted that the sixty-eight claims on Gold Dust Creek had been abandoned during the Klondike Rush, but had subsequently been relocated. What mining took place in the area for the next half century is unknown but a USGS map compiled in 1955 and revised in 1965 indicated a half mile of placer mine tailings on Gold Dust Creek approximately two miles from its mouth (Sec. 21, T. 7 N., R. 11 E.,Fairbanks Meridian). In 1975 the Bureau of Mines reported four dragline operations on the creek. Two of these also utilized bulldozers. 48/

Butte Creek

In 1896 gold was discovered on Butte Creek. Although the USGS gathered water supply information on the creek in 1910, USGS and Bureau of Mines reports have made no mention of mining activity on Butte Creek. However, the USGS's map of the creek compiled in 1952 and revised in 1964 indicated placer mine tailings along more than a half mile of Butte Creek in Sec. 30, T. 7 N., R. 11 E., Fairbanks Meridian. 49/

McLean Creek

Little is known about the mining operations on McLean Creek. In 1910 two men worked on an automatic dam on the creek. No more information has been located about this endeavor. 50/

Harrison Creek

Prospectors located gold on Squaw Gulch, a tributary of Harrison Creek, in 1894. Considerable placer mining was done on Harrison until 1896. The relatively low grade of the pay dirt could not hold men once the Klondike Rush began. However, operations resumed on Harrison Creek in 1904. In 1905 the first hydraulic in Circle district was built on Harrison Creek. Due to the lack of water it was not operated in the second half of 1906. By 1909 inadequate water supply and its own poor design had brought its operations to an end. Harrison Creek was not a major placer stream. Estimates of gold yields up through 1906 included Harrison Creek among "other" producing streams in the Circle district which accounted for $200,000 in gold. 51/

References in USGS reports to mining on Bottom Dollar Creek, a Harrison Creek tributary, in 1910 and on Harrison Creek itself in 1929 and 1934 suggest small and possibly not continuous mining on these streams. In the late 1940s and 1950s, bulldozers and hydraulics worked Harrison Creek. Mining virtually ceased in the area in the 1960s. But with the boom in gold prices in the 1970s considerable operations, most using bulldozers, revived on Harrison Creek. 52/

Crooked Creek

The Crooked Creek basin which forms the richest portion of the richest district of the upper Yukon was staked out by hordes of prospectors swarming over Mastodon, Deadwood, Miller, Greenhorn, Independence, and nearby creeks in 1894. They extracted $9,000 in gold in that first full season. Two years later 300 miners resided along Mastodon Creek eagerly scratching the creek drainage in day and night shifts. Most of the 700 to 900 miners who dug out $700,000 to $900,000 from Birch Creek in 1896 worked in the Crooked Creek basin. Ten years later Deadwood Creek alone yielded approximately $120,000. By then $2.8 million in gold had come from the basin, almost all from the biggest producers--Mastodon, Mammoth, and Deadwood creeks. 53/

Pick and shovel work dominated mining in the Crooked Creek area for more than a decade. A steam shovel clawed Mammoth Creek in 1903 but soon was abandoned. In 1906 a steam scraper and hydraulic mined Mastodon. Steam hoists and thawers were also active. By 1910 a hydraulic plant on Mammoth was the largest of its kind in the Yukon-Tanana region. Deadwood and Independence creek miners did not adopt hydraulics until 1915 and 1917, respectively. 54/

Klondike millionaire Clarence J. Berry brought the first dredge in the district to Mastodon Creek by sled from Circle in the winter of 1911-1912. This machine

officially came from the Yukon Territory where it had been built in 1898, the first anywhere on the upper Yukon. Mammoth Creek got a dredge in 1915. It promptly became the district's largest producer but ceased operation by 1921. Then Berry's machine on Mastodon was the only dredge in the Alaskan upper Yukon until it shut down after the 1926 season. In 1936, Berry built another dredge on Mammoth Creek, followed the next year by the Deadwood Mining Company's establishment of a dredge on Deadwood Creek. Bulldozer, hydraulic, and dragline operations also flourished. There were 300 to 400 men in the district in 1937 compared to only 100 three years earlier. Most of the men were concentrated on Crooked Creek streams. The Deadwood dredge was moved to Nome Creek on upper Beaver Creek in the winter of 1938-39, but Berry's dredge worked on Mammoth through 1952, except for 1943-45. Another company ran the dredge in 1953 and 1954 on Crooked Creek before it ceased operation. 55/

Throughout the dredge era numerous hydraulics also worked the region. By the mid-1930s drifting was being abandoned while bulldozers, draglines, and hydraulics began almost annually to work in various combinations. In 1936, dragline, open cut, and drifting was used by the five miners on Portage and Ketchum creeks. After WWII this work concentrated on Deadwood, Mastodon, Independence, Miller, Porcupine, and Portage creeks. By 1965 the Crooked Creek area accounted for all mining done in the district, albeit these operations numbered less than a half dozen. The area held the same distinction in 1970 with even fewer operations. But the general resurgence in gold mining with the floating of the dollar was clearly reflected in a 1975 survey of Alaskan placer mining. In that year there were sixteen gold operations on Crooked Creek tributaries, most of them utilizing bulldozers. 56/

Preacher Creek

Below Crooked Creek the Birch Creek basin holds little gold. Only on Preacher Creek and its tributary Bachelor Creek has gold ever been reported. Spurr stated that a few men took gold from along Preacher Creek in 1895. But more than a decade later the USGS reported that the presence of values on Preacher Creek had yet to be established. In 1909, there was notable activity on Bachelor Creek and thought was given to installing a hydraulic elevator. But these efforts were abandoned within a year and there is no record of any mining after 1910. 57/

BEAVER CREEK

No stream in the upper Yukon so well illustrates the furious and often futile nature of the gold rush mania than Beaver Creek. A totally groundless rumor sent 150 men to the area in 1887. There was a small gold strike on Golden Creek (present-day Victoria Creek), a tributary of Beaver, in 1904. About 200 men stormed to the area but all left disappointed within a year. Finally, in 1910 a find on Ophir Creek which flows into Nome Creek, a Beaver tributary, brought "a small stampede." This boom actually produced gold, at least in modest quantities, from open cutting the benches and some shaft mines. This activity was restricted to the Nome and Ophir Creek area and it apparently was on only a minor scale until the mid-1920s. 58/

Then in 1926 the Nome Creek Dredging Company built and began operating a dredge on Nome Creek. Until the spring of 1932 when it was destroyed by fire, the dredge annually yielded $50,000 to $80,000 of gold. By the 1939 season, a dredge formerly located on Deadwood Creek had been moved to Nome Creek where it worked through 1941. During WWII the biggest mining enterprises

in the Beaver drainage were a couple of plants utilizing bulldozers, hydraulics, and draglines on Beaver and Ophir creeks. In 1945, the dredge was reactivated but ceased operations after 1947. 59/ In 1975, one miner worked Nome Creek. More recently, exploration of lead, zinc, and uranium deposits has taken place in the White Mountains near the head of Beaver Creek. 60/

HODZANA RIVER

During the boom years along Minook Creek and the Koyukuk drainage at the turn of the century, men poled up the Hodzana River prospecting as they went. In 1904, they found gold on the Mud Fork of the Hodzana River. Reportedly $300 worth of gold came out of one claim. A trickle of prospectors entered the region from the Koyukuk but found only meager diggings. The Yukon Valley News reported on June 2, 1911 that ten men had recently arrived at Tanana in "small boats." All had spent the previous winter prospecting along the Hodzana and its tributaries and some had spent three or four years in the district. Prospects were found on all the river bars and holes had been sunk on all the tributaries and some of the hillsides. In discouragement the men had quit the district, but two others remained behind to try to uncover a quartz vein they anticipated could be found at the head of Pitka Fork. The newspaper article also noted that the first holes were sunk in the Hodzana area in 1901 and many cabins were built there in that year. In 1918 Christian Larson, a Fisheries and Fur Seals agent, reported that four men fishing in July five miles below Beaver on the Yukon used their catch for themselves and their twenty-eight dogs to sustain their mining work on the Hodzana. Kilbourne George of Stevens Village recalled in 1982 that in 1927 he was paid to ferry an unspecified number of miners up the Dall River from which they portaged to the Hodzana. A few men worked the headwaters of the Hodzana during the 1950s and 1960s. Production has been negligible. 61/

HESS CREEK

Mike Hess, a veteran prospector from Juneau and the Fortymile, irregularly prospected the Hess Creek drainage from 1887 into the early 1890s without discovering pay dirt. In 1898 prospectors finding gold on Hoosier Creek in the Minook drainage crossed the divide and staked claims along Quail Creek, a tributary of Troublesome Creek which in turn flows into Hess Creek. They used pack horses and followed the trails leading east up Hunter Creek or Little Minook Creek. Although some placer gold was found on Troublesome and some of its other tributaries, measurable amounts were taken only from Quail Creek. In its first seven years of operation, about $3,300 were extracted. It was mined intermittently into the 1920s; some operators using hydraulics. A bull-dozer or dragline plant worked Quail Creek in the mid-1950s. 62/

A coal mine was developed on the bank of the Yukon opposite the mouth of Hess Creek. The coal was discovered by Oliver Miller in 1897. Although the coal was of an inferior quality, about 1,200 tons had been dug from the bank through 1902. Most was used on river steamers. The mine was abandoned sometime prior to 1917. 63/

ALDER CREEK

In the fall of 1897, there was a brief rush to Alder Creek, a southern tributary of the Yukon below Hess Creek. Sam Dunham, an agent of the U.S. Bureau of Labor who was passing through the area then, told of having to walk twelve miles up the stream to find unstaked ground. USGS and Bureau of Mines publications do not reveal any productive mining on Alder Creek. 64/

MINOOK CREEK

While Edward and Effelin Schieffelin may have found gold on Minook creek in 1882, John Minook is generally credited with discovery of gold in the basin eleven years later. However, it was not until 1896 that the area was carefully prospected and systematic mining began. In 1896 miners found colors along Little Minook and Hunter creeks, the two streams which consistently have been the top producing tributaries. They located gold claims on Little Minook Junior and Hoosier Creeks in the next few years and in 1902 mining began on Slate Creek. 65/

With the exception of the Chandalar district, the Rampart district composed primarily of Minook Creek and its tributaries, has been the poorest in the upper Yukon. In its entire history it has only yielded about $2 million of gold. As early as 1910 USGS geologists remarked that activity in the area was declining because the richest pay dirt was already worked out. Indeed, by then more gold had been taken from Minook Creek and its tributaries than would be extracted in the subsequent seventy years. 66/

A variety of mining methods have been used on Minook. Hydraulics have worked only with difficulty because of a lack of water. In 1906 hydraulics washed the soils of Hoosier, Hunter, and Ruby Creeks. They have persisted in use in the district throughout the century; William Carlo ran hydraulics on Hunter Creek in the 1970s. Ground sluicing proved a more popular method of using water in the 1930s. In particularly dry areas, such as Little Minook Junior, rockers were used. In 1905, John Stanly supervised the introduction of a steam shovel and traction dredge on Minook Creek. Forty tons of machinery were transported three miles up a summer trail from Rampart to the site. After this venture failed it was used in 1910 on Hunter Creek, but failed there too.

Drift mining occurred into the 1930s but fires rather than steam points were used to thaw the ground. 67/

Heavy machinery came to the area in 1939 when a power shovel, bulldozers, and trucks began to work in the basin. In the late 1940s and early 1950s an operation utilizing a dragline, bulldozers, and hydraulics on Little Minook Creek led all producers in the district. Similar, if less extensive, enterprises continued to search for wealth on all the traditionally mined locations. This work dwindled in the late 1960s. By 1970 two hydraulic mines on Hunter Creek accounted for the entire drainage's output. However, by 1975 bulldozer operations had been revived on Little Minook, Slate, and Ruby Creeks. 68/

MORELOCK CREEK

In 1948 Bureau of Mines investigators wrote that prospectors first discovered gold on Morelock Creek in the fall of 1901 and a small stampede to the area around the mouth of Homestead Creek ensued. Mining was done by hand and little was produced. A 1911 USGS report confirms that gold had been extracted from Homestake Creek. In the late 1930s three or four outfits used simple open cut methods along Morelock and at least some of these persisted into the 1940s. Tin deposits in the area were explored in the 1940s but not exploited. 69/

Chapter Four -- Mining

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35. Ibid., pp. 432, 441, 445, 455. There is a possibility that 1961 is the incorrect date for the Hansen to Layman sale since Hansen is listed as the owner of this one- or two-man operation in the State's Division of Mines and Minerals annual report throughout the 1960s. However, Grauman received her information by interviewing Hansen and Layman. Therefore, barring other contrary evidence, the 1961 date will be accepted.

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CHAPTER FIVE

COMMUNITIES

The earliest settlements in the upper Yukon were the imperminent and seasonal ones of Indians. To date, the only places where Indians are known to have frequently set up camp before the mid-nineteenth century are at the mouth of Mission Creek, at the mouth of American Creek, around Old John Lake, and in the Junjik River and upper Copper Creek (a tributary of Charley River) areas. The first two sites probably served as fishing villages; Natives occupied the other sites to intercept migrating caribou herds. 1/

In the half century beginning in 1847, whites set up posts to trade for furs with the Natives. Fort Yukon and the successor Rampart House posts of the Hudson's Bay Company attracted small Indian settlements. Belle Isle, built by Moses Mercier in 1880 near present-day Eagle, was established at a traditional Han community. However, it was not until the gold rushes around the turn of the century that whites created dozens of new settlements. They were either on gold streams or at convenient transportation points to serve miners as trade centers; usually the latter were on the Yukon or had easy access to Yukon riverboat towns. Many mining towns were abandoned as soon as a season's mining proved the stampede which created it to have been unwarranted. Few of the gold rush towns today hold more than the ruins of a handful of cabins. Natives concentrated in villages on the outskirts of the more permanent mining towns, earning money and supplying food and services to the whites. They adopted many white ways including their log cabin homes. When they accepted white education their attachment to communities increased.

By 1910, the upper Yukon gold booms ceased. Instead of hordes of stampeders, the mining streams had a few large operations and a scattering of old timers working one-man claims. At the same time, fur-seekers living much of the year in isolated cabins spread out traplines through the upper Yukon. To reach the more important mining areas, trails and wagon roads were built and maintained by the Alaska Road Commission. Roadhouses along these trails provided accommodations for travelers and served as communication and supply centers for local prospectors and trappers. However, the introduction of the airplane, the construction of auto roads, and the changing trapping methods of the post-WWII era led to the abandonment of most trails and roadhouses.

KECHUMSTUK

Kechumstuk was a fall and winter caribou hunting center for Lake Mansfield Tananas and the Han from the Yukon valley. The first mention of Kechumstuk was in an article in Frank Leslie's Illustrated Newspaper by explorer and correspondent E. H. Wells, who passed the village at the mouth of Kechumstuk Creek on the Mosquito Fork in July 1890. Basil Austin claimed the settlement contained about thirty cabins in 1898 but that the place was deserted when he visited because the Indians were all out hunting. The 1900 census-taker found the place occupied by twenty-one Han. While a land-line military telegraph connected Fort Liscum at Valdez and Fort Egbert at Eagle, from 1903 to 1908, there was a telegraph station located at Kechumstuk. In 1921 Kechumstuk contained eight or nine cabins. It continued at least to the late 1920s. According to anthropologist Cornelius Osgood by the 1960s Kechumstuk was abandoned and most of its inhabitants had moved to Tanacross. 2/

CHICKEN

Chicken has always been a small settlement. In 1896 Spurr noticed fifteen or twenty prospectors on Chicken Creek. The local census-taker could find only two dozen residents of Chicken in 1900. In the past eighty years its population has varied only slightly from that total. 3/

It has served as a supply center and home for miners in the upper Fortymile. A post office was operated from 1903 to 1941. Supplies came up the river both in summer and winter as well as by trail from Dawson and Eagle. In 1926 local residents and the Alaska Road Commission examined possible landing sites. By 1928 two fields were available in the vicinity, the primary one being a short distance above the mouth of Chicken Creek. In the words of USGS geologist John B. Mertie, Jr., who visited the area in 1928, this opened the "interesting possibility" of commercial air freighting from Fairbanks. In 1933 the field was 200 feet by 1200 feet and in fair condition. By 1974 the field had been expanded to 2,600 feet long and the State, which owned it, planned on installing lighting when funds became available. By then, though, road transportation had been opened to Chicken. In 1956 the Taylor Highway connected the settlement with the Alaskan Highway. 4/

BOUNDARY

Boundary was a mining camp on Walker Fork. A road opened in 1937 connecting it to Dawson. It had a post office from 1940 to 1956. Its population may have reached fifty in the post-WWII years. In 1974 its air field was listed as 2,100 feet long. The field was State-owned, earth and gravel, unattended, and unlit. 5/

JACK WADE

Wade Creek, often known as Jack Wade Creek, has been one of the richest gold producers of the upper Yukon since 1895. In 1900 over 200 men worked its bed. In subsequent years the population dwindled; Louis Prindle of the USGS counted only fifty miners on the creek in 1903. The population in the early 1920s was estimated at forty. The census figures for 1930 and 1940 were thirteen and seventeen, respectively. Jack Wade had a roadhouse in 1914. It listed a general store in a 1935 directory. A mining camp still exists on the stream, though the 1980 census listed only one resident. 6/

Before WWII heavy supplies came up Walker Fork in the winter. A short cut for lighter hauls came over the divide from Steele Creek. Jack Wade has been served by two airfields. What has been called Lassen Field was built at the mouth of Wade Creek by 1935. Another field on the stream just above the principal mining camp was also in existence at least by 1940. The ARC maintained the former landing strip. It was only sixty feet wide and 1,150 feet long, and was considered dangerous, especially for planes with a load. In 1950 the upper landing field was reported to be 2,800 feet long and eighty feet wide, and was serviced by Wien and Alaska Airlines. Ann Ayers, her prospecting husband, and his friends brought all their supplies in by air from Fairbanks at ten cents a pound using one of these airfields in 1938. Three years earlier, North American Mines, Inc. carried new 700-pound buckets for a dredge on Wade Creek by air to one of these landing strips. Some time after 1957, Lassen field was converted to a roadside rest area on the Taylor Highway. This highway, opened in 1956, was the major post-WWII transportation innovation affecting Jack Wade. 7/

FRANKLIN

Franklin was the mining camp and post office for the lower South Fork of the Fortymile River. There were eight men on Franklin Creek in 1900. Post office facilities were available at Franklin from 1902 to 1945. For most of this period Franklin consisted of a roadhouse and a handful of outlying buildings at the mouth of the gulch. In 1903 Prindle counted fifteen miners at Franklin. Usually the only residents were the roadhouse keeper and his family. John and Ellen Roberts owned the roadhouse by 1913. They survived on the vegetables they grew in their garden, the game John killed, and the small income they could garner from acting as postmaster, feeding the few old-time miners who came in from nearby streams for their weekly mail, and accommodating the weekly freight caravan traveling between Eagle and Chicken. Like the other roadhouses in the Fortymile area and much of the upper Yukon, Franklin existed partly because of the pleasure the owners derived from their unique way of life. Franklin was last listed in the census in 1940 when it had five inhabitants. Paul Bytell, a resident of the Fortymile area since 1933, stated in 1976 or 1977 that Louie Madigan was the only one living in Franklin in 1945 when the post office closed. 8/

JOSEPH

Chief Joseph led a small band of Tanana Natives who inhabited the Middle Fork of the Fortymile at the turn of the century. Lieutenant Billy Mitchell's winter visit to Joseph in 1902-03 is the earliest documented encounter with this band. In his reminiscences written in the 1930s, Mitchell described Joseph as the home of thirteen families. According to a U.S. Army Signal Corps map of 1905 the village was five to ten miles above the mouth of Joseph Creek and located on the military telegraph route from the Middle Fork of the Fortymile to the Tanana. In the 1903 gold rush to Fairbanks, many stampeders from the upper Yukon

traveled this route through Joseph. How long this settlement existed is uncertain. By 1957 there was a privately-owned bush field near the mouth of Joseph Creek. The airstrip presently is used by recreationists to gain access to the headwaters of the Middle Fork of the Fortymile and the Copper River and by those exploring the mineral potential of the area. 9/

STEELE CREEK

Steele Creek held little if any gold. Rather the settlement which bore its name owed its existence to its location on transportation routes to Eagle and Wade Creek. Spurr made no mention of any settlement at Steele Creek in 1896. Wade Creek had just been discovered and Eagle was not founded until 1898. But by 1900 Steele Creek with its two or three roadhouses had emerged as an important center for Fortymile miners. Few miners lived there when the 1900 census was taken. Instead it was the two hundred miners on Wade Creek just over the divide at the head of Steele Creek along with others in the lower Fortymile who supported the roadhouses, a saloon or two, and possibly a small red light district. Also Steele Creek's location on the lower Fortymile with relatively easy access to the Yukon, as well as its position on the Valdez to Eagle mail trail, gave it considerable geographic advantages. After the furious mining of the turn of the century subsided, Steele Creek continued as a distribution point. Most of its supplies came up the river in the winter, though mail came over the Valdez-Eagle trail. The roadhouse operator worked a ferry across the river for the Alaska Road Commission until 1940. By the 1930s, Steele Creek was a solitary roadhouse surrounded by vacant cabins serving as a regular meeting place on mail days for thirteen prospectors in the area. There was little travel by the roadhouse since dog sleds were being abandoned in favor of planes. There was no air field in the thirties and because the river frequently heaved and cracked in the winter, it was unsuitable for ski plane

landing. In 1951 the post office, which had been maintained at the place since at least 1903, was closed, probably signaling the end of Steele Creek. Its demise was sealed when the Taylor Highway bypassed it to the west. 10/

EAGLE

The Han resided around the Eagle area long before whites arrived. Archeologists have found evidence of residences near the mouths of the Mission and American creeks. Murray was told of a Native settlement in the general area in 1847. In 1867 Frank Ketchum and Mike LeBarge visited a village of 250 Han which may have been camping near Eagle Bluff. In 1880 when Moses Mercier set up the trading post he called Belle Isle, the local Han band numbered 106. Three years later, Frederick Schwatka visited a "permanent Indian village" of six houses and between seventy-five and 100 residents on the Yukon River just above Mercier's then-abandoned post. By the late 1880s, their numbers had diminished to under seventy. 11/

Until the mid-1890s, few whites stopped near the Han band. Trading at Belle Isle was intermittent and though Episcopal clerics preached to the Indians, they did not establish a permanent mission. Miners used the area by 1895 when gold was taken out of American Creek. Most of them disappeared in late 1896 to try their luck on the Klondike. But in the spring of 1898 the older American claims were tempting men back. 12/

On May 28, 1898, twenty-eight miners laid out a townsite they called Eagle City. Within months the town boasted a sawmill, stores representing three major commercial companies, 500 cabins, and 1,700 residents. This boom was short-lived and the town rapidly dwindled, especially with the 1899 rush to Nome. In

1900, the population was under 400 including sixty-three Natives at their village a few miles above town. 13/ That Eagle did not return to its wholly Native village past is attributable to the continuing high yields of gold from the Fortymile area as well as the smaller production from American Creek and Seventymile River, the town's position near the border, and the establishment of Fort Egbert in 1899 at Eagle. The gold brought men and money. The border location allowed commercial companies supplying the miners to avoid Canadian customs and made Eagle the logical place for a U.S. customs office. And Fort Egbert, established to help maintain order, bolstered the local economy until the military closed the fort in 1911.

Eagle's population dwindled in the early twentieth century before stabilizing in the 1920s. The Native village has maintained a steady population -- sixty-three in 1900 and 1940, and fifty-four in 1980 -- while the white settlement dropped to 178 in 1910 and, after the abandonment of Fort Egbert, to 98 in 1920. In 1980 it topped 100 for the first time in seventy years. 14/

In the twentieth century, Eagle has settled into a comfortable existence as the sole continuous, largely white community in the upper Yukon. In 1901 Eagle became the second incorporated city in Alaska. Despite grumbling about taxes, the town hired a magistrate and town marshal and built a school. A U.S. District Court was centered at Eagle until 1903. Catholic, Presbyterian, and Episcopalian churches were active in town. Mining along with trapping, which was especially prevalent in the 1920s, contributed most income to the town. Yet by the latter twenties, the town was declared a "has been." Mining was declining, the rush era miners were aging; the average age was said to be sixty and "the chief industry," reported a road commission employee, was "the holding of low-grade placer ground and hoping that some day some one may

come who will buy their claims." The better gold prices of the thirties did bring some growth as did the completion of the Taylor Highway in the 1950s. The quest for a more simple life brought scores of new settlers to town in the 1970s. Today Eagle City and the neighboring Native village have four churches, a grammar and high school, and three stores. 15/

Eagle has been blessed with a variety of transportation options. Riverboat traffic contributed to the local economy in the summers and Eagle was the most important from the Dawson to Circle over the ice winter route. The Alaska Road Commission built and maintained trails to the Fortymile, American, and Seventymile mining areas. In 1927 the ARC built an airfield utilizing Fort Egbert's old parade ground and dismantling some of the fort's buildings to insure safety. Winds were a hazard on this landing strip and consequently when the wind was blowing dangerously and the river level was low enough, some pilots preferred to land on Belle Isle. By 1938 airplanes seemed to have begun cutting heavily into the once dominant winter land freighting business to the Fortymile from Eagle. Freight brought in by boat could be flown to Chicken for less than the cost of flying them directly from Fairbanks. From October 1937 to early February twenty tons and several passengers took off from the Eagle strip to Chicken. Whether it was to accommodate increased traffic or larger planes, a second field was built by the ARC in 1940 somewhat over one-half mile west of town. However, by 1948 it was falling into disrepair and the field closer to town continued to be the primary landing strip for smaller planes. By 1953 the Taylor Highway reached Eagle. In the late 1970s Hunn Navigation provided barge service when necessary, but most transportation to Eagle involved trucks over the highway or flights from Fairbanks and Tok. 16/

SEVENTYMILE AND STAR CITY

Hungry prospectors from the Klondike laid out the townsite of Seventymile on Seventymile River in late 1897 two miles from the mouth of the river. The following spring, according to different accounts, the town either burned or flooded and some of the miners settled at the still newer town of Star City at the mouth of the Seventymile. In the summer of 1898 Star City received a post office although James Anderson, who visited the "town" in June stated it only contained a cabin and several tents. In March 1899 the town contained four cabins. The 1900 census-taker counted three men in Seventymile and nine in Star City. In 1907 Asa C. Baldwin who was surveying the Alaskan boundary found Star City deserted. He wrote in his notebook "Cabins fallen together. Grass and weeds were high. Failed to find the city of Seventymile, must have been hidden in the weeds." A roadhouse was active near the Seventymile River, probably near its mouth at least in 1901, 1916, and 1917. 17/

MILLER'S CAMP

Miller's Camp was a wood stop for Yukon River steamers as well as a supply center and roadhouse for those traveling the Yukon River winter trail. It was located below the Tatonduk's mouth and operated approximately three decades before being abandoned in 1935. 18/ According to long-time upper Yukon residents interviewed by Melody Webb Grauman in 1976, Frank Charles "Heine" Miller operated the woodstop which also served as a roadhouse in the winter. The place lost its importance when the mails no longer were carried by dogsled and steamboats stopped plying the Yukon. 19/

MONTAUK ROADHOUSE

In 1901 Montauk Roadhouse was located on the Yukon River winter trail at the mouth of Montauk Creek, twenty-three miles north-northwest of Eagle. 20/ When examining the cultural resources of the area in the mid-1970s Melody Webb Grauman was unable to locate the old roadhouse. Informants told her it was at one time a wood stop for Yukon steamboats. 21/

NATION

Nation was laid out by miners in June 1898 as a center for men working the Fourth of July Creek. That first summer and fall, seven or eight cabins arose on the site. It later had at least a dozen houses, a roadhouse, a small store, and a steamboat landing early in its existence. But in 1917 Hudson Stuck considered the place nearly abandoned. In the 1920s and 1930s it housed no more than twelve miners and trappers, most of whom spent much of their time on claims or traplines. About 1939 an airfield 150 feet by 1,700 feet was built at Nation on private land donated for the purpose. Some of the work on the strip was done by Oscar Enstrom, a local miner. 22/

IVY CITY

Ivy City has left little historical record. It was founded in 1898 near the mouth of Fourth of July Creek on the Yukon and served as a center for men on Fourth of July Creek claims. When these claims quickly proved of little value, Ivy was abandoned. 23/

WASHINGTON CREEK ROADHOUSE

Hudson Stuck's rememberances of this Yukon River trail roadhouse dated from the first decade of the twentieth century. It was run by a feisty woman eager that travelers stop at her place rather than that of a competitor nine miles downriver. She was even said to have taken potshots with a rifle at those who would pass her establishment without stopping. Stuck claims that the decline of winter traffic on the Yukon in the early 1910s caused this roadhouse to vanish. 24/ Melody Webb Grauman examined the ruins of the roadhouse in the mid-1970s. She described it as having two rooms and being 36x17 feet in size. An inside squared-off wall was covered with 1906 newspapers. A bunkhouse and dog house were near the ruined roadhouse. 25/

CHARLEY VILLAGE

This settlement near the mouth of the Kandik River may have been of pre-contact Han origin. Schwatka noted six houses there in 1883. The 1900 census-taker counted seventeen inhabitants. In 1903 Judge James Wickersham remained at the "Indian roadhouse" at this place. In 1914 high break-up flooding forced many residents to abandon the settlement for Circle. 26/

INDEPENDENCE

According to Wilds P. Richardson of the U.S Army and Sam Dunham of the Labor Bureau, who both traveled in the area in 1899, Independence was founded at the mouth of Charley River about the same time as the gold rush towns above it to serve sixty Charley River prospectors. In 1899 it contained eight to ten cabins but, like Seventymile, Star, and Ivy, it quickly died out. 27/

COAL CREEK

This community resulted when Gold Placer, Inc. initiated dredging operations six miles up Coal Creek in 1936. It immediately got a post office. Its population of twenty-five to thirty-five was seasonal. In 1957 the dredge shut down and its post office, which may have continued serving men on a dredge on Woodchopper Creek, closed in 1961. 28/

WOODCHOPPER

This mining settlement focused around the dredge which began operating about seven miles up Woodchopper Creek in 1937. There is an airfield nearby and a road built by the miners in the 1930s to the mouth of Coal Creek. 29/

WOODCHOPPER CREEK

This settlement at the mouth of Woodchopper Creek probably was founded about 1906 when gold mining was undertaken about eight miles up the creek. It acquired postal facilities in 1919. USGS geologist, John B. Mertie, Jr., described it in 1925 as consisting "mainly of the fifteen or twenty men engaged in mining and prospecting on Woodchopper, Coal, and Sam Creeks." In 1935 its population was thirteen, including roadhouse operator, Jack Welch. However, in the late 1930s airplanes replaced dogs in carrying mail along the Yukon and Welch quit the roadhouse business relying instead on trapping, fishing, and boating. When Gold Placer, Inc. established a dredge on nearby Coal Creek, Woodchopper Creek lost its post office to the large operation. The following year a dredge was placed up Woodchopper Creek. A road to these mines started at the mouth of Coal rather than Woodchopper Creek, bypassing the small settlement which probably was abandoned by WWII. 30/

WEBBER'S ROADHOUSE

In 1901 Judge James Wickersham, traveling down the Yukon on a winter sled trip, stopped at the cantankerous Mr. Webber's place about three hours journey from Coal Creek's mouth at or near the mouth of Webber Creek. It is described here at length because it was typical of the accommodations offered travelers along the Yukon River trail:

> The one-room log-tavern stood at the edge of a dense forest of tall straight evergreens that covered an island on the left limit of the river. The side walls of the cabin, built of small round logs, were head high, and the central roof-log was just above the outstretched finger tips. The roof was constructed of small round poles laid from the ridge pole to the top logs on the side walls, then covered a foot deep with moss and weighted down with sod and gravel. The tavern was about ten by sixteen feet square inside. It was finished with one clapboard door hung on wooden pins, and one window sash. The dining table consisted of rough boards nailed to poles, about three feet long, driven into auger-holes about four feet apart just below the window. Two pole bunks of similar design adorned the back wall. The dirt floor was spattered with grease from the stove. There was one chair of riven slab set on three pole legs. The two other chairs were boxes, one marked in large letters "Hunter's Old Rye," and the other, "Eagle Brand Milk." A dog stable, much smaller than the tavern, stood alongside. 31/

The structure apparently no longer survives. Ray Bell, who trapped the area in the late 1960s and the first half of the 1970s was unable to locate it. 32/

CIRCLE

Although a number of dates have been proposed for the founding of Circle, the concensus is that the town began in the late summer of 1893 when Jack McQuesten set up a store on the left bank of the Yukon above the present village to capitalize on the rush then just beginning to the Birch Creek diggings. During spring break-up in 1894, flooding forced the settlement's relocation twelve miles downriver to its current site on high ground. As the entrepot to the rich Birch Creek mines, the town quickly boomed into a small city winning, if not deserving, the appelation "The Paris of Alaska." About eighty men wintered there in 1893-94. Natives also soon moved to the region. 33/

Circle grew to about 700 by 1896 although the in-town population fluctuated greatly. Many who wintered there spent the summers at the mines. Freighting in all likelihood was the second most common occupation since the mines were fifty miles away and dogs were very expensive. McQuesten's ACC store soon was joined by competition from the NAT&T Company. The town got its share of small shops and more than its quota of saloons, gamblers, and dance halls. Theatrical companies and "orchestras" of minimal size and quality performed for the miners. Dances required the cooperation of the massively outnumbered women in this frontier camp. The miners formed two fraternal organizations, one of which collected a small library. A school was founded to instruct a class composed primarily of Indian children and the Episcopal Church established a mission. Then in late 1896 the rumor that gold in richer quantities even than those on Birch Creek had been unearthed on the Klondike excited miners to swarm to Dawson City; Circle was largely deserted. 34/

In late 1897 Circle had a brief renaissance. Dawson City was short of food and men were advised to try to get out before freeze-up. About 600 of the exiting armada made it no farther than the empty cabins at Circle. Hunger, boredom, cold, disappointment at not striking it rich on the Klondike, and a desire to get south of 53° prompted some desperate attempts to hike out of Circle. Edward Lung, one of the men frozen in this desolate outpost far from his Tacoma home, noted that the same frustrations worked on those who suffered the winter in town. Circle, he said, was a town which "seethed with unrest and belligerent, arguing men." 35/

With break-up in 1898 miners fled Circle. J. D. Fraser described the town in the summer of 1898 as "composed of several hundred log cabins, none of which were occupied." Some of the residents were at the Birch Creek mines. But the nature of Circle was beginning to change. Businesses increasingly depended for their patronage on the steamboats stopping on their way to and from Dawson City rather than on the local miners. 36/

In 1910 the census-taker counted 144 inhabitants. Thereafter, the population declined and it has since numbered between forty and 100. In 1916 Stuck observed that its white population was only twenty-five though many more lived in the adjacent mining district and depended on Circle for their supplies. He estimated that about sixty Natives lived in the settlement. Throughout the twentieth century Circle has contained one or two stores and restaurants, a roadhouse, an Episcopal Church, and since 1909, a school. (The school, opened in 1896, closed in 1897.) 37/

In 1929 Circle became the first settlement on the Alaskan Yukon to gain auto access to the outside world. The route had earlier served as a winter sled

route and continued to do so since the Steese Highway was only available for automobiles in the summer. That same year the ARC appropriated money to be used for an airfield at Circle. However, nothing was done because the money was shifted to improve the field at Eagle; the Commission feeling that with a good road from Circle to Fairbanks, that small village had less need for plane service. Not until a decade later was a field completed on land bought by the territory. 38/

In 1945 the cheapest route for heavy cargo was by river from Dawson; the quickest was over the Steese Highway. Two airlines operated at Circle's landing strip. Mail arrived weekly, either by bus in the summer or plane in the winter. This relatively good transport system made it easier for the largely Native population to market its furs and craft products. However, an unhappy BIA teacher reported that 80 percent of this income was expended on liquor which could come in just as easily as local products could go out. 39/

On September 20, 1955 two researchers for the Army Corps of Engineers flew to Circle. They learned that Fay E. Wood ran the store and cafe, that eight fish wheels had taken about 16,800 fish in the previous five weeks, that 2,000 visitors stopped at Circle each year, and that Wilbur Jewell produced 333 mbf from his sawmill in 1954. Jewell's logs were hauled from twelve miles down the Yukon to Circle. Each year approximately 1,500 barrels of oil and gas were brought to town. Twenty-five tons of general merchandise were used locally while another 150 tons were "moved out up and down river." Bill Strack used two twenty-three ton barges to carry supplies to Fort Yukon and Old Crow. A boat named the Pelican No. 4 with a forty-five-ton barge also serviced Fort Yukon from Circle. 40/

Present-day Circle residents still largely subsist on fishing and hunting. Income comes from trapping and seasonal work in Fairbanks, on roads, and at military installations. There is one store in town. Wien Air Alaska flies into Circle every Saturday. Fairbanks trucking companies transport goods to town during the summer. Hunn Navigation bases its operations at Circle. 41/

FORT YUKON

Fort Yukon is the oldest white settlement in the upper Yukon and since 1910 the largest town in the area. Never a focal point of gold mining, Fort Yukon's economy has been based on the more stable, if prosaic, life of trapping, steamboat servicing, tourism, Episcopal mission and hospital, and Indian subsistence hunting and fishing.

Alexander H. Murray established the Hudson's Bay trading post of Fort Yukon in June 1847. Murray's post served as fur center for the Han and western Kutchin bands and was the base camp for British boat excursions to Nuklukayet for summer trading with the Natives of the Tanana and Middle Yukon. Annually, boatloads of goods exchanged by Hudson's Bay men made their way along the Porcupine River between Fort Yukon and Lapierre House on the Bell River.

Those living at Fort Yukon led a meager existence. Because of the difficulties of transportation, the only commodities imported other than trade goods were tea and a very small amount of sugar and flour. The company's men attempted gardening, with which they had modest success. In 1864 the Hudson's Bay Company moved their fort about a mile downstream because the Yukon was undermining the bank upon which the post was located. 42/

In 1869 the United States took possession of Fort Yukon and the Hudson's Bay men retreated up the Porcupine. Parrott and Company traders occupied some of the buildings. A successor firm, the Alaska Commercial Company in the early 1870s arranged to put its control of the post on a firm basis by renting it from the government. However, the firm soon abandoned the place. By the time Schwatka visited in 1883 much of the stockade had been torn down to fuel the Yukon's three river steamers. Those stopping at Fort Yukon in 1889-90 on their way to demarcate the United States-Canada border found "naught beyond an ash heap, with the remains of the mud chimneys a mournful monument to former glory." 43/

Visiting the place in 1896, Josiah Spurr of the USGS wrote: "Fort Yukon was simply a rough log building inhabited by one white man, who had a scanty stock of very poor provisions, such as flour and tea, to exchange for skins with the Natives. Around the building the Indians had made their camp, . . . a trading-post being always the nucleus of a . . . congregation of Natives." T. H. Beaumont's trading post was the center for fur trading by well over 400 Natives in the Yukon Flats and along the Chandalar and Porcupine rivers. In the winter of 1897-98 Fort Yukon was engulfed by the starving backwash from Dawson City. That winter approximately 300 men stayed at the fort. However, Thomas Moore, who was at Fort Yukon on Independence Day in 1898, found only one store, a church and parsonage, fifteen deserted cabins, and the tents of fifty or sixty Indians. The winter of 1897-98 was as close as Fort Yukon came to being a gold rush town, though it would serve briefly as a supply point to the Chandalar mines and it generally benefited from river traffic stimulated by gold along the Yukon. 44/

In the first half of the twentieth century Fort Yukon thrived as the fur capital of the interior. The 1900 census-taker counted 155 residents, 80 percent of whom were Natives. In 1905 Fort Yukon held a hotel, two trading posts, and an Episcopal mission. In 1909 the BIA built a school in town. About the same time a missionary physician began servicing the post and in 1915 the mission built a hospital, later named the Hudson Stuck Memorial Hospital. Until it closed in 1957 it was the only hospital in the upper Yukon. 45/

Fort Yukon was the primary market for furs taken throughout the entire American portion of the Porcupine basin as well as for skins from the Chandalar and Christian rivers. Between 1910 and WWII Fort Yukon normally housed about 300 people in summers, of whom 80 percent or more were Native. In the winters much of this population dispersed to trapping cabins. Fisheries agent Christian L. Larson visited the town in late July 1918 and estimated there were about 500 Natives and seventy-five whites. He stated that about forty of the whites had trapping cabins over 100 miles from the village. In 1923, near the height of the fur boom, Fort Yukon boasted three general merchandising stores, two roadhouses, one pool room, one movie theatre, two metal working shops, two boat-building ventures, two wood contractors, one fox and mink farm, and one saw mill. The town also had an automobile, a truck, and three tractors. The American Yukon Navigation steamers regularly stopped at Fort Yukon. 46/

The first plane to arrive at Fort Yukon may have landed as early as 1921. However, not until 1925 did the Alaska Road Commission appropriate money for an airstrip. With the help of local residents a field 300 feet by 1,400 feet was constructed. In 1940 Gerald FitzGerald of the USGS wrote that land planes were commonly used because they could carry more passengers and freight, but that pontoon planes were also used because of their ability to access remote

areas without air fields. In winter there was less need for air travel from Fort Yukon to the Porcupine drainage, though planes equipped with skis could find numerous landing areas. 47/

Fort Yukon has long been vulnerable to flooding. Besides forcing the abandonment of Murray's original site, a change in the course of the river in 1916 forced the tearing down and rebuilding of the settlement farther back from the river. In 1949 a flood destroyed much of Fort Yukon and all important community buildings and many residences have now centered on high ground east of the pre-1949 site. 48/

In 1955 U.S. Army Corps of Engineers investigators reported that a variety of barging operations served Fort Yulon. A. E. Kirk brought supplies from Dawson on his way to Old Crow. The Yutana Barge Line transported goods from the Alaska Railroad transfer point at Nenana. Bill Strack with two twenty-three ton barges traveled to Fort Yukon and Old Crow from Circle and another boat called the Pelican No. 4 pushed a forty-five ton barge between Circle and Fort Yukon. 49/

In the post-WWII decades Fort Yukon's status as a regional center has attracted Natives from outlying areas. Its population grew from 446 in 1950 to 701 in 1960. The most recent census count was 612 in 1980. A government health clinic begun in 1955 made the Hudson Stuck Memorial Hospital unnecessary. The community's children are educated in town through high school. Episcopal, Assembly of God, and Baptist clergy serve Fort Yukon. There is an electric utility serving the town. Several state and federal agencies maintain facilities at Fort Yukon, including a National Guard Armory. There is a volunteer fire department, a library, and a museum. The ACC, a village corporation co-op, a

liquor store, a boat store, and an inn conduct local business. Yutana Barge Lines stop five times each summer and Wien Air Alaska has daily flights to Fairbanks. Hunting, fishing, and trapping remain important to the local economy. But since WWII firefighting, construction work in Fairbanks and Fort Yukon, and welfare have become the primary income sources. 50/

OLD RAMPART

When Captain Charles Raymond ordered the Hudson's Bay traders out of Fort Yukon in 1869, they established a new post called Rampart House in the neighborhood of present-day Canyon Village on the Porcupine River. However, because company officials were uncertain whether the location was in Canadian territory, they destroyed the facility and relocated Rampart House opposite the mouth of the Salmon Trout River. R. C. McConnell, a Canadian government explorer, wrote in the late 1880s that the "fur post . . . barely pays expenses, owing to the heavy cost incurred in the transportation of furs and goods, and is kept up mainly as a protection against the encroachments of traders from the west." In 1890 J. Henry Turner of the boundary expedition determined that the Hudson's Bay post still encroached on American territory. Consequently, the log structures were dismantled, made into rafts, towed up the Porcupine, and reconstructed. However, Old Rampart, as the settlement was then known, continued to be inhabited by a number of Native families. The 1930 census taker counted thirty inhabitants. USGS geologist, Gerald FitzGerald estimated a similar number of residents at the end of the decade. He also noted that the village contained a small trading store. No population has been noted for Old Rampart in censuses since WWII. 51/

CANYON VILLAGE

Located near an earlier site of Old Rampart and the trapping cabin of Nels Curtis, Canyon Village existed for about a decade. It was founded in 1962 by about forty immigrants from Fort Yukon, nearly all Natives, who hoped that moving to the area would help preserve their way of life. Residents supported themselves primarily by subsistence hunting, fishing, and gathering. Families maintained small gardens; furs furnished a cash income. Some obtained added income by firefighting. A school and Episcopal mission were established within a year of the founding of the town. Freight was brought up the Porcupine by boat while weekly mail flew in from Fort Yukon; the planes utilizing a gravel bar or floats or skis to land. Canyon Village, however, was abandoned in the 1970s when the number of school age children dropped below thirteen, compelling BIA to close its school. 52/

BURNT PAW

Burnt Paw was a Native settlement about six miles below the mouth of the Coleen River. Though inhabited in the 1930s and possibly before, it contained only a few families and presently is abandoned. 53/

SALMON VILLAGE

In 1916 Hudson Stuck wrote of two villages on the Black River. One of these was Salmon Village. Located at the intersection of the Salmon Fork with the Black River, it was close to excellent moose, grayling, and salmon country. Residents of Chalyitsik still travel by boat and snowmobile to take advantage of these resources. In 1930 the census-taker counted thirty residents of Salmon

Village. The population declined in the 1930s; the 1940 census counted only five inhabitants. Richard Nelson in his 1973 study of Chalkyitsik noted that the establishment of a school downriver further drained Salmon Village so that "all that remain there today are rotting log houses with open doors and fallen roofs." Grumman Ecosytems' 1975 report on navigable streams of the Yukon referred to Salmon Village as a seasonal fishing camp. 54/

CHALKYITSIK

Often called Fishhook or sometimes Black River by non-Natives before World War II, Chalkyitsik may date from 1900 or earlier. The 1900 census-taker counted seventy-four Natives at "the settlement of Black River," but did not give its location. In 1916 Hudson Stuck wrote of two villages on the river, one of which had a white trader. Two years later, Bureau of Fisheries agent, Christian L. Larson, learned on a visit to Fort Yukon that a Mr. Smith ran a store ninety miles up the Black River in an Indian village. These references probably referred to Chalkyitsik which is eighty-two miles up from the Porcupine. The 1930 and 1940 censuses recorded thirty-five and thirty-three residents, respectively. In 1937 Chalkyitsik consisted of only four cabins. 55/

However, in 1940 or 1941, a boat of supplies to build a school at Salmon Village found it could not reach its destination. Consequently the school was constructed at Chalkyitsik. Striking growth resulted as residents of Salmon Village and outlying trapping cabins began to congregate at Chalkyitsik 56/

In 1946 when C. Masten Beaver arrived in the village he noted twenty-two cabins as well as the schoolhouse and teacher's residence. Beaver subsequently started a trading post there. Basing his information on church records at Fort

Yukon, Demetri Shimkin estimated Chalkyitsik's population was eighty-four in 1947. However, when Joseph T. Gay and Glen W. Shoemaker visited the settlement in September 1955 for the Corps of Engineers they noted only six families with a total of only fifteen people. In the late 1940s an Episcopal Church was established; by the mid-1960s Baptist and Assembly of God churches had been founded. In 1970 the population was up to 130. The official count dropped under 100 by 1980. 57/

Subsistence hunting and fishing near the village have provided much of the inhabitants' needs. Trapping brought considerable income in the earlier part of the century. Since World War II trapping income has been supplemented by welfare and seasonal jobs found in Fairbanks or Anchorage. Ground transportation with Fort Yukon is by snowmobile in the winter. Wien Air Alaska provides connections with Fort Yukon four days a week, landing on an airstrip originally utilized in 1953. In the spring when the water is high a barge brings freight from Fort Yukon. 58/

NITCHIE VILLAGE

William Stevens, a Fort Yukon resident raised on the Black River, claimed in a 1968 article that a settlement of this name existed on the lower Black. It consisted of several log cabins. It is unknown how old this settlement was and whether it was inhabited year-round. No other source suggests the existence of Nitchie. Stevens said the village was totally destroyed by fire in the spring of 1950. 59/

CHANDALAR

Chandalar, or Little Squaw as it sometimes has been called, was a dispersed mining community at the heart of the mining area east of Chandalar Lake. Its population has been both Native and white; some of the Eskimos who moved to the interior with Frank Yasuda lived here. There was a post office intermittently from 1909 to 1944. From 1926 to 1928 an air field was financed by the Alaska Road Commission and cleared with the help of local miners. However, eight years later it was listed in poor condition and only infrequently used. In 1937 a Chandalar miner wrote the ARC that the airstrip was too short and he offered to assist in extending it. In the mid-1970s this field was still in operation. In the post-WWII censuses no inhabitants were reported in the Chandalar area until 1980 when the population was set at four. Placid Oil Company owns the site now as a base for exploration and uses a hunting lodge there both for business and recreation. Wien Air Alaska flies to Chandalar twice a month. 60/

CARO

Caro was the first of three supply points founded in response to the discovery of gold on the Chandalar River. Samuel J. Marsh located it in late 1906 at what he considered the head of navigation for a new, large mining district. Promptly two saloons (one owned by a Circle man commonly known as the "Crummy Kid"), a roadhouse, and several substantial cabins were built. In 1907 a post office was established to provide for the hundreds of miners in the district. 61/

But Caro's heyday was short. In 1908 the Northern Commercial Company found steamboats would not ascend 100 miles up the Chandalar to Caro. Instead they were stopped eighteen miles downstream where the company established Chandalar

Station in competition with Caro. Moreover, Caro was forty miles to the southeast of the mineral area, and the gold was limited, leading to a quick collapse to the gold boom. USGS geologist A. G. Maddren noted that by 1909 only a scattering of Natives resided in Caro. By 1912 the post office was abandoned. In 1923 a small number of Natives and whites remained. The 1930 census-taker counted twenty-five inhabitants. Visitors to Caro in 1967 found magazines in abandoned cabins dated 1934, which may have been the last time the place was occupied. Caro has not appeared on any subsequent census. 62/

CHANDALAR STATION

The Northern Commercial Company established Chandalar Station in 1908 at the point above which its steamer could not proceed farther upstream. The post was abandoned the following year because of the collapse of the Chandalar gold boom, because the river frequently was too shallow to be navigated to Chandalar Station, and because the NCC's prices were prohibitively high. When the company decided to close the store the settlement's population was only thirty. 63/

ARCTIC VILLAGE

The area around Arctic Village, especially that to the east on Old John Lake and to the north in the Junjik drainage, have long been used by Chandalar Kutchin as prime hunting country for caribou. However, Arctic Village did not come into being until a little before 1908 when Christian moved his band from Christian Village and built the settlement's first cabin. Christian's relocation brought his band closer to the caribou country and to Old John Lake, which became, if it was not already, a popular area for Eskimos to trade with interior Natives. 64/

Arctic Village is extremely isolated. Tradition has it that Reverend R. H. Wallace, an Episcopalian missionary at Old Rampart, visited the site in the late 1880s. Native lay readers of the Episcopal mission at Fort Yukon visited the settlement and John Cornell, a 1910 census-taker, may have been the first white to see Arctic Village. Deputy U.S. Marshal Bert Hansen came to the settlement in the winter of 1910-11. At that time the lone log cabin was that of Christian; all other inhabitants were in tents. His estimate of the population, possibly exaggerated, was 100 including many Eskimos there to trade and potlatch. 65/

Arctic Village may have been founded in part to help reinforce Native ways and foster an experiment in Christian life. Albert Tritt, a shaman who became a fervid Episcopal deacon after a visit to Fort Yukon, advocated that his people return to the old hunting ways of their ancestors. One result was the erection of a long caribou fence. This project, which took several seasons before its completion in 1914, represented a revival of a traditional hunting technique. Tritt then coaxed the villagers into constructing a log chapel, a considerable undertaking since Arctic Village is at the edge of the timberline and logs had to be transported great distances. The church was finished in 1917. Tritt's proposal for a two-story log school met opposition and was never completed. When Tritt called on the villagers to replace a winding toboggan trail from Fort Yukon to Arctic Village with a straight one twenty feet wide--to "make straight in the desert a highway for our God"--a portion of the population rebelled and, led by Christian, relocated at Christian Village. This split took place by 1923. 66/

J. B. Mertie's 1927 USGS party visited and mapped the Arctic Village region. He reported about seventy-five residents. This estimate is almost certainly high; the 1930 census recorded only forty inhabitants. Anthropologist Robert

McKennan gave a more thorough picture of the settlement after his 1933 visit. He found six or seven log cabins, a successor church to the one Tritt designed, Tritt's still unfinished school building, and only thirty-six residents.

The 1940 census taker counted only twenty-four villagers. Over the next twenty years Arctic Village grew to over 100; the most recent census puts its population at 104, nearly all Natives. 67/

In 1953 a school was established in a log cabin. Six years later a new school opened. By the late 1970s the children could be educated through grade ten in Arctic Village. The Episcopal Mission remains the only religious organization. In 1959 Arctic Village got a post office. The settlement also has a National Guard Armory, two general stores, a fuel dealer, lodge, sawmill, health center, and water and sewage facilities. 68/

Subsistence and market economies are mixed at Arctic Village. Caribou is still an important food. Early twentieth century dependence on fur trapping for cash has more recently shifted to seasonal construction work in Fairbanks, summer firefighting, and welfare. A road five miles to a hunting area was constructed in 1976. Wien Air Alaska provides five flights a week from Fort Yukon to Arctic Village's 125 foot by 4,450 foot gravel airfield. 69/

VENETIE

It is not known when Venetie, or Chandalar Village as it sometimes was earlier called, was founded. Robert McKennan contends Old Robert established it about 1895. In 1899 USGS geologist Frank C. Schrader observed only one Native village on the Chandalar and it was eight miles above its mouth. At the

same time a Native told a member of the revenue cutter Nunivak's crew of a village of several Indian families ten miles up the Chandalar. The 1900 census recorded a village of fifty-one Natives on the river. However, whether this settlement was eight, ten, or the thirty-five miles up the Chandalar where Venetie lies, is uncertain. James Carroll mentions Venetie in his book on trapping in the 1910s and early 1920s. He described it as "a small native village." 70/

Not until 1940 did Venetie appear in published census reports. Its population has grown from eighty-six in that year to 132 in 1980. The people of Venetie started a school in November 1935. However, the teacher quit after only four months. In September 1937 John Fredson, a Chandalar Kutchin sent to Nenana for schooling by Hudson Stuck, was assigned as a government teacher at Venetie. Largely through his efforts, the Venetie Indian Reservation was established in 1944 to help protect their way of life. The inhabitants of Venetie have always been a mobile people spending much of each year outside the village hunting, trapping, and fishing. A 1945 BIA report noted them traveling to the mountains to hunt, going down near the mouth of the Chandalar to fish, and living in Venetie only about nine months a year. At that time freight entered the village by small boat from Fort Yukon and mail came monthly in the summer by motorized poling boats. There was no airstrip and the few planes to land used a small lake two miles away. Planes and dog teams delivered mail irregularly during the winter. A Native-owned Venetie Trading Company was the only commercial enterprise. 71/

In 1955 two Army Corps of Engineers investigators visited Venetie. They subsequently reported that fifty-nine Natives comprised the settlement's population. They also noted that the Alaska Native Industrial Cooperative had

a store in town, that approximately eleven tons of supplies went into the village annually, and that the cost of transportation from Fairbanks was ten cents per pound. 72/

Modern-day Venetie has a National Guard Armory, two stores, a fuel dealer, an Episcopal Church, and a 4,400 feet long landing strip. Wien Air Alaska serves Venetie five days a week. 73/

CHRISTIAN VILLAGE

In 1900 a census-taker recorded fifty-four Natives, including Christian, on the "Trahanjeek" River. It is uncertain, yet probable, that they were together at a settlement and that settlement was at or very near the present site of Christian Village fifty-five miles north of Fort Yukon on the Christian River. An 1898 USGS map locates a village near the correct point. Anthropologist Robert McKennan believes the village was established about this date and was inhabited approximately a decade until Christian and his band founded Arctic Village. A report of Deputy U.S. Marshall Bert Hansen's 1910-11 voyage into the region gives what probably is an exaggerated description of the then-deserted village; Hanson supposedly saw a log chapel and fifty log cabins. 74/

Christian led a small band back to the settlement in 1924. The Indians continued to follow a subsistence hunting and fishing life. Anthropologist Robert McKennan did not visit Christian Village in 1933. But he learned it consisted of several log cabins when he met most of the Christian band at their caribou hunting site on Smoke Creek. He noted two major families in the group which comprised only twenty-five persons. The 1930 and 1940 censuses counted about three dozen. By 1947 the population had fallen to five and Christian Village has not

been listed in subsequent censuses. In all probability Christian Village's residents emigrated to Fort Yukon or Arctic Village, which both grew considerably in the 1940s. In the early 1950s the river washed away all but two or three cabins. In the past few decades one Native, Abel Tritt, continued to spend much of his year there hunting and trapping. 75/

ROBERT'S VILLAGE OR TSUKON

There are only scattered references to this small and isloated settlement. On November 8, 1916, Hudson Stuck at the end of a day's dogsledding from Fort Yukon came to a spur on the trail to Venetie. Here a Native invited him to spend the evening at Robert John's cabin. Spurr and his two fellow travelers followed the Native five miles to the "comfortable two-roomed cabin." Stuck stated that a couple more families lived nearby making it "quite a little settlement." Stuck wrote that good fishing, moose-hunting, and firewood were handy and that the Natives cultivated a potato and turnip patch. 76/

In 1933 anthropologist Robert McKennan visited a village he called Suko twelve miles east of Venetie. He stated it had "a few cabins and tent frames" and that it was closely associated with Venetie which he also termed "Old Robert's Village." McKennan's location for the village does not coincide with those given in other sources. 77/ In 1944 when reporting on Native votes establishing the Venetie Reserve, John Fredson noted "Sooko" was on Marten Creek thirty-five miles from Venetie. He stated that it housed only three people, all adults on election day, March 1, 1944. 78/ Tom Taylor when visiting the reserve area in 1956 as part of the USGS's mapping project was told the location of Tsukon which he then placed on Marten Creek about twenty-five air miles southeast of Venetie. 79/ Nothing more has been found regarding this settlement.

MASTODON

Mastodon, a mining camp on the Birch Creek tributary of the same name, lasted for a little over a decade. It began in 1894 when gold was discovered nearby. It had a post office from 1902 to 1906. 80/

MILLER HOUSE

Known as "Mammoth House" when Josiah Edward Spurr visited it in 1896, Miller House consisted of "a large log building containing a single room, which served as kitchen, dining room, parlor, general bedroom, and bar room." It was a center for the nearby mining operations. Miller House received a post office in 1908. It was a resting place for those traveling westward from Circle, especially after the establishment of the trail to Fairbanks. It also a small supply of merchandise and was a supply point for neighboring mines. The roadhouse operated until it burned in 1971. 81/

PORCUPINE HOUSE

USGS geologist Josiah Edward Spurr not this short-lived roadhouse at the junction of Porcupine and Mammoth creeks. It apparently survived a year or two. 82/

CENTRAL

Spurr first reported Central as a roadhouse in the heart of the Birch Creek mining region after his 1896 explorations. Its location at a mining trail's crossing of Crooked Creek maintained it as a roadhouse through the 1920s. The roadhouse acquired a post office in 1925 once the Steese Highway made it more

convenient to reach from Fairbanks. However, only after its opportunities as a servicing center on the highway and at the spur to Circle Hot Springs became apparent, did a larger population settle near the roadhouse. In 1940 the census reported fifty-eight people in Central. This population dwindled to twenty-six in 1970, but rose again to thirty-six in 1980. Nearly all residents are white. The economy is based on the summer highway traffic. There is one store and the Central Lodge. Trucking companies bring supplies from Fairbanks when the Steese Highway is open. An airfield built in the late 1930s accommodates Saturday Wien Air Alaska service from Fairbanks. 83/

DEADWOOD

Deadwood was a mining camp along the placer field of Deadwood Creek. It had a post office from 1906 to 1924 and in the 1920s was connected by telephone with Circle and Miller House. 84/

HOG'EM JUNCTION ROADHOUSE

Josiah Spurr ate and slept at Hog'em Junction Roadhouse near the mouth of Deadwood Creek in 1896. This was a large roadhouse and fifteen or twenty men were there upon Spurr's arrival. The roadhouse had an adjacent bunk house for guests. It apparently was still in operation three years later. However, Central was on a more direct route to the Deadwood placers and it, rather than Hog'em Junction, became the trade center of the area. 85/

CIRCLE HOT SPRINGS

Hot springs were noted in the Circle district at the time of the rush to the area. None were seriously developed until Franklin Leach homesteaded 160 acres in 1905. In 1919 he boasted that the springs were the "most permanent asset so far discovered in this district." Besides producing the great majority of vegetables for the mining district, the springs also were frequented by rheumatics. There was no settlement at Circle Hot Springs besides Leach's. He took his vegetables over a wagon road to market among Deadwood Creek miners. In 1924 Deadwood Post Office moved here. In 1927 Leach contributed over $1,000 in money and labor to build an airfield 400 feet by 1,700 feet. It continues to serve air traffic to this day. In 1929 a branch automobile road was constructed from Central House to Circle Hot Springs which by then had gained a reputation as a health and recreational resort. In 1955 this resort grossed over $100,000. Besides a roadhouse and resort it was a center for a small number of miners, hunters, and trappers. Its population was seventeen in 1930, fourteen in 1939, thirty-six in 1958, and twenty-one in 1980. 86/

JUMPOFF ROADHOUSE

In the summer of 1896 two former guides in the Adirondacks built a roadhouse at the junction of Jumpoff Creek and Crooked Creek anticipating considerable traffic during the winter. This roadhouse was in operation in 1899 and 1903 but was abandoned shortly thereafter. 87/

TWELVE MILE HOUSE

Located at the juncture of Birch Creek and the trail from Circle to the Birch Creek placers, Twelve Mile House served both as a roadhouse and a ferry

terminal. It continued at least to 1929. 88/

BIRCH CREEK VILLAGE

In the early twentieth century a Birch Creek Village was three miles downstream from the present settlement. When the present site was first used is uncertain but many of those from the original location helped found the new village. Almost certainly the new site was occupied by the 1940 census which counted thirty-two inhabitants. Most were Native; there were only three whites out of forty-two residents in 1963. At that time the town boasted a newly erected school building and small family gardens. There was no airstrip until one primarily for winter use was built after 1973. Those visiting Birch Creek Village came by boat, floatplane, or by a winter trail from Fort Yukon. In the late 1970s Hunn Navigation barged freight to Birch Creek Village once or twice a year. Wien Air Alaska provides service to Fort Yukon each Wednesday. Subsistence hunting and fishing are dwindling in importance. In the 1960s welfare was seldom collected by residents; cash came instead from trapping and occasional seasonal firefighting. By the 1970s, though, a substantial number of the approximately three dozen residents benefitted by aid dispensed by the Bureau of Indian Affairs. There are no businesses in Birch Creek except for a petroleum distributor. In the past two decades the Assembly of God has formed a local church. 89/

WHITE EYE

White Eye was a Native village sixteen miles above Beaver on the north bank of the Yukon. It was named for its leader by a visiting prospector about 1898. At the turn of the century White Eye was a seasonal settlement for about forty-five

Natives associated with Fort Yukon. Its population was overwhelmingly Native though a white did establish a store there in the 1930s. It was last listed in the census in 1940 when it had only fifteen residents. 90/

BEAVER

Beaver is a product of the Chandalar gold rush of the early twentieth century. In the summer and fall of 1907 prospectors flooding the Chandalar area found that the easiest route between the Yukon and the mines followed a ridge between the Hodzanna and Hadweenzic rivers. This trail had a southern terminus at what became Beaver. Beaver began in 1910 when Thomas G. Carter and H. E. Ashelby built the town's first store. That year three freight companies operated on the trail to Caro, the northern terminus on the Chandalar River. By the end of 1911 the newly established Alaska Road Commission completed a wagon road from Beaver to Caro. But by then the gold rush had petered out and Beaver may have decayed to nothing as did Caro had not Frank Yasuda given it another reason for being. 91/

Frank Yasuda was a trader at Point Barrow when he joined Thomas Carter and Samuel J. Marsh in prospecting the area south of the Brooks Range. Eskimos associated with his trading post joined him. When gold was discovered in the Chandalar area, Yasuda and his Eskimos participated in the mining and in transporting supplies from Beaver. About 1911, after the rush was over, Yasuda joined in partnership with Carter in the trading post at Beaver. At his urging other Eskimos came down from the Arctic. Even in the post boom years, Eskimos were employed transporting goods up the road, working in the mines that remained, and supplying riverboats with firewood. But Yasuda also resumed his relationship as trader for the Eskimos who began trapping the area, particularly the land lying along the road. 92/

Hudson Stuck wrote in the mid-1910s that Beaver was a dying settlement and that frequently Yasuda's only fellow villagers were his wife and an aged Eskimo couple. This doubtlessly reflected seasonal lows in residency. Most townsmen then were out fishing, hunting, trapping, freighting, or mining. Stuck noted that in the summer white men kept one or two dog ranches. No population figures are available in 1910 or 1920 but Beaver seems to have undergone steady growth to 1930 when the census taker recorded 103 residents. An old-timer in the village recalled in the 1970s that there were fourteen houses in 1912, twenty-one in 1917, thirty-seven in 1920, and forty-three by 1930. Other signs of growth were the appearance of another trading post to compete with Yasuda's by the early 1920s and the opening of a school in 1928. In 1925 the ARC authorized $500 for an airfield at Beaver, though it is not certain whether it was built. Two fox and mink breeders had their camp at Beaver in 1935. And according to the president of the Beaver Kwitchwin Corporation, who wrote to BLM in 1978, Charles Schulz raised wheat, hay, and oats on land just north of the village from the early 1920s to 1954. 93/

In 1945 most residents left the village for two months to trap. They sold most of their furs to itinerant buyers from Fairbanks or Juneau or to traders at Fort Yukon. About half of the villagers had gardens but half of all food was purchased from outside. Freight came by boat, both downriver from Dawson and upriver from Nenana. Wien utilized a landing strip built in the late thirties or, in winter, a frozen slough. Mail came monthly by boat or plane. 94/

A decade later two Army Corps of Engineers researchers visited Beaver and noted that the local trader reported thirty tons were freighted from Nenana by boat and eight more tons were flown in from Fairbanks at six cents a pound each year. The territorial school teacher in town stated that twenty-one tons were boated in from Nenana. 95/

The population remained remarkably stable in the post World War II era; census takers in 1950, 1960, and 1970 recorded 101 residents. Only in 1980 did the population plummet to sixty-six. Except for the BIA school teacher and his family, practically all inhabitants of Beaver have been Eskimo or Indian. Over the last two decades the village has been composed of between thirty-five and forty log houses lining the north bank of the Yukon. About a dozen of these had been built in the late 1950s by the Alaska Road Development Board. In 1964 there was both a general store operated by a white and a Native store. A decade later the village with the help of Doyon Limited and the Community Enterprise Development Corporation bought out the white trader and reestablished the store as a community cooperative effort. The Assembly of God has established a mission in Beaver in the past fifteen years but more religious activity focuses on the older Episcopal Church. 96/

Gardens have existed in Beaver since its founding, but most food has always come from hunting and fishing. After WWII, villagers increased their cash income previously derived primarily from trapping, by seasonal construction and firefighting, some Native bead work, and welfare. 97/

Beaver is currently supplied by air and water. Wien Air Alaska services the town three times a week. Yutana Barge Lines lands three or four barges at the settlement each summer. 98/

STEVENS VILLAGE

Some confusion exists about the origins of Stevens Village on the north bank of the Yukon. Contrary to one local legend recorded by villager Leonard John, Old Steven and his people did not live at Fort Hamlin at the turn of the century.

Rather they moved to their present location, which they called "Denyeet," at least by 1889. The community was composed of the families of four brothers who came from around Kokrines. In 1900 the population was fifty-three. Schultz and Russell ran a trading post at Stevens Village from the first years of the twentieth century to at least 1932. After that Dave Droulett ran a store in town. The Bureau of Education established a school in 1907 and a post office was placed at the village in 1936. About 1939 the ARC built a 2,150 foot long airstrip. 99/

In 1955 two researchers for the Army Corps of Engineers visited Stevens Village. Hugh McGuire, who ran the local trading post and store, stated that annually ten to twenty tons are shipped into the village. About three tons arrived by air freight from Fairbanks at the cost of eight cents per pound. 100/

In the late 1970s Air North provided five weekly flights to Stevens Village. Today, Wien Air Alaska flies into town only on Tuesdays and Thursdays. The community is also served by river barge four times a year. 101/

Subsistence provides an important part of the Natives' livelihood. Additional income is obtained from construction labor, railroad work, commercial fishing, and welfare. There are two stores and two churches in town. 102/

FORT HAMLIN

Established at least by 1896, Fort Hamlin was virtually abandoned in two years. The Alaska Commercial Company built two log warehouses and a dwelling for an agent. In addition to these buildings, Robert Graham observed three cabins when he visited the site in July 1898. He reported "only one white man living

there;" leaving it unclear whether he saw any Natives. It served about 100 prospectors as a jumpoff point for the Koyukuk gold rush in 1899. At the turn of the century there was a roadhouse, a station for the winter mail carrier, and several log cabins housing three or four Indian families. Fort Hamlin was not a very profitable operation. With the growth of Rampart, Natives who had brought furs to the post began to gravitate to the larger mining town. Shortly after 1900 the trading company abandoned the post, though steamboats continued to stop to pick up or drop off fuel for their boilers. Gordon Bettles reopened a trading post there in 1904 as a supply point for gold discoveries on Beaver Creek. He closed down within a year when the Beaver Creek boom collapsed. Stevens of Stevens Village resided at Fort Hamlin with some family members in 1905. He may have acted as a trader. 103/

DALL CITY

Walter C. Mendenhall on a USGS survey mission in 1901 commented that "Dall City, so called, consists of two or three abandoned prospectors' cabins, and lies at the point where Dall River is crossed by the overland trail, at the entrance of the canyon-like upper portion of the valley." It had been occupied prior to 1900 and was on a route into the Koyukuk gold fields. 104/

TCHTAU-CHAKET

Tchtau-chaket, also called Woor-dor-tcha-kit by some, was a short-lived Native settlement at the mouth of the Dall River. For about five years it was a winter camp for a band of Indians. In the summer of 1900 Indians who hunted and fished about the lower Yukon Flats and Dall River area, along with some Natives from Tanana, Fort Yukon, and the Chandalar, Koyukuk, and Nowitna rivers

constructed a log cabin village. In 1904 it was reported to have had a small trading post. This village was closely associated with Stevens Village six miles upriver. Most residents probably moved to Stevens about 1906 when a flood destroyed Tchtau-chaket. 105/

RAMPART

The earliest known settlement near the mouth of Minook Creek was that observed by Josiah Spurr in September 1896. The half-breed Minook there dominated a group of Natives whom he hired to mine along the stream which bore his name. Spurr also noted "the temporary camps of a few prospectors" then working in the vicinity. By the succeeding year the city of Rampart was begun about a mile downriver. P. H. Ray then counted seventy tents, ten huts, and one store. Meanwhile, miners were rapidly erecting new cabins. 106/

At the turn of the century Rampart was at its peak. Edwin Bell reported ten stores, twelve saloons, a brewery, and six restaurants amidst a town of approximately 450 cabins. Many of these cabins most likely were empty, their owners using them as a base for excursions to claims in the Minook drainage or having abandoned them, and the Minook region, altogether. J. W. White, who visited in September 1900, reported the town had a newspaper, a library, and a volunteer fire department. And typical of a boom town on the frontier he found that "society here is a problem for moral sociologists." Fortunately, Lieutenant J.C. Cantwell also noted that the town had a mission, a hospital, a small detachment of soldiers, and a jail. 107/

Reports of Rampart's population ranged as high as 2,000. More likely the apex was reached in 1898 or 1899 at closer to 1,000. The census-taker in 1900 counted

about 200 in town, almost as many working their mines in the Minook drainage, and 50 Natives remaining at the settlement at the mouth of the creek. In succeeding years the town declined. In 1904 the Northern American Transportation and Trading Company closed its store, moving its goods to the new boom town of Fairbanks. The next year the Pioneer Saloon shut down leaving Rampart with only three taverns. In 1907 the town's last newspaper fell silent. By 1910 the population dipped to eighty-three with thirty-six more at the neighboring Native village. Henry M. Eakins, a USGS geologist who visited Rampart at this time noted the great decline in population. He wrote that besides serving as a base camp for miners, Rampart's economy gained income through servicing steamboats, trading furs, and fishing for salmon to be sold as dog food. He also noted sizeable garden plots as well as the cultivation undertaken by the Federal agricultural experiment station across the river from town. 108/

By 1916 the Indians had moved from the mouth of Minook Creek into some abandoned cabins in Rampart City. Hudson Stuck said that along with the Natives there were only two or three dozen whites in town. In 1923 virtually all business operations of the boom period were extinct; Julius Rahmstorf ran the only store in town. Rampart's population held at about 100 until 1960. Most were Natives. In 1945 there were sixty-five Natives and a dozen whites. The Indians left town about three months a year to trap. They also engaged in hunting, fishing, and laboring in neighboring mines. There were two stores, one church, a six-year-old air field, and a BIA school. A scattering of whites mined and trapped. 109/

Ten years later two researchers for the Army Corps of Engineers visited Rampart. By then Ira Weisner had clearly emerged as the town's leading citizen. He owned the store, served as postmaster, made road repairs on the

eight mile Territorial road to Little Minook Creek, ran a sawmill, and was the local cannery operator. In 1955 he sold two-thirds of the eight tons of king salmon he bought locally as fresh fish in Fairbanks and canned the remainder. He cut sixteen-inch-diameter logs on the north side of the Yukon. Weisner sold some of this to Stevens Village. He brought fourteen tons of supplies into town for his store. 110/

Little had changed by the early 1970s. Since 1945 the number of Natives had fallen to twenty-one, but Ira Wiesner remained the dominant figure in town; providing most residents employment at his trading post, sawmill, gold mine, and cannery. In 1980 there were fifty-three residents, all but about a half dozen were Natives. 111/

The river has consistently served as an important travel route to Rampart. Steamers regularly put in there during the earlier part of the century. Mail carriers using dog sleds also traveled on the river or trails along its side. Once the Alaska Railroad was completed goods began to be barged up from the Tanana. In the late 1970s Yutana Barge Lines stopped at Rampart five times a year. Rampart also is served by Wien Air Alaska two times a week. 112/

MCCORMICK'S ROADHOUSE

In the early 1910s this roadhouse operated at the intersection of Roadhouse Creek with the Yukon eleven miles below Rampart. 113/

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DRAFT

CHAPTER SIX

WATER TRANSPORTATION

Three water routes have served as primary avenues to supply upper Yukon enterprises and tranport resources to outside markets: down the Porcupine River from Canada, up the Yukon River from its mouth, and down the Yukon River from its headwaters. The Hudson's Bay Company used the first route for over forty years as part of its interconnecting river supply system throughout Canada and into Alaska. Trading foods were floated down the Mackenzie River, up the Peel River, and across a portage to the Porcupine River. Thirty to forty foot boats carried the trade items and furs up and down that stream to the Yukon River, serving Fort Yukon, Fort Selkirk in Canada, and the Indian fur rendezvous site at Nuklukayet. Although the Hudson's Bay Company was forced to give up Fort Yukon in 1869, it continued to use the Mackenzie-Porcupine route to supply its fall-back post at Old Rampart until the U.S. forced them to abandon that post as well in 1890. 1/

The second and main route of travel from 1869 to 1923 was along the Yukon River between its mouth and points in Canada. In the 1860s, Russians ascended the Yukon from Nulato to Nuklukayet to trade, and Ivan Simonsen Lukin and the Western Union Telegraph Company explorers traveled from St. Michael to Fort Yukon. Beginning in 1869 steamboats easily traveled the St. Michael route. During the Klondike Gold Rush, this route reached its peak activity, while overland alternatives from Cook Inlet, Valdez, and the head of the Lynn Canal were tested. 2/

The most practical alternative was the already well known one over the Chilkoot and White passes. This route had long been used by the coastal Indians of

Southeast Alaska to trade with interior Athabascan Indians. The Chilkoot and Chilkat Indians jealously guarded this trail and not until the mid-1880s did prospectors begin to regularly use it. From the ice-free Lynn Canal, trails led over the passes thirty-three miles to Lake Bennett. The prospectors built boats on the lake shore and drifted down the Yukon River. In 1898 steamboats were introduced on the Yukon's headwaters and construction began on a railroad over the White Pass. In 1901 the White Pass and Yukon Route consolidated the railroad and the major Canadian Yukon steamboat company, dominating the upper river traffic. The advantage of an ice-free ocean port aided the White Pass company to expand into the American Yukon River and, in 1914, to purchase its major competitor, the Northern Navigation Company. 3/

The completion of the Alaska Railroad shifted interior transportation from its heavy dependence on river travel. By 1922 freight came by rail to Nenana, on the Tanana River, was placed on river steamers, taken down the Tanana, and then along the Yukon to river ports. Roads extending from Fairbanks and later the Alaska Highway into the Upper Yukon Region cut into the river traffic. During the 1930s cargo planes connected Fairbanks with the more isolated settlements. White Pass boats stopped hauling goods down the river during World War II. In the early 1950s the Yutana Barge Lines of Nenana took over the river trade and continues to give limited service between the railroad at Nenana and Yukon River communities. 4/

Despite its prominence as a transportation artery, the Yukon River presented serious navigation hazards. The Yukon Flats was a maze of shallows and dead-end sloughs. Channels shifted every break-up so a new route through the Flats had to be found each spring. Low and silty water made sandbars a dreaded threat. Christian L. Larson, on a Bureau of Fisheries examination of the Yukon in

1918, was struck by the confusion of channels in the Flats. He remarked that even though all the steamers had pilots, they sometimes got hung up on sandbars or took a turn up the wrong channel. In the river one saw "nothing but islands and untold number[s] of channels . . . , and a man . . . doesn't know where he is going." The Flats were so shallow that steamboats could not take on full loads of fuel at each wood stop for fear of increasing their draft. The entire river could become hazardous at times of high water when logs and other debris were pulled into the current and floated downstream. Ice, which closed the Yukon River for seven to eight months of the year, became a great menace at break-up. The mouth of the Yukon River remained closed a month longer until the frozen Bering Sea opened an ocean channel. Thus river navigation was limited to an intense four to five month period. 5/ Because of the short season, river traffic in the Upper Yukon Region remained at an extremely small scale until the introduction of the relatively fast steamboat. In the late 1840s the Hudson's Bay Company used thirty-foot boats and by the 1860s they were using forty-foot boats to serve their Yukon River posts. Trading goods from England arrived via the Mackenzie River-Porcupine River portage at La Pierre House then were floated down the Porcupine River to Fort Yukon. In 1851 and 1852 boats were rowed and tracked from Fort Yukon upstream to Fort Selkirk in Canada; after 1863 a boat was sent to the Indian fur rendezvous at Nuklukayet. Furs gathered at Fort Yukon were bundled into ninety-pound packs and loaded into the boats for the slow trip up the Porcupine River. One hundred such packs went into a single boat. The upriver voyage to La Pierre House took nearly three weeks while the return to Fort Yukon took less than a week. But this was only a small part of the boat and portage route across Canada to England. The company had to wait seven years from the time trading goods left England for furs to return to London. After 1869 most upper Yukon furs were

shipped downriver, but the Hudson's Bay post at Rampart House continued to transport its annual harvest of furs via the Porcupine and Mackenzie rivers. 6/

On July 4, 1869, the forty-nine-foot-long steamboat Yukon left St. Michael on the Bering Sea for a voyage which initiated steam navigation of the Yukon River. Amid cheers and a rifle salute, Captain Benjamin Hall guided the stern-wheeler toward the mouth of the Yukon. On board were a group of traders hired by the San Francisco bankers' Parrott and Company to establish trading posts along the Yukon River to Fort Yukon. Since the Hudson's Bay Company still lingered at the fort, Parrott and Company requested the Army to send a military engineer to prove by celestial survey that Fort Yukon was on the recently-acquired American soil. Parrott and Company's steamboat easily passed through the Lower Ramparts and had only slight problems battling the swift and shallow waters of the Flats. On July 31, the party arrived at Fort Yukon. Army Captain Charles W. Raymond proved the American fur traders correct and required the Hudson's Bay Company to cease operations. The diminutive Yukon had helped initiate the American fur trade in the upper Yukon region and was the forebearer of scores of steamboats. 7/

In 1870, Huchinson, Kohl and Company--renamed the Alaska Commercial Company (ACC)--received a federally sanctioned monopoly to harvest the Pribilof seals. This advantage enabled the firm to overwhelm its competition. The ACC promptly acquired Parrott and Company along with its trading goods and steamboat. The ACC established a monopoly over Alaska's interior which lasted into the 1880s. The Yukon became the supply vehicle for a fur trade which annually yielded about 10,000 skins and from the 1880s an increasing amount of gold. In constrast

to the slow and arduous route used by the Hudson's Bay Company, the ACC's steamboat allowed American traders to ship goods from San Francisco or Seattle in the early spring and return with furs in September or October. The key to this speed was the Yukon which could take a barge up the Yukon at a pace of about three miles an hour. With this motive power trading posts as far up the river as Fort Reliance (near present-day Dawson in Canada) could be tapped on a two to three month round trip. 8/

The ACC or its agents operated several small steamboats on the Yukon River until the gold rush era. In 1879 the Western Fur and Trading Company of San Francisco launched the St. Michael, the second Yukon steamer. But the ACC took it over in 1883 when this short-lived competitor went out of business. In the same year, ACC agents Jack McQuesten, Alfred Mayo, and Arthur Harper acquired the Schieffelin brothers' prospecting boat called the New Racket. The New Racket, which measured forty-two feet long, was the smallest of the pre-rush steamboats, while the ACC's second Yukon, introduced in 1883 to replace the original boat, was the largest at seventy-five feet long. Eskimos and Indians comprised the small crews, while the captains included McQuesten, Harper, Mayo, and the burly Scandinavian Captain Charles Peterson. The vessels were casually run, without inspections or safety devices, and, in the words of McQuesten "It is a wonder to me that we didn't blow her [the New Racket] up or sink her as I didn't know anything about steamboating." 9/

These early steamboats used wood cut by their crews and hauled barges of ten ton capacity by tow line. Fortunately the vessels' shallow draft of three to four feet made it possible for the inexperienced crews to run the steamboats across the Yukon delta and flats. In 1874 the original Yukon became the first

steamer up the river as far as Fort Reliance. In 1889 the second Yukon took Harper up to reestablished Fort Selkirk for the ACC. This was the farthest known ascent of the river prior to the Klondike Gold Rush. In the same year, the Yukon inaugurated steamer traffic on the Porcupine by transporting a boundary survey expedition to a point about thirty miles below the border. 10/

Prompted by the Fortymile gold find and ready to tap a new revenue source as its monopoly on Pribilof sealing was nearing an end, the ACC built the Arctic, the first of the larger Yukon River steamboats. Designed and built in 1889 in San Francisco, she was the first steamboat knocked down, shipped to St. Michael, and then re-assembled. The Arctic measured 135 feet long, and had a capacity of 140 tons. The company's experienced Captain Charles Peterson took command; he promptly lodged the vessel against a sand bar at the river's mouth--an event causing the starvation winter of 1889-1890 at Fortymile. The following year Captain Peterson again proved his inability to navigate the giant new boat. When he refused to proceed above Fort Yukon because he considered the Flats too shallow for the Arctic, the passengers rebelled and placed an experienced shallow-draft riverboat captain, Billy Moore, in charge of the vessel. Moore sucessfully ascended the Flats, sending a poling boat out ahead to locate a six-foot channel. 11/

In 1895 Moore captained the Arctic on a record number of five round-trips in one season from St. Michael to points between Circle and Fort Selkirk. Moore continued piloting on the Yukon during the gold rush era. The Arctic's subsequent career was much shorter. Its fate reveals another one of the problems of northern navigation; during the breakup in the spring of 1897, an ice floe at Fortymile crushed the vessel to pieces. 12/

The Alaska Commercial Company controlled the commercial traffic and river trade until 1892, when John J. Healy and Chicago investors formed the North American Transportation and Trading Company (NAT&T). The NAT&T stocked mining and trading goods at Yukon River posts and built the steamboat Portus B. Weare to supply their traders and retrieve furs and gold. The company's steamboats bore a marked resemblance to those in use on the Mississippi and Missouri rivers since they were built to the design of NAT&T Captain John C. Barr, a former pilot on the Big Muddy. 13/

Between 1892 and 1898 occurred what appeared to be a contest between the ACC and NAT&T to build the biggest and fastest boat on the river--all a response to the growing mining trade, especially at Circle, Fortymile, and Dawson. The Weare, launched in September 1892, could carry 200 tons, sixty more than the ACC's Arctic. In 1895 the ACC built the Alice which matched the Weare's tonnage. The NAT&T built a second Missouri River pattern sternwheeler, the John J. Healy in 1896 with a 241-ton capacity. The NAT&T followed with two larger vessels in 1897, but in 1898 the ACC built the three largest steamboats ever used on the river. The three identical sternwheelers Susie, Sarah, and Hannah could each carry over 700 tons. The ACC and NAT&T competing fleets of sternweeler steamboats dominated freight traffic during the early gold rush era. At the turn of the century the red and white ACC flag waved over twelve steamers, while the north star between dual smokestacks identified eight NAT&T boats. 14/

Although through most of their histories the ACC and NAT&T companies dominated river transportation, they provided but a fraction of the boats active on the

river at the height of the gold rush. In 1896, the year of the Klondike discovery, the two companies' combined fleets of six boats could handle only a small portion of the passengers. As a result, a number of new steamboat companies entered the field, including the Alaska Exploration Company, the Seattle-Yukon Transportation Company, and the Empire Transportation Company. Moreover, miners' cooperatives and mining associations built small sternwheelers to haul themselves and their supplies to the Klondike. One visiting engineer, Harrington Emerson, estimated there were as many as 110 steamers on the river in 1898. Another contemporary, Walter Curtin, described the McKinley, one of the private miners' steamboats as a sort of barge with a house on it. It was run by a sawmill engine belted to a paddle wheel. Many of these ramshackle vessels were short-lived, being sunk at St. Michael, stranded on Yukon River bars, crushed by ice on the Koyukuk, or washed onto the beaches of Nome. 15/

The same rush which swelled the number of men coming up the river from St. Michael also gave greater prominence to the Chilkoot and White Pass routes. The overland trails to Lake Bennett and on to Dawson were quicker than the steamboat voyage from St. Michael. Captain William Moore, founder of Skagway and father of Captain Billy Moore, had long promoted his White Pass route to the interior. Moore, the general resource potential of the Yukon, and the Klondike gold strike convinced British investors to back the construction of a railroad over White Pass. In 1898, two years before the railroad's completion, steamboats began to ply the Yukon River from Lake Bennett to Dawson. Once it had completed its railroad, the White Pass and Yukon Route organized the subsidiary British-Yukon Navigation Company to operate steamboats from Whitehorse to Dawson. 16/

The combination of an earlier break-up on the Canadian Yukon River, shorter transport distance, and the cost of a 450-mile downriver haul versus an upriver haul of 1600 miles led to the domination of the Klondike trade by the White Pass route. Gradually the older steamboat companies were pressured into bankruptcy or consolidation. The British-owned firms sold their vessels to the British-Yukon Navigation Company, while the Alaska Commercial Company consolidated or bought the Empire Transportation Company, the Alaska Exploration Company, and the Seattle-Yukon Transportation Company and formed two new concerns: the Northern Navigation Company as the steamboat line and the Northern Commercial Company as its commercial partner. However, though the White Pass route replaced the St. Michael route as the dominant passenger corridor to Dawson, the Yukon River in the early years of the twentieth century retained its importance as the main transportation corridor through Alaska and the prime freight route to the Yukon Territory. 17/

Fuel was a perennial problem. At the turn of the century the average round trip fuel bill for large wood-burning boats was $15,000 and the bill was still greater for those pushing barges. Some firms tried coal mining but all efforts were small and the coal of poor quality. The Alaska Commercial Company developed the Nation River coal mine but it proved of little value and in 1903 its successor, the Northern Navigation Company, began converting its larger boats to California crude oil burners. The NAT&T Company was more fortunate and used coal from its Cliff Creek mines, in addition to wood. During the 1903 season, for example, the steamboat Will H. Isom burned 2,000 tons of coal and 680 cords of wood. 18/

After he turn of the century, the Northern Navigation Company built light draft essels to ascend Yukon tributaries to gold mining communities. The compa: y first developed a shallow draft steamboat for use on the Koyukuk River o serve the area's miners. In 1902, Captain James T. Gray, the company's assista nt superintendent of transportation, went to Oregon, where he contracted with P rtland ship builders to design and construct the 120-feet-long Koyukuk which had a draft of eighteen inches when carrying thirty to seventy tons of freigh or ten-and-one-half inches when empty. The sternwheeler was able to haul t: irty tons while drawing less than sixteen inches on its way up the shallo Koyukuk River 523 miles to Bettles. Encouraged by this success, five more K oyukuk class steamers began work for the NNC in the next decade. The Tanan in 1912 ascended the Porcupine at high water to the border, becoming the lar gest steamboat ever on that river. The Koyukuk itself made a pioneering journe up the Chandalar to within fifteen miles of Caro. 19/

The fi st decade of the twentieth century witnessed route modifications on the main r ver as well. Since it was more profitable to operate the Koyukuk class steamb oats on the tributaries, large boats pushed huge barges from St. Michael uprive , dropping the barges off at Nulato and Tanana where transfers were made. This break in haulage allowed the best suited boats to operate on the variou: rivers. The packets Susie, Sarah, and Hannah catered to the declining numbe of passengers to Dawson and Fairbanks. The NAT&T Company operated a comp arable system at least in 1905. The tow-boat Will H. Isom took four barges to Tanana where the light draft steamers Healy, Cudahy, and Weare hauled goods to Fairbanks, and the T. C. Power picked up the load for Dawson. Similar y, a Canadian firm, Side Streams Navigation Company, was organized in 1909 t furnish transportation on Yukon tributaries. Because of an 1871 treaty

between Canada and the U. S., Canada retained free access to Canadian ports via the Yukon and Porcupine Rivers. Side Streams Navigation operated the light steamboats Pauline and Vidette up the Porcupine River to Dan Cadzow's post at Rampart House. The Side Streams Navigation Company also operated up the Fortymile River to the mouth of its canyon east of the boundary and on other Canadian tributaries of the Yukon River. 20/

In the early 1900s gas- or diesel-powered propeller-driven boats were used on the Yukon. By 1907 the Northern Navigation Company operated thirty- to fifty-foot gas launches as mail boats from Kaltag to Eagle. The White Pass Route introduced gas launches on the Canadian Yukon probably for use as mail launches or pilot boats for their sternwheelers. The first tunnel boat, the Nita, appeared on the upper Yukon River in 1909. It was built for a Canadian mining company, could haul six tons of freight, and drew eleven inches of water; its designer claimed it could navigate on "a good, heavy morning dew." The Side Streams Navigation Company also had two tunnel boats on the Yukon. Gasoline launches and other small boats continued to be important in bringing goods up Yukon tributaries. They brought supplies up to Steele Creek Road-house on the Fortymile at least until the mid-1930s. 21/

Despite these innovations, interior Alaska water transportation business was no longer expanding. In 1906 the peak had been reached with 32,000 tons of freight destined for the American Yukon basin. The NAT&T leased its vessels to independent captains in 1904 and closed its stores at Rampart, Fort Yukon, and Fortymile. The company revived somewhat during the Fairbanks boom, but in 1912 the firm closed its last store. Also in 1912, the NNC initiated direct competition with the British-Yukon Navigation Company. Previously the two

giants had stayed out of reach of each other's territory. But in 1912 the NNC began sending its Koyukuk class steamers to Whitehorse. The Canadian operation retaliated by opening its own service to Fairbanks. Finally "the prospect of mutual bankruptcy" drove both companies to the bargaining table and in April 1914, the White Pass and Yukon Route, the parent of British-Yukon Navigation bought the NNC and renamed it the American-Yukon Navigation Company. 22/

However, the American Yukon Navigation Company presided over a declining industry. In the 1910s the company ran ten steamers from St. Michael to Dawson and on the Tanana and Koyukuk. In 1921 this number dwindled to seven. Then in 1923 the company ceased operations from St. Michael to Tanana as a result of the Alaska Railroad's completion to Nenana. Tonnage dropped precipitously--from more than 20,000 in 1920 to less than 1,300 in 1925. By the 1930s three-fourths of its income came from a busy tourist traffic. The American-Yukon Navigation Company continued to run the steamer Yukon between Dawson and Nenana until September 1942 when it was sold to the Alaska Railroad. 23/

The Alaska Railroad commenced riverboat service from Nenana to lower Yukon towns as far as Holy Cross in 1923 and later extended this service to Marshall. The railroad initiated this service to fill the void left by the American-Yukon Navigation Company's withdrawal from the lower Yukon and because other private firms would only make the runs at exorbitant prices. At least after its purchase of the Yukon, the railroad also operated steamboats on the upper part of the river to Fort Yukon. In 1946 and right after break-up in 1947 it gave service to Circle. Insufficient freight ended this experiment. However, at least in 1952 the Alaska Railroad sent the steamboat Nenana on a round trip to Whitehorse. 24/

In 1955 the Alaska Railroad contracted with Yutana Barge Company of Nenana to run the railroad's river service. Yutana was headed by Jack Bullock of B&R Tug and Barge Company of Kotzebue and Art Peterson of Black Navigation Lines of Nenana. Peterson was the son-in-law and heir to the steamboat tradition of George Black. Black began his career of steaming in 1916. He did much of his work on tributaries beyond the Alaska Railroad's reach. These included the Kantishna, Tolovana, Koyukuk and Innoko rivers. He held the summer mail contract from Nenana to Eagle from 1930 to 1946, when air transport replaced his operation. He was on a run to Fort Yukon in 1953 when he fell overboard and drowned. The successor Yutana Barge Lines has provided the primary river transport on the Yukon to Fort Yukon for the past twenty-eight years. 25/

Several other private firms have operated on the upper Yukon. In the mid and late 1950s a Bill Strack transported mining equipment and supplies to the operations at Coal and Woodchopper creeks. He also provided the shipping needs of those from Circle to Fort Yukon and Old Crow. Altogether he carried about 200 tons a year, most of it being petroleum products trucked to Circle from Fairbanks. An E. Kirk, probably in the mid and early 1950s used a forty-foot tug and a twenty-ton barge to ship supplies from Dawson to Fort Yukon and up the Porcupine to Old Crow in Canada fifty miles upriver from the border. In 1966 Brainstorm Freighting Service continued this Dawson to Old Crow transportation. In the 1970s Hunn Navigation of Circle provided barge service to Chalkyitsik, Birch Creek, and Eagle. It had ceased operations by 1980. 26/

In order to simplify its conveyance work, BLM's Assistant to the State Director for Conveyance Management on July 12, 1982 issued a decision that the Yukon

River in Alaska was navigable in fact and in law. The note cited an "historical record . . . replete with data pertaining to the commercial use of this waterway" and an 1871 treaty with Canada guaramteeing that nation transit over the Yukon to the sea. 27/

FORTYMILE RIVER

Because the first important gold discovery in interior Alaska occurred on the Fortymile River and because it has continued to yield substantial gold, the history of use of this stream is extensive.

Fortymile and South Fork

How Howard Franklin and Red O'Brien reached the place thirty miles up the Fortymile River where they found rich pay dirt in 1886 is unknown. But those who followed them beginning in 1887 poled boats up the stream. Henry Davis and four partners were among the first in 1887 to start poling and tracking upriver. Their first day out in May they got only eight miles after much hard pulling. After several more days of poling and tracking they reached Franklin Creek. They worked a claim three weeks, did some hunting and safely descended the river. Others, however, had not been so lucky. Davis helped a number of prospectors off the rocks and learned of two drownings occurring in the canyon in Canada and another near Franklin Bar. 28/

Gold-seekers and explorers also used the same method to ascend the Fortymile. In 1890 Frank Leslie's Illustrated Newspaper sent E. H. Wells and four other

men to explore and report on the wilds of Alaska. They traveled overland from Klukwan to Kusawa Lake where two of the party departed to explore the Alsek River. Wells and the others built a raft and floated to the Yukon and the Fortymile, which they reached on June 22. On July 3, the party, now including two Indians, began the journey up the Fortymile pulling and lining two canvas skiffs loaned by the local trader. Wells mentioned only one major hindrance to their progress to Franklin Gulch. This was the Fortymile's canyon in Canada where the group had to portage their supplies and line their empty boats upriver. From Franklin Gulch Wells and his men with five pack dogs hiked up the Mosquito Fork and into the Tanana drainage, intending to seek a route to the Copper River. 29/

In 1896, Josiah Edward Spurr and two compatriots, representing the first important U. S. Geological Survey mission in the Upper Yukon Region, crossed the Chilkoot Pass and floated down the Yukon to the Fortymile. Skookum, the boat they used on the Yukon, was an eighteen-foot-long dory, which everyone Spurr spoke with at the town of Fortymile felt could not be taken up the Fortymile River. Those with experience on that Yukon tributary told Spurr and his men that they "should take an upriver boat, (that is, a boat built long and narrow, with a wide overhang, so as to make as little friction with the water as possible, and to make upsetting impossible)." However, no such boat was then available in town so Spurr's party, assisted by one miner who wished to travel with them to his Sixtymile River claim, began to row upriver. After traveling a "short distance," the current became so swift that they had to commence lining. The four men lined the boat through the canyon, "supposed to be the most difficult place in the creek to pass," without much problem. They stopped at Moose Creek from where they packed overland to the Sixtymile River mines.

The USGS men subsequently returned to Moose Creek and spent four days lining the Skookum thirty-five miles to the confluence of the North and South forks. Spurr later wrote that the river was:

> Very low and consequently full of rapids and "riffles" as the miners call the shallow places over which the water splashes. On many of these riffles our boat stuck fast and we dragged it over the rocks by sheer force, wading out and grasping it by the gunwale. Again, where there were many large boulders piled together in deep water, the boat would stick upon one, and we would be obliged to wade out again and pilot it through by hand, now standing dry upon a high boulder, and now floundering waist deep in the cold water at some awkward step.

A short distance up the South Fork the river became so shallow that the men abandoned the boat and trekked overland to mines on Franklin Gulch. After examining those placer mines as well as those on Chicken and Napolean Creeks, the men hiked back to the Skookum. They floated back to Fortymile and continued their survey down the Yukon. They capsized once in the rapics of the Fortymile. 30/

Two years after Spurr examined the Fortymile, the USGS sent D. C. Barnard and a small party to make a careful map of the area. Reaching the mouth of the Fortymile via Skagway and Dawson, the men on June 29 set out up the river with their supplies in three canoes. The ascent to Nugget Gulch was "not easy," according to Barnard. There they made a cache and hiked through the Fortymile drainage. On August 8, having finished their surveying, they

returned to Fortymile. Barnard noted that "on account of the low stage of the water and the numerous rocks, we found descending attended with more risk than ascending" but they did not meet with any mishap. Barnard later wrote that the river could be ascended by tracking or poling to the forks and that at high water the South Fork could be ascended to the 142° parallel. 31/

Prospectors continued to boat on the Fortymile and South Fork. For example, in the winter of 1898-99 Basil Austin and his partner Nels Seaver traveled overland from Valdez to Chicken where they built "a slim dory" they christened Detroit. It was seventeen feet long, two feet wide on the bottom, and four feet wide at the top in the center. This was the third boat Austin had helped build in Alaska and was pointed at both ends to make it easier to tow upstream. 32/

On June 11 Austin and Seaver began a boat trip to the town of Fortymile to replenish their supplies. They were "a bit nervous" since this was their first experience "navigating a river that was dangerous." They had heard rumors of "Dead Man's Riffle", "Canyons", and "Falls" but did not know their locations. Austin described the river below Dennison Fork as follows:

> The river bottom was rather narrow, though here and there were wide gravel bars . . . There were stretches of deep smooth water alternating with rapids which were called "riffles". This word . . . covered everything from a gentle slope with a murmur to a fall with a roar . . . We found plenty of them: short, long, straight, curved, medium, bad and a few wicked and vicious. 33/

Seaver rowed while Austin used a paddle at the stern to steer the boat. They lined through a long rocky riffle above Napolean Creek. The first day they traveled to the mouth of the North Fork where they camped for the night. Just below this location there was "Dead Man's Riffle", a swift riffle in a canyon. They dodged rocks at the head of the canyon by "some energetic steering" but grazed a submerged rock farther through the rapids which jolted Nels who lost an oar. They recovered the oar in a long stretch of smooth deep water which preceded the bad riffle at O'Brien Creek called the "Falls". Austin and Seaver lined this section where the river dropped as much as four feet at one point. The Detroit was swamped early in the afternoon of the second day below Canyon Creek. They, therefore, stopped for the night to dry their belongings. 34/

The third day out of Chicken the partners lined past Craig-a-horn riffle, "a bad one below Moose Creek," and entered Canadian territory. In the afternoon they came to the "Canyon", whose roar they heard a mile away. They emptied their boat and lined it through the rapids. They then bailed out the boat and camped for the night. The next morning they portaged their supplies down to the Detroit. While at the foot of the rapids they salvaged some belongings of two men who had attempted to tow a boat with most of their goods up the rapids. The pair had lost control of the boat and recovered it bottom side up two miles below. Austin stated that "tons of material" had been lost in similar mishaps at these rapids. By traveling through most of the following day they reached the town of Fortymile at 1 a.m., June 15. 35/

On the 17th, after buying provisions to last until the winter, the two began their return trip to the Fortymile placers. They found they could not pole upstream because their boat was not long or stable enough to remain straight in

the current. Consequently they settled down to towing. The loaded boat drew about a foot of water. The water was "much lower" than it had been on their downstream trip so they had an easier time getting the Detroit through the Canyon. They spent a great deal of time pulling through the riffles; some days they only managed to travel five or six miles. On June 27th they reached the confluence of the North and South forks. 36/

There the pair heard of good prospects on the North Fork. They decided to continue upriver to Chicken to retrieve supplies they had cached there and then return to the North Fork. Austin and Seaver camped at Napolean Creek the next night and reached Chicken on the 29th. At Chicken they found the bottom of the Detroit "was just about worn off" so they put on a new one. 37/

On July 2 they again began floating down the South Fork. The boat bumped rocks in the low water. Below Uhler Creek they stopped and helped a party, whose boat was struck broadside on rocks in midstream. They got the men ashore and salvaged most of their belongings. Austin and Seaver then helped pull the boat loose which had a large hole in midship. They arrived at the mouth of the North Fork at 10 P. M. that evening. 38/

The pair spent much of the summer mining up the North Fork before heading to Wade Creek. While looking for a claim on a North Fork tributary, they met James Ellison, the recorder of the mining district who was going to Wade Creek. Ellison agreed to acquire a claim for Austin and Seaver. In September they were ready to join Ellison on Wade. Ellison had used their boat, so the two partners "found another which did not leak too badly." On September 11 they loaded supplies they had cached at the confluence of the North and South forks

into the boat and floated to Steele Creek. Austin and Seaver's experience had made them better boatsmen so that "in spite of low water [they] shot all the riffles except the falls at O'Brien Creek. They hiked from Steele Creek to their claim on Wade and built a cabin. On the 29th they tramped back to Steele Creek determined to get supplies at Fortymile and sled them in in the winter. A number of their friends accompanied them and continued on to Canyon Creek where they got boats. The next day at Steele Creek, Austin and Seaver took "a rather big boat" and floated down to Canyon Creek where they joined their waiting friends from Wade. They had to pull their boats over ice in two places above the Canyon. They reached Fortymile at four that evening. Theirs' were the last boats down the river that year as the Fortymile was frozen over the next morning. The men had to wait at the trading post until October 21 when the Canyon was frozen over and suitable for travel. They used sleds carrying 300 pound loads up the river and up the Steele Creek-Wade Creek divide to their claim. After a winter of mining they headed back to Fortymile with their gold on May 8. They hiked to Steele Creek roadhouse and commandeered a boat which they floated on the recently opened river to Fortymile arriving May 10. From there they boarded an upriver steamer and left Alaska via Skagway. 39/

A far less detailed, and doubtlessly inaccurate, report of boat travel on the Fortymile is that published by Sarah Elizabeth Patchell in 1939. According to Patchell, she and two couples, the Gills and Camberns, in August 1904 rowed and tracked a boat from the Yukon to the mouth of Wade Creek where they staked claims and immediately returned downriver. Her account is at least incorrect in the number of days she said it took them to reach the mouth of Wade Creek. She said the two men rowed and tracked the boat to their dest-

ination in three days. This distance is ninety miles, an impossible task. The forty-five miles to Steele Creek would have been nearly impossible as well. Austin and Seaver required ten days to travel from Fortymile to the confluence of the North and South Fork which was twenty-three miles above Steele Creek. 40/

Patchell mentioned no feature by name on her route. She said the men rowed up the Fortymile to "swift rushing rapids" at which point the men began "the hard toil of pulling the boat along." The first night they stopped at a roadhouse. The next morning they resumed rowing until they again came upon rapids which had to be lined through. They then resumed rowing until evening. The third day they again rowed their boat "as the water was not so swift." They arrived at what Patchell called Wade Creek that evening and the next morning "travelled several miles" where they staked their claims. Given the comparatively short time the party had been on the river, the absence of any mention of the North or Walker forks, the illogic of traveling ninety miles up a river when half that distance will get one to a known short trail to a destination, and the indication that Patchell walked to the placers on Wade Creek suggest that her party had traveled up the Fortymile only to Steele Creek and then hiked the usual route to Wade Creek. 41/

In any case, Patchell described their return trip to the Yukon as including a frightening descent "down the dangerous stream full of boulders and rocks." The men were almost exhausted trying to keep the boat clear of the boulders, when they struck one and threw the passengers from the boat. They rescued themselves and camped for the night. The next day they resumed their trip through "mad rushing rapids" arriving at Fortymile at 8 P. M. 42/

Referring to the high prices of goods at Franklin Creek, Spurr observed in 1896 that "freight done in boat(s) can only be done with good water." 43/ Yet freighting was performed on the river not only to Franklin Creek but as far as Chicken on the Mosquito Fork. Alfred H. Brooks in 1906 stated that a steamer ascended the river to about the boundary line but that supplies more commonly reached the placers by long, narrow poling boats. 44/ James Geoghegan, who himself traveled by pack horse from Chicken to the Tanana Valley via Ketchumstuk in 1903, recalled later that during the rush from Dawson to the Tanana that summer, poling boats to bring supplies from Fortymile to Chicken could be hired for fifteen dollars a ton. They took a week to pole to Chicken and only four hours to return to the Yukon. 45/ Based on his travels in the southern portion of the Fortymile drainage in the summer of 1907, Louis M. Prindle of the USGS remarked that the Fortymile was "a difficult stream to navigate, and boat loads of material are frequently lost or long delayed by low water." Prindle said it cost 25¢ a pound to bring goods by boat to Chicken. This was comparable to pack train costs in the summer but five times more expensive than winter freighting by horse-drawn sleighs on the river ice--the means by which most supplies reached the Fortymile placers. Not surprisingly, Prindle found that "but little freighting was done in summer." 46/

The establishment in 1908 of an overland postal route from Eagle to Chicken via Steele Creek and Franklin virtually ended boat travel on the Fortymile. Winter sledding on the river from Dawson continued to account for the bulk of freight entering the area. 47/ But the mail route allowed John B. Powers, who held the mail contract until 1938, to deliver goods to his store at Chicken at the same time he transported the mail. This arrangement made summer and winter overland delivery from Eagle feasible; in 1921 Powers wrote that if the government

went through with an alternative mail delivery system via Dawson and the Fortymile, little traffic would remain on the Eagle to Steele Creek route because "as would go the mail, so would go the most if not all the other business." 48/ Most Alaska Road Commission and USGS personnel who visited the region in the 1920s and 1930s described its transportation without mentioning boat traffic. 49/ The exception was John B. Mertie, Jr. who made an examination of the Fortymile, Eagle, and Circle districts in 1936. Besides mentioning the Eagle to Chicken summer trail and winter sledding over the river ice, he also noted that "gasoline launches and small boats are . . . used on the streams tributary to the Yukon, particularly on the Fortymile, where supplies are freighted from the mouth of the Fortymile upstream to Steele Creek." 50/ How extensive such service was, though, is called into question by a series of articles in the Alaska Magazine by Ann Ayers. Ayers and her husband ran the Steele Creek roadhouse in 1958. Ayers makes no mention of boat transport on the Fortymile and noted that the roadhouse was nearly out of supplies by the time the river froze solidly enough to permit a tractor to pull twenty tons in on a sled from Dawson. 51/

Scattered documents mention boat use on the Fortymile or its South Fork in connection with the area's trail system. In 1925 R. J. Shepard of the Alaska Road Commission reported that the South Fork was fordable at Franklin where the Eagle to Chicken trail crossed, but that rowboats were also available for men on foot. 52/ In 1912 there was a cable ferry at Steele Creek capable of carrying six horses across the river each trip. 53/ In 1926 a new ferry was installed at the same location. The ferry used at Steele Creek in 1934 was 31' 8" long, 12' wide and 3' 2" deep. 54/ At that time D. F. Millard of the ARC proposed a new ferry forty feet by twelve feet with a depth of two and

one half feet be brought in to replace the worn out old one. 55/ The Steele Creek ferry continued to function through the 1930s. However, in the fall of 1940 the ARC ordered its operation ended. District Engineer Hawley Sterling noted that no horse had crossed on the ferry that year. Indeed there had been "no horse travel." This presumably was due to the introduction of air travel which replaced Power's pack train service in 1938. Sterling noted that the roadhouse keeper at Steele Creek had a small boat for pedestrians and that horses could swim the river except at very high water. 56/

Miners also continued to use the river, though, their use is not extensively documented. The only information on their river travel comes from 1976 and 1977 interviews with Paul Bytell conducted by Terry L. Haynes, a Western Interstate Commission for Higher Education intern with BLM. Bytell and his brother Jim dogsledded to Chicken from Fairbanks via the Mosquito Flats in the winter of 1933. That spring, Bytell recalled, they "lit out from Chicken down river, then went up the North Fork." They felt that the North Fork offered some promise for there had been little prospecting or trapping recently in the area. Although Bytell did not explicitly mention utilizing a boat on this trip, he did tell Haynes that in the summers of 1933-35 he and his brother got their supplies by taking a boat down from their North Fork and Long Bar operations (about a mile below the confluence of the North and South Forks) to Steele Creek. In 1934 Bytell said he hauled 700 or 800 pounds in the boat up to Long Bar from Steele Creek, a trip which took three days. 57/

In the 1970s and 1980s the Fortymile River and its South Fork have been used by recreationalists, floaters and dredgers. In its 1973 publication, Fortymile National Wild and Scenic River, Alaska: A Study, the Alaska Planning Group of

the U.S. Department of the Interior estimated that the river and its forks received about 1,000 visitor-days use each summer. All of this involved non-motorized boats. 58/ Three years later the BLM's Fairbanks District Office estimated that float-boaters accounted for 869 visitor days per year. 59/ Lon Kelly, recreation specialist at the BLM's Fortymile Resource Area, stated in a telephone interview that since that time suction dredgers constituted a majority of river users. He hesitated to provide any guess on total river use since no adequate counting had ever been done. Kelly stated that jet boats churned the waters of the main stream both above and below the bridge at O'Brien Creek but knew of no propeller boat travel. He said jet boats went up to the South Fork bridge but noted that those in flat-bottomed boats occasionally had mishaps at a set of rapids about a mile and a half above O'Brien Creek. 60/

In order to monitor the river's use and enforce regulations, the BLM staff at Tok floated the river weekly each summer since 1977. They traveled in either a Campway Hopi or Avon Redshank raft. Once or twice a year at high water periods they traveled from the Mosquito Fork bridge to the O'Brien Creek bridge. About every other week they floated from the South Fork bridge to the bridge over the main stem at O'Brien Creek. Three or four times a year the BLM employees flew to Joseph on the North Fork and descended it and the main Fortymile to the O'Brien Creek bridge. And two to three times a year they floated from O'Brien Creek to either the Clinton Creek bridge in Canada or to Eagle via the Yukon. 61/

In June 1967 Bob Krumm, Jerry Wickstrom, Wendell Elliott, Bob Olindorf and Wayne Boden of BLM and Paul Leroux, Tom Cates, and Bob Hinman of Alaska's Department of Fish and Game made a canoe trip from Chicken to Eagle on the

Yukon River. The purpose of the expedition was to help assess the potential of the river as a recreational canoe route. Two members of the trip stated that the water in the Mosquito Fork was shallow, requiring lining the group's canoes at two places on June 9, the first day of the trip. Later that day the eight men lined past "very rocky and fast rapids" one mile south of Napolean Creek. After traveling about eighteen miles, they stopped for the night at the site of the abandoned settlement of Franklin. 62/

On the tenth the canoeists traveled approximately twenty-two miles in six hours on the water. They encountered "very rapid water" at the confluence of the North and South forks. An anonymously authored trip log suggested that the area "be classified for lining down stream though we ran it without accident." They, however, did take on water. Bob Hinman later recalled that he lined through these rapids and he termed it a "10 Gallon Rapids" referring to the amount of water which flowed into his fifteen foot canoe. Below the junction the anonymous log reporter stated the river was "deep and powerful but relatively smooth." 63/ The next day the group floated about eighteen miles to Bonanza Bar. They ran numerous rapids, but only that about four miles west of the Taylor Highway was considered dangerous. Hinman termed this the second of the river's two "10 Gallon Rapids." They lined this rapid. 64/

June 12 was the last day the party spent on the Fortymile River in American territory. The men lined around Deadman Rapids, which both records of the trip called "bad", and rapids farther downstream near Eldon's Landing. At the latter, Hinman's canoe was swamped. They subsequently entered Canada and floated down the Yukon to Eagle. 65/

Hinman had several general observations about the trip. He stated that the Fortymile throughout much of the length of the float was "a series of very enjoyable rapids alternating with stretches of quiet water." He noted few sweepers or protruding rocks. However, Hinman warned that "the nature of the river changes drastically with varying water levels" and that "if one were to run it at a much higher stage or during low water, he would find that some of our comments pertaining to various rapids would not be valid." 66/

There are a pair of accounts from the 1970s of travel from Joseph Creek downstream at least to the Taylor Highway bridge at O'Brien Creek. On August 25, 1972 Jules V. Tileston, head of the Bureau of Outdoor Recreation's Alaska Task Force investigating potential Wild and Scenic Rivers, Alden Sievers of the BLM, and Tom Cantine of the Alaska Power Administration began a float trip to examine the recreational potential of the Fortymile. They helicoptered a seventeen-foot standard Grumman canoe and a 16.5 foot fiberglass Pere Marquette lightweight to Joseph and started downstream. They arrived at the North and South forks' confluence at four o'clock on the afternoon of the 28th. Tileston noted the rapids at this point "are basically Class I or Class II, high standing waves but not serious at the water level we are experiencing here. Easily negotiated with a fully loaded open canoe." (Tileston had observed at Joseph that the river there was at "medium level, possibly low.") Tileston described the rapids encountered the following day as "a little more complex than what we have been seeing, with higher standing waves; however they are still relatively uncomplicated. There is one rapid which is in the low Class III upstream from Polly Creek . . . . This rapid is runable on the right-hand side with some modest maneuvering. No difficulty except for the maneuvering must be made to avoid rocks." On the 30th they entered a rapid in Sec. 30, T. 7 S., R. 34 E., Fairbanks Meridian, and swamped the Grumman. After retrieving and drying their gear they continued downstream into Canada. 67/

The other description of travel from Joseph is a short account published in 1976 by Elizabeth Johannsen, a photographer, who traveled with a pipeline worker named Mike Dunn, and Gary Kroll and Steve Cook of Alaska Raft Adventures. They flew to Joseph, inflated their two rafts, and began downstream. Johannsen does not indicate how long it took them to get to their take-out point at the Taylor Highway bridge and gives few other details of their travel. She mentioned portaging around the falls at the Kink and floating rapidly through the swift water immediately below. But she described travel farther downstream to the Taylor Highway as "more sedate." 68/

Mosquito Fork

In 1906 USGS geologist Alfred H. Brooks wrote that the Fortymile had "long been" one of the routes of communication between Natives of the Upper Tanana River and the Yukon River. Brooks wrote that Tanana Natives crossed the divide and descended the river to the Yukon in skin boats or rafts, but returned home overland. Brooks did not mention a specific fork. 69/ However, a Native trail noted on an 1885 map by Lieutenant Henry Allen, who had visited the Tanana Valley but not the area of the trail, suggests that a route passed to either the Mosquito or Dennison fork. 70/ Indians certainly were familiar with the passage at the head of the Mosquito Flats; in 1890 this was the route over which Natives guided Frank Leslie's Illustrated Newspaper explorer and correspondent, E. H. Wells. 71/

The first account of whites boating on the Mosquito Fork and the only one describing upriver travel is that of Walter H. Pierce. Pierce does not name the fork on which he traveled and Robert De Armond, who edited a 1977 edition of

Pierce's book, questioned the veracity of the author's rendition of a confrontation with Tanana Indians. However, the description of the route of travel and the surrounding geography is consistent with the conclusion that Pierce made a journey through the Mosquito Flats. Pierce and a group of thirty-one other prospectors ascended the Fortymile towing their boats around rapids and occasionally portaging their supplies. They panned for gold as they went, passing one fork which carried no gold and continuing up another until they found no more ground worth working. It was then late June or early July when they arrived at a "low flat country" with "many lakes and swamps" and a range of snowcapped mountains to the westward. The group decided to continue on to these mountains. Pierce described their efforts:

> We worked hard from day to day pulling through the lakes, and in places passing through narrow channels. Sometimes we were impeded by timber that had fallen across the channel. We then had to cut the timber out. In other places the lakes were more swamp than lake. It would be a black, sticky mud, through which it was hard to pull the boats.

The group then crossed into the Tanana drainage, had their colorful or, more likely, entirely imaginative encounter with Tanana Indians, and then returned to the flats where they had left their boats. By then the shallow lakes of July had dried up and their boats "were not less than ten miles from water." They carried their boats until they could again utilize the shallow water of the "swamp lake." For about four days more they "pulled, hauled, tugged and lifted" until they left the flats and reached open water. 72/

Bob Steel recalled that shortly after break-up in 1898 in a rush to the gold fields he, his brother, and two companions who had traveled from Valdez went twenty miles from Lake Mansfield to the Mosquito Fork where they built a boat and floated downriver. If Steel was correct about the overland trip from Lake Mansfield being only twenty miles, then this means his party began descending the fork in their boat in the Mosquito Flats area. 73/ Pierce's and Steel's accounts are the only ones to suggest boating taking place above Kechumstuk. Indeed, Alfred H. Brooks was told that the Native village was at the head of small boat navigation. 74/ Shad Reid, whose diary is held at the University of Alaska, Fairbanks, did some prospecting in the vicinity of Kechumstuk and in late May 1898 found the fork at least nine miles below the village to be adequate for boating. On July 1, he took a boat downstream to Gold Creek. On Independence Day he "worked all day boating the river, had to walk and pull the boats most of the day." On the 6th he reached Chicken. 75/

The next summer, Basil Austin and Nels Seaver traveled through much of the Fortymile country. They were among the scores of prospectors who came into the upper Mosquito Fork region from Valdez via the Tanana. On May 1, Austin and Seaver sledded into Kechumstuk. Just below that point Austin noted that two brothers named Rolf were building a boat to travel downriver. To Austin the Mosquito Fork looked "small to navigate" and so he and Seaver continued sledding. This proved extemely difficult as water was running on the river ice. Still they persisted as they had to get to Chicken Creek to replenish their dog food. They finally had to cache the sled and walk their supplies the last eight miles, arriving on May 8th. On the 22nd three men who had built a boat farther upstream reached Chicken. Several days later another party arrived and reported that one of their group had drowned when their boat hit a rock

and overturned in the swift water. The Rolfs had such a hard time on the Mosquito Fork due to its low water that they decided to leave Alaska immediately and go back to Iowa. Austin and Seaver built a seventeen-foot long "slim dory" and traveled in it from Chicken to the town of Fortymile, then back to Chicken, and finally up the North Fork. There was one difficult portion on Mosquito Fork below Chicken where sweepers overhung the river bank. While still at Chicken on June 10th Austin had seen and helped rescue two men who had been knocked from their raft by the sweepers. Austin and Seaver cautiously lined their boat around the sweepers. 76/

James Geoghegan who packed a horse from Chicken to the Tanana during the Fairbanks gold rush of 1903 recalled later that during that summer poling boats brought supplies from Fortymile to Chicken for fifteen dollars a ton. He did not mention the boats going upstream from Chicken. 77/ Four years later Louis M. Prindle of the USGS, who had been in the area, reported that goods were transported from the Yukon to Chicken by boat at 25¢ a pound. This was comparable to pack train costs in the summer but five times more expensive than winter freighting by horse-drawn sleighs on the river ice--the means by which most supplies reached the Fortymile placers. Not surprisingly, Prindle found that "but little freighting was done in summer." 78/

By then, though, an overland mail route and a military trail and telegraph line passed through the Mosquito Flats to Eagle. In 1907 the Alaska Road Commission undertook to improve the trail system from Eagle to Chicken. In subsequent years there ceased to be any notice of boat use on the Mosquito Fork until the 1970s.

There have been cabins and settlements above Chicken, but their existence generated no documents indicating water travel on Mosquito Fork. A 1905 U.S. Army Signal Corps map drawn to display the military's telegraph lines near Eagle, showed "Lee's Cabin" on the telegraph line along the upper portion of Mosquito Fork. The map was less than precise in depicting this area, but it appears to have been above the Mosquito Flats. 79/ USGS maps compiled in the mid-1950s and 1960s displayed a number of structures along the Mosquito Fork. The ruins of Dick Mitchel's Ranch were marked in T. 24 N. R. 13 E. Copper River Meridian. 80/ Mitchel held the mail contract between Chicken and Tanacross from 1921 to 1930 and supplied hay to pack animals at Chicken. 81/ It is not known how he transported the hay to market. The abandoned Native settlement of Kechumstuk was marked one mile up the tributary of that name. Three cabins at the mouth of Ingle Creek were connected to the Taylor Highway by a jeep trail. 82/

Since the 1970s there has been an indeterminate amount of recreational floating on the Mosquito Fork. Lon Kelly of BLM's Fortymile Resource Area reported in June 1982 that since 1977 BLM's staff during periods of high water has floated from the Taylor Highway bridge over Mosquito Fork to the O'Brien Creek Bridge in order to monitor the river's use. 83/

Grumman Ecosystems Corporation in a 1975 report on the navigability of upper Yukon streams prepared for the U.S. Army concluded that the Mosquito Fork could float canoes downstream from Mitchel's Ranch. However, this statement was not based on any field investigation. 84/

Dennison Fork

No mention of watercraft on Dennison Fork has been found. Reporting on a 1928 summer field trip through the area for the USGS, John B. Mertie, Jr. characterized the headwater valley of the fork as swampy and lake-dotted presenting "great difficulty to summer travel with horses, although they are ideal for winter travel by dog sled." He ignored any boating or canoeing potential. Below the headwaters he described Dennison Fork as having "sluggish water alternating with riffles where the water flows swiftly over coarse cobbles and boulders." He stated that access to the area was "by trail from Eagle; by boat from Fortymile, Yukon Territory, to Steele Creek and thence southward by trail; or by boat up the Tanana to Tanana Crossing." He found at least the first two of these routes wanting because of the poor quality of the trail from Eagle and because of delay at customs coming through Canada. He believed that airfields at and near Chicken would provide better access to the general region but gave no information on how supplies would then enter the Dennison Fork area. Mertie also spoke of a need for a road from Grundler on the Richardson Highway in order for mining in the Fortymile district to revive. 85/

A USGS map compiled in 1956 and revised in 1967 showed only three structures on Dennison Fork. One was on the Taylor Highway at its crossing of the Dennison Fork's West Fork. The others were on an unnamed tributary in T. 22 N., R. 18 E. Copper River Meridian, and on Logging Cabin Creek, a tributary of the West Fork (T. 22 N., R. 16 E. Copper River Meridian). The Logging Cabin Creek cabin is about one-half mile from the Taylor Highway. 86/

The 1975 Grumman Ecosystem Corporation's report on navigability of upper Yukon streams conducted for the U.S. Army stated that downstream from the mouth of its West Fork, the Dennison Fork was fifteen to forty-five feet wide, had numerous small rapids and was shallow except for occasional pools five to ten feet deep. It concluded that canoes could navigate the fork downstream from the mouth of its East Fork (Sec. 15, T. 21 N., R. 14 E. Copper River Meridian). The Grumman report was written without benefit of a field investigation. 87/

Walker Fork

There is no evidence of boat travel on Walker Fork. Early prospectors in the area normally walked to its rich placers on Poker, Davis, and Wade Creeks through stream valleys leading south from the main stem of the Fortymile. Basil Austin and Nels Seaver, miners who entered the Fortymile River Valley in the spring of 1899, reached Wade Creek from the North Fork by floating to Steele Creek and hiking to Wade Creek. In late September, 1899, in order to pick up supples for winter work on their claim on Wade Creek, they and a party of three miners on the stream hiked over the divide to the main stem of the Fortymile and boated to the Yukon. After freeze-up they used sleds to take supplies back to their claims. They went up the Fortymile to Steele Creek and up it to the pass to Wade Creek. After the spring break-up they hiked back to Steele Creek and floated downstream to the Yukon. 88/

There was a close association between the Wade Creek mines and the settlement at Steele Creek. The 1900 census emphasized this. It enumerated over 100 men mining Wade Creek. Among them was only one roadhouse keeper. At the same time Steele Creek with only eighteen people had three roadhouses. 89/

Alfred H. Brooks of the USGS who visited the area in 1899 reported that there were two ways to reach Wade Creek. One was overland from Eagle and the other required a small boat up the Fortymile. But both of these routes involved passing through Steele Creek and hiking over the divide to Wade Creek. 90/

In 1906 the Alaska Road Commission began to make improvements to trails connecting the main stem of the Fortymile to Walker Fork. In that year work was done on the Steele Creek to Wade Creek route. 91/ The following year mining operators on Canyon Creek contributed over $1,000 to a project conducted by ARC to improve a trail from the mouth of Canyon Creek to the headwaters of Walker Fork. 92/ Completion of these trail improvements made any use of boats on Walker Fork even less likely.

Overland travel from Steele Creek to Wade Creek was most reasonable because the river route to the mouth of Wade Creek was forty-five miles from Steele Creek and a person had nearly as far to walk to get to the placers from the mouth of Wade (eight miles) as from the mouth of Steele. 93/ However, even from points upriver from Steele Creek, overland travel may have been preferred. No account is known of travel to any Walker Fork placer from the Mosquito or Dennison forks. However, in 1898, when Bob Steel heard of good paydirt on Wade Creek he chose to travel overland to these placers by an unknown route from Franklin rather than take his boat to the location 94/

Besides the cabins on the well-known gold mining tributaries of Davis, Poker, and Wade creeks which were at one time connected to the Yukon by roads or trails, the USGS maps of the 1950s and 1960s showed a cabin at a placer operation one mile up Twelvemile Creek (T. 27 N., R. 21 E., Copper River Meridian),

two cabins on Cherry Creek (T. 26 N., R. 22 E. Copper River Meridian), one structure on McKinley Creek (T. 26 N., R. 21 E. Copper River Meridian), a cabin on Liberty Creek (T. 25 N., R. 19 E. Copper River Meridian), and the ruins of three cabins on Walker Fork. The ruins may have been miners' cabins. The maps do not show trails to these cabins. How their inhabitants reached them is unknown. 95/

In its 1975 report on navigable streams in the upper Yukon written to the U.S. Army, Grumman Ecosystems Corporation stated that Walker Fork was suitable for canoes downstream from the mouth of Wade Creek. However, the authors of this report made no field investigation of the area. 96

North Fork

Except in the gold rush era of the turn of the century and in the past decade, there is little evidence of use of watercraft on the North Fork of the Fortymile.

Basil Austin offers the best glimpse of boating on the North Fork during the gold rush. Austin and his partner, Nels Seaver, entered the Fortymile drainage from Valdez via the Copper and Tanana drainages in the spring of 1899. The pair built a boat at Chicken, floated down to Fortymile to buy supplies and headed back up the Fortymile to try their hands at mining. At a roadhouse at the confluence of the North and South forks, Austin and Seaver heard of a number of claims being opened up on Montana Creek, a tributary of Hutchinson Creek which flows into the North Fork. Men were needed to work there at ten dollars a day so Seaver and Austin decided to go to that area after retrieving supplies they had cached at Chicken. 97/

On July 6th the two men with three months of supplies in their seventeen-foot-long "slim dory" started up the North Fork. Austin described the stream as "almost one continuous shallow riffle" and "smaller and swifter" than the South Fork. Others, presumably at the roadhouse near the mouth of the North Fork, had given them direction to ascend the stream to "Granite Creek" and pack up that stream and over a divide to Hutchinson and Montana creeks. On the evening of the 7th they camped below the mouth of Wilson Creek, nine miles from the forks. While there, men in two boats came down and stopped. They had been prospecting on Slate Creek far up the North Fork, although Austin does not state whether they took a boat to the tributary. The next day Austin and Seaver reached "Granite Creek." Precisely where this creek was is uncertain. The Dictionary of Alaska Place Names equates Granite Creek with Bullion Creek. However, this is not consistent with Austin's description. His "Granite Creek" was a right bank tributary of the North fork below Hutchinson Creek, seventeen miles above the mouth of the North Fork. 98/

At Granite Creek they cached their boat and all but a week's worth of supplies which they carried with them to examine the gold prospects in the area of Hutchinson and Montana Creek. Two days hiking brought them to the junction of Confederate and Hutchinson Creeks. Austin stated that this "rough, rugged country was accessible only by packing over the mountains in summer, or by roundabout sledding up the creeks in the winter." At the mouth of Confederate Creek they met James Ellison, the recorder of the district, who advised them to try their mining luck on Little Manila, a tributary of Manila Creek. Austin and Seaver staked claims on a tributary of Little Manila they call Frying Pan Gulch, and a stream Austin called Lucky Gulch over a divide from the headwaters of Chicago Boy, another tributary of Manila Creek. (The Dictionary of Alaska Place Names suggests that this may have been Bullion Creek). Austin and Seaver then returned to the mouth of Granite Creek. 99/

The pair considered boating up to Hutchinson Creek and then hiking in to their claims. However, their boat was leaking and they had nothing with which to caulk it so they had to hike into the claims by the arduous route they had already explored. It took them nine days to pack their supplies in. They mined in the area and by September 10th were back at the mouth of Granite Creek in order to descend the North Fork on their way to what they hoped would be better prospects on Wade Creek. 100/

Since James Ellison, who had agreed to stake claims for Austin and Seaver at Wade Creek, had taken their boat, the two partners found another to take downstream. Austin wrote that the "water was extremely low in the North Fork, consequently we struck numerous rocks, but had no serious trouble." Once they reached the roadhouse at the mouth of the North Fork, they heard "that several had been wrecked coming down," including Ellison. Austin and Seaver had seen one boat "wrapped around a rock like a necktie." They then floated down the Fortymile to spend the remainder of the fall and winter mining on Wade Creek before leaving Alaska. 101/

As Austin's account indicated, the North Fork did not provide easy travel. Sam C. Dunham in a report to the Department of Labor in 1898 commented that some Fortymile camps, especially those up the North Fork, could not be profitably mined because of transportation costs. 102/ Austin noted that a bag of flour costing five dollars at the Fortymile post and fifteen dollars at the confluence of the North and South Forks, cost thirty-five dollars at Montana Creek in the center of the North Fork mining area. 103/

Interviews conducted by Terry L. Haynes, a Western Interstate Commission for Higher Education intern with BLM, in 1976 and 1977 provide the only information on watercraft use on the North Fork between the Gold Rush Era and the 1970's. Haynes interviewed Paul Bytell who with his brother Jim dog sledded to Chicken from Fairbanks via the Mosquito Flats in the winter of 1933. That spring the two "lit out" from Chicken downriver, then went up the North Fork which they felt offered some promise for there had been little prospecting or trapping recently in the area. Bytell did not mention using a boat on the North Fork, though he evidently did since he noted that one he had at a cabin at the mouth of Wilson Creek was crushed by ice and highwater in 1936. 104/

Maps showing habitations on the Middle and North Forks do not strongly suggest boat use to them. A 1905 map drafted by the U.S. Signal Corps located Chief Joseph's village about seven miles up Joseph Creek, but the few pieces of information on travel to the village contained in William Mitchell's reminiscences of 1902 and 1903 make no mention of boat or canoe use of the Fortymile or its forks. 105/ The 1957 USGS map of the Fortymile area displayed four buildings at the mouth of Joseph Creek, yet these probably were most commonly accessed by an adjacent airfield. Finally, a cabin nearly six and one-half miles up Pittsburgh Creek and another up an unnamed tributary of Pittsburgh Creek (T. 5 S., R. 24 E., Fairbanks Meridian) had been built about 1946 by Elmer Nelson. Nelson reached these cabins by flying to the Gold Run Creek landing field and presumably hiked in from there. 106/

Trails or air transport also appears to have served North Fork cabins. The USGS maps prepared in 1957 showed two ruined cabins on Green Creek, a tributary of Ruby Creek in T. 3 S., R. 25 E., Fairbanks Meridian. It also

displayed six ruined cabins on Gold Run Creek and one cabin on Jim Creek (T. 4 S., R. 25 E., Fairbanks Meridian). At least two of the cabins on Gold Run and the one on Jim Creek were built and used by Elmer Nelson for trapping in the late 1940s. Nelson reached the cabins by flying to a nearby landing strip on Gold Run. Three cabins were shown in the North Fork valley from two miles above Comet Creek to Bullion Creek. A trail linked these cabins. Other cabins were at the Kink and at scattered locations downstream. 107/

A cultural resource inventory completed in the late 1970s focused on still more cabins on the North Fork. Richard Caulfield spent the winter of 1976-77 investigating for the National Park Service the subsistence life-styles of residents of the area which was then under study for inclusion in a preserve. He spoke to whites and Natives at Eagle. Presumably one of those he conversed with told him of a "Main Cabin" on an unnamed creek near its confluence with the North Fork in T. 4 S., R. 28 E., Fairbanks Meridian, and of three cabins along Comet Creek. Upper Comet Creek Cabin was near the stream's headwaters, Mooselick Cabin was about ten miles from Comet Creek's mouth, and Lower Comet Creek Cabin was about four miles farther downstream. All of these were on a trapline trail which itself was connected to Eagle by a winter trail. 108/

In 1972 the U.S. Bureau of Outdoor Recreation sent a party led by Jules V. Tileston to examine the potential of the Fortymile River as a Wild and Scenic River. Tom Cantine of the Alaska Power Administration and Alden Sievers of the Bureau of Land Management accompanied Tileston on a float trip on the North Fork and its tributary, the Middle Fork. On August 25 a helicopter transported the threesome and one seventeen- and one nineteen-foot canoe to the mouth of Joseph Creek on the Middle Fork. The water level was medium or

possibly low, according to Tileston. As they descended the Middle Fork for about fourteen and one half miles to the mouth of Manila Creek their first day, they rode a "very easy, fast current." There were some standing waves but no significant maneuvering was required. Tileston noted "several areas where it would be necessary to get out and walk unless extremely careful because of shallow depth across gravel bars extending diagonally across the river." He also found the "constant shift between pools and riffles" to add interest to the stream. 109/

The next day, the 26th, the trio traveled twenty-six and one-half miles farther downstream to the Middle Fork's mouth. Tileston found many "shallow rock gardens that require quite a bit of maneuvering." He felt that the stream required at least intermediate canoeing skill for although the "water itself is not technically dangerous in terms of hazardous rapids; . . . when considering the distance for help, this is not a novice stream." Tileston's wife's paddle, which one of the other team members was using, was lost when Cantine and Sievers attempted to push their canoe off a rock. Tileston believed that at a higher water level many of the rapids they encountered would have been washed out while with two inches less water many sections which were then "marginally runable" would have to be walked through. 110/

On the 27th the men took an hour to descend the first 300 yards below the mouth of the Middle Fork. This involved passing through a "constricted drop of about 5 feet" which Tileston described as an "easy Class III for someone who knows what they are doing," based on the International Whitewater Classification. He wrote that a loaded canoe would not make it through this area without "taking considerable water and without danger of swamping." He also stated

that the volume of the river is doubled by the merging of the North and Middle forks. The trio stopped at the mouth of Bullion Creek which Tileston termed as "small." Upstream from the Kink they encountered "several Class II rapids with standing waves of sufficient height to cause a loaded canoe to take in water." At the Kink the water dropped "20 to 25 feet in a very short distance." The portage around the Kink was 200 yards long. The trio camped at the Kink on the evening of the 27th. 111/

The next day they continued down to the mouth of the North Fork. There were "many rapids and riffles" in this stretch of the river. Tileston wrote that "the rapids are Class II with a little bit higher standing waves" than they had experienced earlier. "Rock gardens are not quite as frequent and pools longer and deeper," he wrote. Some maneuvering was necessary to avoid rocks. After arriving at the mouth of the North Fork the party continued downstream to the Yukon. Tileston summarized the canoeing and kayaking possibilities of the Middle and North forks by saying that there was a good ratio of pools to riffles and the streams provided "a pleasing recreation experience." 112/

In a brief report offered to the Bureau of Outdoor Recreation, Bill Quirk, a private citizen, gave a description of a recreational kayak trip he took from Joseph to the Taylor Highway bridge near O'Brien Creek. In late June bush pilot Charlie Warbelow flew Quirk and his equipment to Joseph. Because he was in a hurry, he immediately assembled his folding kayak and started downstream. This was his first kayak trip on a fast water river. Quirk at first entered the rapids with three to four feet standing waves with caution, but soon gained confidence and traveled to the confluence of the Middle and North forks in fourteen hours. He rested and ate and continued down the North Fork, stopping

to examine miners' cabins along the way. Quirk found much of the miners' belongings where they left them. He theorized this was true because the cabins were "too far from any road and up a dangerous river for river boats." Quirk had no other observations relevant to the river's character and arrived at the Taylor Highway bridge without any mishap. 113/

From July 7 to July 15, 1976, Western Interstate Commission for Higher Education intern Wendell Bell and Michael Sullivan canoed sixty miles probably from some point in T. 5 S., R. 27 E., Fairbanks Meridian, to which they had themselves and their canoe flown, to the Taylor Highway Bridge over the Fortymile River near O'Brien Creek. They did this as part of BLM's research of historic structures in the area. The pair mentioned nothing about their experience on the stream. However, they did write that "observations of two particular sets of rapids, one of them unnavigable, helped to explain why this area has not been frequented as much as other stretches of the Fortymile." 114/

Another float trip on the Middle and North forks was recorded in an article by Elizabeth Johannsen published in Alaska Magazine in June 1976. Johannsen, a photographer, flew with pipeline worker, Mike Dumm, and Gary Kroll and Steve Cook of Alaska Raft Adventures to the mouth of Joseph Creek where they inflated their two rafts and began floating downstream. Johannsen provides very little information about their trip for the characteristics of the Middle and North forks. She did, however, mention that they portaged around the falls and below the falls they "whirl[ed] through the gap, called The Kink." 115/

In 1975, Grumman Ecosystems Corporation stated that the Middle Fork was suitable for canoes below the vicinity of Joseph Creek and that canoes could

navigate all of the North Fork. However, the authors of this report made no field investigation of the area. 116/

The final environment statement prepared by the Alaska Planning Group of the Department of the Interior on the Fortymile as a Wild and Scenic River offered descriptions of the Middle and North Forks. The "headwater streams" of the Middle Fork above Joseph Creek were described as "small, meandering, and have a high preponderance of muskeg." Both forks were said to average thirty to fifty feet in width "with depths to 10 feet." The average gradient on the Middle Fork was claimed to be ten feet per mile; it was 18.8 feet on the North Fork. It stated that there were "numerous small rapids in the Middle Fork and Upper North Fork. The North Fork has two major rapids: one immediately downstream from the confluence of the Middle Fork; and a short series of rapids dropping 17 feet at 'The Kink'." The report concluded that there is sufficient water to float canoes and kayaks in the Middle Fork below Joseph and through all the North Fork, but that motors "can be used only during periods of high water levels." It is unknown if any members of the Alaska Planning Group made ground level inspections of the Middle Fork above Joseph Creek or the North Fork above the mouth of the Middle Fork. 117/

Jet motors have recently been used on the North Fork. Lon Kelly, recreation specialist for the Fortymile Resource Area, stated in a phone interview with the author that one trespasser at the Kink tried to take a boat up the Fork. Kelly was uncertain how far upstream the boat was taken but said he had heard that it was quite battered in the trial. Kelly also said another trespasser succeeded in taking a jet motor-powered freight canoe to the Kink, though he ruined some engines in the process. 118/

EAGLE CREEK

There is scant information on the history of Eagle Creek. According to the reminiscence of Lieutenant William "Billy" Mitchell who was at Eage to supervise the construction of the Army's telegraph line to Fort Egbert, a Scandinavian in his sixties died in a cabin fifteen miles up Eagle Creek in the winter of 1902-1903. However, there is no record of how this man got between his cabin and the Yukon. 119/ In the summer of 1905, C. A. Bryant and John Powers of Eagle, who had a contract to provide wood to the Army at Fort Egbert, cut timber on Eagle Creek and drove logs down the creek, some from twelve miles up, and landed them in a boom. They then transported them six miles to Eagle. 120/

The Bureau of Land Management first considered the navigability of Eagle Creek in 1977 in connection with the identification of easements on lands selected near the village of Eagle by Doyon, Limited and Hungwitchin Corporation. The Fortymile Resource Area staff in an undated and unsigned document based upon interviews with residents of Eagle City and a plane fly-by of the area, found that Eagle Creek was ten to twenty feet wide and three to five feet deep. There was insufficient data on the volume of water discharged into the Yukon. They reported it to be a single channel stream with steep banks of spruce, aspen, and cottonwood. The report stated that the "slough at mouth can handle most any boat up about 100 yards where it is about 4' deep. Past this there are fallen trees in water about ¼ mile up from mouth, swift water, and areas where water is shallow all the way across." 121/

Two trail easements were proposed along Eagle Creek. The Alaska Division of Lands (ADL) requested a twenty-five foot easement for a trail

paralleling the creek from its mouth into Canada. The Hungwitchin Corporation which represented Eagle Village Natives stated that this was a non-existent trail. The Fortymile Resource Area staff could not find evidence of the trail and so did not recommend an easement for it. Instead, they recommended an easement for an extant winter-use tractor trail along Eagle Creek. Both the ADL and the BLM requested a fifty-foot easement for this trail, which began at a cabin on the right bank of the Yukon a short distance below Eagle Creek. The trail headed southeast to Eagle Creek, crossed the stream, and followed the left bank before crossing back to its right bank, which it followed to the international boundary. The Native corporation reported this trail was overgrown and not used, but the Fortymile Resource Area favored it as an access route to and from Canada. 122/

On June 4, 1979, the Alaska State Office of BLM in its "Notice of Proposed Easement Recommendations for Hungwitchin Corporation," summarized the physical character of Eagle Creek as presented in the Fortymile Resource Area's 1977 report, and stated that BLM had no information on historical use of the creek. In addition, "no significant present use has been documented." It concluded that Eagle Creek was neither navigable nor a major waterway "because there is no documented significant present use, and the stream gives access to Cananda - not to public lands." The State Office also recommended against both trail easements, stating that both were wholly within Native lands and did not provide access to public lands. 123/

MISSION CREEK

The first two observers to record their impressions of the character of Mission Creek were USGS geologists. Josiah Edward Spurr made the Survey's pioneering

exploration of mining districts in Alaska in 1896. After traveling down the Yukon and along the Fortymile River to its forks in an eighteen-foot-long boat called Skookum, Spurr and his two assistants descended the Yukon to the mouth of Mission Creek. There they beached the Skookum and walked up Mission and American Creeks to examine the mines. Spurr believed that a canoe or small boat could ascend Mission Creek ten or twelve miles. He also reported that miners had taken supplies up the creek as far as the mouth of Boulder (Colorado) Creek (Sec. 25, T. 1 S., R. 31 E., Fairbanks Meridian), "though this was probably when the stream was above low-water mark." 124/

Two years later USGS geologist E. C. Barnard visited the area to collect base topographical information for a geological map of the area. He and his assistants hiked in the drainage of Mission Creek and reported that the stream was "not of sufficient size to permit of ascending in boats." He instead recommended that travelers follow the ridges. 125/

In 1905, to fulfill a government wood contract, C. A. Bryant and John Powers felled trees on Mission, American, and Excelsior (a tributary of Mission) creeks and floated them to the mouth of Mission Creek. Their work was for naught, though, because a sudden rise in the stream broke the boom and all the lumber floated down the Yukon. There is no subsequent available evidence of boat use on Mission Creek, presumably because of the easier transport offered by a trail out of Eagle. 126/ This trail was first documented by USGS geologist Louis M. Prindle who visited the area in 1905. Two years later F. E. G. Berry of the Alaska Road Commission improved the trail to sled road standard. It ran one-half mile south of and parallel to Mission Creek to Excelsior Creek where it crossed to the north side and over a divide to the Seventymile River. 127/

Richard Caulfield in his study of contemporary subsistence use of the Yukon-Charley area for the National Park Service reported two cabins near Mission Creek. Both are shown on current USGS maps. Presumably he got his information from residents of Eagle in the winter of 1976-77. Caulfield also located a cabin about one mile up Clifford Creek and another opposite the mouth of Colorado Creek in T. 1 S., R. 31 E., Fairbanks Meridian. Both were on the winter trail from Eagle to Comet Creek on the North Fork of the Fortymile River. The cabin opposite Colorado Creek also was on a trapline down Mission Creek and up Excelsior Creek; it was at the foot of a summer trail to the east flank of Mount Eldridge. 128/

The BLM first considered the navigability of Mission Creek in 1977 in connection with its solicitation of easement recommendations for lands selected near the village of Eagle by Doyon, Limited and the Hungwitchin Corporation. The BLM Fortymile Resource Area staff in an undated and unsigned document based on interviews with residents of Eagle City and on a plane fly-by of the area, reported that Mission Creek was ten to twenty feet wide with a depth of six inches to four feet. There was insufficient data on the volume of water discharged into the Yukon. It was a single channel stream bordered by spruce and aspen. During high water, the Yukon flooded the first quarter mile of the stream. The staff also wrote that it was shallow in "many places" and that "NO outboard motors (kickers) could be used here." 129/

Two trail easements were proposed along or near the lower portion of Mission Creek. The Alaska Division of Lands (ADL) requested a ten-foot easement for a trail from the mouth of Mission Creek to the mouth of its tributary, Lost Creek (Sec. 23, T. 1 S., R. 32 E., Fairbanks Meridian). The ADL considered Mission Creek to be navigable. According to the Fortymile Resource Area staff,

this easement was "nominated in keeping with ADL's policy of providing land access to the beginning of navigability of a stream." The Native corporation termed this easement unnecessary and the Fortymile Resource Area opposed it. The other request was for a fifty-foot easement for the old Eagle-Seventymile River sled trail. This was recommended by the ADL, the BLM, the Alaska Department of Fish & Game, the Resource Associates of Alaska, Inc. (a Fairbanks firm), Don Dettart of Gakona, Rudy Voitt of Fairbanks, and Jeffery B. Tingley of College. This easement was for a "foot, ATV, and snowmobile trail" to provide year-round overland access from Eagle to the Seventymile River for trapping, hunting, mining, and sport fishing access. The Hungwitchin Corporation commented that the trail existed and did not oppose the proposed easement. The Fortymile Resource Area staff recommended approval of the proposed easement, stating that the trail "receives substantial present use, with usage expected to increase." 130/

On June 4, 1979, the Alaska State Office of BLM issued a "Notice of Proposed Easement Recommendations For Hungwitchin Corporation." Noting that BLM had no record of historical or current water transportation use of the stream, the State Office concluded that Mission Creek was not navigable and not a "major waterway." At the same time, the BLM recommended against the ten-foot trail easement proposed by the ADL as it was not on land selected by the State or Natives. It supported the easement for the Eagle-Seventymile River trail because of its importance in providing transportation to "the upper reaches of the Seventymile River, the Seventymile and Crooked Creek landing strips" and public lands west of the Native-selected lands. 131/

American Creek

In 1896, Spurr termed American Creek "a little stream which one could leap at almost any point." He noted that miners brought supplies to placers near the creek's headwaters by pack train. 132/ Two years later USGS geologist E. C. Barnard reported that the stream was "not of sufficient size to permit of ascending in boats." He instead recommended travelers follow the ridges. 133/ Trails evidently were the primary or only means to the mines. A 1902 map by E. J. Chamberlain show three trails generally following American Creek to the placer mines. 134/

The only possible reference to use of the stream for transportation is in connection with floating logs to the Yukon for sale. In 1905, to fulfill a government wood contract, C. A. Bryant and John Powers felled trees on American, Excelsior, and Mission creeks and floated the timber to the mouth of Mission Creek. If and how far the logs were floated on American Creek is unknown. 135/

In 1977, when considering the navigability of streams near American Creek, including Mission Creek, in connection with land conveyances to Doyon, Limited and the Hungwitchin Corporation, the BLM's Fortymile Resource Area did not investigate American Creek. Having recommended Mission Creek to be nonnavigable, the BLM apparently had little doubt that American Creek too was nonnavigable. 136/

Indirectly reflecting on the usefulness of American Creek as a means of waterborne transport, the BLM Fortymile Resource Area recommended a 100-foot easement for the Taylor Highway following the bank of American Creek upstream from

Sec. 23, T. 2 S., R. 32 E., Fairbanks Meridian. The Hungwitchin Corporation accepted this nomination. Another easement proposed by the City of Eagle and the ADL was a fifty-foot easement for five existing spur roads of the Taylor Highway terminating at points on the east side of American Creek. These were in Sec. 36, T. 1 S., R. 32 E., Fairbanks Meridian, and Secs. 1, 2, 11, and 12, T. 2 S., R. 32 E., Fairbanks Meridian. These roads provided access to a free use permit wood cutting area. The Fortymile Resource Area staff did not recommend this easement as the roads were in a portion of the Eagle Village selection which had been rejected. The staff noted that on the one hand, if this rejection was overturned in a current appeal proceeding, then the land would be in Native lands and wood-cutting would constitute trespass. On the other hand, if the BLM's rejection of Hungwitchin's selection was upheld, then the land would remain public and an easement would not be necessary. 137/

On June 4, 1979, the BLM Alaska State Office issued a "Notice of Proposed Easement Recommendations For Hungwitchin Corporation." Like the Fortymile Resource Area, it did not address the navigability issue in relation to American Creek. It supported the Taylor Highway easement "to insure public interest" in it and noted that an easement may not be required because Secretarial Order 2665 on October 16, 1951 recognized and established Taylor Highway as a public road with a width of 100 feet. The State Office recommended against the spur road easements as the Taylor Highway offered alternative access to public lands. 138/

LAST CHANCE CREEK

No evidence has been discovered of water transportation on Last Chance Creek which enters the Yukon River in Sec. 3, T. 1 S., R. 33 E., Fairbanks Meridian.

DRAFT

However, the creek provided a transportation route to the headwaters of the Porcupine and Peel rivers. Robert Stacey, a long-time resident of Eagle, recalled in the late 1970s that he used to follow "an established trail up Last Chance Creek" and thence up the Tatonduk River to the headwaters of the Porcupine. In what season this travel was accomplished, is unknown; but he did note that he used the trail to reach hunting and trapping grounds. 139/

In 1977, when considering the navigability of streams within lands selected by Doyon, Limited and the Hungwitchin Corporation, the BLM evidently regarded Last Chance Creek to be nonnavigable, for it did not mention the creek by name. However, the Fortymile Resource Area staff reported on proposed easements along the creek. Eagle City requested a twenty-five foot trail easement from the mouth of the creek and along its right bank nearly to the Canadian border where the trail crossed the creek and continued on into Canada. The city argued that it would provide access to Canada through Native-held lands. The Native corporation stated that this trail did not exist. The Fortymile Resource Area did not recommend its approval because alternate easement trails to Canada were being recommended along Shade Creek and Eagle Creek and because the Yukon provided river access to Canada. 140/ On June 4, 1979 the Alaska State Office of BLM issued a "Notice of Proposed Easement Recommendations For Hungwitchin Corporation" in which it opposed this easement as it was entirely on Native-selected lands and did not provide access to public lands. 141/

SHADE CREEK

No evidence has been discovered of water transportation on Shade Creek. There is, however, evidence of a trail along the creek. The BLM, ADL, and

the City of Eagle recommended an easement for a trail along the right bank of Shade Creek from its mouth to an unnamed tributary in Sec. 30, T. 1 N., R. 33 E., Fairbanks Meridian. The trail continued up the right bank of this tributary to its head, and thence around the northwest base of McCann Hill to Canada. The ADL argued that the easement would provide access to Canada. Eagle City reported that that portion of the trail to the headwaters of the unnamed stream was used for berrypicking. The Native corporation claimed that it was a non-existent trail. 142/ The BLM Fortymile Resource Area staff supported the nomination because of its current use for berry-picking and because it would provide access to Canada. On June 4, 1979, however, the Alaska State Office of BLM deleted this proposed easement because it lay entirely in Native land and would not provide access to public land. 143/

SEVENTYMILE RIVER

Seventymile River has proven difficult but not impossible to ascend and descend in a variety of watercraft. In 1898, Sam C. Dunham of the U.S. Bureau of Labor reported that "owing to numerous falls and rapids in the creek, . . . it is almost impossible to ascend the Seventymile River in boats." He went on to say that the summer pack trail was abysmal and consequently the miners along the river sledded their supplies in during the winter. 144/ E. C. Barnard, a USGS geologist who visited the area in 1898, was also skeptical about the use of boats on the Seventymile, writing that though small boats could go up it a short distance, the mines at the headwaters were more accessible from Eagle by trail. 145/

Yet miners did boat on the river. In his reminiscences Billie Moore, a sometime steamboat captain, sometime prospector, recalled that in the late summer of 1890, he, Barney Hill, and four others used three boats to ascend the Seventymile three days to Hill's bench diggings about forty miles from the Yukon. In September they returned down the Seventymile in one day and poled to the Fortymile post where they gained supplies for the winter. They boated these to the Seventymile's mouth but waited until freeze-up to sled the supplies back to their bench diggings. The following spring, Moore and two other members of the party built a raft and descended the stream. Moore characterized the Seventymile as "either a small river or a large creek, and it is annoying to travel down it, especially with a raft." For a short distance they had easy floating "barely touching bottom once in a while." But after rounding a bend they saw a rock in midstream. The water was so deep that their poles would not reach bottom and they got hung up on the rock. After they shifted their blankets, grub, and themselves and pushed against the rock, the raft came free. The remainder of the trip was uneventful. 146/

USGS geologist, Louis M. Prindle, investigated the mining potential of the Seventymile River area in 1903. He later made observations about the geology of tributaries as far upriver as Flume Creek, suggesting that he had ascended the stream that far. In his published report on the expedition, he stated that the Seventymile "can be easily forded on foot at low water, and with the exception of a short portage at the falls (a short distance above Canyon Creek) is generally navigable for small boats nearly to Barney Creek." 147/ He commented that the Seventymile placers are "generally" reached by a trail from Eagle, but noted that "supplies are sometimes carried [to Nugget and Flume creeks] by boat as far as possible and then packed overland; in other cases they are carried all the way from Eagle by pack train." 148/

Sometime after 1931 C. A. Bryant, a long-time prospector and freighter at Eagle, wrote his reminiscences which included accounts of trips up the Seventymile River in the 1900s and 1910s. About half the trips recounted were overland and the other half involved boat travel. The heaviest moving was reserved for winter sledding. He wrote of four boating experiences. In 1904, Bryant and four others were packing with horses from Copper Creek on the Charley River to Eagle. At Flume Creek two miners had built a boat and one of Bryant's men used it to descend the Seventymile to the Yukon and upriver to Eagle while the rest of Bryant's party continued their overland trek. In July 1906, Bryant, his wife, and Charles Yost spent ten days canoeing from Eagle to Nugget Creek on the Seventymile. They used a Peterborough canoe, "a bum thing to navigate creeks with a load in," carrying 700 pounds of supplies. Mrs. Bryant walked as the two men "pulled, pushed, lined and poled" to Yost's destination on Nugget. Bryant and some friends packed his supplies the remaining ten miles to Flume Creek. In August, Bryant built a boat at Flume Creek in which the Bryants and one other made a three-day trip to Eagle. Finally, in 1916, Bryant made his last recorded boating excursion on the Seventymile. In August he and Frank Sandberg with 500 pounds of provisions poled and lined up the river to the mouth of Rock Creek where Sandberg disembarked. Bryant continued two more days in the boat to the falls. Later that summer Bryant with several persons also in his boat descended from the falls to Fox Creek. The passengers followed the trail to Eagle while Bryant continued downriver in his boat. 149/

In 1907 the Alaska Road Commission noted that freight from Eagle to the Seventymile mines "has always been hauled down the Yukon to the Seventymile, . . . and then up the Seventymile River to the diggings." The ARC probably here referred to winter sledding. In 1907, with a view to shortening the sledding

trip and reducing rates from $140 per ton to about $100 a ton, F. E. G. Berry of the ARC located and completed a twenty-mile sled road to the mouth of Rock Creek on the Seventymile. From there sleds could be pulled up the river ice. 150/ In 1921 the ARC extended a pack trail from the sled road nearly to Alder Creek. 151/ Still, water transport continued to be used during the summer because of the poor condition of the road and trail in wet weather. This was reflected in a 1924 letter to the ARC by John W. Scheele, who worked a claim on Crooked Creek. He stated that once improvements were finished and "goods could be transportated as far as Fox Creek on the 70 Mile River, it will save a lot of time, and avoid the dangers, by not having to run the 70 Mile and then pole up to Eagle, and back again down the Yukon and pole up the 70 Mile." 152/ However, it is not clear that the route was improved to make it a suitable summer route for heavy supplies.

U.S. Geological Survey maps drafted in 1957 show over two dozen cabins and other structures scattered along the Seventymile River. One or more buildings were located at the mouths of Flume, Alder, Nugget, Barney, Little Ruby, Broken Neck, and Crooked creeks. All of these were on the ARC road and trail system. Flume and Crooked creeks by then were also served by airfields 153/ and at least one miner had taken advantage of airplanes by landing a plane load of supplies on an unspecified river bar on the Seventymile in 1936. 154/

Richard Caulfield's research of contemporary subsistence uses of the Yukon-Charley area conducted in the winter of 1976-77, confirmed the existence in 1957 of a cabin on the south bank of the Seventymile in T. 1 N., R. 30 E., Fairbanks Meridian. This may well have been only a trapping cabin as in the 1970s it was on a trapline extending from Eagle to a point on Seventymile River above Flume Creek. 155/

The Bureau of Land Management first considered the navigability of Seventymile River in 1977 in connection with the land selections of Doyon, Limited and the Hungwitchin Corporation. On the basis of interviews with residents of Eagle City and a plane fly-by of the area, the BLM Fortymile Resource Area reported that the Seventymile River was fifty to 100 feet wide with a depth ranging from three inches to ten feet with an average of three feet. There was insufficient data on the volume of water discharged into the Yukon. The river was "very shallow" in braided areas; sweepers "sometimes extend all the way across the river in areas where the channel is narrow and deep," and that, except for its delta, the lower two and one-half miles of the river were "wide and deep." Canoes and floatboats were used on the river for recreation and sleds and snowmobiles traveled over its ice in winter. Possibly in contradiction to its statement of boat use on the river, the Resource Area noted that a "canoe with kicker [was] O.K. for first half mile or so" when answering the question of "watercraft commonly used" on the river. 156/

The Fortymile Resource Area recommended a number of easements to ensure access to and use of the river for recreational purposes. Noting the "non-navigable" status of the river, the Resource Area staff joined the ADL in proposing an easement on the bed of the Seventymile and a twenty-five-foot-wide easement on both banks through the entire Native selection area. The Resource Area's rationale was that the river "has significant future recreational potential," though it then received "minimal use." The staff rated the river as Quality A, an excellent rating, for floatboats, and wrote that without the easement "the recreational value of the river would be negated." The Native corporation stated that it could not see why a "trail" was necessary. 157/

At the same time the Fortymile Resource Area staff recommended three campsite easements "to provide temporary (one night) camping on the Seventymile River." These were located "approximately one day's travel time (six river miles) apart "in sec. 20 and 27, T. 1 N., R. 31 E., Fairbanks Meridian and sec. 30, T. 1 N., R. 32 E., Fairbanks Meridian. The staff considered the Seventymile a recreational river which, though then only minimally used, would receive heavy use with the establishment of the Yukon-Charley National Park. The Native corporation had no comment on these easements. 158/

On June 4, 1979 the BLM Alaska State Office staff issued a "Notice of Proposed Easement Recommendations For Hungwitchin Corporation" and a similar document for lands selected by Doyon. They described the Seventymile as 100 feet wide for about two and one half miles from the delta, then narrowing to about fifty feet. The stream was said to be braided in some areas. The depth figures were identical to those given in the earlier Fortymile Resource Area's report. The State Office claimed that during high water, mining equipment, supplies, and people were transported on the river "well upstream" of the selection area, which ended on the western edge of T. 1 N., R. 31 E., Fairbanks Meridian. It went on to say that the river received minimal recreational use, that Dave Roy, a local resident, had taken miners twelve to thirteen miles upriver, but that "use by miners has stopped due to a log jam." It concluded that the Seventymile was a "major waterway due to significant present use by miners and recreationists" and that the "history of prior use is sufficient to support the determination that the Seventymile River is navigable." 159/

Only one of the easements recommended in the earlier report was supported by the State Office notices to the Hungwitchin and Doyon corporations. The streamside and riverbed easement was dropped from consideration due to BLM

regulations issued November 27, 1978. One campsite easement, in Sec. 21, T. 1 N., R. 31 E., Fairbanks Meridian was recommended because "miners and recreationists going upriver to public lands need overnight camping sites on their way." However, the other one-acre campsite easements were rejected as the State Office believed the one campsite easement would suffice. 160/

TATONDUK RIVER

Unlike many of the streams flowing into the Yukon from the south or west, the Tatonduk and other streams on the opposite side of the Yukon carry no gold. Consequently there is little information of miners ascending these rivers in boats. However, several right bank rivers provided government surveyors access to the U.S.-Canada border. In the winter of 1887-88, William Ogilvie, on a Canadian expedition to survey the border, traveled through the valley and concluded that above the point three or four miles from its mouth where the valley of the Tatonduk narrows, the river was steep enough "to prevent anything larger than a very small boat ever being taken up it." 161/ On July 15, 1907, Asa C. Baldwin on a boundary survey mission lined a canoe up the river "as far as we could safely go. Where we stopped the channel was full of rocks and the current swift." Baldwin had broken his paddle. He and his one or two assistants tied the canoe up in the canyon. Notes Baldwin made on the 22nd suggest he and one partner may have gone farther upstream in the canoe after they had gotten two poles with which they could pole in several bad lining places. 162/ In the summer of 1912, a Canadian survey party headed by D. D. Cairnes obtained supplies via the Tatonduk River. Mail and supplies were poled up the river to "Mail Camp," a point on the Canadian side. Cairnes noted that on August 4, when the party moved their equipment to this camp, the river had risen too high to be forded, requiring them to build a raft. 163/

In 1930, John B. Mertie, Jr., a USGS geologist who traveled through the area that year, recorded his observations of the Tatonduk. In the canyon near the border "the stream is deep and gravel bars are absent," but as the valley floor widens out the river "flows over a wide gravel bar, with numerous sloughs and overflow channels." He characterized the Tatonduk throughout most of its course as "a swift mountain stream." Mertie continued:

> At low stages of water it may be forded on foot at numerous places between the boundary and the Yukon, and on such riffles it is too shallow for power boats. At high water it can not be forded anywhere below the boundary, even on horseback, and although deep enough at such times for a motor boat, a great deal of power would be required to drive a boat upstream against its current. 164/

Sometime in late August and early September 1978, as part of a joint effort to gain evidence for then on-going litigation on the navigability of the Nation and Kandik rivers, Richard O. Stern and C. Michael Brown of the Alaska Division of Forest, Land and Water Management and the U.S. Bureau of Land Management, respectively, interviewed George Beck, who had lived at Eagle off and on since 1934. In the course of their two interviews with Beck, they also gathered information on the Tatonduk River. Beck said that it had very swift water, that there were boulders in the river's headwaters, and that "going up that river was like going up a ladder." He said that Charlie Biederman, a life-long resident of the area, once poled up the Tatonduk with two Atomic Energy Commission scientists who were conducting studies. Finally, Beck stated that Oscar Erickson, a trapper, had ascended the river in a good-sized boat with a four-cylinder engine. Erickson had a cabin up the river an unstated distance which had since washed away. 165/

The Bureau of Land Management first considered the navigability of Tatonduk Creek in 1977 in connection with the identification of easements on lands selected by Doyon, Limited and the Hungwitchin Corporation. The BLM Fortymile Resource Area staff reported the Tatonduk River to be twenty to thirty feet wide, except at the delta where is was about fifty feet wide. It was "fairly deep" except at the delta where is was approximately five inches deep. There was insufficient data on the volume of water the river discharged into the Yukon. It was braided in some places especially at high water but it was "generally straight flowing." The Fortymile Resource Area staff reported minimal canoe and float-boat recreational use, but anticipated greater use with the creation of the Yukon-Charley National Park. It also noted a five- to six-mile trail from Frank Charles "Heine" Miller's wood-cutting camp at the river's mouth up the river for sheep-hunting. 166/

The Resource Area staff recommended a number of recreation-related easements on the river. Noting the "non-navigable" status of the river, the staff joined the ADL in recommending an easement on the bed of the Tatonduk and a twenty-five-foot-wide easement on both banks through the entire Native selection area. The Resource Area's rationale was that the river "has highly significant recreational potential," though it then received "minimal use." The staff rated the river as Quality A, an excellent rating, for floatboats and wrote that without the easement "the recreational values would be neglected." The Native corporation stated that it could not see why a "trail" was necessary. 167/

In addition, the Fortymile Resource Area staff recommended two campsite easements above the river's mouth "to provide temporary (one night) camping on the Tatonduk River." These were located "approximately one day's travel time (six river miles) apart" in Sec. 9, T. 2 N., R. 32 E., Fairbanks Meridian,

and Sec. 7, T. 2 N., R. 33 E., Fairbanks Meridian. The staff considered the Tatonduk a "recreational river" which, though then only minimally used, would receive heavy use with the establishment of the Yukon-Charley National Park. The Native corporation had no comment on these easements. 168/

On June 4, 1979, the Alaska State Office of BLM issued a "Notice of Proposed Easement Recommendations For Hungwitchin Corporation." Most of the information presented in this report was derived from the earlier Resource Area staff paper. It added that "the Tatonduk River receives significant use by hunters for access to public lands," that "in recent years several parties have made annual trips to the area to hunt sheep and caribou," and that "jet boats have been taken up the river beyond the Canadian Border." The State office concluded that "documentation available is not sufficient to support a determination that the Tatonduk River is navigable" but did characterize the stream as a "major waterway because it receives significant present use for access to public lands." 169/

None of the easements recommended by the Fortymile Resource Area were retained. The streamside and riverbed easement was dropped from consideration due to BLM regulations issued November 27, 1978. The two campsite easements were rejected in favor of another easement proposed sometime after the Fortymile Resource Area's report. This easement was for a one-acre campsite on the river's right bank in Sec. 2, T. 2 N., R. 32 E., Fairbanks Meridian, and an adjoining twenty-five foot trail easement north from the campsite to public lands which the State Office contended had "significant recreational value." The campsite, the State Office predicted, "will be used as a transfer point from water to land travel." 170/

NATION RIVER

The first documented use of the Nation River was by D.D. Cairnes' boundary survey party of 1912. After an unsuccessful effort was made to use specially designed gasoline launches on the river, the group employed poling boats to bring supplies upriver from the Yukon. However, field notebooks kept by the surveyors do not explicitly confirm that polers transported supplies up the Nation. 171/

The USGS map of the Nation River area, published in 1956, reveals only one cabin nine miles upstream. The origin of and access to this cabin is not evident from the map. 172/

John McPhee in his Coming Into the Country described the life-style of Brad Snow and Lilly Allen who he visited in the upper Yukon. They told him that in 1974 they took 700 pounds of grain seven miles up the Nation in a canoe and built a cabin. 173/

The BLM initially considered the navigability of the Nation River in 1975 in connection with a series of land conveyance actions involving Doyon, Limited. The first such action occurred on December 5, 1975 when BLM released a Decision to Issue Conveyance for T. 8 N., R. 31 E., Fairbanks Meridian, which included a small segment of the Nation. The BLM determined that the river was non-navigable and at the same time recommended a twenty-five-foot trail easement on each side of the stream. 174/

A BLM report compiled in June and early July 1976 devoted a more extensive discussion to easements. This report summarized easement recommendations gathered from interested parties from March through May of that year. The Alaska Department

of Highways suggested a twenty-five-foot-wide trail easement from the mouth of the Nation River along the river to Canada. BLM opposed this easement, for it found no sign of the trail on an overflight. Also, there was no record of present use, and access to areas reached by the trail could also be reached by proposed BLM easements. The BLM, the ADL, and the Alaska Department of Fish and Game (ADF&G) proposed instead a fifty-foot-wide corridor "which generally follows the eastern side of the Nation River." This corridor was to provide access to public lands isolated by Doyon selections. The same agencies recommended a streamside and streambed easement along the entire length of the river and five one-acre campsites in Sec. 23, T. 6 N., R. 30 E., Fairbanks Meridian; Sec. 6, T. 6 N., R. 31 E., Fairbanks Meridian; Sec. 21, T. 7 N., R. 31 E., Fairbanks Meridian; Sec. 19, T. 8 N, R. 32 E., Fairbanks Meridian; Sec. 18, T. 8 N., R. 33 E., Fairbanks Meridian. The rationale for these easements was that "the Nation River is becoming a significant recreational river" and that without the easements the recreational value of the river would be negated. The BLM further stated that the common access method was "to line upriver and float back down." Finally, the BLM, the ADF&G, and the ADL suggested one-acre campsite easements at the proposed trail crossings of Tindir Creek and Waterfall Creek (both Nation River tributaries). These campsites would "serve as boat launching sites." 175/

While BLM was preparing these easement recommendations, Doyon, Limited appealed the decision that the Nation and Kandik rivers, were nonnavigable to the Alaska Native Claims Appeal Board (ANCAB). On May 10, 1976, ANCAB ordered the State to join the litigation as a necessary party in the appeal. The board referred the matter to the Chief Administrative Law Judge, J. K. Luoma, on October 21, 1977, who held a hearing on the matter in Fairbanks in late September 1978. 176/

Judge Luoma summarized what he considered the salient relevant facts concerning the Nation River in a recommended decision rendered June 1, 1979. He described the river as characterized by "many shallow areas where log jams form." He wrote that: "There are many obstructions on the river. The river is a sometimes braided, sometimes meandering, stream." The judge noted that the water level was quite variable with the amount of precipitation. In areas where the stream was narrow and against a bank the Nation River was four to six feet deep, but that in other areas gravel bars extended across the entire stream. In June 1978, the water was so deep in the selected area that flow measurements were impossible. However, two months later the river was three to four feet deep in the channel and four to seven inches deep at two gravel bars in the selection. The flow ranged between five and six miles per hour in June 1978, and one or two miles per hour that August. 177/

Reviewing the information presented in his court on human use of the Nation River valley, Judge Luoma stated that subsistence use of the river by whites dated at least from the 1930s. Native use of this area began earlier. However, the judge gave no specific examples of Native travel or use of the Nation River. The first instance mentioned by Luoma of travel on or along the Nation was the International Boundary Commission, which transported supplies up the river to the boundary in 1912. He was uncertain if this transport was accomplished by poling boat, but believed that to have been likely. Luoma stated that the route probably was the river and its tributary, Hard Luck Creek, to the border. 178/

According to Judge Luoma, no evidence of travel by trappers on the Nation River was received during the hearing. However, in August 1978 Richard O. Stern of the Alaska Division of Forest, Land and Water Management and C. Michael

Brown of the BLM jointly interviewed individuals with some knowledge of travel on the Nation and Kandik rivers. This report was submitted as an exhibit and Luoma cited it in his recommended decision. George Beck, who had lived in the area since the 1930s, stated that a family of trappers used to travel to the head of the river with winter supplies in an inboard motor-equipped boat. Beck stated that Christopher Nelson use to boat his trapping supplies up the river to a cabin at the mouth of Jungle Creek. Willy Juneby, a Native raised near the mouth of the Kandik, told Stern and Brown that in the 1930s Jim Taylor trapped the Nation River basin and at times of high water took a boat with an outboard motor about forty miles upstream. Temporary BLM employee Brad Snow informed the State and BLM interviewers that a seventeen-foot canoe could haul 600 to 800 pounds up the Nation River at all water states, although at times lining would be necessary. He also stated that a nineteen-foot canoe could be taken upriver for "quite a distance." Finally, Stern and Brown learned that Bob Stacy once descended the Nation from its headwaters in a mooseskin boat with a partner and forty beaver skins. Based partly upon this information, Judge Luoma recommended that ANCAB determine the Nation River to be navigable, a recommendation which the board followed on December 14, 1979. 179/

Pursuant to an ANCAB order, the BLM easement staff met on April 26 and October 23, 1979 to develop easement recommendations for lands selected by Doyon in the region of the Kandik and Nation basins. In a draft final easement memorandum, dated November 28, 1979, a trail easement roughly paralleling the Nation River through virtually the entire selection area was dropped in favor of a trail easement from the river in Sec. 15, T. 8 N., R. 32 E., Fairbanks Meridian northwesterly to public lands. This trail used in conjuction with the Nation River was considered adequate to provide necessary access to public lands. Site easements which had earlier been contemplated for Sec. 6, T. 6 N,

R. 31 E., Fairbanks Meridian and Sec. 1, T. 7 N., R. 31 E., Fairbanks Meridian were shifted to Sec. 21, T. 7 N., R. 31 E., Fairbanks Meridian and Sec. 15, T. 8 N., R. 32 E., Fairbanks Meridian, the latter to serve as the trailhead for the earlier mentioned trail easement. Both of these site easements included twenty-five-foot easements on the bed of the Nation for the length of their waterfronts. 180/

At the time that the draft final easement memorandum was prepared, the BLM considered the Nation River to be nonnavigable. However, in final easement documents dated March 11 and March 12, 1980, the BLM took note of ANCAB's decision and named the river as a navigable stream. 181/ On April 8, 1980, the BLM issued a decision to conform the easements in light of the ANCAB's decision. The twenty-five-foot trail easement along both banks of the Nation River was deleted. 182/ On April 28, 1980, the BLM released a Decision to Issue Conveyance (DIC) which termed the Nation River navigable and included the trail and site easements cited in the final easement statement. The townships involved in the DIC were Ts. 6 and 7 N., R. 31 E., Fairbanks Meridian and T. 32 N., Rs. 32 and 33 E., Fairbanks Meridian. 183/

FOURTH OF JULY CREEK

Although gold mining took place for many years along this creek, no evidence has been found that miners or anyone else traveled by any vessel on the stream. Rather a trail, improved to road standard in the 1920's and 1930's, provided the miners' transport needs. (For elaboration on this land route see the following chapter). Indeed, Charlie Biederman a life-long resident of this portion of the Yukon Valley, testified in the Kandik-Nation navigability hearing in 1978 that a boat could not be taken up Fourth of July Creek. 184/

KANDIK RIVER

The Kandik River's history, like its course, parallels that of the Nation. The notebooks kept by members of the 1912 boundary expedition record supplies arriving at the border by poling boats. On June 25, polers brought mail and provisions, including four sacks of oats, to a camp on the Kandik. By July 6, the expedition had moved to a point on a tributary of the Kandik in Canadian territory. The unnamed tributary flows into Alaska at Sec. 26, T. 11 N., R. 32 E., Fairbanks Meridian. The three polers arrived at the camp on July 6, with eight sacks of oats and some moose meat. They had had to leave eight other sacks twelve miles downstream due to low water; they retrieved these the following day. 185/

Melody Webb Grauman in 1976 interviewed residents of the upper Yukon as part of a study for the National Park Service to identify the historic resources of the area. In her report she noted that either or both George Beck and Charlie Biederman, long-time residents, told her that Peter Summerville in the early twenties poled his supplies up the Kandik to the Johnson Gorge area each summer to cache them for his winter trapping operations. 186/

During the 1970s the recreational uses of the Kandik were explored by the federal government and private individuals. In 1972, Jules Tileston of the Bureau of Outdoor Recreation and Jerry Timmons and Fred Kaas respresenting the Bureau of Land Management and the National Park Service, respectively, along with a seventeen-foot standard Grumman canoe, a nineteen-foot square stern canoe, and supplies were helicoptered from the mouth of the river to a point on the river ten to fifteen miles above the U.S.-Canada border. Tileston

estimated that the river at its mouth was about a foot higher than normal. While still at the river's mouth, Tileston noted a riverboat came down the stream, but he did not find out how far up the boat had been. 187/

On September 6th, the men began the float downstream. Their first day's trip took them to a point about four miles below the mouth of Big Sitdown Creek. Of this stretch of the river Tileston wrote:

> Depth averages probably 2 feet. However, as we are seeing it just after a rain and the river is receding, there probably are shallows in this area where you would have to walk across. Walked across a couple because we chose the wrong branch this afternoon.

He continued that "in terms of hazards, the basic thing is sweepers." The three men did not encounter any trees entirely blocking the stream because "the swift current" pushed them back to the bank and deposited them length-wise down the middle of the river. Tileston noted that "caution must be taken as the current is swift." He said the current, which he estimated at five or six miles per hour, would make it extremely difficult to dislodge a canoe caught against a sweeper near the bank. This section required only an "intermediate type skill level for open canoes," he concluded. "The river would be considered as suitable for a novice in the 'outside,' the basic distinction being that you can't have a mistake on Kandik as you have no ready help." 188/

The next day the party was on the river from about 8:30 a.m. to 5 p.m. and covered twenty miles. Tileston characterized some of the rapids in this section

as "approaching Class III in terms of complexity of current." There were rare and easily avoided three-foot-high standing waves, he wrote. He noted one abandoned trapper's cabin below Indian Grave Creek. 189/

On the 8th the trio reached the lower Kandik. Tileston found the rapids "more numerous and a little bit heavier but still not above Class II." All could be skirted with little difficulty. Only a 200- to 300-yard long "boulder field" required any maneuvering. 190/

By 1 p.m. on the 9th the party reached the Yukon after traveling thirteen and one-half miles. Tileston wrote that sweepers were more abundant in the delta but the current less swift. He blamed the large number of sweepers on a forest fire of the previous year. 191/

In concluding remarks, Tileston wrote that "rapids are almost absent making this an excellent canoe-camping stream requiring minimal canoeing ability." However, he also stated that due to the recent fire the "lower 2/3 of the river . . . is extremely dangerous because of sweepers." Tileston anticipated that logjams "will develop to the extent to completely block surface downstream or upstream movement of watercraft." 192/

In September 1975, three BLM smokejumpers, Robert Betts, Jon Klingel, and Dave Pierce, vacationed by parachuting with two single collapsible Klepper kayak and one double collapsible Klepper kayak to a point on the Kandik about five miles above Johnson George. On the first day of the trip they found the rapids in the gorge a challenge. However, they were able to stay clear of the occasional exposed rocks and the kayaks' spray covers guarded them from the "waves" that came completely over their kayaks. They camped for the night

after traveling a few miles containing only short stretches of white water below the gorge. On the second day Betts and Pierce occasionally ran aground when they drifted out of the current. The current once pulled Pierce under a sweeper. However, Pierce was not hurt and his kayak did not capsize. Betts, who wrote an account of the trip for Alaska Magazine, stated that:

> We were still far enough upstream for the river to be exclusively ours. The shallow water and rapids prevented riverboats from traveling this far upriver. By the end of the second day, however, we reached the point where travel by riverboat was becoming possible, and it was only a matter of a couple of miles before we would begin to encounter signs of man. 193/

On the third morning, as they continued downriver, they found the river to widen with fewer stretches of fast water. They came upon the first occupied cabin on their trip at Threemile Creek. According to Betts, the last two miles of the river "proved to be more hazardous than anything we had yet encountered." They found that earlier high water on the river had deposited tree trunks and stumps at every turn of the river. Betts ran into one of these logjams, the current sending him and his kayak upside down under the logs. Betts swam free of the kayak and was able to pull it to shore. He lost his camera and paddle in the incident. Pierce and Klingel lined their kayaks around the logjam and paddled cautiously past "a couple more bad logjams before reaching the Yukon." 194/

In late June 1976 as part of the National Park Service's investigation of the recreational potential of the upper Yukon area, Bob Howe and Richard Caulfield undertook a canoe trip up the Kandik River. They arrived at the mouth after

descending the Yukon from Eagle with twelve gallons of fuel in the canoe to power their six-horsepower motor, the men started upstream at 10 a.m. June 23. Howe considered the water level higher than he had seen it the previous year. They climbed five or six sets of rapids to Threemile Creek. Most of the rapids were fast enough so that they had to run the outboard at full throttle to ascend them. Howe found that a logjam near this tributary had broken up somewhat over the previous year. At 2 p.m. the men tried to ascend another rapid but their motor was not adequate to the task. They were sent into a sweeper and swamped in water chest high. Howe was swept under the canoe and pinned against the logs. He survived by finding an air pocket and Caulfield soon moved the canoe far enough so Howe could escape. One side of the canoe was partially "crunched in" and the bottom was flattened, but they were able to straighten most of it. The twosome then drifted cautiously back to the mouth of Threemile Creek. 195/

The next day Howe and Caulfield portaged around the rapids they had failed to ascend the previous day. They had to line through six other rapids, most of which Howe felt they could have ridden through except that their throttle had been damaged. Howe noted that the "Kandik gives the impression of much wilder high water than the Charley River." He also suggested that it had been burnt over more than the Charley River, resulting in less stable vegetation and more sweepers. 196/

On the 25th the men ascended to their most upstream camp. They lined up an "especially severe" rapids about one and one-half miles below Easy Moose Creek. They planned on lining down these rapids on the return trip as well. Howe

and Caulfield camped at the upper end of Johnson George. The next day they took their emptied canoe above the gorge and visited a cabin which probably had been used for trapping as there were remnants of snowshoes and two sleds. 197/

On the 29th they left camp and made it more than half way back to the Yukon. They stopped at a cabin at Threemile Creek where they spoke with a trapper identified only as Fred, who said he had lined up the Kandik as far as Easy Moose Creek. Later that day they arrived at the Kandik's mouth. 198/

Howe wrote that the Kandik was "considerably more tricky to negotiate than the Charley, particularly for the novice or intermediate recreation floater." He felt that the current was swifter than the Charley's and that its water level fluctuated dramatically. He noted that sweepers presented a hazard. The Kandik "is not easily negotiated by the novice or intermediate canoer (and rafts would have to be dragged in many places and could easily be punctured)," wrote Howe, because of its remoteness, recreationists might easily be stranded for days without seeing other travelers or aircraft. Therefore, the two men agreed that the Kandik would not be an appropriate "overflow" alternative to the Charley River. 199/

The BLM initially considered the navigability of the Kandik River in 1975 in connection with a series of land conveyance actions involving Doyon, Limited. The first such action involving the Kandik occurred on December 5, 1975 when BLM released a Decision to Issue Conveyance for T. 8 N., R. 31 E., Fairbanks Meridian, which included a small segment of the stream. The BLM determined

that the river was nonnavigable and at the same time recommended a twenty-five-foot trail easement on each side of the stream, a streambed easement, and a one-acre campsite on the river with a spur trail. The precise location of the campsite and trail was not cited. 200/

A BLM easement report compiled in June and early July 1976 devoted more extensive discussion to easements. This report summarized easement recommendations gathered from interested parties from March through May of that year. 201/ In April 1976, William R. Thomas, Chief of the Bureau of Outdoor Recreation's Alaska Office, recommended a streamside and streambed easements in the Kandik basin throughout the selection area. He noted that BOR's 1972 canoe expedition indicated the river possessed "outstanding scenic and recreational values," and that since 1972 the BOR had received reports of several people traveling up the Kandik River in motorboats, primarily in the fall for hunting purposes. Thomas also wrote that "because of its shallow nature, the bed and banks are frequently utilized to line or drag boats up river at least as far as Johnson Gorge." 202/

The BLM supported this easement request, adding that its own personnel had "observed substantial use extending the entire length of the river on several occasions." At the same time, the BLM, the ADF&G, and the ADL proposed a 100-foot-wide road corridor from Johnson Gorge along the south side of the river to the Canadian border. This route was justified as "the only viable means of access to the upriver areas," seven one-acre campsites along the river (Sec. 22, T. 8 N., R. 29 E., Fairbanks Meridian, Sec. 8, T. 8 N., R. 30 E., Fairbanks Meridian; Sec. 27, T. 9 N., R. 30 E., Fairbanks Meridian; Secs. 4 and 30, T. 10 N., R. 31 E., Fairbanks Meridian; Sec. 14, T. 11 N., R. 31 E.,

Fairbanks Meridian; Sec. 26, T. 12 N., R. 32 E., Fairbanks Meridian) to accompany the recreation-oriented streamside and streambed easement proposed by BOR, and another campsite where the 100-foot corridor crossed Indian Grave Creek, a Kandik tributary. 203/

While BLM was gathering these easement recommendations, Doyon Ltd. appealed BLM's decision that the Kandik, as well as the Nation River, was nonnavigable to the Alaska Native Claims Appeal Board (ANCAB). On May 10, 1976, ANCAB ordered the State to join the litigation as a necessary party in the appeal. The board referred the matter to the Chief Administrative Law Judge, J. K. Luoma, who held a hearing on the matter in Fairbanks in September 1978. 204/

Judge Luoma summarized what he considered the salient relevant facts concerning the Kandik River in a recommended decision rendered June 1, 1979. He described the river above the selection area (above T. 8 N., R. 30 E., Fairbanks Meridian) as increasingly shallow, meadering, and wide. Within the selection area, which extended down to Johnson Gorge, Judge Luoma stated that the Kandik "is deep, is free from gravel bars, and has a uniform bed." It was too deep to measure in June 1978; it was four to six feet deep in the selection area that August. The river flowed at five miles per hour in June 1978 and one mile per hour in August. Below the selection area Judge Luoma described the Kandik as "alternately meadering and braided." Above a defined channel in its lowest quarter or half mile "the river becomes a shallow stream." In August 1978 there were seventy "shallow areas" below the selection area. 205/

Judge Luoma went on to summarize information presented in his court on human use of the Kandik River Valley. He stated that subsistence use of the river by whites dated at least from the 1930s and that earlier Natives supported themselves

by gathering the region's resources. Luoma wrote that Natives, presumably prior to extensive contact with Caucasians, hunted at the head of the Kandik and floated down the river to the Yukon in moose skin boats. The first non-Native travel on the Kandik cited by Luoma was that of the International Boundary Commission in 1912. At that time poling boats brought supplies to the boundary. The boats were poled and lined. At shallow places the suppliers had to shovel an opening and line their boat through. They traveled upstream at a rate of five or six miles a day. After taking nearly a month to reach the boundary, the commission's pole boaters descended the Kandik in six hours following a cloudburst which made the river very high. 206/.

Trapping was the primary economic support for two people living on the Kandik between the two world wars. These trappers used a poling boat on the river. In the 1930s eight trappers harvested furs on the upper Kandik. The judge stated that they probably traveled either by poling boat or folding boat, possibly by-passing the lower portion of the river by entering its valley via a portage from the Yukon and Rock Creek. 207/

In his decision, Judge Luoma drew a large portion of his information on trapper travel on the stream from the testimony of Charlie Biederman, who for many years lived at the mouth of the Kandik. Biederman had ascended the Kandik to Johnson Gorge numerous times through most of the open water season. Luoma did not state explicitly what size boat Biederman used, but Biederman testified that "if he had had a reason to take a 24 or 26-foot river boat far up the river, in his opinion, nothing would stop him." Biederman also told the court that "quite a few hunters" traveled upriver annually in riverboats. These boats were between twenty-four and twenty-six feet long with a forty-two or forty-six inch bottom. These boat were metal and had motor lifts to facilitate

travel through shallows. Some used jet motors. The hunters traveled sixty to seventy miles up the Kandik and spent as much as a week on the river before bringing their kill down to the Yukon in their boats. Based upon all the above information, Judge Luoma recommended that ANCAB determine the Kandik River to be navigable, a recommendation upon which the board acted on December 14, 1979. 208/

The BLM easement staff met on April 26 and October 23, 1979 pursuant to an ANCAB order to develop easement recommendations for lands selected by Doyon in the region of the Kandik and Nation basins. The staff considered but rejected a number of easements pertaining to the Kandik River. A streamside easement was rejected because it was counter to current regulations. A streambed easement was dropped because of the ANCAB decision on the navigability of the river transferred ownership of the bed to the State. A campsite easement along the river also was rejected because numerous sandbars, which were State property due to ANCAB's decision that the Kandik was navigable, provided adequate public camping facilities. 209/ The Final Easement documents dated March 11 and March 12, 1980 echoed these easement recommendations and, taking note of ANCAB's decision, named the Kandik as a navigable stream. 210/

On April 8, 1980 BLM issued a decision to conform the easements in the 1975 Decision to Issue Conveyance in the wake of ANCAB's decision. The April 8 document dropped all easements included in the earlier decision; that is the streamside, streambed, and campsite and accompanying trail easements. 211/

CHARLEY RIVER

In 1903 U.S. Geological Survey geologist Louis M. Prindle led a pack train excursion from the Seventymile River to Birch Creek to examine the geology of those two gold mining drainages. In so doing he crossed the Charley River approximately thirty miles from its mouth. He later reported that in its lower course the river was 200 to 300 feet wide and "can be easily forded on foot at low water." He also wrote that it "is said to be navigable for small boats for a distance of 100 miles above its mouth." 212/

Melody Webb Grauman in her Cooperative Park Studies Unit report entitled Yukon Frontiers gathered much of the very fragmented evidence yet found on use of the Charley River Valley. She noted that a 1976 archaeological survey party could not locate the two cabin ruins on Copper Creek shown on a USGS map compiled two decades earlier. However, the group did locate another cabin on this tributary as well as eleven prehistoric sites. Conversations with two old-timers in the region, George Beck and Charlie Biederman, led Grauman to comment that "there are supposedly cabins at the mouth of nearly every creek on the Charley River." They specifically mentioned cabins at the mouths of Essie, Highland, and Drayham creeks. Grauman visited two cabin ruins at the mouth of Silvia Creek, which she considered may have dated from a turn-of-the-century prospector, and a well-preserved cabin at the mouth of the Bonanza Creek which she presumed was used for trapping at the mouth of Bonanza Creek. The USGS 1956 maps show another cabin at the mouth of Hosford Creek. 213/

In 1972 and 1973 the Bureau of Outdoor Recreation studied the Charley to determine its suitability as a Wild and Scenic River. A BOR report dated

May 12, 1973 stated that before the agency's 1973 field work on the river there was only one report of anyone attempting to canoe the Charley. According to the unnamed source of the report, a trapper in the winter of 1938-39 brought an aluminum canoe into the basin on a dog sled. He planned on using it to take his furs out in the spring. However, winter temperatures of -60°F caused the aluminum to become brittle and crumble. Whether this was true or not, the first BOR party in 1972 did observe the remains of a canoe which may have been destroyed in this way near a ruined cabin. 214/

In September 1972 Jules V. Tileston of BOR, Scott Grundy of Alaska Department of Fish and Game, and Fred Kaas of the National Park Service floated down the stream in a seventeen-foot standard Grumman canoe and a nineteen-foot square stern Grumman canoe as part of BOR's study of the river. On the 9th Kaas, Tileston and Jerry Timmons of the BLM arrived at the mouth of the river via travel on the Yukon from a similar study on the Kandik River. Tileston noted that the Charley's water was clear and its level low. The next day Timmons left with a Grumman Goose which brought in supplies and Grundy flew in. That afternoon a helicopter ferried the men, canoes, and supplies to a point 100 yards below the mouth of Copper Creek. 215/

On September 11 they began their float and camped about two miles above Essie Creek that night. Tileston noted in his diary that "at this time of year, at this water level, there was sufficient water to generally float the canoe." He wrote that there was one bar over which the canoes had to be dragged and that with less water "this section would become a real problem." He commented that the braided section below Copper Creek was not difficult, though floaters should be careful to select the correct channel. Tileston considered the rapids encountered that day to be Class II. He wrote that "there are many rock

gardens and several chutes with standing waves 2 to 3 feet high." In an open canoe traveling through the main chute of the rapids there would be "a good probability of swamping," but there almost always was a route around these hazadous areas. In general he characterized the current as "very swift" and the water clear -- "you can see in water up to 10-15 feet deep with no problems." 216/

The party visited two cabins on that first day. One was located in Sec. 25, T. 2 N., R. 21 E., Fairbanks Meridian. Based on the "dog-sled width" of a nearby trail, Tileston guessed it was a trapper's cabin. There also were four or five dog houses. The remains of a canoe were near the cabin. Tileston did not give a location for the other cabin but it was upriver from the above mentioned one. It contained gold pans, many traps, and a large tool set. Tileston speculated the deteriorated cabin was used during the 1930s. 217/

On September 12 the trio descended to just above or some place below Bear Creek. Early in the day one of the canoes got hung up on a small boulder and the current swung it into three other boulders. The rapid was minor compared to those of the previous day, but it took all three men to free the canoe. Two dents had to be pounded out of the canoe and some food was lost; the major catastrophe being that only two cans of beer survived for the three men. Tileston noted that because the river moved so rapidly there was little sand in its bed. Also he theorized that the reason they saw no fish was because the lack of pools and the swift water made for an unproductive fish habitat. Tileston did not give his source of information but said that "riverboat navigation is supposed to go as far up as Cascade Creek and is reportedly gone up as far as

Copper Creek." He noted that several of the bars the party crossed on the 12th showed paint marks where boats had been dragged across. He also wrote that riverboats had beached at the campsites used on both the 11th and 12th. 218/

On the next day the men canoed through a drizzling rain to a cabin located at Bonanza Creek owned by George Wyat of Fairbanks. Wyat with his three sons and a daughter were moose hunting. Wyat told Tileston that based on his eight years observing the river, it was about eighteen inches higher than normal for this time of year. Tileston also noted that the "river character has changed considerably since yesterday, now pools greatly extended." He stated that the riffles were minor compared to those of the previous days and that there were no rapids. 219/

By noon of the 14th the trio reached the Yukon. At the mouth of the Charley they visited a cabin occupied in the previous two years. They then retrieved some fuel cached at the mouth and headed down the Yukon to Circle. 220/

Tileston included some summary conclusions about the river in his field notes. He wrote that at low water levels floaters would have to line or walk through "rock gardens" and bars above Crescent Creek, but at the water level at which the BOR group traveled they could have started farther upstream and that Copper and Crescent creeks probably were runable. Tileston considered the Charley River a Class II/III on the International Difficulty Rating system and the skill level as Intermediate/Advanced. He said the current was swift, maneuvering "a constant requirement," and that many rapids had to be scouted to determine the correct channel. Finally, he wrote that "motorboat (jet) travel

has been reported upstream as far as Copper Creek. This can be accomplished only at right water level and then only with considerable abuse of equipment (if paint on rocks are any indication)." 221/

Later that year J. Scott Grundy of the Alaska Department of Fish and Game wrote a letter to Tileston summing up his understanding of the boating opportunities offered by the Charley River. He stated that:

> Present riverboat travel . . . does not progress upstream much further than Crescent Creek. A maximum of two or three boats progress this far upstream each year (usually during the sheep season) as it requires extreme skill and is very abusive to equipment. 222/

In May-August 1973 the BOR analyzed the Wild and Scenic River potential of Charley River. It stated that the maximum stream flow occurred in late May and early June because of break-up and snow melt. Observations in 1973 along Copper Creek and the upper Charley River indicated that the water there could be as much as ten feet above normal summer levels at break-up. Rain induced high water could be expected twice each June and July and once in August. Such fluctuations could be sudden and had to watched for because too much water was "dangerous." These storm-related high waters ranged from six inches to several feet above normal. Extended periods of low water normally began in late August or September. River levels dropped as surface water became locked as ice and snow. The BOR stated that the current averaged six to eight miles per hour above Bear Creek; three to five below. The river had

"an open meandered [sic] and an occasional [sic] braided section in the open upper valley" and it gradient was "relatively even with no falls or cascades." Below Bear Creek "the river becomes meandering." 223/

In describing floating on the Charley River, the BOR stated that "limited observations indicate there are generally sufficient water flows to permit canoeing or use of other small hand propelled watercraft for recreational purposes from breakup to freezeup including the lower portions of Copper and Crescent Creeks and the entire river down-stream from the confluence of the two upper forks in T. 3 5., R. 20 E. [Fairbanks Meridian]." Above Copper Creek there were shallow rock gardens and bars which made lining or walking advisable. Still, the BOR stated that "from a canoeing/kayaking standpoint this is one of the best clearwater, whitewater streams in this section of the state. 224/

Upriver access was either by riverboat, plane of helicopter. The BOR stated that "with considerable effort, abandon and a favorable water level (which is rare)" a riverboat equipped with a "jet-pump attachment on a ±40 h.p. outboard motor" could proceed upstream to the vicinity of Copper Creek. However, "usually water level and prudence" limited motorized boat travel to the Bear Creek area where "numerous large boulders and rapids clog the river channel at low water." Planes could land on "a recently constructed primitive, unauthorized bush airstrip" near the mouth of Copper Creek. The rivers gravel bars were not safe for landings and "the river is generally too shallow and tortuous for landing float planes." There was, however, a small lake in Secs. 19 and 20, T. 1 S., R. 21 E., Fairbanks Meridian, which "under ideal landing and takeoff conditions" could accommodate a small float plane. There

were abundant landing sites for helicopters. Altogether, the BOR estimated only twenty-five to thirty people a year used the drainage; most, if not all, of these for hunting. 225/

In 1974 Ron Warbelow, a partner in 40-Mile Air, wrote to Pat Burchard of BOR who was interested in flying into the upper Charley River drainage. He described the Copper Creek airstrip as 850 feet long in a canyon with "adverse winds" and poor approaches. Warbelow said he had taken a 180 and a 206 in with "very light loads and considered it marginal for this type of aircraft." Describing the river, Warbelow said that "as you get farther up towards the headwaters, the going gets pretty rocky." He recommended that during low water, an air reconnaissance of the river be done to find an appropriate put-in place. 226/

Recreationist Harold Dinkins, who put in at a Charley River headwater tributary at the extreme east end of T. 4 S., R. 22 E., Fairbanks Meridian, experienced the hazards of abnormally high water. On the 17th of August 1980 Dinkins parachuted his raft and gear to his put-in point and had a plane drop him off at the airfield at Joseph on the Middle Fork of the Fortymile. The next day he hiked to the drop site. By noon of the 19th he was floating downstream and by the following noon he reached the Charley River proper after running through increasingly frequent white water. The high water stage in the river made Class II or, at most, Class III rapids more severe. Dinkins said that "in some places where the gradient of the river reached 50 feet or more per mile, the force of the water and complexity of the required maneuvering exceeded anything I had experienced canoeing the Fortymile or Gulkana and other Interior rivers." Around 6 o'clock on the evening of the 20th he got caught in a "roller" and had to swim through rapids to reach shore. The next morning he was fortunate to recover his raft, oars, and most of his equipment. There was still plenty of

white water in the river but he had no other mishaps, camping at Hanna Creek the evening of the 21st and about two miles above the Yukon the next night. He then followed down the Yukon to Circle. Dinkins concluded with these observations:

> Upriver navigation in a motorized craft would be difficult beyond 50 miles or so . . . For those who may wish to take my route, I suggest they be prepared for a lot of walking and lining under low and average water conditions and challenging white water when the river is high. 227/

NINEMILE LAKE

The only information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Ninemile Lake (T. 19 N., R. 13 E., Fairbanks Meridian) by floatplane, it contained the note that only lakes on which "a small float-equipped airplane" could land were visited. 228/

HOSPITAL LAKE

The Bureau of Land Management first considered the navigability of Hospital Lake (T. 20 N., R. 12 E., Fairbanks Meridian) in the mid-1970s in connection with its solicitation of easement recommendations for lands selected by Gwitchyaazhee Corporation, representing Fort Yukon Natives. On January 7, 1975 Paul Solomon, Jr., the corporation's land agent, wrote to BLM describing what he considered to be the navigable waters within the village's conveyance

area. He wrote that floatplanes landed on the lake in the summer. Solomon stated that when the Porcupine River was at high water stage, it flowed through Hospital Lake and Joe Ward Slough into the Yukon River. He recalled that at one time the water washed out about a third of the south end of the airport. The weekly Air Force supply plane landed on the north end of the runway and since trucks could not reach it, two boats were sent through Joe Ward Slough into Hospital Lake to take supplies off the plane. 229/ Others later wrote statements supporting Solomon's assertions. Clifton Fairchild wrote that he started Fort Yukon Air Service in 1949 and that he had "used Hospital Lake for transportation every year since then." He also recalled that in 1962 when a portion of the runway was flooded and a sick Air Force employee had to be flown to Fairbanks that the person was taken by boat down the Yukon, up Joe Ward Slough, and through Joe Ward Slough to the dry part of the runway. Fred Thomas, an Air Force employee in 1962, wrote that during that summer's flooding he was told to take a boat through Joe Ward Slough to Hospital Lake in order to unload the weekly supply plane. Thomas also confirmed that floatplanes used the lake. 230/

The Bureau of Outdoor Recreation on March 27, 1975 recommended a campsite easement on the Porcupine River near Hospital Lake and a trail from the site to the lake. The justification for this was that:

> Because the Porcupine River joins the Yukon River downstream of Fort Yukon, non-motorized craft coming down the Porcupine presently utilize the short portage between the Porcupine and Hospital Lake to reach commenrcial air service at Fort Yukon. 231/

Both the BLM and the Alaska Department of Fish and Game (ADF&G) made similar proposals. 232/

A five acre campsite and boat and floatplane tie-up in Sec. 7, T. 20 N., R. 12 E., Fairbanks Meridian was proposed by BLM, ADF&G, and some elements of the general public. A 1976 BLM document stated that there were an estimated 400 to 500 recreational use days at this site. Who made this estimate is not clear. The same document stated: "It is a very popular 'jumping-off' point for sportsmen using the Yukon and Porcupine River as well as a stopover point for sportsmen." It received "heavy use by recreational boaters, sports fishermen and hunters. 233/

The easement report also contained a summary of navigability information concerning the lake. It stated that the lake is connected to the Yukon by a slough and that it can be used to transport goods from the town's barge landing to its airfield. The report mentioned that the lake received recreational use. Finally, it noted that BLM, Gwitchyaazhee, Doyon, and the State of Alaska all claimed the lake was navigable. 234/

The Easement and Navigability Task Force met on September 9, 1976. It considered Hospital Lake navigable and recommended the earlier proposed easements referring to Hospital Lake. It added a second site easement on the lake at the terminus of the portage from the Porcupine and a trail on the south shore of the lake from the airport to the Yukon River. The last was justified as facilitating "continued use of a navigable body and for access along this water body." These recommendations were included in the "Notice of Proposed Easement Recommendations for the Village of Fort Yukon" issued March 23, 1977. 235/

The Federal-State Land Use Planing Commission then undertook consideration of the BLM's easement proposals. Alaska's Department of Public Works, Division of Aviation called to the Commission's attention the proximity of all the easements bordering Hospital Lake with the Fort Yukon landing field. The State noted that FAA regulations required that vehicles, persons, and large domestic animals be restrained from runway areas. The State's Division of Aviation believed that it would not be possible to retain its air operations certificate for the Fort Yukon field if there was right-of-way between Hospital Lake and the runway. 236/ Because of this objection the Land Use Planning Commission urged BLM to drop the trail easement along the southern shore of Hospital Lake unless it and the Division of Aviation could agree on a route which would not conflict with safe air operations. The Commission also opposed the five-acre campsite and boat and floatplane tie-up because it fell on patented airport land. However, the Commission agreed to the other portage trail easement from the Porcupine and the site easements at each and of the trail. 237/ A State Director Final Easement Memorandum issued July 6,1978 reflected the Commission's suggestion by dropping the five-acre site. But the BLM continued to include the portage easements and the trail easement south of Hospital Lake. 238/

On February 19, 1982 BLM easement staff members met with Gwitchyaazhee members at Fort Yukon. Marty Karstetter, one of the visiting BLM employees, later summarized the villagers objections to the portage trail and accompanying site easements. They stated that the general public would not use the portage, that a BLM field team in 1977 could not locate the trail, that the area was a swamp with no high ground, and that Native allotments overlay the trail and the sites at both ends of the trail. 239/

An unsigned and undated document apparently composed by Gwitchyaazhee Corporation echoed many of the points expressed at the February meeting. It also stated that anyone going to the Porcupine from the airport would portage via a campground on the Sucker River, not via the proposed easement trail. 240/

Robert Michael, a non-Native resident of Fort Yukon, provided a considerably different view in a letter to the BLM's Branch of Easement Identification. He stated that the portage trail "is of great importance during the summer months, especially to the people that drift the Porcupine river." He assumed that all people coming down the river from Canada had to clear customs at Fort Yukon. Michael went on to say that he had been stopped several times while on the lower Porcupine by people asking directions to the portage. He wrote that "foreigners that drift the river have a map that shows this as the way to get into town." Michael concluded that "it is the only practical way to get into town in a non powered boat." 241/

However, on April 21, 1982 BLM's Assistant to the State Director for Conveyance Management informed the president of Gwitchyaazhee Corporation that because of conflicts with a Native allotment the agency had decided to delete the portage trail from the Porcupine to Hospital Lake and its accompanying site easements. 242/ This finding was reflected in a second State Director Final Easement Memorandum dated June 9, 1982 which also dropped the trail from Hospital Lake near the airport to the Yukon because municipal roads offered adequate transportation facilities between the two places. Thus, when the Decision to Issue Conveyance was released on August 26, 1982, there were no easements on Hospital Lake. The BLM determined the lake to be navigable, though, in both documents noting that it has been used to transport goods from the barge landing on the Yukon to the airfield and was used by recreationalists traveling from the airfield to the Yukon and the Porcupine. 243/

PORCUPINE RIVER

The substantial amount of transportation which has taken place on the Porcupine has been summarized in the overview to this chapter. What follows are examinations of the use of the river's major tributaries in the United States.

Rapid River

This drainage is in about as remote an area as any in Alaska, helping to explain the scarcity of information about water transportation on it. Gerald FitzGerald, a USGS geologist who reached its mouth by boat in 1939, described the river as "not available from the Porcupine because of the very steep, boulder strewn rapids that extend three quarters of a mile upstream from its mouth." Fitz-Gerald did not mention observing the river above its mouth but hinted that it would make for easy boating, writing that the "stream is deep and confined to one channel." FitzGerald did not note any cabins on the stream nor are any marked on recent USGS maps. The only other mention of its navigability is in Nancy Lethcoe's 1972's "Alaska Perspective: Wild and Scenic Rivers" noting that Jim Scott, Anchorage District Manager of BLM, recommended the river "for boating use." 244/

Salmon Trout River

Among historical documents consulted, only a dotted line with an arrow pointing downstream on a map accompanying a 1918 publication of the International Boundary Commission indicates travel along the Salmon Trout River prior to the 1970s. The dotted line was dated 1911. However, the published report does not make it clear how this indicated travel was accomplished. 245/

The BLM first considered the navigability of Salmon Trout River in 1976 in connection with its solicitation of easement recommendations for lands selected by Doyon, Limited. William R. Thomas, Chief of the Bureau of Outdoor Recreation's Alaska Office, suggested a streambed and streamside easement. Thomas wrote that the river was popular for fishing and that BOR had received "several reports of people ascending the Salmon Trout by boat to hunt, fish, and sightsee." He did not know how far upstream these boats went, but stated that the Bureau thought it possible to ascend at least as far as T. 27 N., R. 29 E., Fairbanks Meridian (The river exits this township about six and one-half miles above its mouth). 246/

In an easement report prepared by BLM in June and early July 1976, the agency supported the BOR's proposal and recommended five one-acre campsite (Sec. 3, T. 26 N., R. 29 E., Fairbanks Meridian; Secs. 21 and 35, T. 26 N., R. 30 E., Fairbanks Meridan; Sec. 21, T. 25 N., R. 30 E., Fairbanks Meridian; Sec. 9, T. 24 N., R. 30 E., Fairbanks Meridian) on the river in conjuction with it. The BLM stated that "the Salmon Trout River is a significant recreational river with well-established historical and present use." It noted that the current use of the river was by lining which required the numerous campsites to facilitate upriver travel. The BLM did not know if these campsites were then receiving any use. The easement report also recommended a 100-foot wide corridor along the Salmon Trout to satisfy access needs to the northern portion of the Kandik withdrawal identified by the BLM, the Alaska Department of Fish and Game, and the Alaska Division of Lands. 247/

In subsequent BLM documents referring to conveyances to Doyon in the area, no mention is made of the streamside, streambed, or campsite easements. At least in the case of the campsites, this evidently was due to the fact that only

T. 23 N., R. 28 E., Fairbanks Meridian among the townships through which the Salmon Trout runs was under consideration. This township was upriver from the campsite easements. However, the corridor easement was included in a November 26, 1976 Notice of Proposed Easement Recommendations. This document also stated that no navigable waterbodies passed through this township. 248/ On January 11, 1977 the Federal-State Land Use Planning Commission agreed with BLM's easement recommendation for the 100-foot corridor which was then included in a final easement statement dated January 20, 1977 and a Decision to Issue Conveyance issued March 3, 1977. 249/ However, in April and October, 1979 BLM reconsidered this and other easement through lands affected by the Nation-Kandik ANCAB appeal. In a State Director Final Easement Memorandum signed March 12, 1980, the 100-foot corridor was dropped because public lands were accessable without passing through the affected township. 250/

Coleen River

Prior to 1940 only scattered bits of information about the Coleen had appeared in print. In 1920 Hudson Stuck, a missionary and explorer based at Fort Yukon, published an account of travels he had made by dogsled from Fort Yukon to the Arctic and back in the winter of 1916-17. On his return trip Stuck stopped at the cabin of an Eskimo named Charley on the upper Coleen River. Charley asked him to marry his eldest daughter to Joseph, a visiting young man. Although strictly against the law to perform the marriage without the young couple having registered with a U.S. commissioner, Stuck married the pair. He defended himself in the book by noting that the nearest commissioner was 250 miles away at Fort Yukon. Since it then was late in the winter the young man, had he gone to Fort Yukon, could not have returned until summer and Stuck added that it was "doubtful if he could return then; for we were not on

navigable water, and only with the utmost difficulty could this place be reached from the Yukon in the summer." Stuck subsequently sledded downriver passing one padlocked trapper's cabin before reaching an occuppied cabin about forty miles above the river's mouth. An Indian named Gabriel was there, having come in over a trail from John Herbert's cabin on the Porcupine (T. 25 N., R. 21 E., Fairbanks Meridan) to gather his traps and return to the Porcupine by the same route. 251/

In 1929 the USGS published geologist John B. Mertie's "Preliminary Report on the Sheenjek District." Mertie and three others had covered a portion of the Sheenjek in a 1926 mapping expedition. Mertie and his men may have climbed some of the hills dividing the Sheenjek and Coleen, but his assertions that the Coleen was "navigable for canoes and light power boats" and was more difficult to navigate than the Sheenjek probably was based on second-hand information. 252/

Gerald FitzGerald, a USGS geologist, authored the first report of water travel on the Coleen. As part of a Survey expedition mapping the Porcupine River basin, FitzGerald with assistants Charles U. Southwich and Joe DeGrade took a twenty-two foot riverboat with a twenty-two horsepower outbound motor from Fort Yukon to the international boundary. They then descended the Porcupine and reached the mouth of the Coleen on July 20. "Because of unusually low water, it was impossible to get the large motor-equipped boat into the Coleen River," but FitzGerald and one assistant ascended the Coleen in a Peterborough canoe which had been deposited at the river's mouth for them by a freight boat. They began their journey on July 25. FitzGerald noted that, "difficulties of lining or 'tracking' upstream, bucking swift water, pulling shallow bars, and dodging 'sweepers' and caving banks made the rate of progress only 12 to 17

miles a day." Stormy weather made continued surveying impossible so seventy-five miles from the Porcupine the twosome turned around and in two days floated back to the larger river. The map accompanying FitzGerald's report displayed four cabins on the river. Two were about five miles above the river's mouth. Another was thirty miles upriver and the last, called Owen's Cabin, was about fifty-five miles from the Porcupine. A photograph shows either FitzGerald or one of his assistants lining their canoe up the lower Coleen. At this point a gravel bar was on the left bank and cliffs fell to the water line on the right bank. The river appeared to be at least sixty feet wide. Finally, FitzGerald gave the following description of the river:

> In its upper part the river flows along the west side of a wide alluvium-filled valley, in many places with several narrows braided channels. Toward the mouth the valley east of the Lower Ramparts of the Porcupine. . . . Most of the flood-plain bars are composed of coarse gravel overlain with fine sand and silt. Driftwood is strewn over the bars, often in great piles on the higher ground near the brush line. At low water the numerous bars make it comparatively easy to line a shallow draft boat upstream, although the main channel is often hard to recognize where the stream, although the main channel is often hard to recognize where the steam is braided. Trappers and natives familar with the river take loaded river boats, usually equipped with outboard motors, more than 100 miles up the Coleen. Such trips are usually made in the early spring or during high water, in order to avoid the troublesome shallow bars and the riffles. On the lower river sweepers and snags are common. 253/

One of the trappers to use the Coleen was mentioned briefly by James Carroll wrote that he sold a one cylinder motor of about five horsepower which he had kept running only with the greatest difficulty to a trapper on the Coleen named Gordon in 1919 or 1920. Gordon had similar difficulty keeping the motor running. How far he drove the motor up the Coleen is unknown, but Carroll reported that Gordon complained that he had to take it apart to repair it "on every sand bar on the Porcupine and Coleen Rivers." Carroll stated that Gordon was still trapping on the Coleen when he wrote his reminiscence. 254/

The USGS map compiled in 1956 and revised in 1966 showed three structures on the river. All were clustered fifty-three miles upstream and labeled Owens Cabins. 255/ When questioned by the Corps of Engineers in 1958, Arthur Peterson, an officer of Yutana Barge Lines of Nenana, stated that the Coleen was impassable for small tugs and barges. Peterson said that since the advent of air transport, all supplies to the Coleen area came in by plane. 256/

Grumman Ecosystems Corporation in a 1975 report on the navigability of upper Yukon streams prepared for the U.S. Army paraphrased FitzGerald's report on the Coleen. It added no new information on the use or the character of the river. 257/

Sheenjek River

The first known written account of travel on the Sheenjek was penned in October 1906 by geologist Samuel J. Marsh whose explorations were supported by New York mining speculators. Marsh was convinced that valuable gold deposits might be found in the Brooks Range. On April 30, 1906 he and a group of assistants reached the head of the Sheenjek on dog sleds. It is uncertain but

likely that they had come from Fort Yukon. They built a cache and prospected in the headwaters of the Sheenjek and Coleen. Marsh made a solo trip to the Arctic for supplies and to make contact with whaling ships. He rejoined his party on September 6th on the Firth River where they had continued their prospecting. On the 8th they started toward Fort Yukon. They reached their cache on the Sheenjek nine days later and built two rafts. They began floating downriver "having many accidents and escapes, of which it is not necessary to speak of except to say that I lost the camera and got everything soaked." In the following January, Marsh would write that rafting the Sheenjek "can only be described by the word HELL in pronounced capitals." On September 25 the men came upon two trappers from whom they got food and a boat with which they descended to Fort Yukon, arriving on the 29th. It is uncertain whether the men got the trappers' boat before reaching the Porcupine. From Fort Yukon Marsh took a steamboat down the Yukon. 258/

Not until the 1910s, did whites regularly probe the Sheenjek drainage. In the fall of 1911, James Carroll and his partner Jack Ingels ascended the river from Fort Yukon using two twelve-foot square-sterned boats butted together. Though this was not an ideal craft for ascending the river, the two poled, lugged, and lined it forty-six miles upstream where they built a cabin and trapped. Their progress farther up the Sheenjek was blocked by ice. The following year Carroll, this time alone, took a boat upriver. This vessel was capable of carrying 600 pounds and his four dogs. However, much of the time Carroll had the dogs in harness pulling the boat for him. That year Carroll went twenty miles farther up to where a turn-of-the-century trapping cabin stood abandoned. Shortly after reaching this place Pat Deagle passed by, pulling a boat still

another twenty-five miles up the Sheenjek to his cabin. Later, on September 22, Carroll took a "practically empty" boat on a two-day trip upstream to visit Deagle. 259/

Carroll's reminiscence of these experiences does not record whether he trapped on the Sheenjek in each succeeding year. However, Carroll did write that after marrying in 1915 he and his wife, Fanny, took "a good poling boat" up the Sheenjek to his cabin. The trip from Fort Yukon took seven days and was accomplished by poling and lining with dogs. An old Indian named Peter Moses had accompanied them to take their boat back to Fort Yukon since Carroll and his wife intended to return to Fort Yukon by sled before break-up. They still had "a small boat" at their cabin "to hunt and run around with." Before freezeup they took this boat up to Deagle's cabin and shot a moose. The moose weighed 700 pounds dressed and made "a good load" for their small boat on the way back to their cabin. 260/

The following year the Carrolls trapped at the same cabin and in the winter of 1917-18 Fanny stayed home while Jim Carroll trapped alone at his Sheenjek cabin. This year Carroll used a one-cylinder motor called a Bronko to reach his cabin. It was so difficult to keep running that he sold it the next year. In 1918-19 the Carrolls trapped out of a ten-foot square cabin at the mouth of the Sheenjek. The next year Carroll bought another motor and a thirty feet long shovel-nose boat, "the type most trappers used for going upstream to their trapping camps." Carroll commented that "we were getting tired of lining our boat upstream with dogs, rope, and pole." 261/

After a year on the Old Crow Flats, the Carrolls made their last trip to their Sheenjek cabin recorded in Jim Carroll's reminiscence. They made the trip in

"six easy days" with about one and one-half tons in the boat. The small motor worked perfectly. After depositing most of their supplies at their first cache on the Sheenjek, they took dry salmon for dog food about fifty miles farther up the river in the boat. At least some of this was cached at Deagle's cabin. The round trip took four days. 262/

Carroll's longest boat ascent of the Sheenjek was in early June 1922, on a mission to locate the corpses of two men said to have been shot by Arctic Village youths. Carroll went with the local marshal and two other men. Their twenty-foot boat with a five-foot beam was powered by a small one-cylinder motor. The motor had great difficulty pushing against the swollen current. Three of the men got out and walked along the shore to lighten the load. But the banks were so cluttered with obstructions that walking became extremely arduous. Consequently, instead of going 175 miles up the Sheenjek as Marshal Hocks had anticipated would be possible, the party tied up the boat and started overland to Arctic Village, having traveled an estimated 140 miles by river from the Sheenjek's mouth. 263/ These river mile estimates probably were exaggerated. It is unlikely that the group would have attempted to ascend the river more than the 122 miles to the mouth of the Koness River, the valley of which would have provided the most direct overland route from the Sheenjek to Arctic Village. 264/

In 1926 the first USGS expedition entered the Sheenjek Valley to survey the largely unmapped area. On June 6, 1926 John B. Mertie, Jr., J. O. Kilmartin, Earl Hunter, and Ray Russell took two Peterborough canoes equipped with outboard motors from Fort Yukon up the Porcupine to the mouth of the Sheenjek. They continued up the Sheenjek. In the twenty-mile stretch located upstream from what they called Carroll's cabin, (Mertie estimated it at seventy-five miles

from the Porcupine but his maps show it to have been only about sixty miles upriver) to Christian's cabin, the Survey party's "heavily loaded" canoes had to be lined along the gravel bars. The men began their mapping about ninety miles upriver near the mouth of Thluichahnjik Creek. They continued their mapping to a point about 160 miles above the Porcupine, where the work was discontinued due to injuries to Kilmartin and Russell. The group returned to Fort Yukon in the later part of July. On the first day of their descent they covered seventy miles in nine hours. They traveled sixty miles the second day. Both days they were aided by a rain-swollen river. The following year Mertie led another four-man party which traveled in pairs to Arctic Village from Fort Yukon by overland winter trail and by canoe up the Chandalar. They then walked to and surveyed the headwaters of the Sheenjek northeast of Arctic Village. 265/

The resultant reports gave extensive descriptions of the Sheenjek. Mertie found no evidence of glacial melt entering the river. In the Yukon Flats, he wrote that the river had a tortuously winding course. He noted that on the 1926 expedition's trip upriver no bars were observed for the first sixty miles, but that on the return trip in late July the low water exposed sand bars "at nearly every turn of the river all the way to the Porcupine." Mertie continued:

> At low water the lower Sheenjek could certainly be called a distinctly sluggish stream but in flood there is a strong current everywhere, and some of the swifter places require active paddling in conjunction with an outboard motor to drive a loaded canoe upstream against the current. In general, however, the lower part of the Sheenjek presents

> no difficulty to motorboat navigation, except at high water, when muddy water concealing numerous snags, floating driftwood, and bad whirlpools necessitates a greater degree of care."

One such whirlpool was five miles above the mouth. Another troublesome spot was located near the head of the flats where the current ran swiftly through a group of upstanding snags. Both of these places presented problems only at high water. In its lower course the Sheenjek had few riffles but these became progressively more numerous upstream. Above Christian's cabin, Mertie reported that the Sheenjek is "a swift braided, meandering stream for . . . about 35 miles." About ten miles below the mouth of the Koness River the Sheenjek's valley was considerably constricted before the valley again widened upriver to a width of one to three miles. Mertie described the valley above this constriction as "a well-wooded flat characterized by oxbow and other lakes, swamps, and muskeg." He wrote that up to its East Fork, the Sheenjek was "a swift braided stream, and although more confined than in the flats and straighter in its general course, it splits repeatedly into two or more main channels and has numerous high-water overflow sloughs." 266/

Beside Carroll's and Christian's cabins, Mertie marked one other structure on the Sheenjek on the map accompanying his report. This was labeled "Macgregors Cache" near the mouth of an unnamed creek. This location appears to correspond to present-day Eskimo Creek in T. 16 S., R. 39 E., Umiat Meridian. 267/

The USGS 1956 mapping of the Sheenjek as revised in 1972 noted a cabin a half mile up Eskimo Creek, a cabin on Thluichohnjik Creek near its confluence with the Sheenjek (T. 31 N., R. 16 E., Fairbanks Meridian), and three cabins on the left bank of the river (T. 30 N., R. 16 E., Fairbanks Meridian). Unless

Mertie's map was substantially incorrect in its placement of Christian's and Carroll's cabins, the structures on the more recent maps are not the remmants of their cabins. 268/

In 1958 the Corps of Engineer's study of the Yukon Flats concluded that small boats could navigate an unspecified distance on the Sheenjek. The report warned that at low water dragging or lining might be necessary over the shallowest riffles. 269/ As part of their effort to gain information, the Corps questioned Arthur Peterson, an officer of Yutana Barge Lines of Nenana. Peterson stated that the Sheenjek was impassable for small tugs and barges. Peterson said that since the advent of air transport, all supplies for the Sheenjek area went in by plane. 270/

By the 1970s people began to exploit the Sheenjek's recreational potential. In October 1970, Averill S. Thayer, then Refuge Manager of the Arctic Wildlife Range, published an account of a trip he had made on the upper Sheenjek. He did not specify the year or the purpose of his one-man expedition. In early July, a floatplane transported him, his supplies, and a collapsible canoe to Ambresvajun Lake, also known as Last Lake. It was considered the northern-most lake in the lake-studded valley of the Sheenjek on which a plane could land. Thayer portaged a half mile to the river and began floating downstream. He paddled up one unnamed tributary which "was not a great deal wider than the canoe" to an unnamed lake. He returned to the river which he found easy traveling until it became swifter above Old Woman Creek. Below that creek white water dodged between boulders. He lined the canoe through one quarter-mile segment of boulders. Thayer described another portion of the river between Old Woman Creek and the East Fork as a "series of quick water connected by deep pools." He stopped at Eskimo Creek which enters the Sheenjek in

T. 16 S., R. 39 E., Umiat Meridian. A short distance up the tributary he found "log cabins, dog houses, and a faint sled trail." It is uncertain if these were the remnants of Macgregor's Cache. He had anticipated that he would walk rather than canoe up this creek. It was "mainly dry, made up of a series of clear pools separated by gravel bars through which the water flowed." Thayer said that it provided pleasant walking as he splashed through the pools. He apparently did not go far before he walked back to the river and a mile downstream where a floatplane picked him up. 271/

Recreationists from far away came to use the river. In July of an unstated year between 1970 and 1975 seven boys and two adult leaders of Simsbury, Connecticut's Boy Scout Troop 171 flew from Fort Yukon in a floatplane to "the headwaters of the Sheenjek River, just 75 miles from Alaska's northern coast." If this estimate was accurate it would mean that the Scouts landed well above Last Lake, possibly where the Sheenjek ceases to be a double-lined river in T. 6 S., R. 36 E., Umiat Meridian. Their trip to Fort Yukon in five cedar and canvas canoe took fifteen days. They averaged about eight miles an hour with the help of a five-mile-per-hour current. The Scouts canoed five to six hours each day. (The estimates are not precise. Traveling eight miles an hour for five hours a day for fifteen days would have meant that they canoed 600 miles. The distance from T. 6 S., R. 36 E., Umiat Meridian to Fort Yukon by river is less than 300 miles.) Scoutmaster Culver A. Modisette stated that the Sheenjek's "blue- green glacial water was so clear that the bottom, 10 feet down, looked as if it were only a foot away." They came to "tricky standing waves in crosscurrents, but [the river] was not particularly hard to navigate." Only one canoe was swamped. The incident occurred on the fourth day down the Sheenjek. Only cooking utensils were lost. 272/

In 1972 Time-Life Books published a "coffee-table" volume on Alaska which contained an account of author and photographer Dale Brown's float trip on the upper Sheenjek. The year of Brown's trip was not given. On July 17th he and his guide, Spence Linderman, flew from Fort Yukon to Last Lake. Through the 22nd they hiked northward and returned to the Sheenjek opposite Last Lake. On the 23rd they awoke to find that the river, swollen by rain, was at least thigh deep and unsafe to cross without a rope and pole to steady themselves. Their cache of food and their yellow inflatable raft were cached on the other side of the river near Last Lake. Fortunately, Averill Thayer of the Bureau of Sport Fisheries and Wildlife flew over in a floatplane at that time. Through signs they communicated their plight to Thayer. Thayer picked up their supplies and deposited them on a sandbar on Brown's side of the Sheenjek after land his plane on the river two miles downstream from Last Lake. They felt the "raging current" too threatening for their meager swimming abilities so they did not launch their raft. About midnight the water stopped rising and in the midafternoon of the 24th they began to travel downriver. "We drifted along with the current, spinning around in it, bouncing over the riffles, swirling by the water-gouged banks." For the next four days they floated intermittently to Lobo Lake, but Brown's account gives no observations of the river. From Lobo Lake they flew to Fairbanks. 273/

Government interest in the recreational potential of the river increased after the Alaska Native Claims Settlement Act of 1971 named the Sheenjek as a potential addition to the Wild and Scenic Rivers System. The National Park Service's file on developing this designation for the river contains a number of documents describing the Sheenjek. Wilbur Mills, a member of the Alaska Committee of the Seattle organization called "The Mountaineers," prepared a preliminary draft in March 1971 of "A Proposed Addition to the Arctic National Wildlife Range." It

is unknown where or how Mills got his information. He stated that the Sheenjek below Last Lake was navigable by canoe, kayak, or inflatable boat. Above Last Lake, people could hike to the peaks of the Brooks Range. 274/

On June 13 and 16, 1972 the Alaska Task Force of the Bureau of Outdoor Recreation conducted aerial observations of the Sheenjek which, along with literature research, led to a preliminary report on the Wild and Scenic River potential of the river. It stated that the fifty-five miles of the river's valley above Lobo Lake was an alpine province formed by the south slope of the Brooks Range. At its glacial headwaters and downstream twenty-five miles the report stated that the Sheenjek had a steep gradient and "numerous rapids, riffles and boulders." Below this the river entered an area of lakes and muskeg meadows. "It loses much of its braided character and becomes wide and flat with numerous islands lying between well defined channel banks." After flowing twenty miles through this area the river narrows and becomes more swift. The "river splits repeatedly into two or more channels and oxbows, swampy muskegs and overflow areas become common." The report goes on to state:

> Near Monument Creek the river leaves the swampy muskeg area and flows through an area of numerous gravel bars along a well drained valley floor. In this area the river is swift and braided with broad expanses of open sand and gravel bars. About 15 miles below the mouth of Koness river, the Sheenjek leaves this gravel bar area and enters the upper reaches of the Yukon flats. In the remaining 80+ miles of the river, the Sheenjek slows becoming increasingly placid and wide with cut banks of peat and silt. In this "flats" area the river shows the strong meander patterns characteristic of major Yukon flats

> tributaries. During normal summer water conditions, there are no major rapids but numerous riffles and pools may be found from the piedmont province upstream. 275/

The anonymous report writer considered the water to be Class I in difficulty with occasional rapids of Class II difficulty and that the Sheenjek was canoeable from Last Lake. Above this lake the report stated that "the rugged peaks of the divide are easily accessible by foot." The report estimated the average current at five to seven miles per hour. 276/

In discussing access to the Sheenjek, the BOR report noted that there were no established roads or trails to or within the study area. It claimed that access to the Sheenjek's upper reaches was "almost exclusively by air or overland by foot" and that "the lower reaches of the Sheenjek (mouth to approximately river 70) is accessable [sic] by power boat during high water but only with considerable dragging over gravel and sand bars." 277/

Roger Bolstad, a wildlife biologist for the BLM, wrote a memorandum to interested BLM managers and recreation specialists on July 5, 1973 about a canoe trip he and five others had taken down the Sheenjek in June. The trip was part of the Wild and Scenic Rivers study mandated by ANCSA. Others in the group were Mike Wright of the Bureau of Outdoor Recreation, Bob Stevens of U.S. Bureau of Sport Fisheries and Wildlife, Carroll Romberg of the Alaska Water Laboratory, and June Weinstock and Barbara Winkley, both of the Alaska Conservation Society. 278/

The six people and three seventeen-foot canoes were flown from Fort Yukon on June 13. At 11:30 p.m. their turbo Beaver landed on Last Lake where they

spent the first day. At 9:30 a.m. on the 14th the party left the lake via a "small narrow outlet channel." After traveling about three-fourths of a mile they reached an unnamed lake covered with aufeis ice. They dragged the canoes over the ice for 1.5 miles where they reached an open channel flowing into the Sheenjek. Bolstad noted that the river carried deposits of sediment from glacier melting and runoff. They averaged about four miles on hour on the river and stopped after going fifteen miles to camp for the evening. 279/

On the next day the group started at 10 a.m. Bolstad considered the water to be Class I until a point about five miles below Lobo Lake where 200 yards of Class II water was encountered. The river then was high. Consequently most of the boulders were under water and the rapids were easy to negotiate. However, Bolstad wrote that "during low water, . . . care should be exercised through this stretch of river." That evening they camped near Table Mountain. 280/

Bolstad made few comments on the Sheenjek downriver from this point until he reached the stretch below the mouth of the Koness River. On the 16th after canoeing ten miles, they passed the unnamed stream (T. 14 S., R. 37 E., Umiat Meridian) which serves as an outlet for Sheenjek Lake. Bolstad wrote that this stream was hard to find because it was small and its banks were covered with willow and alder thickets. They spent that evening about seven miles below this unnamed tributary. On the next day they traveled approximately thirty miles to a point five miles below Monument Creek. Bolstad noted that the Sheenjek was braided and that there were an increasing number of sweepers. They floated twenty-five miles the next day to the mouth of the Koness. On the 19th they helicoptered to the headwaters of the Koness to examine its Wild and Scenic River potential. 281/

They recommenced their canoe trip down the Sheenjek on June 20th, covering about thirty miles that day. Bolstad observed that the water was clearer than it had been upstream but still was "murky." He also wrote that below the vicinity of Snow Mountain the river was "broad and braided." On June 21st the party traveled approximately thirty miles in seven and one-half hours and camped about twelve miles below Outlook Point. Of that day, Bolstad observed, "The river was now large with numerous sweepers." He saw "abundant" gravel bars servicable as campsites. The group floated seven hours and covered about twenty-eight miles on the summer solstice. They noted that the 1956 USGS Fort Yukon quadrangle D-1 map no longer accurately reflected reality as "numerous river channel changes had occurred." The canoeists found two trappers' cabins on the river near Gailey Lake (T. 23 N., R. 16, E., Fairbanks Meridian) which were in good condition and supplied with trapping equipment. That night they camped about five miles below Shuman Lake (T. 24 N., R. 16 E., Fairbanks Meridian). On the 23rd they floated twenty-eight miles in seven hours. "Strong southerly winds made portions of the river difficult paddling." That evening they camped about a half mile upstream from where the Sheenjek left the Fort Yukon Quadrangle D-1 map. The next morning an hour and fifteen minutes after starting downstream they reached the Porcupine River and from there canoed to Fort Yukon. 282/

In late July 1981 another government party examined the Wild and Scenic River potential of the Sheenjek. Averill Thayer and Roger Kaye of the U.S. Fish and Wildlife Service and Jim Morris and Ross Kavanaugh of the National Park Service flew into Last Lake on the evening of July 23rd. Their two seventeen-foot aluminum canoes were brought in on two separate flights from Fort Yukon. They portaged their gear a quarter mile across wet ground and tussocks to a gravel bar on the Sheenjek. 283/

They began downriver at 9:30 a.m. on the 24th. It had rained the previous night and continued through most of the morning. According to Jim Morris, "the river was running high and silty. The river bank is characterized predominantly by a low (10 ft.) cut bank. There are occasional small gravel bars." After travelling about twenty-five miles in five and one-half hours, they camped at a site below the mouth of Old Woman Creek. It rained hard as they began to set up camp. 284/

The next day the foursome canoed about thirty-two miles in six hours. The Sheenjek had risen about eight inches during the night and was noticeably siltier than on the 24th. The current, Morris wrote, was "very fast. . . . Near the camp [it] was over 5 mph." They encountered the "first set of notable rapids" near Table Mountain where the current was ten miles per hour or faster. These were about a half mile long. Morris also wrote that "elsewhere on the stretch of river travelled today, particularly during the latter part of the day, the current was consistently fast (8-10 mph)." The second set of rapids were approximately fourteen miles below the first and extended for almost two miles. These were easy to navigate by staying close to the right bank. Morris rated both sets of rapids as Class II during high water. Generally during this second day, the river was fifty yards wide. Morris noted occasional high cut banks and some islands. 285/

On the morning of the 26th, the group found that the Sheenjek had dropped a foot. The current still was swift with many Class I rapids and some sweepers. Morris noted that below the East Fork the river broke into many channels and cautioned that "during this high water stage boaters must be careful to avoid going down any of the new channels which meander through the forest and where potential sweepers might be treacherous." The group stopped in a vain

effort to locate the mouth of Eskimo Creek. Morris believed they failed to locate it because the high river water spilled over into the creek giving it the appearance of a river channel. They stopped several miles below Eskimo Creek after traveling about twenty-four miles in three and one-half to four hours. 286/

On the 27th they traveled thirty miles in four to four and one-half hours. They found the river eight to ten inches lower than the previous day but it was still "very silty" and "very fast." It resumed raining in the afternoon shortly after they began to make camp at the mouth of the Koness River. Morris described the Sheenjek in this stretch as "very braided with sweepers and piles of trees, logs, and brush in the river." 287/

The next day the foursome began travel from near the mouth of the Koness. Although he said the river had dropped about eighteen inches overnight, Morris still found the Sheenjek "relatively high and fast (probably 6-8 mph)." Not far below the Koness the group encountered three people travelling upriver in single kayaks. They had begun their river travel at Circle, descending the Yukon and ascending the Porcupine and Sheenjek. They planned on continuing up the Sheenjek to Kongakut Pass and paddling down Kongakut River to the Arctic. They told the Wild and Scenic River group that the high water was causing them unexpected delay. Morris wrote that he and his fellow downriver travellers thought to themselves that the high water would give them even greater trouble farther up the Sheenjek. Morris later learned that the kayakers succeeded in making it to the Arctic and did kayak an unspecified distance up the Sheenjek beyond Last Lake. 288/

Later on the 28th Morris began to notice changes in the river character before entering the Yukon Flats. He wrote that the gradient "appears much less."

The river also became wider and quite braided and the gravel bars were larger than most of those upriver. Trees and tundra were sloughing off from the high cut banks into the river. The canoeists encountered moderate head winds. At 6 p.m. they stopped for the night above the mouth of Thluichohnjik Creek after traveling thirty-two miles in about four and one half hours on the river. 289/

On the 29th the four men fought off moderate winds and occasional strong gusts as they left the piedmont behind and entered the Yukon Flats. They passed Outlook Point and travelled through a thick spruce forest. Morris recorded that there were broad gravel bars and an increased number of log jams. He also observed that the river was "much more braided here than the topographical map indicate." He stated that the current was four to five miles per hour. In about six hours on the river they travelled thirty miles. 290/

The men woke on the 30th to find that the river had dropped about a foot in the night and that the water was noticeably clearer. The current had slowed to three or four miles per hour. Paddling was much more passive here, Morris wrote, because there was no need "to maneuver in fast water among rocks, sweepers, and numerous channels." Even the "many" log jams were easily avoided. Still the lower river was active in cutting new channels, chewing away at the forest, adding new sweepers, and moving log jams. The party passed a couple sets of trapper cabins visible from the river. By canoeing five and one half to six hours they travelled twenty-eight river miles and camped near Shuman Lake. 291/

The 31st was their last day on the Sheenjek. The river remained at the same level overnight. The group floated thirty-six miles to the river's confluence with the Porcupine in seven hours. Morris observed:

> This part of the river is mostly contained within a single channel about 75 yards wide and the current has slowed to about 2 mph. The last few miles of the Sheenjek were affected by high water from the Porcupine River. There was no perceivable current in the Sheenjek and the water level was well up into the shore shrubbery.

On the lower Sheenjek the foursome passed a couple of trapper cabins and some burned areas. They met two floaters from Maine. They had put in about four weeks earlier near Kongakut Pass and traveled down the Sheenjek in an inflatable canoe. The next day the Wild and Scenic River group traveled down the Porcupine. On the 2nd they reached their take-out point near the mouth of the Sucker River. Although unstated, they presumably reached Fort Yukon by a ten-mile road from this point. 292/

On January 14, 1982 Roger Kaye, an outdoor recreation planner with the U.S. Fish and Wildlife Service for the Yukon Flats National Widlife Refuge, completed a report on past, present, and potential future use of the Sheenjek River below the mouth of Monument Creek. This was sent to Jim Morris for his National Park Service investigation of the Sheenjek's potential as a Wild and Scenic River. In a cover letter to Morris, Kaye stated that the report's brevity (two-pages) was primarily due to a lack of reliable information on current uses. Kaye wrote that figures given in the report were a general consensus of the

most knowledgeable users of the river he had been able to contact in Fort Yukon. The people he contacted were: Richard Canal, Joe Firmin, James Peter, Bill Russell, John Peter, Susan Peter, and Jim Wells. 293/

Those he contacted supplied information on both past and present use. Oral histories pointed to the Sheenjek as important to Yukon Flats Indians as a pre-contact hunting and fishing area and a travel and trade route. According to Kaye, whites introduced a new life-style based on trapping which Natives quickly adopted. 294/

Kaye wrote that trapping remained the predominate activity along the lower Sheenjek. He stated that at the time he wrote two families lived in trapping camps on the river for at least half the year and that another family lived all year about twenty miles from the river, but maintained a trap line camp on the Sheenjek. Moreover, "a few individuals and partners" spent most or all of the winter on trap lines on the river. Others who lived in Fort Yukon had shorter traplines along the river to which they flew or snowmachined to every week or two during the winter. The Fort Yukon residents told Kaye that while there were probably as many trappers on the river as in the past, the intensity of effort and the annual fur harvest was less. Kaye believed that trapping would remain the primary use of the lower Sheenjek. 295/

In his January 1982 letter, Kaye stated that at that time hunting and fishing also occured on the Sheenjek. Most hunting was for moose, though black bears and, very infrequently, grizzlies were taken. Local hunters indicated to Kaye that twenty to twenty-five Fort Yukon people in seven to twelve parties traveled up the Sheenjek in flat-bottomed boats with twenty-five- to seventy-horsepower outboards every fall to hunt. They killed ten to sixteen moose. The two

families living on the river also hunted moose, caribou, and other game. Hunters from outside the area hunted moose on the Sheenjek, gaining access by bush aircraft or riverboats powered by either prop or jet motors. Kaye wrote that there were few if any hunting guides operating on the lower Sheenjek. Fishing was not an important attraction of the river; most was done incidentally to recreational floating or winter trapping. There were no fish camps on the river. Kaye believed that the amount of hunting and fishing on the lower Sheenjek would at least remain the same, if not increase. 296/

Except for those engaged in hunting and subsistence activities, other river use was limited to float boating. Fort Yukon air charter operators estimated they had flown twenty-five to thirty floaters into Last Lake for each of the previous few years. Kaye considered that fewer than this number of floaters accessed the river by other aircraft. He also thought that in the future "river floating via canoe, kayak and raft is the activity most likely to increase substantially. 297/

Koness River

The Koness River, the major tributary of the Sheenjek, was described by John B. Mertie, Jr., a geologist who led USGS teams which mapped the lower and upper portions of the river in the summers of 1926 and 1927. These expeditions were made to survey the Sheenjek and East Fork Chandalar drainages. The 1926 four-man party took two Peterborough canoes from Fort Yukon up the Sheenjek well past the mouth of the Koness. The 1927 four-man group arrived at Arctic Village by pairs; one twosome taking sleds from Fort Yukon in the winter and the other taking a canoe up the Chandalar. From Arctic Village the men hiked over and mapped the area north and east of the settlement. In neither year is there a record that the men used watercraft on the Koness.

Rather they charted part of its course from their observations in surveying the surrounding terrain. Mertie wrote that the river, "though not a large stream at normal stages of water, drains a large and diversified area. . . . In its lower course Koness River is a meandering stream, bordered by numerous sand bars, and is pretty well confined to a single channel but flows in a swampy valley much like that of the Sheenjek." 298/ Farther upstream the river split into a number of tributaries "which flow for the most part in wide, open valleys bordered by rolling hills." 299/

There is documented evidence of only a handful of structures in the Koness drainage excluding those near Old John Lake. A map accompanying Mertie's report noted a cabin owned by a man named Franks. 300/ The USGS map revised in 1966 marked three structures at this location labelled "John Franks' cabin" (T. 16 S., R. 33 E., Umiat Meridian). The USGS also marked four structures in the middle part of the drainage which Mertie's parties had not reached. One was at the confluence of Vanticlese Creek and the Koness River and three were located near the head of an unnamed creek in T. 34 N., R. 15 E., Fairbanks Meridian. No information has been found on the origins or use of any of these buildings. The maps noted no trails to the structures. 301/

On June 13 and 16, 1972 the Alaska Task Force of the Bureau of Outdoor Recreation conducted aerial observations of the Koness as part of its investigation of the Wild and Scenic River potential of the Sheenjek basin. An unsigned report with a cover letter dated May 28, 1973 based on it and a literature search stated that at its headwaters the Koness was a "typical braided stream of steep to moderate gradient" which about thirty miles from its headwaters became a meandering river with a moderate gradient and a cut bank channel. It flowed through a less steep portion of the southern Brooks Range piedmont

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than the Sheenjek and thus had a "slightly more meandering and more of a marsh type of habitat than the Sheenjek in this province." It stated that the Koness was much smaller than the Sheenjek and that it "does not appear canoeable except below its confluence with Vanticlese Creek during all but the earliest part of the recreation season." The report described the water as Class I with occasional rapids in the Class II category of difficulty. The BOR's study found that the Koness did not "possess those same values that qualify the Sheenjek for inclusion in the national [Wild and Scenic Rivers] system." Precisely what these "values" were was not stated. 302/

As a result of this recommendation the BOR seems to have made only one more study of the Koness. As part of a six-person float trip down the Sheenjek in June 1973, a helicopter picked up the observers who had floated down the Sheenjek from Last Lake to the mouth of the Koness. The helicopter on July 19th took the observers (Mike Wright of BOR, Bob Stevens of U.S. Bureau of Sport Fisheries and Wildlife, Roger Bolstad of BLM, Carroll Romberg of Alaska Water Laboratory, and June Weinstock and Barbara Winkley of the Alaska Conservation Society) up the Koness. Roger Bolstad's notes on the expedition stated that the "upper Koness was a rock garden and did not appear desirable as a good canoe river." 303/

Old John Lake

Despite its relatively large size, little information on boat use of Old John Lake has been gathered. USGS geologist John B. Mertie, Jr. led a mapping party in the area in 1927 which hiked on the lake's western and northern sides. He marked one cabin on an unnamed creek flowing into the northern end of the waterbody. 304/ The USGS 1956 map of the area, which was revised a decade

later, showed a cabin at this same location (T. 15 S., R. 31 E., Umiat Meridian). In addition, the USGS map marked a cabin on the southwest shore of Old John Lake (T. 16 S., R. 30 E., Umiat Meridian). 305/

Anthropologist Robert McKennan, who conducted an ethnographic study of the Chandalar Kutchin in 1933, stated that Natives hunted and fished in the lake area and that there was a caribou fence north of Old John Lake. However, McKennan could provide no further information as he had not visited the waterbody. 306/

Tom Taylor, a mapping expert with the USGS in Alaska since the mid-1950s, stated that the Geological Survey landed supplies on Old John Lake for field work it was to conduct. These were landed during the winter and pulled from the ice to the shore before break-up. Taylor did not state in which year this incident occurred. 307/

The BLM garnered easement recommendations in relation to its conveyance of the former Venetie Indian Reserve to the Natives of the area following the enactment of the Alaska Native Claims Settlement Act. One easement proposed by BLM was for a trail from the Reserve to the lake. The justification for the trail was that the lake had "highly significant recreational fishery values." 308/ The Federal-State Land Use Planning Commission disagreed with this finding on February 14, 1979, stating that alternative access to the lake and nearby public lands was available. 309/ In its "Final Easements for the VENETIE INDIAN CORPORATION and NEETS'AI CORPORATION (Artic Village)" BLM on September 19, 1979 wrote that:

This lake is regarded as having highly significant recreational fishing values. Sportsfishing for lake trout and grayling is very popular and as a result, public utilization of this water body and surrounding resources is moderate to heavy during the spring and summer months of the year. Floatplanes serve as the most common mode of transportation for access to Old John Lake. This water resource will facilitate continued public access to public lands northerly and easterly from the former reserve. 310/

Black River

As with the smaller drainages to its south, information on the Black River and its Salmon Fork was first obtained through the work of the boundary commission parties. In 1909, the Canadian attache to an American surveying party chartered a launch at Dawson with the object of making a reconnaissance trip up the Black River to determine its suitability as a supply route to the crews on the boundary. The launch was twenty to thirty feet long, gasoline-powered, and driven by a propeller; it carried four or five men and a canoe. It is unknown precisely how far the launch went up the river, but the evidence suggested that it was not far. According to the Commission's report, the Canadian attache demonstrated that the river would not be a practicable route of travel unless it was found to be almost impossible to transport supplies overland from the Yukon River. The river was reported to be shallow in many places, and useable by powerboat only during a short period immediately following the spring break-up of the river ice. 311/

Cognizant of the difficulty of navigating the Black River, a Canadian party in 1911 used the specially-constructed Aurora to ascend it. The Aurora was forty

feet by nine feet and was equipped with a three-cylinder twenty-four-horsepower gasoline motor driving a stern paddle wheel. It also had a power capstan for "tracking" upstream. The boat drew twenty-two inches of water. Pushing a forty-foot barge, the Aurora could transport seven to twelve tons depending on river conditions. The boat began up the Black River on June 21. However, by late June, the high water of the spring was rapidly falling. The Aurora was halted by low water about two hundred miles upstream from the Porcupine, probably somewhere on the Salmon Fork. The supply party retreated to the Porcupine and did the best it could to transport boundary markers and supplies overland from Rampart House, on the Canadian side of the border. 312/

In 1912, the Commission made another attempt to transport material on the Black River and Salmon Fork to the boundary line. In late May, the launch Falcon went upstream about 275 miles. Until June 19, poling boats relayed about three tons of supplies the remaining thirty miles to the line. According to James D. Craig, head of the Canadian crew, "These supplies could have been taken all the way to the line by launch, except for the fact that owing to the very light snowfall of the mild winter of 1911-12, the period of high water in the spring was not very much shorter than usual, but the water never reached anything like its usual high spring stage." Pole boats were also used near the boundary line to move the surveying party across the Salmon Fork and on June 26 a raft was built to cross the unusually high waters of Grayling Fork. 313/

In the second half of August 1939, Gerald FitzGerald and two assistants used a Peterborough canoe and a twenty-two-foot boat with a twenty-two-horsepower engine to navigate over one hundred miles up the Black. FitzGerald described the first seventy-five miles as easy boating in normal water stages for vessels drawing two feet or less but cautioned that even in this lower stretch there

were several bars and riffles which shallow draft boats would find difficult at low water. He observed that Natives used small boats to go up to Chalkyitsik, though they frequently portaged to avoid large river bends. Thirteen miles above the Native village was Deadmans Riffle which FitzGerald characterized as "impossible to cross . . . with a loaded boat without lining, poling or dragging for a short distance." Finally, FitzGerald learned from the Indians that "several large tributaries" joined the Salmon Fork from the east and that some of these "are said to be navigable by a river boat for long distances at normal water." 314/

The most extensive chronicle of twentieth century use of the Black River drainage is Born On Snowshoes, by Evelyn Berglund Shore. In 1928 when she was a child the Berglund family entered the area to trap. Together with three aged white trappers named Pete Nelson, John Roberts, and Bill O'Brien, the Berglund family were the only white residents on the upper Black River. Pete Nelson's home was located some distance below Salmon Village on the right bank of Black River (twenty-eight miles downstream according to a USGS map). 315/ John Robert's cabin was located on the Salmon Fork, about half a mile above Runt Creek. Bill O'Brien's cabin was located some twelve miles upriver from Robert's cabin. The Berglund family resided in the home of John Roberts. Roberts maintained three trapping cabins on Runt Creek, two on Drifting Snow Creek, two more upstream from the home cabin on Salmon Fork, one downstream on the fork, and one between Drifting Snow and Racquet creeks. All of these were connected by trails.

In 1928, the Berglunds met Roberts, Nelson, and O'Brien at Fort Yukon, and decided to accompany the old trappers to Black River. They loaded their supplies and outfit into Robert's boat, a thirty-four-foot launch powered by a 15-30 Universal inboard engine, and on July 1, left Fort Yukon for the Black River.

Roberts towed a scow and his thirty-foot poling boat, as well as the boats of Nelson and O'Brien, who usually accompanied Roberts on his annual journey to Fort Yukon for supplies. On this occasion, the party was made up of nine people and numerous dogs on five boats.

After a week and an estimated 160 miles of travel, the party reached Pete Nelson's cabin. Leaving the trapper's boat and supplies at the cabin, the party continued upstream, and eventually reached the confluence of Salmon Fork and Orange Creek (Black River). Shore recalled that the country was quite different here. On the Salmon Fork, the cutbanks were covered with spruce trees as on the Porcupine River, but there were large stands of white birch on higher grounds, and the wide gravel bars were bordered by willows and cottonwood. Near the mouth of the Salmon Fork, the rolling hills of spruce, aspen, and birch could be seen in the distance. Farther upriver, the ridges became higher and rocky bluffs became numerous. The current was swift, and drift piles along the banks were more frequent.

The trip to the mouth of Salmon Fork was apparently uneventful, since Shore did not record any difficulties. On the Salmon Fork, however, the party was forced on several occasions to make camp on the river bank or bars for extended periods of time, awaiting high water so that they could navigate shallow stretches. One day the party came upon a shallow stretch which they could not navigate. An attempt was made to pole the scow, then loaded with three or four tons of supplies, through the shallow water; but the effort failed when the scow was damaged by a submerged log. Eventually the water rose and, having repaired the scow, the party continued upriver in the launch with the scow in tow. Shortly the party came upon another short stretch, this one well known to Roberts as he indicated that they were only twenty miles from his cabin. This

time the party was forced to camp on a gravel bar for two weeks, patiently waiting for rain and higher water. The rains finally came, raising the water level, and the party successfully navigated the river to Robert's home. Taking advantage of the high water, Roberts took Bill O'Brien in the launch with O'Brien's boat in tow to his cabin.

Upon his return, Roberts assisted Shore's father in constructing an addition to the old trapper's cabin which was to serve as the family's home. Evidently the cabin was located near the river bank, for Evelyn Shore recalled that after a three-day period of heavy rainfall, the river left its bank and flooded the cabin to a depth of one foot. In September, Roberts and several members of the family went on a moose hunting trip in the poling boat. They lined the boat up Salmon Fork, traveling six miles the first day and some unknown distance the second day when they bagged a moose. Some of the meat was stored in a cache, and the remainder was taken down the river in the poling boat to Roberts' cabin, which they reached in two days.

After a winter of trapping and hunting on the Salmon Fork, Roberts and the family returned to Fort Yukon with the opening of navigation in the spring. After about three weeks at Fort Yukon, where they visited friends and purchased supplies, they returned to Salmon Fork, with Pete Nelson. However, Shore's father remained at Fort Yukon, where he died after a long illness. 316/

For the Berglunds, subsequent years on the Black River were governed largely by routine. Mrs. Shore succinctly described their lifestyle as follows: "In the next twelve years our lives were an unvarying routine: up the river in the summer; a fall of woodcutting, meat-cutting, toboggan-building, berry picking; a long, hard, cold winter of running the traplines; a spring of beaver trapping,

wolf skinning, closing-up; a fast trip downriver; a brief few weeks in Fort Yukon, and up the river again." The trips were made in the launch with the scow in tow. Besides Roberts, the Berglunds, and numerous dogs, the launch could carry twenty-eight cans of gasoline on the upriver trips. The scow was used to haul supplies, sometimes amounting to a ton. Pete Nelson always accompanied Roberts and the Berglund family on the upriver trips with his poling boat. 317/

The journeys from Fort Yukon to the Salmon Fork were long and difficult, especially on the Black River where shallow water frequently forced the traveler to make camp for days, sometimes weeks, until rain raised the water level. Shore did not record how long these journeys took, or where their camps were usually established. She did note, however, that they commonly camped on Twentymile Bar, a gravel bar on the Black River about twenty miles from the Porcupine River. In addition, temporary quarters were also maintained near a bluff, (probably Pink Bluff) located about a mile by land or two miles by river from their cabin. The river ran swift and forcefully against the bluff. Consequently Roberts and the Berglund family generally relayed their supplies in small lots from the bluff to their cabin rather than risk the loss of supplies with an upset boat in the swift water. It usually took six trips in the motor boat to relay the supplies around the bluff. When the water was low, four dogs were used to track the poling boat loaded with supplies around the bluff, while the trappers lined the motor boat and scow over the riffle. The boats were usually left in a small slough just above the big bluff. The poling boat would be used at times for moose-hunting trips up the Salmon Fork. 318/

The trips from the Salmon Fork to Fort Yukon were in contrast quite short. The trappers always started downriver as soon as the river was clear of ice

and the water was high. Evelyn Shore recalled that the trip to Fort Yukon, which she estimated to be some 280 miles from their home, seldom took more than three days. One year, she recalled, they descended the Salmon Fork and Black River in four hours. She was surely exaggerating in this case. Generally, they required about five hours to reach Pete Nelson's cabin, where they spent the night. On the second day, they usually made camp on Twentymile Bar. By early afternoon on the third day they would reach Fort Yukon. 319/

Evelyn Shore left the Salmon Fork in 1941, and apparently never returned. Her family and John Roberts moved to Fort Yukon a year or two later. Pete Nelson reportedly committed suicide at his cabin rather than starve to death after breaking his leg. Bill O'Brien apparently moved east of the International Boundary where his trapline was located in 1938, shortly after his cabin on the Salmon Fork was washed away by the river.

In addition to some of the cabins on a map in Evelyn Berglund Shore's Born on Snowshoes, USGS maps produced since 1956 show three cabins (one in ruins) at the confluence of Bull Creek and Grayling Fork and a cluster of five cabins at the mouth of Grayling Fork. Three other cabins are on the left bank of the Black at the eastern edge of T. 16 N., R. 25 E., Fairbanks Meridian. A pair of cabins are on the river in T. 17 N., R. 24 E., Fairbanks Meridian. A solitary cabin lies in T. 19 N., R. 24 E. Fairbanks Meridian. Besides Chalkyitsik and the abandoned settlements of Old Salmon Village and Salmon Village, Nelson's Cabin (T. 21 N., R. 22 E., Fairbanks Meridian), Doghouse Cabin (T. 21 N., R. 20 E., Fairbanks Meridian), Thompson Cabin (T. 22 N., R, 17 E., Fairbanks Meridian), three unnamed cabins (T. 22 N., R. 16 E., Fairbanks Meridian, and

T. 21 N., R. 15 E., Fairbanks Meridian) and the fish camp of Dahteh (T. 21 N., R. 22 E., Fairbanks Meridian) lie along the Black River below the Salmon Fork. 320/

In 1958 the Army Corps of Engineer's Terrain Study of the Yukon Flats District, Alaska noted "Deadman's Riffle," a shoal above Chalkyitsik, as a major barrier to river use. Below this shoal the river was normally navigable by small boats. Those able to overcome this barrier to river traffic found navigation in low water stages above Deadman's Riffle to require much lining through riffles and waiting for the water to rise. 321/

More recently, there have been at least three trappers who have spent their winters on the upper Black River and on Grayling Fork. Fred Thomas' headquarters are located at the mouth of Grayling Fork. Albert Thomas of Fort Yukon and "the Henry family" of Chalkyitsik are located on the Grayling Fork, one of them near the mouth of Bull Creek. All three trappers charter airplanes to travel to and from their cabins. Fred Thomas transports up to half of his outfit to his headquarters by airplane in the winter, and uses a twenty-two-foot aluminum riverboat to transport the remainder. He usually takes one to three loads of supplies up the river by boat each summer. 322/

The limits of navigation on the Black River, Grayling Fork, and Salmon Fork have been summarized by Fred Thomas of Fort Yukon. Writing to the BLM on the subject of easements in 1976, Mr. Thomas reported that one "can almost always get as far as Grayling river with a light boat. Of course if it's a dry summer, the river gets pretty low." With a good stage of water, one can also ascend the Grayling Fork as far as Bull Creek, and the Black River as far as Wood River. Beyond the mouth of Wood River, "it's not so good." Although

he had never been on the Salmon Fork, Mr. Thomas reported that in the past trappers ascended the river each fall to hunt moose. According to these hunters, Mr. Thomas said, the Salmon Fork is a swift river with "lots of snags and drift pile[s]." 323/

The people of Chalkyitsik have long used the Black River and its principal tributaries as routes of travel, and as a result acquired a wealth of invaluable knowledge about the rivers and their unique characters. Traveling with the Indians from 1969 to 1971, Richard K. Nelson was struck by the extent of their knowledge, writing:

> But despite its changes, the Indians who have traveled up and down the Black River all their lives know exactly where to expect riffles, how to locate river channels, and just how long it will take to get from one place to another. I have seen them navigate flawlessly by dim moonlight, when the usual indicators were lost in darkness. An important part of navigation is long-term experience in the area, so that a knowledge of the local 'landscape' is acquired. 324/

In the summer Chalkyitsik residents in the 1970s made regular two-day trips to Fort Yukon to visit relatives, seek employment, or make connections to air flights to Fairbanks and other Alaskan cities. In the early part of the twentieth century a Chalkyitsik trader had supplies tracked upstream to town. Supplies for the Black River's school came by boat to Chalkyitsik, though low water prevented them traveling farther upriver as intended. More recently Hunn Navigation has serviced Chalkyitsik. 325/

Inhabitants of Fort Yukon and Chalkyitsik periodically ascend the Black River to hunt and trap. According to Nelson, some men from Chalkyitsik ascend the Black River or Salmon Fork as early as August but usually in September for the purpose of hunting moose and bear. Most of the hunters take their moose in areas at least thirty-five miles up the Black River or more than a day's travel from Chalkyitsik. Most hunting is done on the Salmon Fork for a distance of thirty-five to forty miles, and about the same distance on the Black River beyond Salmon Village. In the spring, hunters from Chalkyitsik ascended the Black River to cut dry spruce for firewood, though most wood is collected during the winter. 326/

Black River Natives have used the traditional birch bark canoe which later was adapted to use canvas instead of bark for the skin. Until the 1940s these Indians also used moose skin boats built in the field to transport game meat for short distances. In more recent times, most travel on the Black River has been done in typical riverboats of interior Alaska. Inboard and outboard motor-powered boats were first used on Black River on a customary basis in the late 1920s; but it was not until the 1960s that many Indians possessed these craft. According to Nelson, about three such boats were available at Chalkyitsik in the late 1950s. Twenty years later, there were seventeen such boats at the village. These wooden boats ranged in length from eighteen to twenty-four feet, and in width from four to five feet. The boats had flat bottoms and square bows, and were powered by outboard engines (fifteen to twenty-five horsepower) mounted on "lifters," devices designed to lift engines to a desired level whenever crossing shallow places. As many as five full-grown moose and a calf could be carried in a twenty-four-foot riverboat, but usually three or four were considered a full load. Occasionally an empty boat was towed along upriver to increase the carrying capacity. 327/

In the 1970s, the Indians began to purchase aluminum riverboats. In early July 1979, Jack Mosby of the U.S. Heritage Conservation and Recreation Service (HCRS) observed three aluminum riverboats, all ranging in length from twenty to twenty-four feet, at Chalkyitsik. There may have been more of such boats, for many of the men were at the time away on firefighting crews near Big Delta. Also, Mr. Mosby met Fred Thomas twice on the Black River. The first time was on a gravel bar in Section 32, T. 22 N., R. 20 E., Fairbanks Meridian, on July 3 when Thomas was bound for his trapping headquarters on the Grayling Fork in a heavily loaded boat. It had taken Thomas three hours to reach this point from Chalkyitsik. By then he had used thirty-nine gallons of gasoline on the run from Fort Yukon. Mosby again encountered Thomas when the latter was returning to Fort Yukon with a load of fifty-five gasoline barrels. On both occasions, Thomas and a Mr. Johnson were using a twenty-four-foot aluminum boat equipped with a twenty-five-horsepower Evinrude engine on a "lift."

While boat traffic on the middle and upper Black River is primarily related to hunting and trapping activities, there is a possibility that recreational boating may develop in the future. In 1979, the U.S. Heritage Conservation and Recreation Service sent a small party to study the Black River and make recommendations as to its potential classification as a Wild and Scenic River. On June 26, 1979, a hydroplane landed the group on a small, deep, horseshoe-shaped lake in Section 34, T. 18 N., R. 24 E., Fairbanks Meridian. The party consisted of Jack Mosby and JoAnn Dunec of HCRS and Lon Swenson and Roger Kaye of the U.S. Fish and Wildlife Service. Crossing the short portage, about 150 feet in distance, to the river, the party found the water in the river to be very high, about five feet deep. The river was seventy-five to 100 feet wide, and there was little current. According to Fred Thomas, whom Mr. Mosby met

on the river below Nelson Bluff, the water was the highest he had seen in three years. However, on the first day of the trip, Mr. Mosby recorded in his journal the observation that the water probably had been six to ten inches higher after the spring break-up of the river ice.

Descending the Black River in two seventeen-foot Grumman canoes, the party enjoyed high water and a sluggish current during the twelve days that they were on the river. For the most part the trip was uneventful. Mr. Mosby described the river as confined, monotonous, and not very interesting. Dense vegetation lined the high banks, making it virtually impossible to obtain a view of the landscape. Occasionally, they saw moose, beavers, eagles, and other wildlife, as well as forest fire burns and cabins used by trappers during the winter. They saw the first cabin, the one used by Fred Thomas during the winter, on the second day of their trip. The cabin was located just below "The Reef" (T. 18 N., R. 24 E., Fairbanks Meridian).

On June 29, they arrived at the confluence of the Black River and Salmon Fork. The party attempted to reach the Salmon Fork by way of the southern channel, but found it blocked. According to Mr. Mosby, the Black River at the confluence of the Salmon Fork is about 300 feet wide with high cut banks and a bottom of small gravel. The water was about five feet deep, and the current averaged between one to two miles per hour in short stretches.

On the following day, they paddled up the shallow slough to the site of Old Salmon Village, where they found the remains of eight cabins as well as a cemetery. Mr. Mosby believed that the village site was not usually accessible, as the entrance to the slough was only twelve inches deep. Continuing downstream they stopped briefly to take a photograph of the one remaining

cabin at Salmon Village and later visited a relatively new cabin, then unoccupied, which was owned by Paul Thomas. About a mile further, the party met two men with an airplane. Due to a lack of fuel they were on a gravel bar, apparently waiting for another airplane to arrive with a load of gasoline. Passing Nelson Bluff on July 1, the party encountered numerous gravel bars, some extending in places almost across the river. Several cabins were seen. One cabin, evidently occupied in the 1940s, was in danger of falling into the river as a result of the river cutting into the bank. On July 2, the party stopped at Dahteh, an old fishing camp, and found a cabin recently used by a trapper. Several high bluffs were passed, and the party noticed a slight increase in the river current. Mosby's group reached Chalkyitsik on July 4. Four days later, the foursome paddled against the current up the north channel of the Black River to the Porcupine River. Water from the Porcupine River was flowing into the channel. On July 10, the party finally reached Fort Yukon. 328/

A subsequent HCRS pamphlet described the float-trip potential of Black River. It recommended canoes or kayaks and said it would take thirteen to sixteen days to travel from near Birch Lake (T. 18 N., R. 24 E., Fairbanks Meridian) to Fort Yukon or nine to ten days to Chalkyitsik. The HCRS publication characterized the river as "a slow, meandering, flat-water stream." It elaborated that:

> The section above the confluence of the Salmon Fork flows moderately fast (3-4 mph) through forested lowlands of white spruce and willow. Below the Salmon Fork confluence the river slows (2-3 mph) as it widens and passes along numerous bluffs. Below Chalkyitsik the river slows (1-2 mph) as the meanders increase in size and the riparian vegetation decreases in size.

The report stated that the Salmon and Grayling forks "appear floatable," though there was no easy plane access points to them. Finally, HCRS warned that after July 1, the Black River was not normally floatable above Chalkyitsik. 329/

In 1975 BLM examined the navigability of the upper portion of Black River and easement recommendations along it in an area selected by Doyon, Limited. The effected portion of the river lay above the line common to Ts. 11 and 12 N., R. 27 E., Fairbanks Meridian. In July 1975 Thomas D. Williams of the Fortymile Resource Area visited the basin including on-the-ground observation near the mouth of Van Hatten Creek. He described the river as between five and fifteen feet wide, reaching its widest at the pools. At flood stage, however, it could broaden to thirty feet. Depth ranged from two inches to a maximum in the pools of ten feet. Normal maximum depth outside pools was three feet. Williams estimated the discharge at 10,000 gallons a day. There were many bars. Williams stated that the river had open water for about six months but that after break-up travel on the stream "would be more of a walk than a float." He wrote that riverboats with kickers are used in the area, but that the river "is not large enough for modern commercial use." 330/

In a navigability report prepared by the Fairbanks District Office in August 1975, Black River was described as a meandering, clear, tea-colored stream. The report stated that Black River and Van Hatten Creek at their confluence had approximately the same amount of water. It concluded that there was no indication of current or historical use and that "the present use of riverboats with outboard motors would be impossible without much carrying of the craft." Furthermore, it stated that open water activities were not likely to occur on

these headwaters because duck hunting, berry picking, and salmon fishing were more promising in the lower areas near the Black, Porcupine, and Yukon rivers. 331/

In 1975 the Fairbanks District Office issued a report on easements in the area selected by the Chalkyitsik Native Corporation. The Alaska Department of Fish and Game and the Alaska Division of Lands recommended ten-foot shoreline easements on both banks of the river "to assure continued free public access to these state waters and to provide for the full use of the public fish and wildlife resources." The BLM recommended wider alternative trails which would parallel the river and provide access to other than recreationists. The BLM's investigation failed to indicate the presence of any existant trail in the area. 332/ The State on October 21, 1975 recommended easements along the banks of all water bodies its Water Delineation Plats indicated as navigable, which included the Black River through the selection area. Another unsigned and undated document in the file recommended a boat tie-up, floatplane tie-up, and overnight camping at Chalkyitsik, though the author stated this site then got only light use. 333/

On January 13, 1976, BLM personnel visited Chalkyitsik. According to Stan Stowell, one of the examiners, Steve Henry stated that the Black River could be used for about 150 miles and sometimes to the Canadian border. Villagers used riverboats and did trapping, fishing, and hunting along it. 334/ At a meeting with five Chalkyitsik residents, the villagers accepted with some reluctance six campsite easements along the Black River through the selection area and, according to summaries of the meeting written by two BLM employees, voiced no opinion on a streamside easement along the river's banks. 335/

The first easement staff review took place on May 5, 1977. The BLM claimed that the Black River was navigable to Chalkyitsik. It recommended the campsite easement at the village and the five other campsite easements on the river in Sec. 23, T. 22 N., R. 16 E., Fairbanks Meridian; Sec. 4, T. 21 N., R. 17 E., Fairbanks Meridian; Sec. 32, T. 22 N., R. 18 E., Fairbanks Meridian; Sec 36, T. 22 N., R. 19 E., Fairbanks Meridian; Sec. 11, T. 21 N., R. 20 E., Fairbanks Meridian. These were to facilitate "recreational use of a highly significant recreational water body." The staff also recommended a streamside easement along the Black River to Chalkyitsik and a streamside and steambed easement along the river above Chalkyitsik. The river above Chalkyitsik was stated as having "highly significant present recreational use." 336/

In the fall of 1978, the BLM listed proposed easement recommendations for lands selected by the village of Chalkyitsik and by Doyon near that village. It followed the easement staff report's recommendations except to delete the streambed and streamside easement above Chalkyitsik and one campsite easement (Sec. 36, T. 22 N., R. 19 E., Fairbanks Meridian) because it fell outside the conveyance area. 337/ In a letter to the Federal-State Land Use Planning Commission dated October 4, 1978, Doyon did not oppose the campsite easements but did object to the streamside easement. 338/ Within a month the village also opposed the streamside easement. It went on to object to the campsite easement in Sec. 11, T. 21 N., R. 20 E., Fairbanks Meridian stating that:

> The Black River flows swiftly enough through the eastern half of the withdrawal that any person floating in a canoe would be able to make the trip to Chalkyitsik (and the municipal reserve lands) in a days travel. Persons who travel the river upstream use motors and easily make it through our selection area in less than a day.

Finally, the village corporation disagreed with the BLM's determination that the Black River was navigable only to Chalkyitsik. The village statement to the Land Use Planning Commission noted that traders had earlier used the river to supply inhabitants of Salmon Village and that "local barge companies could supply this area now if there were people living in the area." 339/

On November 16, 1978 the Federal-State Land Use Planning Commission issued its recommendations. To conform to new easement regulations it advised abandonment of the streamside easement. The commission felt that the two-acre campsite easement at Chalkyitsik was unnecessary but agreed with campsite easements in T. 22 N., R. 16 E., Fairbanks Meridian; T. 21 N., R. 17 E., Fairbanks Meridian; T. 22 N., R. 18 E., Fairbanks Meridian; and T. 21 N., R. 20 E., Fairbanks Meridian. 340/

In 1980, C. Michael Brown of the BLM Alaska State Office prepared a special study of the Black River and recommended that the entire waterbody up to Wood River including the Salmon and Grayling forks and Bull Creek be determined navigable. Brown based his finding on Grayling Fork largely on evidence of travel by the 1912 International Boundary Commission. He noted that "only the aggregate lengths of Black River and Grayling Fork approximate the distance traveled by the party of 1912," estimated by party member J. D. Craig as 305 river miles from the mouth of Black River to the boundary. 341/ Current USGS maps indicate the distance from the Porcupine to the boundary via Grayling Fork to be 311 miles while that via Salmon Fork is only 224 miles. 342/ However, this writer considers the latter route more likely. The published report issued by the Commission contained a listing of location of boundary markers in which Grayling Fork appears to have been called Orange Creek and Salmon Fork called Black River. 343/ Moreover, logs of the journey

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kept by several members of the 1912 expedition made it clear that they considered the present Salmon Fork to be the Black River and that it was up this stream that Chris Curtis and Frank Ray poled supplies from a "cache," evidently left by the Commission's riverboat downstream, to the border. 344/

In August 1982 BLM prepared a draft report on final easements proposed for Native-selected lands near Chalkyitsik. The draft changed the location of the campsite easement in T. 21 N., R. 20 E., Fairbanks Meridian from Sections 11 and 12 to Section 1, but otherwise followed the Land Use Planning Commission's recommendations. 345/

Tiinkdhul Lake

The only records found referring to Tiinkdhul Lake (T. 20 N., Rs. 21 and 22 E., Fairbanks Meridian) were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. The State Department of Natural Resources included it among lakes it considered navigable and requested a ten-foot easement along its shore. 346/ The Fairbanks District Office of the BLM proposed a one-acre campsite on the lake. 347/ When BLM employees met with Chalkyitsik residents on January 13, 1976, the Natives made no objection but said that this lake was important to them for fishing. 348/ The one-acre site was not recommended by BLM's Easement Task Force which met May 5, 1977 because "a substantial portion of the lake is on public lands" and thus alternate campsites were available. This group also recommended against an easement on the lake's bed and its entire shoreline, stating that part of the lake was on

public land and there was "no significant public use." 349/ These easements were dropped in the Notice of Proposed Easements issued in the fall of 1978 because the lake lay outside the selection area. However, this document stated that had these easements been in a selected township, they would have been approved. 350/

In the course of the Federal-State Land Use Planning Commission's consideration of easements for lands to be conveyed, the village of Chalkyitsik notified the Commission that it opposed any easement on Tiinkdhul Lake because it had "a long history of Native subsistence use and no known public use." The village also stated that this lake had a very special religious significance to the Natives. 351/ The Land Use Commission in its recommendations dated November 16, 1978 did not address the one-acre site easement. However, it stated that the shoreline and lake bed easement was not only out of the selection area, it also was inappropriate according to the Commission's understanding of easement regulations. 352/ The BLM gave no further consideration to these easements.

Chahalie Lake

The only records found referring to Chahalie Lake (T. 22 N., R. 19 E., Fairbanks Meridian) were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. The State Department of Natural Resources included it among lakes it considered navigable and requested a ten-foot easement along its shore. 353/ The Fairbanks District Office of the BLM proposed a one-acre campsite on the lake and an associated trail and landing area. 354/ When BLM personnel met Chalkyitsik residents on January 13, 1976, the villagers objected to the campsite saying that they got most of their

fish from this lake. 355/ At its meeting on May 5, 1977, the BLM's Easement Task Force recommended a site easement including a twenty-five-foot strip in front of the site and a trail easement accessing the lake from Black River. The task force stated the lake had recreational value and the trail was important to the villagers' subsistence. However, at the same meeting the task force rejected an easement on the lake's bed and its entire shoreline, stating that Chalkyitsik residents opposed it and that there "has been no significant public use of the lake demonstrated." 356/ The Notice of Proposed Easement Recommendations issued in the fall of 1978 supported the above easements but dropped them because they were not within the conveyance area. 357/

In the course of the Federal-State Land Use Planning Commission's consideration of easements on lands to be conveyed, the village of Chalkyitsik opposed all easements on Chahalie Lake because it had "a long history of Native subsistance use and no known public use." 358/ The Commission issued its report in November 1978 in which it agreed with BLM's Notice of Proposed Easements which stated that all the easements should be dropped because they were outside the conveyance area. However, the Commission added that it felt only the site easement would have been appropriate under easement guidelines had the lake been in a conveyed township. 359/ BLM gave no further consideration to these easements.

Jokoei Lake

The only records found referring to Jokoei Lake (T. 21 N., R. 18 E., Fairbanks Meridian) were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and the regional Native corporations. In discussing an easement for an

existing trail which passed by this lake, BLM's Fairbank's office in 1974 stated that Chalkyitsik villagers used Jokoei Lake for summer duck hunting. 360/

Marten Lake

The only records found referring to Marten Lake (T. 21 N., R. 18 E., Fairbanks Meridian) were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. The State Department of Natural Resources included it among lakes it considered navigable and requested a ten-foot easement along its shore. 361/ However, at its May 5, 1977 meeting BLM's Easement Task Force recommended against this easement stating that "there is no significant use, and there is already access to municipal lands." 362/ The easement was subsequently rejected by BLM in a Notice of Proposed Easement Recommendations 363/ and by the Federal-State Land Use Planning Commission's November 1978 review of the proposed easements. 364/ No further mention of Marten Lake has been found in the conveyance file.

Chatritt Lake

Richard Nelson in an anthropological study of Chalkyitsik conducted from 1969 to 1971 took note of Chatritt Lake's (Sec. 13, T. 21 N., R. 17 E., Fairbanks Meridian and Secs. 5-9, 17 and 18, T. 21 N., R. 18 E., Fairbanks Meridian) place in the subsistence life-style of local Natives. The villagers watched for it to freeze with especial interest so they could commence ice fishing. Nelson found that other lakes and sloughs also were fished but "none [could] produce pike and whitefish" as could Chatritt. Nelson made no mention of fishing the water body during the open season. 365/

The only other records found referring to Chatritt Lake were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. In 1974 when selecting lands in its core township the village corporation excluded this lake from its acreage computation, presumably on the grounds that it was navigable. 366/ Stan Stowell of the BLM's Fairbanks District Office filled out a Navigability Field Report on Chatritt Lake (spelled Chatreii on Stowell's report). The report was not dated but similar reports by Stowell suggest that this report was filled out in January 1976. Stowell did not indicate how he acquired his information but stated that canoes and small boats were used on the lake. 367/ An easement on the entire shoreline of the lake was proposed, but BLM's Easement Task Force which met on May 5, 1977 recommended against it because "it does not fit the easement guidelines." However, the task force recommended a site easement in Sec. 8, T. 21 N., R 18 E., Fairbanks Meridian on the shore of the lake. This site was to include a twenty-five-foot easement on the bed of the lake along the site's waterfront. The rationale for this easement was to provide overnight camping and floatplane access to "water bodies having significant recreational value." 368/ The Notice of Proposed Easement Recommendations for the Chalkyitsik Native Corporation issued in the autumn of 1978 echoed these recommendations. In doing so, though, BLM stated that the site in Sec. 8 was on an unnamed lake. 369/ However, this "unnamed" lake is shown on current USGS maps as connected to Chatritt Lake. 370/

The Federal-State Land Use Commission issued its recommendation on easements in November 1978. It agreed with BLM that the shoreline easement was inappropriate. It further urged that the site easement be dropped because Chatritt Lake was not "a unique or particularly significant water body and similar resources were found on nearby public lands." 371/ In an undated and

unsigned draft State Director Memorandum on final easements prepared subsequently, the site easement was rejected because it was recreational and did not facilitate access to public lands. 372/

Tsiyeehvun Lake

The only records found referring to Tsiyeehvun Lake (T. 21 N., R. 17 E., Fairbanks Meridian) were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. The Fairbanks District Office of BLM recommended a campsite and boat and airplane tie-up on the lake and an associated trail to this site from Chalkyitsik. 373/ On May 5, 1977 BLM's Easement Task Force recommended these easements to facilitate use of the lake. 374/ These recommendations were included in the Notice of Proposed Easement Recommendations for Doyon issued in September 1978. 375/

The Federal-State Land Use Planning Commission then considered BLM's proposals. Doyon opposed the site easement, noting that BLM did not consider this lake navigable or a major waterway, and thus such an easement was unjustified. 376/ The Land Use Commission issued a recommendation on November 16, 1978 supporting Doyon. The Commission believed the easement should be dropped because "the lake is not particularly significant and similar bodies of water are located on nearby public lands for public recreational use." 377/ In an undated and unsigned draft State Director memorandum, the BLM accepted the Commission's rationale and deleted the easement. 378/

LITTLE BLACK RIVER

In 1958 the Corps of Engineers reported the Little Black and its distributaries, the Grass and the Sucker rivers, to be navigable only for vessels easily portaged for short distances. In the Yukon Flats the Corps felt that larger launches "may have difficulty." The report's author stated that small portable boats or canoes could "probably" navigate the Little Black in the marginal upland, but that the suitability of larger craft was unknown. The Corps summarized its impression of the river by saying it "is not considered an easy avenue of movement for river boats." The Corps compiled its report on the basis of documentary research and field investigations conducted in the 1940s and early 1950s. 379/

The BLM gathered information on the Little Black and its distributaries in connection with its examination of easements and navigability for conveyance of lands to Doyon, Limited and the villages of Chalkyitsik and Fort Yukon. On January 13, 1976, Stan Stowell, realty specialist with the Yukon Resource Area questioned Steve Henry of Chalkyitsik on the navigability of the streams. Henry stated the Little Black was traveled for trapping in the winter, fishing in the summer, and hunting in the fall. An unidentified twenty-five miles of the river was used. Henry told Stowell that riverboats were utilized on the river and that there were Native allotments on the stream. Stowell further recorded, based either on Henry or his own observations, that the Little Black was about 100 feet wide, "shallow," with log jams. He wrote that every spring the river flooded and that villagers used the river for subsistence. Airplanes and snowmobiles also could be used to access the area along the Little Black River. 380/

The same day Stowell interviewed Richard E. Martin of Chalkyitsik who stated that Grass River was also used for fishing, hunting, and trapping. Martin said use extended about twenty-five miles up from the Porcupine. Stowell wrote that riverboats navigated the Grass River "during flood stage; in the summer there is very little water for boats." Stowell went on to write that riverboats were used "only during high water in spring and that winter travel was by snowmobiles for trapping activities." According to Martin there were Native allotments on the river. Stowell, based either on Martin or his own observation, stated that the Grass River was about 100 feet wide and six feet deep. It flooded every spring and there were many trees in the river. 381/

On May 5, 1977 the Easement Staff of BLM recommended that the Little Black and Grass rivers be considered nonnavigable. It also recommended a one-acre campsite easement in Sec. 15, T. 19 N., R. 18 E., Fairbanks Meridian on the left bank of the Grass River as well as a twenty-five-foot-wide easement on the bed of the river along the waterfront of the campsite. This was to be for camping, vehicle use, and staging. The proposal termed the Grass River "a significant recreational waterway." 382/ In the Notice of Proposed Easement Recommendations issued in the fall of 1978, BLM dropped consideration of this easement because it was outside the selection area. 383/ A draft of Final Easements for Doyon, Limited in the vicinity of Chalkyitsik in preparation in August 1982 named the Little Black and Grass rivers as major waterways but considered them nonnavigable. 384/

The Sucker River was considered in BLM's easement and navigability work in connection with Native selections around Fort Yukon. On September 9, 1976 the agency's Easement Task Force recommended a trail easement beginning at the end of a road easement from the village. The trail easement commenced in

Sec. 2, T. 20 N., R. 12 E., Fairbanks Meridian and proceeded southeasterly to public lands in T. 20 N., R. 13 E., Fairbanks Meridian. This trail took a route between the meandering Sucker River and Squirrel Creek; it usually lay closer to the latter. 385/ The Notice of Proposed Easement Recommendations issued March 23, 1977 did not include the Sucker among navigable streams but recommended the trail easement. 386/ The Federal-State Land Use Planning Commission report dated June 23, 1977 echoed both of these findings. 387/

Numerous comments on the trail easements associated with the conveyance of land to Natives around Fort Yukon were received by BLM in 1982 as the agency prepared to issue Final Easement documents. Mitchell G. Sheldon of the U.S. Fish & Wildlife Service urged that the trail be "for foot and winter travel only." 388/ The BLM's Marty Karstetter met with village corporation members on February 19, 1982. The villagers stated that no one would ever use the trail, that the area was swampy mosquito country, and that an easement would interfere with trapping. 389/ In a written response the village corporation made the following, somewhat confused statement in opposing the trail easement:

> If the general public wanted to get to T20N R13E F.M. or refuge lands farther east during the summer they would fly in. If they were to use the Yukon they could boat to [the trail easement] and walk in. However, no one would walk [the] proposed trail easement . . . during the summer due to lakes, bogs, and marsh tundra. As with all public lands out side [sic] native land selections the general publics [sic] only real method of getting to public lands is by plane.

The village corporation went on to say that during the winter the best route to the isolated public land was to follow the Sucker River, except to portage to

avoid large meanders. 390/ Seven other villagers, most if not all of them outside the village corporation, identified the trail easement as a route leading to land they used for hunting, trapping, fishing, and recreational activities. 391/ The Final Easement document issued by BLM on June 9, 1982 termed the Sucker River a major waterway providing access to public lands. It stated that "the primary mode of travel by local residents is by riverboats and canoes" and determined the Sucker River navigable to the east boundary of Sec. 12, T. 20 N., R. 12 E., Fairbanks Meridian. 392/

Vunte Lakes

The only record found referring to the Vunte Lakes was generated in the course of the BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. The Vunte Lakes were outside the selection area. However, BLM in describing a trail used to reach Ohtig Lake from Chalkyitsik, stated that this trail continued on to the Vunte Lakes. The report does not make it clear for what purpose these lakes were used. 393/

Ohtig Lake

Richard Nelson in an anthropological study of Chalkyitsik conducted from 1969 to 1971 took note of Ohtig Lake's place in the subsistence life-style of local Natives. Ohtig Lake (T. 20 N., Rs. 18 and 19 E., Fairbanks Meridian) was the most important duck hunting location for residents of Chalkyitsik. Nelson stated that in the past hunters went to this "large, shallow lake" in the summer and fall. The Natives also hunted ducks on the lake when the ducks were molting and unable to fly. The Natives then canoed about the lake driving the

ducks to confined areas where they could easily be killed by bow and arrow or shotgun. Nelson was told that by this technique hundreds were killed in a single day. However, by the years of Nelson's visits such communal hunting activity had ceased. Yet, "occasionally a motorboat is hauled to the lake and hunters cruise about shooting ducks." 394/

The only other records found refering to Ohtig Lake were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. An easement for two existing trails to Ohtig Lake from the village were suggested. The lake was said to be used for summer duck hunting as well as for fishing. 395/ The State Department of Natural Resources included it among lakes it considered navigable and requested a ten-foot easement along its shore. 396/ The Bureau of Outdoor Recreation urged a boat and floatplane tie-up and overnight campground on the west side of the lake as well as a trail from this site to a trail leading south from Chalkyitsik. This was to accommodate sports fishermen whose use of the lake was said at that time to be light. 397/

On January 13, 1976, BLM personnel met with Chalkyitsik residents who "objected to any campsite on Ohtig Lake, however they agreed to accept [one proposed by BLM's Fairbanks District Office]." 398/ At its meeting on May 5, 1977 BLM's Easement Task Force recommended a one-acre site in Sec. 6, T. 20 N., R. 19 E., Fairbanks Meridian and a 500-foot extension along the shoreline on either side of the site. Also included was a twenty-five-foot easement on the bed of the lake for the entire length of the site easement and its extensions. The purpose of this easement was to provide access to a waterway having recreational value. The site was chosen "because of its history of public recreational use" and because villagers preferred it over other possible locations

on the lake. However, at the same meeting the task force rejected an easement on the lake's bed and its entire shoreline, stating that Chalkyitsik residents opposed any outside use of the lake and because the lake receives "no significant public use." 399/

Both easements were dropped in the Notice of Proposed Easements issued in the fall of 1978 because the lake was outside the selection area. However, the Notice stated that had the easements been within the conveyance area, they would have been recommended. 400/

The Federal-State Land Use Planning Commission then took up consideration of the easements. The village of Chalkyitsik wrote to the Commission that it opposed all easements on Ohtig Lake because it had "a long history of Native subsistance [sic] use and no known public use." 401/ The Land Use Commission agreed with BLM's decision to drop the easements because they were outside the selection area, but stated that even had the lake been in the conveyance townships the easement on its bed and shoreline would have been inappropriate. 402/

Finally, in undated drafts of the State Director Final Easement memorandum, Ohtig Lake was considered a "major waterway" along with the Porcupine, Black, and Grass rivers, because it was one of "the primary surface transportation routes for travel to villages, homesites and public lands." 403/

Unnamed Lake (Secs. 5-8, 17 and 18, T. 20 N., R. 18 E., Fairbanks Meridian)

The only records found referring to this lake were generated in the course of BLM's consideration of easements and potentially navigable waters on lands near Chalkyitsik selected by the village and regional Native corporations. The State

Department of Natural Resources included it among lakes it considered navigable and requested a ten-foot easement along its shore. 404/ However, at its meeting on May 5, 1977 BLM's Easement Task Force instead recommended a one-acre site in Sec. 5 and a 500-foot extension along the shoreline on either side of the site. Also included was a twenty-five-foot easement on the bed of the lake for the entire length of the site easement and its extensions. The purpose of this easement was "to provide facilities on water bodies having recreational significance and [to allow] easier access to isolated blocks on public land." The Notice of Proposed Easement Recommendations for Doyon issued in the fall of 1978 supported this easement saying it "will provide space for boat moorage, floatplane tie-up, temporary storage of supplies and equipment, and overnight camping and resting." 405/

The Federal-State Land Use Planning Commission then considered BLM's proposals. Doyon opposed the easement noting that BLM did not consider this lake navigable or a major waterway, and thus such an easement was unjustified. 406/ In its recommendations issued November 16, 1978 the Land Use Commission urged BLM to drop this easement saying that there was nothing unique about this lake, that similar resources were located on nearby public lands, and that the lake served no access-related function. 407/ In an undated and unsigned draft State Director memorandum, BLM recommended against this easement because it did not serve to access public land and because it was recreational in nature. 408/

Twelvemile Lake

Little information on Twelvemile Lake (T. 19 N., R. 10 E., Fairbanks Meridian) has been found. In July 1962 a U.S. Fish & Wildlife Service team examined the lake as part of a resource study of lands potentially affected by the building of

a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached the lake by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 409/

The only other record found concerning Twelvemile Lake was generated in 1975 when BLM considered easements and potentially navigable waters on Native-selected lands near Birch Creek Village and Fort Yukon. On April 4, 1975 Ann Ivanoff of the BLM Alaska State Office navigability task force stated that the agency considered the lake nonnavigable. 410/ On June 24, 1975 Clyde Murray of BLM prepared a navigability field report in which he stated that canoes were the most common watercraft on the lake but floatplanes also touched down on it. He stated that the lake was essential to the subsistence of Fort Yukon inhabitants and that Birch Creek Village residents did not use the lake. This was confirmed by David James of Birch Creek whom Murray interviewed. James stated the lake was used year-round. It provided both hunting and fishing, but only Fort Yukon residents fished the lake. James reported that there were Native allotments around the lake and that a winter trail between Birch Creek Village and Fort Yukon passed by the lake. 411/

The BLM recommended a lakeshore campsite easement near the Fort Yukon-Birch Creek Village trail. An easement report in 1976 stated that this site received light use by travelers and was to provide temporary camping for those on the trail. 412/ This proposal was contained in a notice of proposed easements and was approved by the Federal-State Land Use Planning Commission in June 1977. 413/ About a year later a State Director Final Easement Memorandum supported this easement adding the justification that it facilitated the use of Twelvemile Lake by providing for "boat moorage, vehicle use, and temporary camping." 414/ However, in a second State Director's

Memorandum in 1982 the easement was deleted because there were camping areas on the trail in public lands in T. 19 N., R. 10 E., Fairbanks Meridian, and because a portion of the lakeshore was on public lands. Those landing in floatplanes could use this lakeshore land for temporary camping, loading, and unloading. 415/ This reversal of positions was reflected in a Decision to Issue Conveyance in August 1982. 416/

CHANDALAR RIVER

Anthropologist Robert McKennan, who lived among the Chandalar Natives at Artic Village, Venetie, a hunting camp on Smoke Creek, and a fish camp called "Suko" (Tsukon on current USGS maps) in the summer of 1933, has written that these people were and long had been a piedmont hunting society which made little use of streams. Presumably acquiring his information from the older Indians he met on his field investigation, McKennan wrote that in aboriginal times willow rafts pointed fore and aft were the only watercraft used and these were to cross streams, not to float down them. 417/ The field diary and report of USGS explorer Frank C. Schrader, who in 1899 traveled the entire main stream and the North Fork to T. 35 N., R. 6 W., Fairbanks Meridian may add credence to this assertion. About thirty miles from the mouth of the Chandalar, Shrader saw the remnants of an Indian skin canoe. However, this was in the Flats area and may not have been associated with Chandalar Natives but with those living on the Yukon. In contrast, when he recorded a visit to forty Chandalar Natives camped on Chandalar Lake, Schrader made no mention of seeing any Native water craft. 418/

Schrader's was the first USGS exploration of the area and the first detailed description of travel on the Chandalar River and its North Fork. The expedition's

primary purpose was to gather information on the geology, topography, economic conditions, and transportation routes of the Koyukuk River on which there had been a gold discovery the previous year. 419/ By traveling through the Chandalar drainage Schrader's party also could gather information on potential routes to the Koyukuk's headwaters.

After reaching Fort Yukon via Skagway and Dawson, Schrader and his six-man crew started down the Yukon on June 22nd in three Peterborough canoes and a large blue boat named Betsy. They began their ascent of the Chandalar on either the 24th or 25th. On June 25th Schrader traveled nine miles and noted the river had a strong current but no riffles. The following day the party made seven miles as the river became swifter with many channels. On June 27th the current continued swift and the men had difficulty with Betsy. The next day Schrader decided to leave Betsy behind and loaded all their supplies except ten pounds of nails in the three canoes. At that time Schrader and one other man were in an eighteen-and-one-half-foot cedar canoe carrying about 1,400 pounds including their own weight. Schrader wrote that the canoe could probably carry about 500 pounds more. They traveled seven miles that day and twelve the next. On the 29th they encountered seven prospectors who said they had canoed about 160 miles downriver in the previous five days. These men, who had prospected in the Koyukuk and were heading for Birch Creek and Dawson, estimated Schrader and his party would need thirty-five days to reach the portage to the Koyukuk. The next day Schrader and his men traveled five miles. They put canvas covers on their canoes because the riffles were getting stronger. On July 1 the river rose due to two days of rain. They made eight miles and Schrader noted that canoeing was becoming more difficult. Rain continued on the 2nd. Schrader commented that travel that day had been a

"hard pull in very swift water" and that they had lost a pole and two paddles to the rapid current. They pulled the boats upstream by tracking along the bank. On the next day they began to emerge from the Flats, on the 4th they traveled four more miles, and on the 6th they passed the East Fork. 420/

Schrader chronicled his party's ascent of the main Chandalar above the East Fork in less detail than the lower segment of the river. He characterized the tracking in the first three miles above the East Fork as easier than that below it but noted there still were bad riffles. Schrader made no further comments on the river in his field diary until the group reached the rapids below Chandalar Lake. However, in his published report he characterized the main Chandalar between the confluence of the West Fork and North Fork and the mouth of the East Fork as swift with some riffles difficult for canoes to ascend. There also were large boulders. 421/

His published report also had conclusions on the character of the lower portion of Chandalar. Schrader described the river as entering the Yukon through several channels. Above the delta in the first ten to twelve miles where the stream was in a single channel, Schrader reported it to be 300 feet wide, six feet deep with a velocity of four-and-one-half or five miles an hour. He concluded that a flat-bottomed steamboat could ascend the river twenty or thirty miles in high water, but no more than six or seven miles at ordinary stages because of riffles. 422/

In 1903 Samuel J. Marsh, an explorer, geologist, and U.S. Commissioner may have rafted on the Chandalar. His account of a prospecting journey is hazy as to his precise location. He and Thomas G. Carter and nineteen others, mostly Eskimos, wintered on the headwaters of the Canning River. Marsh recalled in

1906 that Carter and an Eskimo went off to the southeast and himself to the southwest on April 1st. Contradictorily, Marsh then said he prospected along the main range of mountains dividing the Yukon drainage from those of the Arctic rivers "get[ting] far to the Eastward." At any rate, in July he ran low on supplies and calculated he was 120 miles from the Yukon. He packed for two weeks until he came to a stream large enough to navigate. He built a raft but after floating a few hours it wrecked on some swift rapids. He built another raft and floated four more days before coming to an Indian village where he acquired food. The existence of this village suggests that Marsh may have traveled one of the forks of the Chandalar to present-day Venetie. From the Native settlement he traveled by some means to ~~Fort~~ Yukon where he took a steamboat to St. Michael. 423/

Oscar A. Piper, hired by the Army in 1904 to find an overland route to the upper Koyukuk mines, spoke with A. E. Carr at Fort Yukon about the potential of the Chandalar Valley. Carr, a storekeeper at Fort Yukon, began to provide twice-monthly mail service to the Koyukuk mines via the Chandalar valley in 1902. He characterized his winter trail route as difficult and he was unable to find a practical summer pack trail. Consequently, Piper reported, travelers up the Chandalar in the summer normally used boats. 424/

Men took greater interest in water transportation in the Chandalar drainage after prospectors found good paydirt on Little Squaw and Big Creeks in 1906. Before freeze-up, miners poled up the Chandalar from Fort Yukon. How far upriver they poled is uncertain. That winter these prospectors, as well as merchants who hoped to supply the anticipated rush of stampeders, freighted

tons of goods from Coldfoot or over the ice of the Chandalar River from Fort Yukon. This included "Kid" Stevens from Circle who had a horse help pull a load of alcohol up from Fort Yukon. 425/

In December 1906 Samuel J. Marsh established a post office and recorder's office at a site he called Caro near the mouth of Flat Creek. He also was interested in supplying the miners and, therefore, located Caro at what he considered the head of steamboat navigation on the Chandalar. Marsh's estimation of how far a steamboat could ascend the river proved optimistic. 426/ In June and July low water stopped the Northern Commercial Company's shallow-draft steamer, the Koyukuk, on two trips up the Chandalar about fifteen to twenty miles below Caro. The boat left at least sixty-five tons at this point which came to be called Chandalar Station. 427/ No information has been found of any subsequent steamboat travel on the Chandalar and Marsh reported that the NCC abandoned its store at Chandalar Station in 1909 because the river was "too shallow to navigate." 428/

Men took supplies to the Chandalar mines by back-packing, poling boat, and dog sled. In 1907 the NCC hired Indians at $12.50 a day to haul goods cross-country from Chandalar Station to the mines. Marsh described the resulting prices as so extravagant that miners usually brought their own supplies in either sixty miles from the NCC store or 150 miles from Fort Yukon. In 1908 he informed the USGS that miners used poling boats in the summer or dogsleds in winter, but he did not state by what route or how far the poling boats ascended the Chandalar. The mouth of Grave Creek on the Middle Fork is about sixty miles above the site of Chandalar Station and a ten mile hike to the mines. 429/ The mouth of Big Creek is about thirty-five miles from the old

NCC store and the Big Creek placers were about twenty miles farther upstream. 430/ This latter route is suggested by a document Marsh wrote to his mining financier, William Sulzer, in 1907 when he stated that the price for poling or dog sledding supplies from Fort Yukon to Caro was fifteen cents and thirty-five cents to the head of Big Creek. 431/ Finally, the mouths of Tobin Creek on Chandalar Lake and Lake Creek above Chandalar Lake are fifty and sixty miles, respectively, upriver from Caro and provided potential trail access to the mines. 432/

Marsh in his role as postmaster made recommendations on postal service to Caro to the Assistant Post Master General in April 1907. At that time he still felt a steamboat could bring mail to the town in June and July. He also thought that throughout the open season horses or dogs could tow small boats or barges to Caro. He said the upriver trip would consume six to eight days and the return to Fort Yukon two to three more days. 433/

In making his mail route recommendations in April 1907, Marsh already anticipated an overland route to the Chandalar mining district from the Yukon near the mouth of the Hodzana. 434/ Marsh later recorded that in the summer and fall of 1907 others confirmed that a good pack trail and wagon road route over dry gravel ridges was available by leaving the Yukon about ten miles above the Hodzana. This route was similar to that followed by the sled road built by the Alaska Road Commission from the Yukon at Beaver to Caro between 1909 and 1911. 435/ This trail and other overland routes from Caro to the mines combined with dwindling confidence in placer prospects in the district largely, if not completely, eliminated the need for boat transport up the Chandalar. The last such trip as yet found documented was in July or early August 1911 when food

supplies were low at Caro and Marsh brought in one and one-half tons of food and a ton of oats to enable the horses to work until such necessities could be freighted from Beaver over the as yet uncompleted road. 436/

John B. Mertie, Jr., a USGS geologist, examined the lower Chandalar Valley and its East Fork in the summer of 1927. In the previous winter two members of his expedition sledded supplies to Arctic Village and the upper Sheenjek River valley. On June 9, Mertie and an assistant, C. A. Wheeler, left Fort Yukon in a canoe equipped with an outboard motor. They entered the upper mouth of the Chandalar and Mertie later reported that the first twenty-five miles of their voyage up the river were "easy and rapid." However "from that point westward progress became slower and more difficult, for the river was then at its highest stage and was therefore swift and full of driftwood and was carrying a large volume of water spread out into numerous overflow channels. Finally the current became too swift to ascend with a motor, and, as many of the gravel bars were covered with water, continuous lining of the canoe was also impracticable." Mertie and Wheeler, therefore, were forced to stop at several places to wait for lower water. They lost fifteen days in this manner and did not begin their ascent of the East Fork until July 2. After spending the summer surveying, all four men in the expedition left Arctic Village on August 20. They traveled down the lower Chandalar River and through its lower mouth in a Peterborough canoe and a canvas canoe, reaching the settlement of Beaver on September 9. Mertie made no observations on the nature of the river on the return trip. 437/

Mertie described the Chandalar in his USGS report published in 1930. He noted that below the mouth of the Christian River (Cutoff Slough), the Chandalar was

very sluggish at low water but had a current of two to three miles an hour at flood stage. In this stretch there were sandbars which were covered at high water. Mertie further reported that:

> Above the Christian River for 20 miles the river is swifter and split into numerous channels, through which, even at low water, it is not easy for a stranger to follow the main channel. From this point upstream to the East Fork, a distance of 25 miles, the river is a swift stream but is less split up than farther downstream. The current in the Chandalar River, from the Christian River to the East Fork, runs from 3 to 5 miles an hour at high water, and under these conditions the stream is hard to navigate.

Mertie noted that Natives had "no difficulty in navigating the river in motor boats up to Chandalar Village [Venetie], 45 miles from the upper mouth, at any state of water, and at high water a well-powered shallow-draft boat could probably go on upstream beyond the mouth of the East Fork, perhaps to the mouth of the Middle Fork." 438/ It should be noted that Mertie did not boat up the main river beyond the East Fork, but did walk in the drainage of the river in the Middle and North Fork area in 1923. 439/ Finally, Mertie reflected some of his own experiences in writing that "loaded canoes of considerable draft with outboard motors can not navigate successfully the 70 miles to the East Fork at high water, because the stream is too swift, and at low water the shallow channels will cause trouble." 440/

In 1939 boats brought supplies from Fort Yukon to the village of Venetie at the cost of four cents per pound; airplane rates were six cents a pound. In 1945 John Fredson of Venetie reported that men commonly made skin boats or rafts to return from hunting but did not state where this hunting took place. Fredson

noted that during the summer mail arrived monthly by a poling boat powered by an outboard motor. Freight arrived by "small boat" after passing through Skagway, Dawson, and either Circle or Fort Yukon. 441/ Because of their dependence on the rivers for fish and travel by boat in the summer and sled in the winter, the villages of Venetie, Arctic Village, and Christian in their request in the late 1930s for an Indian reservation asked that the reserve's boundaries include the centers of the Christian River, Chandalar River, and the East Fork of the Chandalar. 442/

Except for Venetie and the abandoned buildings at Caro, USGS maps compiled in the mid-1950s indicate only ten cabins on the main Chandalar. Two cabins were located together in T. 27 N., R. 1 E., Fairbanks Meridian. Two others were at the extreme east end of T. 26 N., R. 3 E., Fairbanks Meridian. Bearman Cabin was on the left bank of the river either in T. 22 N., R. 8 E. Fairbanks Meridian or T. 23 N., R. 8 E. Fairbanks Meridian. And a cluster of five cabins was marked at the confluence of Cutoff Slough and the Chandalar. 443/

On being interviewed by the Army Corps of Engineers in November 1958, Arthur Peterson, an officer of Yutana Barge Lines, stated that neither barges nor small tugs could ascend the Chandalar. He noted that freight used to be poled to Venetie, but that in 1958 commercial and private aircraft from Fairbanks and Fort Yukon served the area. 444/

In 1958 the Army Corps of Engineers in its Terrain Study of the Yukon Flats District, Alaska stated that small, motor-powered river launches could go up the Chandalar "with difficulty." They found that in the Flats area either many

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shoals would have to be lined or a hoist device for the propellor would have to be employed. The report warned of large boulders upstream from the mouth of the East Fork. 445/

Little recently has been written on boat travel on the Chandalar other than on its East Fork and the main channel below the East Fork. An exception to this was William Henderson's trip in 1960 to satisfy his curiosity to see Caro. Henderson, the school teacher at Venetie, took advantage of an offer made by Allen Tritt, a long-time Venetie resident, to take him up the river in his thirty-foot flat-bottomed boat equipped with a thirty-three horsepower Evinrude. Henderson noted that near Venetie the river was so swift he "wouldn't want to attempt navigation on it with anything less than an eighteen h.p. outboard motor." He further felt that it would be impossible to take a stern wheel steamer up to Caro as he mistakenly thought had been done during the gold rush. He said that "due to spring flooding and the erosion of the banks on both sides, the Chandalar is becoming wider and more shallow." Henderson did not mention any mishap traveling on the river, but noted that above Caro, Tritt had to manuever the boat past "rapids where partially submerged boulders churned the swift-flowing stream into seething, frothy foam." Henderson estimated they traveled about 100 miles upstream from Venetie. 446/

Another recreationist, Don Ross, who had previously worked for the Alaska Department of Fish & Game, traveled from Arctic Village to Venetie by kayak in 1966. He had himself and his seventeen-foot folding kayak flown to Arctic Village from where he started downriver, probably sometime in July. He commented on the challenge of the rapids on the East Fork but made no mention of the main river. 447/

In 1973 the Natives of the Venetie Indian Reserve decided to exercise the option under the Alaska Native Claims Settlement Act to gain title to the Reserve. 448/ Subsequently, the BLM gathered information on the need for easements in the Reserve. The BLM proposed a five-acre site easement at Venetie to include a twenty-five-foot-wide strip of the Chandalar's bed along its waterfront. This was the main boat landing area for the village. The agency also recommended a streamside easement on the left bank of the Chandalar as well as an easement on the streambed from the left shoreline to midstream from the East Fork to the mouth of the Chandalar. The BLM stated that the river and its East Fork "served as travel routes for exploration, trade, commerce and intervillage travel." 449/

The Federal-State Land Use Planning Commission on February 14, 1979 issued its comments on these easements. It accepted the site easement, albeit one-acre in size and in conjunction with a trail to a nearby airfield, to provide for changes in transport modes between river and air. The Commission rejected the streamside and streambed easement because streamside easements were not consistent with regulations and because the Chandalar's right bank was accessible to public use. 450/

On May 25, 1979, Robert Arnold, Terry Hassett, Robert Faithful, and Stanley Bronczyk of the BLM met with the Venetie Tribal Government and its representatives in Fairbanks. The Venetie leaders objected to the site and trail easement as well as an easement for the airfield. 451/ The arguments they put forward were later reflected in the State Director's final easement document dated September 19, 1979. In this document the airstrip easement at Venetie was dropped because there was no history that the strip had been used to gain access to public lands west of the Reserve and because in the previous winter

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Venetie's villagers had demonstrated the suitability of another route to lands west of the Chandalar. This was accomplished in the course of moving heavy equipment from the pipeline haul road at Coldfoot easterly to Venetie. The exact route was not given but it showed "that a viable access route to the public lands westerly of Venetie may well be the pipeline haul road." Because the BLM deleted the airstrip easement, there was no need for the trail from the landing field to the river site easement or for the site easement itself. Finally, the State Director's memorandum dropped the streamside and streambed easement because it was primarily recreational in nature and did not conform with new regulations. 452/

The State Director's final easement memorandum also described use of the Chandalar and its East Fork. It stated that the people of Venetie and Arctic Village used riverboats on the Chandalar River and its East Fork to gain access to public lands west of the Venetie Reserve. The Indians continued to carry on subsistence trapping and hunting operations on these public lands. The memorandum further noted that recreationists floated the East Fork from Arctic Village and continued on the main river to Venetie. According to the memorandum, they used rafts, canoes, kayaks, and riverboats. 453/

The Navigability Task Force of BLM's Fairbanks District Office reviewed lands in the Chandalar drainage selected by the State for navigable waters in April 1981. Basing its conclusions on references in the Arctic Environmental Information and Data Center's "Water Body Historical Data" computer print-out, the district office recommended that the Chandalar up to the confluence of the North and West Forks be considered navigable. 454/

On April 21, 1981 Sherman Berg of BLM's State Office concurred in this recommendation. On April 22, 1981 State Director Curtis V. McVee concurred in the recommendation. 455/

North Fork Chandalar River

The field diary and published report of USGS geologist Frank C. Schrader, who in 1899 traveled the Chandalar from its mouth to a point on the North Fork in T. 35 N., R. 6 W., Fairbanks Meridian, provide the only known account of water travel on the North Fork of the Chandalar River. Thirty-five to forty miles above the mouth of the Chandalar, Schrader's party of six men in three Peterborough canoes encountered seven prospectors who said they had canoed 160 miles downriver in the previous five days. They had come from the Koyukuk drainage. If their estimated mileage was correct, they had started canoeing down the North Fork from near or above the mouth of Quartz Creek. 456/

On July 12 Schrader's men began their ascent of the North Fork. On July 15 and 16 the men made five miles each day through swift water. On the 17th they traveled only three miles as they had to portage rapids which they all agreed were "fully as hard as Whitehorse rapids and probably much more dangerous to run." Schrader stated in his field notebook that the water rose 300 feet in a quarter of a mile. Traveling on the lake above the falls proved much easier. They spent several days on Chandalar Lake visiting four prospectors and forty Natives. Schrader made no mention of any of these people using boats. He reported that paddling for the eighteen miles above the lake was without major problems. There were no riffles. Indeed, Schrader made no mention in his field notebook of any trouble ascending the river until the group reached a creek in T. 35 N., R. 6 W., Fairbanks Meridian. They portaged up

this creek's valley to Robert Creek in the Koyukuk drainage. The men met Natives in the area and Schrader recorded in his field diary that the Chandalar side of the portage "has long been an old camping ground used by the natives, both Koyukuk and Chandalar."

In his published report, Schrader made a few other observations on the character of the North Fork. From its mouth to the rapids the river current was swift "with some riffles difficult to ascend with canoe." Contradicting his field diary he stated that the rapids were about a quarter of a mile long over which distance the river fell ten feet or more, mostly at the lower end of the rapids. (Current USGS maps confirm this figure as closer to the fact.) Schrader reported that the eight miles between the rapids and Chandalar Lake was "comparatively smooth." He found the current in the lake to be about one-half mile per hour and though it was not deep, he felt steamboats "of considerable size" could navigate the lake. Schrader described the stretch of the North Fork upstream from Chandalar Lake to the portage his party took to Robert Creek to be very winding. The first twenty to thirty miles above the lake flowed sluggishly and could, he said, be ascended by rowing or paddling in canoes. Schrader suggested that it might be possible to navigate farther up the North Fork than his men had. He wrote that it was "possible that by ascending Chandalar River above the sixty-eighth parallel to very near its headwaters, and going light, a portage could be made across to the Dietrich River. The natives, however, denounce this region as very rough." 457/

No other clearly documented use of the North Fork has been uncovered, though there is at least a suggestion of poling boats on the lower portion during the gold rush era of 1906-09. Samuel J. Marsh, a U.S. Commissioner at Caro, wrote to Alfred H. Brooks of the USGS in 1908 that miners poled or dog sledded

their supplies to the Chandalar mines either sixty miles from Chandalar Station, a Northern Commercial Company store about fifteen miles below Caro, or 150 miles from Fort Yukon. He did not state by what route or how far the poling boats ascended the Chandalar.. 458/ However, in the previous year he had written William Sulzer, his financial backer in mining, that the cost for poling or dog sledding supplies from Fort Yukon to the head of Big Creek was thirty-five cents. 459/ The head of Big Creek is about sixty miles from the old NCC store. It is unclear if Marsh wished to imply that poling boats ascended Big Creek. The mouth of Big Creek is eight and one-half miles up the North Fork. Another interpretation of Marsh's comments is that poling boats ascended the North Fork to Chandalar Lake near the mouth of Tobin Creek (sixty-five miles from the old NCC store) or above the lake to the mouth of Lake Creek (seventy-five miles from the old NCC store). The valleys of both of these creeks led to gold operations. 460/

Chandalar Lake may well have witnessed plane use. However, little documentation has yet been uncovered of such use. In the winter of 1933 Noel Wien landed on Chandalar Lake. 461/ In May 1937 Merle H. Guise, who had an interest in the Chandalar mines, wrote to Ike Taylor of the Alaska Road Commission requesting a better landing field in the area because floatplane landings were expensive. Guise wrote that he planned on sending men and supplies to the mines "after the ice is out of the lakes (Little Squaw Lake or Chandalar Lake)" and planned on flying up shortly thereafter. He complained that the present landing field was too short for safe take-offs and requested improvements. The landing field was closer to the mines and thus would be preferable because "the airplane charges on pontoons is about double the cost on wheels, due to restricted load when taking off on water." 462/

The USGS maps made in 1956 and revised in the mid-1960s show no structures in the North Fork basin above those associated with the mining district east of Chandalar Lake. Besides those at the settlement of Chandalar the main concentration of cabins were in the hills near the headwaters of Little Squaw Creek. These were connected by trail to Chandalar and the Middle Fork and in the 1920s were linked to a winter trail along Big Creek. With only four exceptions all the other structures lying on the North Fork or one of its tributaries were also on a portion of the network of Alaska Road Commission trails constructed in the 1920s between Caro, Coldfoot, and the Chandalar mines. The exceptions were solitary cabins on Squaw Lake (T. 32 N., R. 3 W, Fairbanks Meridian), Baby Creek (T. 32 N., R. 5 W., Fairbanks Meridian), Indian Creek (T. 31 N., R. 5 W., Fairbanks Meridian), and Monarch Creek (T. 27 N., R. 4 W., Fairbanks Meridian). 463/

The Navigability Task Force of BLM's Fairbanks District Office reviewed lands in the Chandalar drainage selected by the State for navigable waters in April 1981. It stated that a trail, which Schrader referred to in 1899 as used only by Natives at one time ran from the mouth of Lake Creek to the Middle Fork and that the North Fork "is of such a size to allow travel by pole boats." Consequently, the FDO recommended that the North Fork be considered navigable to Lake Creek. 464/ Sherman Berg of BLM's State Office and State Director Curtis V. McVee concurred in this recommendation on April 21 and April 22, 1981, respectively. 465/

Little Squaw Lake

Little Squaw Lake (T. 32 N., R. 3 W., Fairbanks Meridian) may well have witnessed plane use. However, little documentation has yet been uncovered of

such use. In May 1937 Merle H. Guise, who had an interest in the Chandalar mines, wrote to Ike Taylor of the Alaska Road Commission requesting a better landing field in the area because floatplane landings were expensive. Guise wrote that he planned on sending men and supplies to the mines "after the ice is out of the lakes (Little Squaw Lake or Chandalar Lake)" and planned on flying up himself shortly thereafter. He complained that the present landing field was too short for safe take-offs and requested improvements. The landing field was closer to the mines and thus would lessen packing costs which from the lakes to the mines was nearly as high as that for flying from Fairbanks to the lakes. Moreover, a landing field would be preferable because "the airplane charges on pontoons is about double the cost on wheels, due to restricted load when taking off on water." 466/

The Navigability Task Force of BLM's Fairbanks District Office reviewed lands in the Chandalar drainage selected by the State for navigable waters in April 1981. The report noted that there was no history of waterborne commerce on Little Squaw Lake. Nevertheless, it recommended that the lake be considered navigable because it was of a sufficient size to support navigation and in particular was susceptible to use by those bringing in or taking out supplies from the area's mines. 467/ The State Director concurred in this recommendation on April 22, 1981. 468/

Squaw Lake

The Navigability Task Force of the BLM's Fairbanks District Office reviewed lands in the Chandalar drainage selected by the State for navigable waters in April 1981. The report noted that there was no history of waterborne commerce on Squaw Lake (T. 32 N., R. 3 W., Fairbanks Meridian). Nevertheless it

recommended that the lake be considered navigable because it was of a sufficient size to support navigation and in particular was susceptible to use by those bringing in or taking out supplies from the area's mines. 469/ The State Director concurred in this recommendation on April 22, 1981. 470/

Crooked Creek

Only one bit of evidence points to any use of watercraft on Crooked Creek. USGS geologist Frank C. Schrader, who led the earliest government exploration of the Chandalar in 1899, called present-day Crooked Creek the West Fork of the Chandalar. He wrote that the few prospectors who had portaged from the South Fork of the Koyukuk to the Chandalar by the Crooked Creek route said that it passed over a low and easy divide and that "at high water the distance of actual portage between points of canoe navigation is reduced to 10 miles or less." 471/

The Navigability Task Force of BLM's Fairbanks District Office reviewed lands in the Chandalar drainage selected by the State for navigable waters in April 1981. It presented no evidence of use of Crooked Creek and recommended that it be considered administratively nonnavigable. 472/ Sherman Berg of BLM's State Office and State Director Curtis V. McVee concurred in this recommendation on April 21 and April 22, 1981, respectively. 473/

West Fork Chandalar River

No evidence of watercraft on the West Fork has been found, but two government reports described the stream. John B. Mertie, Jr., a USGS geologist, in the summer of 1923 walked in the general area of, if not within eyesight of, the

West Fork. He also spoke with men at Beaver and at the Chandalar mines. In his published report he stated that the fork was a "swift-flowing stream from source to mouth" and that it was "fordable almost anywhere at ordinary stages of water." 474/ In early July 1971 the U.S. Fish and Wildlife Service examined the fish of the stream to help evalute the potential impact of the Trans-Alaska Pipeline. Norval F. Netsch led a five-man team which visited the numerous streams along the then-proposed pipeline corridor by helicopter. They estimated the West Fork's width at ten to fifteen feet and its depth at one-half to three feet. Its bed varied from sand to boulders. 475/

In April 1981 the Navigability Task Force of the BLM's Fairbanks District Office reviewed lands in the Chandalar drainage selected by the State for navigable waters. It stated that the Arctic Environmental Information and Data Center's "Water Body Historical Data" contains "many references to pole boats ascending the West Fork Chandalar River to supply the Chandalar Mining District." This is a geographical impossibility as the West Fork leads away from the Chandalar mines, and no such references exist in the AEIDC computer print-out. The district office evidently intended this comment to refer to the North Fork. At any rate, the FDO made no other mention of travel on the West Fork and recommended that it be considered administratively nonnavigable. 476/ Sherman Berg, navigability specialist in the BLM's State Office, and State Director Curtis V. McVee concurred in this recommendation on April 21 and April 22, 1981, respectively. 477/

Middle Fork Chandalar River

There is no clear evidence of boat travel on the Middle Fork of the Chandalar River. In 1908, Samuel J. Marsh, U.S. Commissioner at Caro, wrote USGS

geologist Alfred H. Brooks that miners brought supplies to the Chandalar diggings in summer by poling boats sixty miles from the Northern Commercial Company store fifteen to twenty miles below Caro. 478/ Grave Creek on the Middle Fork, a potential route to the Chandalar placers, is about sixty river miles above the site of this store. There are alternative interpretations of Marsh's statement. The head of Big Creek by way of the North Fork is sixty miles from the former NCC store. The mouths of Tobin Creek on Chandalar Lake and Lake Creek above Chandalar Lake are sixty-five and seventy-five miles, respectively, from the site of the store. 479/

Precisely how the Middle Fork contributed to transportation in the Chandalar valley is unknown. In 1922 the Alaska Road Commission began to maintain a trail up Flat Creek and across the Middle Fork near the mouth of Grave Creek. It then followed up Grave Creek to the mines. The ARC stated that this trail had originated at some unspecified date with miners and that at least in the early 1920s it was the ordinary route of travel from Caro to the Little Squaw mines. 480/ The ARC continued to maintain the trail at least through the 1920s. 481/

Although John B. Mertie, Jr., a USGS geologist, walked in the general area of, if not along the entire distance of, the Middle Fork in the summer of 1923, he made no observations on its character beyond its general direction and length. 482/

The USGS quadrangle maps made in 1956 as revised in the mid-1960s showed no cabins in the Middle Fork drainage north of the Chandalar mining district. Solitary cabins were located on Little McLellan Creek (T. 3 N., R. 2 W., Fairbanks Meridian), Dictator Creek (T. 29 N., R. 3 W., Fairbanks Meridian), and at

three places along the Middle Fork--in T. 31 N., R. 1 W., Fairbanks Meridian; T. 30 N., R. 1 W., Fairbanks Meridian; and T. 28 N., R. 4 W., Fairbanks Meridian. The last was an Alaska Road Commission cabin on the Caro to Coldfoot route. The others were on the Caro to Chandalar mines trail via Flat Creek; the northern-most one, at least, served as an ARC cabin. 483/

In April 1981 the Navigability Task Force of BLM's Fairbanks District Office reviewed lands in the Chandalar drainage selected by the State for navigable waters. Although it found no documented use of the Middle Fork, the district office staff recommended that the Middle Fork to Sec. 20, T. 31 N., R. 1 W. Fairbanks Meridian be considered navigable. Their rationale was that poling boats were known to have been used upstream from Caro, that the Middle Fork "is large enough for pole boats," and that "with the numerous cabins along its course and the many gold mines located on its tributaries", the Middle Fork "was susceptible to navigation." 484/ Sherman Berg in the BLM State Office, and State Director Curtis V. McVee, concurred in this recommendation on April 21 and April 22, 1981, respectively. 485/

Ackerman Lake

On June 1, 1982 John P. Cook of the BLM Fairbanks District Office submitted a report on water bodies in lands selected by the State within the Chandalar drainage, including Ackerman Lake (T. 31 N., R. 1 E., Fairbanks Meridian). He noted that a Bureau of Indian Affairs realty specialist stated that the lake was not navigable when filling out paperwork relevant to a Native allotment application on the east end of the lake. This realty specialist also wrote that "the land is not suitable for harborage, landing and wharf purposes," though the allotment examiner landed on the lake in a Grumman Goose. Later, a trespass

examiner landed a Cessna 185 equipped with floats on the lake. He noted a canoe on the lake. Cook recommended that Ackerman Lake be determined nonnavigable. 486/ The State Director concurred on June 25, 1982. 487/

East Fork Chandalar Lake

There is limited information on early Native boat use of the East Fork. Anthropologist Robert McKennan, who lived among the Chandalar Natives at Arctic Village, Venetie, a hunting camp on Smoke Creek, and a fish camp called "Suko" (Tsukon on current USGS maps) in the summer of 1933, has written that these people were and long had been a piedmont hunting society which made little use of streams. Presumably acquiring his information from the older Indians he met on his field investigation, McKennan wrote that in aboriginal times willow rafts pointed fore and aft were the only watercraft used and these were to cross streams, not to float down them. 488/ Anthropologist Frederick H. West in his dissertation on the Chandalar Kutchin, stated that in the later part of the first decade of this century Natives introduced the skin boat used in the Yukon Flats to the East Fork. West described them as "a temporary device used to return home after hunters have gone up the river from Arctic Village and have taken their bag of game." 489/ In 1933 McKennan and a Native family traveled from Arctic Village to Venetie in a caribou skin raft. 490/

Samuel J. Marsh, an explorer, geologist, and U.S. Commissioner, may have rafted on the East Fork in 1903. His account of a prospecting journey is hazy as to his precise location. Marsh, Thomas G. Carter, and nineteen others, mostly Eskimos, wintered on the headwaters of the Canning. Marsh recalled in 1906 that Carter and an Eskimo went off to the southeast and himself to the southwest on April 1st. Contradictorily, Marsh then said he prospected along

the main range of mountains dividing the Yukon drainage from those of the Arctic rivers "get[ting] far to the Eastward." At any rate, in July he ran low on supplies and calculated he was 120 miles from the Yukon. He packed for two weeks until he came to a stream large enough to navigate. He built a raft but after floating a few hours it wrecked on some swift rapids. He built another raft and floated four more days before coming to an Indian village where he acquired food. The existence of this village suggests that Marsh may have traveled one of the forks of the Chandalar to present-day Venetie. From the Native settlement he traveled by some means to Fort Yukon where he took a steamboat to St. Michael. 491/

Geologist John B. Mertie, Jr. of the USGS was the first to report on the East Fork in any detail. In a publication describing his work in the field in 1926 Mertie stated that the fork was "a large stream, swift but navigable for canoes, and is regarded as an excellent route into that part of the Brooks Range lying west of the headwaters of Sheenjek River." However, this description was based on hearsay information. Mertie had not yet visited the East Fork; he had spent the summer of 1926 on the Sheenjek. 492/

In the summer of 1927 Mertie had an opportunity to test his conclusions about the East Fork. In the previous winter two members of his expedition sledded supplies to Arctic Village and the upper Sheenjek River valley. On June 9 Mertie and an assistant, C. A. Wheeler, left Fort Yukon in a canoe equipped with an outboard motor. Because of high water they did not reach the mouth of the East Fork until July 2. Mertie and Wheeler made less use of the outboard motor on the East Fork than they had on the main Chandalar. Mertie did not explain why this was the case. He stated that "most of the progress [on the East Fork] was made by lining the canoe along gravel bars, the motor being

used mostly in making bad crossings, and in ascending stretches of the river where no gravel bars were exposed on either side." On July 9 the two men had to stop their canoe trip upriver when Mertie injured his ankle. The group was then about three miles above Lush Creek (T. 31 N., R. 7 E., Fairbanks Meridian). Wheeler hiked to Arctic Village, arriving there on the 14th. The next day Gerald FitzGerald and a Native took a canvas canoe from Arctic Village to Mertie's camp above Lush Creek. They arrived at the camp the same day. On the evening of the 16th the three men began to walk to Arctic Village, a journey that took two-and-one-half days. 493/

After a month covering 200 miles in the upper Sheenjek and East Fork valleys, Mertie and the three others in his expedition began their return trip down the East Fork. They left Arctic Village on August 20 in two skin boats obtained from the Natives, and arrived at the camp near Lush Creek on August 28. On the next day the men continued downstream in the Peterborough canoe and canvas boat they had cached there. Three men rode in the Peterborough canoe and one in the canvas canoe. They arrived at the mouth of the East Fork on September 5. The slow return trip probably was caused by the mapping they did on both sides of the river on their way down from Arctic Village; a project made more difficult on the lower stretch of the river when the men encountered early snows. 494/

Chandalar Natives were still using skin boats in 1945. In that year John Fredson, a Native living at Venetie, reported that the Indians used both rafts and skin boats to return from hunting. It is probable, though undocumented, that some of this hunting took place along the East Fork. 495/ This assumption is strengthened by the request for an Indian reservation made by Venetie, Arctic Village, and Christian Indians in the late 1930s. These villagers asked

that the boundaries include the centers of the Christian River, Chandalar River, and the East Fork of the Chandalar because these water bodies supplied fish for food for themselves and their dogs and because these streams were used as routes of transportation by boat in summer and dog sled in winter. 496/

Quadrangle maps based on USGS field work in the 1950s revealed no cabins on the East Fork or its tributataries north of Arctic Village. One cabin lay on the east side of the river opposite Little Rock Mountain in T. 32 N., R. 7 E., Fairbanks Meridian. (John B. Mertie, Jr.'s USGS mapping party which visited the area in 1927 noted this cabin.) Three cabins were located at the west end of the Vunittsieh Lakes (T. 31 N., R. 1 E., Fairbanks Meridian) which emptied into the East Fork via Chekhechunnjik Creek and the North Fork of the East Fork. Two other cabins were near the mouth of the North Fork of the East Fork. Tom Taylor, who did the field work for the 1956 USGS maps of this area, recalled in 1982 that John Roberts of Venetie said that the latter two cabins were used by him for hunting and trapping. 497/

Don Ross, a recreationist who had previously worked for the Alaska Department of Fish & Game, traveled from Arctic Village to Venetie by kayak in 1966. He had himself and his seventeen-foot folding kayak flown to Arctic Village. He briefly explored the area and took a photograph of a Native on a log raft at least thirteen feet wide on the East Fork above the village. He started downriver, probably sometime in July. He wrote that "twenty miles below Arctic Village I hit the worst stretch of the rapids, and all hell broke loose. More than once I told myself I had no business running rapids in the middle of the wilderness where one mistake could mean capsizing or worse." He continued that the East Fork "kept me busy, providing some of the most exciting and exhilarating

moments of the summer, with one stretch of rapids following another in an unbroken chain." He noted several close calls, "one when I hung up on a boulder in midstream, and another when I was smashed sideways into the bank after rounding a nasty hairpin bend." Ross had taken the precaution of having Ross Carswell, a Wien pilot in Fork Yukon look out for him. If Ross wrecked his kayak, Carswell had agreed to land his Beaver on one of the gravel bars to retrieve him. However, Ross succeeded in reaching the main Chandalar and Venetie without mishap. Carswell picked him up at Venetie and flew him to Fort Yukon. 498/

Alaska Magazine in July 1972 published a story about Arctic Village by Maureen Beuning. In it she displayed a photograph of the Bishop Rowe Episcopal Church which was completed in the late 1960s. The villagers cut the logs, which from the photo appear to be nine to ten inches in diameter, on Nichenthraw Mountain and "rafted them nearly 60 miles" down the East Fork. Beuning probably overstated the river distance from the Nichenthraw Mountain area. The foot of the mountain is about forty miles from Arctic Village. 499/

In 1973 the Natives of the Venetie Indian Reserve decided to exercise the option under the Alaska Native Claims Settlement Act to gain title to the Reserve. 500/ Subsequently, BLM gathered information on the need for easements in the Reserve. Two site easements were proposed at Arctic Village in Sec. 24, T. 15 S., R. 28 E., Umiat Meridian; one for the primary boat landing area and another for the main floatplane access point for the village. These were stated to be utilized by residents, travelers, and recreationists. Hunters in particular took advantage of the Arctic Village floatplane tie-up:

> Arctic Village serves as the major base of operation for moose, grizzly bear and dall sheep hunts into the Brooks Mountains and Arctic National Wildlife Range. During the hunting season, 3 to 5 float planes may be tied up along the site.

An easement for an existing trail was to lead from the boat tie-up easement northerly to public lands in Sec. 19, T. 15 S., R. 28 E., Umiat Meridian. The justification for this easement was that it led to "a summer trail which extends up the East Fork of the Chandalar River, traverses the Brooks Range, and terminates at Barter Island." The BLM did not support a proposal for an easement on both banks of the East Fork for the entire length of Reserve, but did back a streamside easement on the left bank and the east half of the river's bed downstream from a place identified as Gold Camp in Sec. 23, T. 29 N., R. 4 E., Fairbanks Meridian. The rationale for this was that the East Fork was considered navigable only to this point (the source of the information on Gold Camp is not clear from the BLM's files). The BLM stated that this easement was necessary "to provide for public use of waters having a highly significant present recreational use" and that the East Fork and the Chandalar had served as travel routes for exploration, trade, commerce and inter-village travel. Finally, the BLM did not consider a proposal submitted by an unnamed party for a site easement in Sec. 20, T. 14 S., R. 29 E., Umiat Meridian at the confluence of the Junjik River and the East Fork because it was outside the conveyance area. 501/

The Federal-State Land Use Planning Commission on February 14, 1979 issued its comments on these easements. It disagreed with the floatplane tie-up stating that the Federal Aviation Administration and the local government recognized and would accommodate the needs the easement was to serve. The Commission

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agreed with the Arctic Village boat tie-up easement and with the trail leading from it northward to public lands. It disapproved of any streamside easement on the East Fork stating that these were contrary to regulations and noting that the right bank of the stream was available to travelers. 502/

On May 25, 1979 Robert Arnold, Terry Hassett, Robert Faithful, and Stanley Bronczyk of the BLM met with the Venetie Tribal Government and its lawyers in Fairbanks. The Venetie leaders objected to the boat launching site easement stating that no one except local Natives used the area and that should anyone bring in a boat to launch, suitable facilities for doing so were available at an area adjoining the airport. The Natives also felt it was an unfair taking by the public of improvements they had made at the boat landing site. The Indians also objected to the trail easement north to public lands. They told the BLM representatives that only Natives hiked into the public lands to the north of Arctic Village. Others could cross the river by boat to reach these public lands. Moreover, no single trail existed northward from the village across this flat, low, lake-dotted area. Rather local residents used a variety of trails to the public lands. The Natives especially objected to this easement because it was only used by Natives and traversed some of their best fishing areas, including Tritt Creek, a popular set-net fishing site. 503/

On September 19, 1979 the State Director took account of the comments made both by the Land Use Planning Commission and by the Natives. All of the easements were dropped. According to the State Director, the people of Venetie and Arctic Village used riverboats on the Chandalar River and its East Fork to gain access to public lands west of the Venetie Reserve. The Indians carried

on subsistence trapping and hunting operations on these public lands. Recreationists floated the East Fork from Arctic Village and continued on the main river to Venetie. They used rafts, canoes, kayaks, and riverboats. 504/

Debbie Miller, who taught at Arctic Village in the 1970s and is currently writing a history of that village for the National Park Service, wrote to the author:

> During periods of high water, boats have been known to ascend the East Fork to where Flatrock Creek joins the Chandalar. In the summer boats commonly ascend the East Fork to the "Nitsii Ddhah" area (Nichenthraw Mountain on topo map). Roughly 68° 25' on your map.

She also stated that Red Sheep Creek is a popular hunting and fishing area for Arctic Village residents, but that the Natives fly rather than boat to this spot. 505/

On June 1, 1982 John P. Cook of the BLM submitted a report on certain streams in the Chandalar drainage including the East Fork up through T. 29 N., R. 3 E., Fairbanks Meridian. Cook noted West's, McKennan's, and Mertie's findings on the character of the East Fork. He stated that use since Mertie "has been largely confined to use around Arctic Village (float planes) and above, where Brooks Range Arctic Hunts has conducted canoe and float trips on the Junjik down to Arctic Village." He noted that the easement file for Venetie Reserve made an assumption of navigability for the East Fork up to "Gold Camp" in Sec. 22, T. 29 N., R. 4 E., Fairbanks Meridian. However, Cook found that the cabins located at that point were not those of a mining enterprise but of Johnny Frank, an Arctic Village resident who trapped from there to Ackerman Lake on the Middle Fork. Cook concluded that there is "no record of water

travel other than that incidental to research and recreation" and that though the East Fork is "marginally susceptible to navigation" the "lack of any exploitable resources and the Native ownership of the river from the middle of the streambed eastward would make any development depending on water transportation unlikely." Cook thus recommended that the East Fork be considered nonnavigable. 506/ The BLM State Director concurred in this recommendation on June 25, 1982. 507/

Junjik River

Although anthropologist Robert A. McKennan, who visited and spoke with residents of Arctic Village, Venetie, and associated fishing and hunting camps in 1933, reported that Chandalar Kutchin acquired flint for making fires, knives, and arrowheads near the head of the Junjik, he did not indicate any water travel on this stream. 508/

In late 1976 Kevin Apgar of the Bureau of Outdoor Recreation collected information on the Junjik River to prepare for a projected field trip investigation. At the time, the agency planned to investigate the suitability of the river for inclusion in the Wild and Scenic Rivers System. (No field trip was ever undertaken.) Apgar found little evidence of Native use, though he noted Native allotments on the river. Dave Spencer, a former chief of wildlife refuges in Alaska, and Abe Thayer, a long-time manager of what was then the Arctic National Wildlife Range, both told Apgar that they believed Natives had used the Junjik drainage less in recent years. Eugene M. Witt was the most consistent user of the river valley in the 1970s. During the summer he maintained a guiding service for

hunting big game. An Alaska Magazine advertisement by Witt in 1976 also referred to float trips. Witt operated a base camp on the west shore of Timber Lake as well as some outlying tent camps on Crow Nest Creek. 509/

Apgar was unable to contact Witt, but he did interview Kevin Delaney, who worked as a guide for Witt in 1969 and was employed by the Alaska Department of Fish & Game in 1976. Delaney described the Junjik as a clear water stream with adequate water to float an Avon raft from an unnamed lake in T. 12 S., R. 23 E., Umiat Meridian, which Delaney called "Fish & Game Lake," at any time during the summer. Delaney stated that the Junjik provided good grayling fishing. He said that hiking along the river was "not too bad" but was hindered by the presence of tussocks. 510/

Apgar's report contained several statements not directly attributed to any of the three individuals interviewed. He wrote that "several people have floated the Junjik in recent years." Access was either by motorboat from Arctic Village, although no upper limit of travel was noted, or by airplane from Arctic Village, Fort Yukon, or Kaktovik. Dave Spencer told Apgar that he had landed on Timber Lake in a Beaver. Timber Lake, Apgar noted, was "shallow." Apgar wrote that "smaller floatplanes used by ADF&G occasionally land on "Fish and Game Lake." 511/

Jim Morris, a "river runner" with the National Park Service's Wild and Scenic Rivers program, briefly described to the author a vacation float trip he had taken on the Junjik. In the summer of 1980 he was part of a ten-person group which flew to Timber Lake. Using a twelve-foot Redshank raft and two other thirteen foot inflatable rafts the group floated in a "slough" of the lake and then portaged a short distance to the Junjik. Morris said the river was floatable

both below and above the point at which they entered it. According to Morris, floating on the Junjik was "common", but his party saw no other floaters on the trip. His group descended to Arctic Village, where they took a plane to Anchorage. 512/

Loon Lake

The only evidence of use of Loon Lake (T. 15 S., R. 28 E., Umiat Meridian) was contained in a file concerning the conveyance of the Venetie Indian Reserve to the Natives of the area. The BLM recommended a site easement on the northwest shore of the lake. This easement was to include a twenty-five foot-wide easement on the bed of the lake along the waterfront of the site. The site was designed to provide camping, boat and floatplane tie-ups, temporary storage for supplies and equipment, and to facilitate access to lands north of the site. The lake was to serve as an alternate floatplane landing site when conditions did not permit landing on the Chandalar. 513/ On February 14, 1979 the Federal-State Land Use Planning Commission disagreed with this proposal stating that other easements provided adequate access to public lands. 514/ The State Director's final easement memorandum issued September 19, 1979 dropped this easement for the reasons given by the Commission. The same document further stated that: "This water body serves as an important floatplane access point for Arctic Village and public lands outside the former reserve. During the hunting season, floatplane use on Loon Lake is substantial as Arctic Village is the major base of operation for moose, grizzly bear and Dall sheep hunts into the Arctic National Wildlife Range." 515/

Vunittsieh Lakes

This is a group of very small lakes (less than a half mile in diameter) and one larger lake (T. 31 N., Rs. 1 and 2 E., Fairbanks Meridian) approximately three miles long east of Ackerman Lake. On June 1, 1982 John P. Cook of the BLM submitted a report on water bodies on lands selected by the state within the Chandalar drainage. Cook wrote that:

> "No Euro-American use of the lake can be documented but John Frank [an Arctic Village Native] has a well established trap line camp at the west end of the main lake. The [Native] allotment examiner [presumably for Frank's allotment] gained access from Ackerman Lake by land, at the same time as he examined [an] application on the latter Lake. This lake is considerably narrowerer (less than ¼ mile) and has several ridges extending into the lake. It would probably not be used for float planes with the availability of Ackerman Lake so close.

Cook thus recommended that the Vunittsieh Lakes be determined nonnavigable. 516/ The State Director concurred on June 25, 1982. 517/

Venetie Lake

The only reference to Venetie Lake (T. 26 N., Rs. 6 and 7 E., Fairbanks Meridian) was contained in a file concerning the conveyance of the Venetie Indian Reserve to the Natives of the area. An undated summary of easement proposals submitted to the BLM included a discussion of a site easement on the eastern shore of the lake. This site was to include a twenty-five-foot-wide

easement on the bed of the lake along the site's waterfront; it was to serve as a campsite along a trail. The BLM opposed this easement in the belief that the trail was unnecessary. 518/

Marten Creek

There are only a few references to Marten Creek. Maps of the area compiled by the USGS in the 1950s depicted cabins at two locations along the tortuously twisting course of Marten Creek and one on Kocacho Creek (T. 25 N., R. 8 E., Fairbanks Meridian), a tributary of Marten Creek. The 1963 revision of a 1956 USGS quadrangle map showed a winter trail linking this cabin with cabins on Marten Creek at a location in the southwestern portion of T. 23 N., R. 9 E., Fairbanks Meridian and at Tsukon in the same township. These last two probably are "Lower Fish Camp" and "Suko" as identified by anthropologist Robert A. McKennan in 1933. McKennan visited Suko, which he described as twelve miles east of Venetie at the point where the Suko River flows from Suko Lake. He found a few cabins and tent frames there. He did not visit Lower Fish Camp, but the Indians of Venetie, who used both of these places as fish camps, told him it was five miles below Suko on the Suko River. Neither Donald Orth's Dictionary of Alaskan Place Names nor current USGS maps identify Suko River, yet its location as depicted on a map in McKennan's book is very similar to Marten Creek. 519/

Another reference to Marten Creek was contained in a file concerning the conveyance of the Venetie Indian Reserve to the Natives of the area. An undated summary of easement proposals submitted to the BLM included a discussion of a site easement in Sec. 18, T. 28 N., R. 10 E., Fairbanks Meridian. This

site was to include a twenty-five-foot-wide easement on the bed of the stream; it was to serve as a campsite on a trail between Venetie and Christian. The BLM opposed this easement in the belief that the trail was unnecessary. 520/

Vetenjerlo Lakes

The only information found concerning these lakes stemmed from a July 1962 U.S. Fish & Wildlife field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached one of the lakes (T. 25 N., R. 8 E., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. The report does not make it clear which of the lakes the Fish & Wildlife employees surveyed. 521/

Vunikth Lakes

The only information found concerning these lakes stemmed from a July 1962 U.S. Fish & Wildlife field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached one of the lakes (T. 25 N., R. 7 E., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. The report does not make it clear which of the lakes the Fish & Wildlife employees surveyed. 522/

Unnamed Creek (Ts. 25-28 N., R. 8 E., Fairbanks Meridian and T. 27 N., R. 9 E., Fairbanks Meridian)

The only references found which pertain to this unnamed creek were contained in a file concerning the conveyance of the Venetie Indian Reserve to the Natives of the area. An undated summary of easement proposals submitted to BLM included discussions of an easement for the Venetie-Christian trail shown on current USGS maps and a campsite on the trail at the unnamed creek in Sec. 14, T. 27 N., R. 8 E., Fairbanks Meridian. The trail paralleled the creek's upper stretches. The BLM dropped the trail easement as unnecessary. Since the site easement had only been justified as a campsite along the trail, it too was dropped. 523/

Christian River

Very little is known about the use of boats on the Christian River. USGS explorer John B. Mertie, Jr., wrote in 1926 that "Christian River is said to be a sluggish stream with numerous log jams and is regarded as unsuitable for canoe navigation." Mertie did not travel on the river. However, in 1958, the Corps of Engineers reported that small launches and canoes could negotiate the lower portion of the Christian where log jams were the primary impediment. In the upper part river transport was more difficult because of the need to line shoals. The Corps study of the Yukon Flats was based on a literature search and field investigations in the 1940s and early 1950s. 524/

Maps of the Christian River valley have displayed several structures. A 1930 USGS map of the Chandalar and Sheenjek area showed Christian Village, Simon's Cabin (on Otter Creek) and Caribou House (T. 33 N., R. 11 E., Fairbanks

Meridian) on a winter trail from Arctic Village to Fort Yukon. It also noted "Willow Camp" in T. 35 N., R. 11 E., Fairbanks Meridian, but no permanent structures were then associated with the location. 525/ The 1972 revision of the 1956 USGS map encompassing the Chandalar drainage included the sites on the 1930 map, but Simon's Cabin unlike the others was no longer on a winter trail and the ruins of a structure was recorded at "Willow House." Two other ruined cabins were marked in T. 35 N., R. 10 E., Fairbanks Meridian. Also a cluster of four cabins was shown on an unnamed tributary in T. 33 N., R. 9 E., Fairbanks Meridian and two more on another unnamed tributary in T. 33 N., R. 8 E., Fairbanks Meridian. 526/

In 1973 the Natives of the Venetie Indian Reserve decided to exercise the option under the Alaska Native Claims Settlement Act to gain title to the Reserve. 527/ Subsequently, the BLM gathered information on the need for easements in the Reserve. The sites proposed to BLM along the Christian River were in Sec. 9, T. 35 N., R. 11 E., Fairbanks Meridian; Sec. 32, T. 34 N., R. 10 E., Fairbanks Meridian and Sec. 22, T. 32 N., R. 9 E., Fairbanks Meridian. All were to include a twenty-five-foot strip of the bed of the river. The first site at the location of "Willow House" was to serve as a rest stop and campsite for those traveling the Christian-Arctic Village trail. The BLM dropped this easement prior to submission of easement proposals to the Federal-State Land Use Planning Commission because it believed the trail was unnecessary. The other two campsites were also dropped because they did not "facilitate public access to public lands and [because] Christian River is located entirely within the former reservation." 528/

Otter Creek

There are few references to Otter Creek (mouth in T. 31 N., R. 11 E., Fairbanks Meridian). In 1926 and 1927 John B. Mertie, Jr. led USGS mapping parties into the Sheenjek and East Fork Chandalar River areas. While it does not appear the men viewed Otter Creek, they marked its course in a reasonably accurate manner and showed Simon's Cabin on the creek about three miles above its mouth. This cabin was on a winter trail from Arctic Village to Fort Yukon. 529/ The 1972 revision of the 1956 USGS map encompassing Otter Creek also included Simon's Cabin, but it was no longer indicated as on a winter trail. 530/

The only other reference found which refers to Otter Creek was contained in a file concerning the conveyance of the Venetie Indian Reserve to the Natives of the area. An undated summary of easement proposals submitted to the BLM included a discussion of a site easement in Sec. 17, T. 31 N., R. 11 E., Fairbanks Meridian. This site was to include a twenty-five-foot-wide easement on the bed of the stream to serve as a campsite on a trail between Christian and Arctic Village. The BLM opposed this easement because it felt the trail was unnecessary. 531/

Tivehvun Lake

The only information found concerning this lake stemmed from a July 1962 U.S. Fish & Wildlife field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the

field examiners reached Tivehvun Lake (T. 23 N., R. 11 E., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 532/

BIRCH CREEK

In July 1863 Kutchin Indians took Reverend Robert McDonald from Fort Yukon in their birch bark canoes to a point about forty miles up the Yukon. From there they portaged to Birch Creek, paddled downstream two miles to a stream generally considered to be present-day Preacher Creek, and then ascended that creek for another day to a significant Native religious site. 533/

The Birch Creek gold rush of the 1890s was sparked when two men of Native and Russian blood portaged from the Yukon to Birch Creek, found gold, did some hunting, and floated down the creek to the Yukon in skin boats. V. Wilson who wrote a guide book to the gold fields, described two routes to the mines in 1894. Some men portaged from Circle City directly west to Birch Creek "from which point the river is followed by boat to Crooked River, thence up to the mines on Independence, Mastodon and other creeks." A shorter way was to travel by trail the entire distance from Circle. 534/ In their guides to the gold fields published in 1897, John William Leonard and Ernest Ingersoll both noted the use of boats to transport goods to the mines from Circle. Ingersoll recounted that one party used a trained moose to pull their boat up the creek. Leonard stated that freighting by horse cost forty-five dollars per 100 pounds. As an alternative,

> Some miners carry their goods or have them packed over by Indians the 8 miles to Birch Creek. But if this is done one has to pole up stream for

> from forty to seventy miles, making several portages around rapids and at the head of canoe navigation to carry the provisions several miles up the particular tributary upon which the claim he is working is located. 535/

Waterborne transport to the mines, however, had a short history, nor was it ever the prime supply line to the Circle gold district. After a few years into the new century, USGS geologists describing travel in the area, ceased mentioning the use of boats on Birch Creek. A well-established trail system supplied all summer transport needs. And even at the earliest stage of the mining boom, Wilson wrote that "miners depend on the snow and ice for freighting their summer supplies to the mines." 536/

The lower portion of the river, though having a less spectacular history, witnessed more successful boating. Miner C. Bruce in his 1895 guide to Alaska and Henry Elliott and Ernest Ingersoll's guide issued two years later, stated that Birch Creek was navigable for small, light-draft boats for 150 miles. Sam C. Dunham in 1898 gave the more conservative estimate of 100 miles. In 1906 Alfred Hulse Brooks wrote that "Birch Creek is navigable for small steamers only in the flats." 537/

Most use of the river has been tied to the Natives' hunting, trapping, and fishing activities on the stream's lower stretches. Natives of the Yukon probably reached the area by portaging. A 1924 Alaska Road Commission map showed three portages from the Yukon to the lower portion of Birch Creek. Each followed in a southwesterly direction from the Yukon: one from the Indian settlement of Twenty-two Mile Village, another from the Indian settlement of Seventeen Mile Village, and one from a point about midway between these two places. Biologist Olaus J. Murie visited the Birch Creek area in 1921. He

wrote that year that at least as early as 1910 trappers frequented the fine muskrat country along Preacher Creek, floating down the tributary shortly after break-up. He did not cite the source of this information. Although Murie did not say how far upstream the trappers started, he may only have been refering to the lower portion of the creek in the Yukon Flats since muskrat thrive best in marshy land. Mark S. Boyce in 1974 wrote that both canoes and boats were used during moose season on Birch Creek in the fifty miles upstream from the Flats. 538/

The USGS map of the Circle Quadrangle showed numerous cabins and buildings on the gold-bearing tributaries of Birch Creek, most notably Eagle Creek, and the branches of Harrison Fork and Crooked Creek. Almost without exception the map displayed trails or roads linking these mining facilities to the Steese Highway. However, a scattering of other cabins on the upper part of Birch Creek appeared not to have been linked by a land route to the highway or to an outlet on the Yukon. These included solitary cabins at the mouths of Harrington Fork (T. 5 N., R. 10 E., Fairbanks Meridian), Portage Creek (T. 6 N., R. 15 E., Fairbanks Meridian), and an unnamed southern tributary in T. 6 N., R. 16 E., Fairbanks Meridian as well as three cabins and the ruins of two structures on Birch Creek in T. 6 N., R. 17 E., Fairbanks Meridian and T. 7 N., R. 17 E., Fairbanks Meridian. There also were two cabins on the Yukon Fork in T. 5 N., R. 17 E., Fairbanks Meridian. 539/

The USGS maps of the Circle and Fort Yukon quadrangles also located a couple of isolated cabins on Birch Creek below the mouth of Crooked Creek. One was four miles above the point where Birch Creek split into its upper and lower mouths. No cabins were located on its upper mouth. Besides Birch Creek Village, there was one cabin on the lower mouth in T. 18 N., R. 7 E., Fairbanks

Meridian between the creek and Scaup Lake. A cabin was also located on Bachelor Creek, a tributary of Preacher Creek (T. 8 N., R. 8 E., Fairbanks Meridian). A trail along Bachelor Creek passed by this cabin. 540/

The Army Corps of Engineers in 1958 determined that Birch Creek was "navigable to small inboard- and outboard-powered motor launches" upstream to a point above the Steese Highway bridge near Circle. However, the Corps cautioned that above Preacher Creek conditions deteriorated as the depth decreased and the current and incidence of shoals increased. 541/

Studying Birch Creek as a possible canoe trail, the BLM sponsored a trip on the stream in 1967. Four BLM employees--Wayne Boden, Carl Jeglum, Cal Niver, and Alden Sievers--decended the creek in two canoes from the Steese Highway bridge over the North Fork to a point above the bridge over the main creek from August 7 to August 12. According to the account of the trip, the water level was higher than normal. Still, "because of the lack of water, the party had to drag their canoes for the first two (2) miles. The rest of the day was spent "climbing in and out of the canoes--floating a few yards, then dragging a few yards," so that six miles were made in five hours during the first day. More dragging of the canoes was required for the first five miles of the second day's voyage. After two hours the party reached Harrington Fork. From this point downstream, the water was of sufficient depth so that the canoes did not have to be dragged. About twenty-three miles was covered in eight hours on the water during the second day. They camped at the extreme east end of T. 5 N., R. 11 E., Fairbanks Meridian. On the third day, the canoes had to lined through four sets of rapids. These were the only points on the trip where the canoes had to be lined. Approximately sixteen miles were traveled in five hours during the third day. That evening they camped at the east end of

T. 6 N., R. 13 E., Fairbanks Meridian. On the fourth day there was a significant increase in the water level and the speed of the current. No problems were encountered and about forty miles were covered in seven hours on the water during the fourth day. The party encountered its last white water just before entering the Yukon Flats. The men spent their last evening at the southern end of T. 7 N., R. 17 E., Fairbanks Meridian. The next day they took seven hours to float to an access point to the Steese Highway near a cabin in T. 9 N., R. 16 E., Fairbanks Meridian. 542/

Despite the difficulties of the trip, which included some sweepers, the BLM concluded that Birch Creek "provides one hundred forty (140) miles of pleasant canoeing experience requiring only intermediate skills." An accompanying map was marked to indicate "little water" on the North Fork above its confluence with Birch Creek. The BLM recommended a two-mile road to this point which was projected as a future launch site. The map showed that the canoes were dragged to an unnamed creek at the northern end of T. 6 N., R. 10 E., Fairbanks Meridian. From this point to the north end of a marshy area in the same township the map notation read: "Little canoeing without scrapping [sic] bottom." 543/

From August 23 to August 29, 1972, Duane Ferdinand and John Perrigo of the BLM, John Wise of the National Park Service, and Pat Pourchot of the Bureau of Outdoor Recreation canoed the same route as the 1967 party in order to study the Wild & Scenic River potential of Birch Creek. They put in at the place recommended as the launch area by the 1967 travelers. While Perrigo stated that the canoeists experienced "no obstacles" in their first two days' voyage which brought them past the mouth of Harrington Fork, he noted

"numerous low water areas where the canoes had to be dragged for short distances." Pourchot later wrote that the "river is ideal for the moderately experienced canoeist," but added:

> When this inspection was made, water levels were extremely low. In the upper reaches considerable dragging and scraping of canoes was encountered. Even in the lower reaches there were a few areas where bottom scraping occurred. From accounts by others I feel this condition exists much of the time, at least in the extreme upper reaches. For much of the season, a ¼ to ½ mile of portaging is necessary from the highway put-in point . . . . From this point to the confluence of Harrington Fork (about 10 miles) there are many exposed rocks, shallow areas and sweepers and care should be taken. Wear and tear on equipment can be extensive. 544/

On the third day the men had to line the canoes "in several rocky narrows" to prevent damage due to low water. Boulders also forced them to line through some chutes with white water. On the fourth day the party's progress was slowed by "several . . . wide shallow water courses" while at another point a canoe was swamped. The next two days offered no problems for the canoeists. At a point below Jump Off Creek they saw a homemade riverboat with an outboard motor and fishing gear. Only on the last day was there any more difficulty; the men had to drag their canoe across several shallow spots. 545/

In 1973 the BOR suggested that under criteria then being developed by Alaska, Birch Creek was navigable to the vicinity of Fryingpan Creek. It reported that "upstream navigation . . . is precluded [in] much of the segment [between the two Steese Highway bridges] by the swift current and shallow,

rocky streambed. River travel has largely been limited to downstream "floating' by raft or canoe" for which it offers "outstanding recreational opportunities." However, the BOR noted motorboats can be launched near the downstream bridge at Mile 147 and travel upriver thirty to forty miles until "small rapids and shallow waters" prevented further travel. The BOR estimated that about twenty-five parties consisting of a total of about seventy-five persons canoed down this section of the creek in 1972 and that around 100 trips were made by motorboat or aircraft to hunt in the ten to twenty miles above the Birch Creek bridge. 546/

The BOR later published reports on Birch Creek's potential as a Wild River. A late 1973 publication stated that: "motorboat access to the proposed river segment is available from the Steese Highway bridge at Milepost 147. From this point, motorboat use is possible with normal water levels for 30 to 40 miles upstream of the lower study boundary." The lower study boundary was near the mouth of Quartz Creek in T. 9 N., R. 16 E., Fairbanks Meridian. It also estimated that Birch Creek, presumably the Wild River segment, witnessed 950 user days of raft, canoe, or kayak floating a year. It made no estimate of motorized boat travel. 547/

A later undated draft environmental statement drawing on unspecified observations of the creek described the upper portion of the Wild River section as "generally shallow with fast water." This segment extended at least ten miles downstream followed by forty miles of "fast water with occasional shallows and four sets of rapids . . . 40 miles of fast water with few shallows, . . . 45 miles of slow water with no rapids" and fifty miles of the "upper regions" of the Yukon Flats. It stated that in its "headwaters" the stream was ten to twenty yards wide with a depth up to four feet and that in its lower reaches it was thirty to fifty yards wide with depths of four to eight feet with fifteen foot pools. It is

uncertain whether the report referred to the lower portion of the creek or the Wild River segment of the creek. The draft proposal stated that motorboats could reach the Wild River segment by ascending Birch Creek 170 miles from the Yukon. This mileage is incorrect as the Wild River segment begins over 230 miles from the Yukon. It also asserted that the proposed Wild River area "offers outstanding recreational opportunities" for canoeing, kayaking, and rafting. 548/ An undated final environmental statement by BOR echoed its earlier report except to delete from its description of the stream the forty-five-mile segment of slow water with no rapids; evidently this had been erroneously inserted in the earlier draft as its inclusion would suggest that the Wild River portion of Birch Creek was about fifty miles longer than it actually was. 549/

Birch Creek Village also used the lower mouth to transport goods from the Yukon. According to an undated regional planning study, Hunn Navigation made one barge trip to the settlement in 1976. But in other years "due to shallow water," barges could not enter the creek. The same report stated that Yutana Barge Lines discharged cargo for the village at the mouth of Birch Creek two or three times a season. The villagers then transported the freight to their community by riverboat. 550/

The BLM first considered the navigability of Birch Creek in the mid-1970s in connection with its solicitation of easement recommendations for lands selected by the Native corporations of Circle and Birch Creek villages and Doyon, Limited. The BLM made further determination on the stream's navigability in 1981 in the process of conveying its land to the State. Circle's Danzhit Hanlaii Corporation submitted requests for land encompassing Birch Creek from the northeast quarter of T. 10 N., R. 16 E., Fairbanks Meridian downstream through T. 13 N., R. 16 E., Fairbanks Meridian. Doyon selected portions of T. 11 N.,

R. 17 E., and T. 10 N., R. 16 E., Fairbanks Meridian which included segments of Birch Creek. On June 26, 1975 Clyde Murray of BLM examined the creek in the selection area. He described the stream as a meandering one 200 to 300 feet wide with cut banks and sand and gravel bars. He stated that periodically ice jams caused floods and that there was infrequent flooding due to run-off. Through conversations with Albert Carroll and possibly others at Circle, Murray learned that local residents trapped and hunted in the area, that there were Native allotments along the stream, and that recreationists floated and fished Birch Creek. Riverboats as well as canoes were used on the water body. 551/

In 1975 the BLM gathered easement recommendations from interested parties. The BOR and the Alaska Department of Natural Resources (DNR) proposed streamside easements. The BOR wanted this easement only south of the Steese Highway bridge stating that this segment of the stream received "heavy use" by fishermen and recreationists. The bureau asserted that there was substantial use by canoeists coming downriver to the Steese Highway and by boaters and persons on foot going up the river on foot from the bridge to camp, fish, and hunt. The DNR asked for the streamside easement in all the selected townships. It stated that trails extended along the creek south of the Steese Highway bridge and were used by fishermen. This easement was designed to insure ingress and egress to "isolated blocks along the waterways and right-of-way areas."

Five campsite and boat tie-up easements were also propsed. These were in Sec. 27, T. 10 N., R. 16 E., Fairbanks Meridian; Sec. 11 or 12, T. 10 N., R. 16 E., Fairbanks Meridian; Sec. 27, T. 11 N., R. 16 E., Fairbanks Meridian; Sec. 31, T. 12 N., R. 7 E., Fairbanks Meridian; and Sec. 27, T. 13 N., R. 16 E., Fairbanks Meridian. The U.S. Fish & Wildlife Service and the Bureau

of Outdoor Recreation recommended the second of these locations, which was at the Steese Highway bridge, for boat launching and vehicle parking. The BLM proposed the other four campsite easements for recreational purposes, noting that canoeists made substantial use of the creek above the Steese Highway bridge and such use was expected to extend northward in the future. The BLM's easement task force on January 22, 1976 approved the easement along the creek bank and added the creek's bed in all the townships. It also supported the campsite easements except it relocated one from Sec. 27 to Sec. 15 in T. 10 N., R. 16 E., Fairbanks Meridian and split the one in T. 10 N., R. 16 E., Fairbanks Meridian so people could approach the creek from both sides of the Steese Highway bridge in sections 11 and 12. 552/ These recommendations were repeated in the June 14, 1976 "Notice of Proposed Easement Recommendations" issued to both Danzhit Hanlaii and Doyon. These BLM also concluded that the Yukon River was the only navigable water body in the selection areas. 553/

The Federal-State Land Use Planning Commission received comments on these proposed easements from the Interior Village Association, which objected to the streamside easement because it did not satisfy the criteria of providing "highly significant present recreational use" and to the campsite easement at Sec. 31, T. 12 N., R. 17 E., Fairbanks Meridian because the site "has adequate space for camping located below high water mark during the periods of the year when it would be used by the public." 554/ The Land Use Commission also received a communication from the State's Department of Natural Resources noting that the creek received "very heavy use especially where the road system parallels the river." 555/ On September 13 and 15, 1976, the commission approved all the easements recommended on the BLM's proposed easement recommendations documents through Circle Village's and Doyon's selections, respectively. 556/

On May 4, 1978 BLM issued its final easement decisions through the selected lands. These were unchanged from those proposed two years earlier, except to add a twenty-five-foot streambed easement along the waterfront of the campsites. The campsites were to provide camping and boat moorage areas and the creek was stated to be "heavily used by hunters, fishermen, boaters, and other recreationists." 557/

The Yukon Resource Area submitted draft State Director Memos for Native-selected lands near Circle on March 7, 1979. These desiginated Birch Creek as a major waterway but not navigable. It stated that:

> Because of the two overland access points at [Steese Highway] Mileposts 94 [at the North Fork] and 147, recreational use on Birch Creek is highly significant. Sportsmen, canoeists, and kayakists access Birch Creek at Milepost 94 and continue their journey to the bridge at Milepost 147 . . . The remaining portion of Birch Creek from the bridge . . . northwesterly to Birch Creek village provides inter-village travel and access to public lands. This portion receives substantial use by sportsmen and recreationists from Fairbanks and is used by residents of Circle for subsistence hunting and trapping.

The draft memos supported the campsite easements at the Steese Highway bridge and those in Sec. 6, T. 11 N., R. 17 E., Fairbanks Meridian and Sec. 27, T. 13 N., R. 16 E., Fairbanks Meridian. The sites on both sides of the Steese Highway bridge were stated to be "heavily used" during the summer months. They were needed to accommodate "sportsmen, canoeists, kayakists, and other river enthusiasts." The other two recommended easements were

separated by approximately a day's travel on Birch Creek and were designed to accommodate public travel on the stream. The two formerly recommended campsite easements were dropped as unnecessarily duplicative of the other sites. 558/

In March 1980 at the request of Martin Karstetter of the BLM's easement staff, Sherman Berg of the BLM's navigability unit prepared a report on Birch Creek. Using sources cited in the AEIDC navigability contract project, Berg presented evidence on past use of Birch Creek. He noted statements by Miner Bruce, H. W. Elliott, and E. Ingersoll that small, shallow-draft boats could ascend the creek 150 miles, mentioned early miners boating upstream from the Circle portage. He cited Mark Boyce's 1974 thesis on the beaver population of interior Alaska which stated that canoes and riverboats were then used on unspecified portions of Birch Creek, and referred to the 1958 Corps of Engineers report which stated that small inboard- and outboard-powered launches could proceed up the creek from its mouth to above the Steese Highway bridge. Considering this and other information, Berg recommended Birch Creek be considered navigable through the selection area. 559/

Subsequent documents issued by BLM referring to Native-selected lands near Circle reflected Berg's findings. These included draft DIC's and Final Easement recommendations dated August 8, 1980. The latter stated that Birch Creek was then used "extensively to access active mining claims, as well as for subsistence and recreational purposes." 560/ Final easements were issued in December 1981. A DIC for the village was promulgated in March 1982. A Final Easement memo for Doyon was issued by the State Director on July 29, 1981 along with another DIC on August 17, 1981. 561/ On January 28, 1982 an amendment to the

second Final Easement memo was issued and a third DIC for Doyon was signed March 23, 1982. All of these documents echoed earlier navigability and easement decisions in reference to Birch Creek. 562/

In the process of conveying lands to the State and extending Circle's and Doyon's selections, the BLM in 1982 determined Birch Creek navigable upstream from the original Circle selection area through T. 7 N., R. 17 E., Fairbanks Meridian. On April 9, 1981 the Fairbanks District Office of the BLM issued navigability findings for the upper half of Birch Creek in the course of conveying lands to the State. The water body was found nonnavigable in its uppermost extremity through T. 7 N., R. 11 E., Fairbanks Meridian because of its "limited size, location, and other physical characteristics which limit waterborne use." Much farther downstream in Ts. 7 and 8 N., R. 17 E., Fairbanks Meridian and T. 8 N., R. 16 E., Fairbanks Meridian. Birch Creek was considered navigable because of unspecified historic use and the stream's physical characteristics. 563/ These findings were cited in a February 9, 1982 report by Marion England of the Fairbanks District Office in justifying determinations of navigability for Birch Creek in Ts. 9 and 10 N., R. 16 E., Fairbanks Meridian, both of which are downstream from T. 8 N., R. 16 E., Fairbanks Meridian. 564/

Simultaneously with making navigability and easement decisions for Native lands near Circle, the BLM took similar actions for Native-selected lands around Birch Creek Village. These encompassed most of Birch Creek's upper mouth, the upper two-thirds of the lower mouth, and the main creek up through T. 17 N., R. 11 E., Fairbanks Meridian. In the first half of 1975 Birch Creek Village, the BLM, and Alaska's Department of Fish & Game recommended campsite boat tie-up easements along the creek and Alaska's Department of Natural Resources urged streamside easements along both the upper and lower mouths. The

village requested sites at the junction of the two mouths (Sec. 25, T. 17 N., R. 10 E., Fairbanks Meridian) and on the lower mouth in Sec. 32, T. 17 N., R. 10 E., Fairbanks Meridian, Sec. 34, T. 17 N., R. 8 E., Fairbanks Meridian, and Sec. 18, T. 17 N., R. 8 E., Fairbanks Meridian. The BLM proposed comparable easements on the upper mouth in Secs. 11 and 13, T. 18 N., R. 9 E., Fairbanks Meridian, and Sec. 19, T. 19 N., R. 8 E., Fairbanks Meridian. All of these were suggested as overnight camping grounds for recreationists floating Birch Creek. The Department of Fish and Game suggested an easement at Birch Creek Village for a campsite and a boat and floatplane tie-up. The agency stated that the area received "moderate use" by recreational boaters, fishermen, and hunters. The village proposed an alternative site just below the village. The ADF&G also recommended a ten-acre boat and floatplane tie-up on the upper mouth in Sec. 25, T. 18 N., R. 9 E., Fairbanks Meridian stating the area received "moderate use by hunters and sport fishermen." For some reason this latter easement did not receive further consideration. Finally, the State Department of Natural Resources requested the streamside easements to provide access to public lands and waters. 565/

On April 10, 1975 John Stevenson and Clyde Murray of the BLM visited Birch Creek to discuss easements with village leaders. A BLM employee produced the following summary of comments on Birch Creek:

> Lower Birch Creek--Riverboats and canoes--approximately six parties last year; upper mouth gets low in summer--non-navigable.

The report writer also noted there was a floatplane and boat and canoe tie-up at Birch Creek Village. 566/

Clyde Murray on June 24, 1975 reported on information relevant to Birch Creek he had obtained from interviews with David and Edward James of Birch Creek Village. David James described the stream as meandering with cut banks and sand bars. He noted no obstructions to navigation, though seasonably low water prevented boating on the upper mouth. The lower mouth had adequate water through the summer. According to David James, fourteen-foot canoes and sixteen- and twenty-four-foot riverboats with at least twenty-five-horsepower motors were common in the area. He stated that local people used unspecified portions of the creek for travel and subsistence and that recreationists floated the stream. Edward James reiterated David James' comments on recreational use. He said that villagers utilized fifty miles of "upper Birch Creek" in the winter for trapping, that in the fall they hunted about 100 miles above their settlement, that they brought supplies and fire and cabin logs up to their community via the lower mouth, and that the upper mouth was only used in the spring, when villagers gathered muskrats. He claimed that thirty-foot boats traveled on the lower mouth all summer. 567/

The Easement and Navigability Task Force met on January 22, 1976. It supported the campsite easement proposal near the junction of the two mouths, but rejected the site easement in Sec. 32, T. 17 N., R. 10 E., Fairbanks Meridian on the lower mouth as unnecessary in view of the other easements on the stream. Other village-proposed campsite and tie-up easements were supported, including the one below Birch Creek Village which was favored over one in the village recommended by the State Department of Fish and Game. The Task Force also recommended a one-acre site on the right bank of the lower mouth in Sec. 34, T. 18 N., R. 7 E., Fairbanks Meridian. This was to allow access to a trail easement leading from it to Scaup Lake. The Task Force supported the three campsite and tie-up easements the BLM had recommended on the upper mouth

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and added a fourth in Sec. 32, T. 18 E., R. 10 E., Fairbanks Meridian. All the site easements along the upper mouth extended twenty-five feet into the bed of the stream across the entire length of the site's waterfront. The Task Force also recommended streambed and streamside easements on both sides of the lower mouth and Birch Creek above the lower mouth and a trail easement along the right bank of the upper portion of the upper mouth. The latter led from another trail easement which connected Birch Creek with the Yukon and was designed to provide access to isolated public land in T. 17 N., R. 10 E., Fairbanks Meridian. The Task Force recommended that the lower mouth be considered navigable to Birch Creek Village. 568/ With the exception of deleting the upper mouth site easements in T. 18 N., R. 9 E., Fairbanks Meridian and T. 19 N., R. 8 E., Fairbanks Meridian which were not in the selection area, the notices of proposed easements signed by the State Director on July 14, 1976 followed the recommendations of the Task Force. 569/

The Federal-State Land Use Planning Commission then took up consideration of the BLM's easement and navigability recommendations. Among those protesting the BLM's findings was the Interior Village Association which stated that the village corporation felt too many campsite easements had been proposed on the lower mouth, that the trail easement along the upper portion of the upper mouth was unnecessary, and that the streamside and streambed easements were not needed because of the campsite easements the BLM proposed. 570/ However, the Land Use Planning Commission on October 26, 1976 approved all of the BLM's proposals. 571/

The Final Easement memoranda dated June 7 and August 14, 1978 changed none of the easement recommendations approved by the commission, except to expand the easement on a portion of the upper mouth to include both banks and the

bed of the stream. The campsites all were to provide space for boat moorage. The site in Sec. 34, T. 17 N., R. 8 E., Fairbanks Meridian was at one end of a portage to Beaver Creek. The site near the village was then "used for boat moorage and floatplane tie-up." The memos repeated statements on the use of Birch Creek and its mouths in other documents in the file and added that the upper mouth "is used primarily by local residents for fishing and in the spring for rafting." 572/

On June 1, 1981 Marion L. England of the Fairbanks District Office prepared a navigability report for water bodies in T. 19 N., R. 8 E., Fairbanks Meridian. He cited gold rush era guidebooks stating that Birch Creek could be ascended 100 or more miles to document past use of the upper mouth in this township. Although he gave no evidence of physical susceptibility to navigation, he asserted it was susceptible to such use. 573/

This recommendation of navigability for Birch Creek's upper mouth was incorporated in an undated "Notice of Proposed Easement Recommendations" issued in early 1982 and in a draft Final Easements Memorandum dated March 22, 1982. The latter document reversed the BLM's recommendation on several easements. The site easement in Sec. 34, T. 18 N., R. 7 E., Fairbanks Meridian and the accompanying trail easement to Scaup Lake was dropped because the site in Sec. 18, T. 17 N., R. 8 E., Fairbanks Meridian provided an adequate temporary camping area and because the trail was recreational in nature and did not provide access to a major waterway. For similar reasons the site easement in Sec. 22, T. 17 N., R. 8 E., Fairbanks Meridian and an accompanying trail easement to a nearby unnamed lake were dropped. The draft State Director

easement memo also dropped all streamside and streambed easements on Birch Creek and its mouths because these were not consistent with new easement regulations. 574/

On April 19, 1982 Michelle Ward, Dot Tideman, and Larry Jackson of the BLM met with representatives of Birch Creek Village's corporation to discuss navigability and easements. During the meeting Ward jotted down some of the Natives' comments on a copy of the draft State Director memo; she later wrote a summary of the villagers' comments. The villagers agreed with all the BLM's navigability recommendations but remarked that the upper mouth "sometimes is too low to provide for safe travel," that it is "rarely used," and that it only can be used "right after breakup." The townsmen also noted that the upper mouth could only be floated down. One "can't come back up" the stream. The village corporation opposed the site easement just outside of the village. Concerned with the purity of their drinking water, they proposed use of the municipal reserve lands within the townsite as a better alternative. Birch Creek Village representatives also objected to the site easement in Sec. 25, T. 17 N., R. 10 E., Fairbanks Meridian. They said there were too many sites along the creek and that the proposed site "is only about four hours from the village by canoe and about 35 minutes by skiff." 575/

On June 18, 1982 Larry Jackson drafted a memorandum to the Birch Creek Village selection file recounting his impressions from the meeting with the Natives. He wrote that "historical references show the Upper Mouth is/was navigable," but failed to cite the references. Jackson also stated that the BLM should not declare the upper mouth a major waterway because "we may be encouraging people to use an unsafe waterway." He wrote that the residents of Birch Creek Village had told him that the upper mouth was "very difficult and

unsafe to float except for a few days following breakup. This isn't because of rough water but because of low water obstructions." He noted the villagers' objection to the campsite easement in Sec. 25, T. 17 N., R. 10 E., Fairbanks Meridian. The villagers, he said, stated that the location was a four-hour float from the village and public lands were only four hours upstream from the site. He agreed with the villagers in urging dropping an easement outside the settlement in favor of use of the municipal reserve to accomodate river traffic. As had the Natives, Jackson agreed with the site easement at the head of a portage from the lower mouth of Birch Creek to Beaver Creek in T. 17 N., R. 8 E., Fairbanks Meridian, but recommended that the discussion of its use be revised to indicate its use by the non-Native segment of the area's population. 576/

Doyon, Limited responded to the draft State Director Memorandum on May 17, 1982. The corporation supported the village in its objections to the two site easements. It also opposed without comment the easement for a campsite and boat tie-up easement in Sec. 18, T. 17 N., R. 8 E., Fairbanks Meridian. 577/

On June 8, 1982 the Assistant to the State Director for Conveyance Management informed the Birch Creek Village corporation of his decisions on easements on lands to be conveyed to them. All campsite easements along Birch Creek were retained except that near the village. The BLM accepted the village's position that the municipal reserve adequately accommodated river travelers in the area. 578/

The Anchorage Daily News on July 2, 1982 carried a front-page article on miners' disgruntlement with the Wild River designation for Birch Creek and on the damage to water quality caused by placer operations near the head of the stream. Don Stein, chairman of the Fairbanks branch of the Alaska Miners

Association, felt that the creek was not a wilderness stream but an "average" Alaskan river which had seen years of mining activity. Mining had colored Birch Creek a dark brown. The water's visibility was reduced to a half inch. It was not potable and hid rocks and obstructions, making navigation difficult. As a result, unidentified BLM officials told the news reporter that the recreational use of the stream had declined. 579/

Hat Lie Lakes

Little information on Hat Lie Lakes (T. 18 N., R. 10 E., Fairbanks Meridian) has been found. In July 1962 a U.S. Fish & Wildlife Service team examined the largest of these lakes (Secs. 14-15, 22-23, 26-27) as part of a resource study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached the lake by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 580/

The only other records found concerning Hat Lie Lakes were generated beginning in 1975 in the course of BLM's consideration of easements and potentially navigable waters in Native-selected lands near Birch Creek Village. The BLM recommended an undeveloped public campsite and boat and floatplane tie-up on the lake to accommodate recreationists. 581/ The easement and navigability task force in January 1976 supported this proposal and added a twenty-five-foot strip of the lake's bed in front of the site. 582/ This easement was included in the "Notice of Proposed Easement Recommendations for Doyon, Limited" issued July 14, 1976 and agreed to by the Federal-State Land Use Planning Commission that November. 583/ The site easement was included in a State Director's memorandum signed in 1978 which contended that it was "necessary to reserve

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this easement for the continued use of the lake for commercial and private floatplane use to facilitate recreational fishing in the lake." 584/ However, an undated draft of a State Director memorandum stated that on February 20, 1979 the easement staff decided to drop the site easement on Hat Lie Lake because the water body was wholly within Native selected lands and was recreational in nature. 585/

Discovery Lake

Little information on Discovery Lake (T. 16 N., R. 11 E., Fairbanks Meridian) has been found. In July 1962 a U.S. Fish and Wildlife Service team examined the lake as part of a resource study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached the lake by floatplane,, only lakes on which "a small float-equipped airplane" could land were visited. 586/

The only other record found concerning Discovery Lake (T. 16 N., R. 11 E., Fairbanks Meridian) was generated in June 1975 when Clyde Murray of the BLM interviewed Edward James of Birch Creek Village. The interview was conducted in the course of the BLM's investigation of potentially navigable waters within Native-selected lands near the village. Murray reported that the lake was important for the villagers' subsistence; it was used for ratting, trapping, duck and moose hunting, and year-round fishing. Canoes and floatplanes were used on Discovery Lake. Airplanes most frequently touched down on the lake during the hunting season. James stated that canoes were portaged to the lake. 587/ The files contain no further information pertaining to Discovery Lake, doubtlessly because it fell outside of selected lands.

Unnamed Lake (Secs. 8-9, 16-17, 20-21, T. 16 N., R. 10 E.,Fairbanks Meridian)

The only record found concerning this lake was generated beginning in 1975 in the course of BLM's consideration of easements and potentially navigable waters in lands near Birch Creek Village selected by Doyon, Limited. When Doyon orginally selected this township in April 1975, it excluded the land underlying this lake because it believed the lake to be navigable. The BLM, however, considered it nonnavigable. 588/

The Alaska Department of Fish and Game (ADF&G) proposed a one-acre undeveloped campsite and boat and floatplane tie-up on the lake in Secs. 16 and 17 to serve recreationists. 589/ On April 26, 1976, the BLM easement and navigability task force moved this as one-acre site to Section 17 and included with it a twenty-five-foot easement on the bed of the lake. The task force noted that this was a "heavy" subsistence use area for Birch Creek villagers, but nevertheless recommended the proposal because "there is a large water area available for both the public and the villagers" and because the lake did provide access to a large section of public water. 590/ This recommendation was reflected in the "Notice of Proposed Easement Recommendations for Doyon, Limited" issued July 14, 1979. 591/

On November 3, 1976 the Federal-State Land Use Planning Commission informed the BLM that it approved this easement proposal. 592/ The State Director issued a final easement memorandum supporting this site on August 14, 1978. He stated that it was essential "for the continued use of the lake for commercial and private floatplane use to facilitate recreational fishing in the lake." 593/ However, after a February 20, 1979 meeting, the easement staff drafted another

final easement document which dropped this easement, for it did not meet easement regulations, it was entirely within Native-selected lands, and it was recreational in nature. 594/ No further mention of this easement was found in the BLM easement files.

Twin Island Lake

Little information on Twin Island Lake (T. 16 N., R. 9 E., Fairbanks Meridian) has been found. In July 1962 a U.S. Fish and Wildlife Service team examined the lake as part of a resource study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached the lake by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 595/

More information concerning Twin Island Lake was generated in the course of conveying lands to Native corporations pursuant to ANCSA. In applying for lands, Birch Creek Village's Natives excluded the lands under this lake from their acreage count because the villagers considered it navigable. 596/ In June 1975 Clyde Murray and John Stephenson of the BLM interviewed two residents of Birch Creek Village as part of their investigation of potentially navigable water bodies in Native-selected lands near the village. The two BLM men prepared navigability field reports on the "Three Lakes" which included this lake, Chloya Lake and an unnamed lake in Secs. 15-16, 21-22, T. 16 N., R. 9 E., Fairbanks Meridian. However, in their reports of their interviews it is not clear whether Murray, Stephenson, and the men they interviewed referred to all three lakes or only to Twin Island Lake. Throughout their report "lake" is always singular and they indicate that the "lake is accessable by slough from Birch Creek." On USGS maps only Twin Island Lake is shown to be connected

to Birch Creek by a slough. Murray spoke with Edward James who stated that villagers depended heavily for their livelihood on the Three Lakes. He stated that there were campsites around the lake and that canoes and floatplanes were utilized on it. David James told Stephenson that the lake area was used for muskratting, beaver trapping, moose and duck hunting, and berry picking. Local residents fished the lake year-round. He said no cabins were on the lake. David James stated that at low water a twelve-foot pram could be taken to the lake via a slough from Birch Creek. During high water a thirty-foot boat could make the same journey. 597/

The BLM considered two easements relating to Twin Island Lake. The Alaska Department of Natural Resources proposed a linear easement around the Three Lakes; the BLM suggested an undeveloped campsite and floatplane tie-up. The latter was to provide a camping area for recreationists and its front boundary was to be the mean high water line. 598/ Winston James, president of the Native corporation of Birch Creek Village, stated at a June 24, 1975 meeting with BLM representatives John Stephenson, Clyde Murray, and Sigwein Savok that the campsite would aid public use of the lake and impact the village's hunting grounds. James remarked that with such an easement he did not believe the village corporation would be able to prevent the general public from moose hunting on village lands. 599/ Partly as a result of Native objections, the BLM's easement and navigable task force opposed these two easements. The task force wished to avoid "unnecessary conflicts with subsistence use." 600/ This rationale was echoed in the Notices of Proposed Easements issued July 14, 1976 for both Birch Creek Village and Doyon. 601/ The State Department of Natural Resources protested these stances to the Federal-State Land Use Planning Commission, contending that "Native use is public and under that premise an

easement should be designated." 602/ Nevertheless, the Land Use Planning Commission agreed with the BLM. Nothing more concerning the Three Lakes in general or Twin Island Lakes in particular is to be found in the BLM's files. 603/

Unnamed Lake (Secs. 15-16, 21-22, T. 16 N., R. 9 E., Fairbanks Meridian)

Few records were found of this unnamed lake. Some were generated in the course of conveying lands to Native corporations pursuant to ANCSA. In applying for lands, Birch Creek Village's Natives excluded the land under this lake from their acreage count because they considered it navigable. In June 1975 Clyde Murray and John Stephenson of BLM interviewed two residents of Birch Creek Village in connection with an investigation of potentially navigable water bodies in Native-selected lands near the village. The two BLM men prepared navigability field reports on the "Three Lakes" which included this lake and Twin Island and Chloya lakes. However, in their reports of their interviews it is not clear whether Murray, Stephenson, and the men they interviewed referred to all three lakes or only to Twin Island Lake. Throughout their report "lake" is always singular and they indicate that the "lake is accessable by slough from Birch Creek." USGS maps revealed that only Twin Island Lake is connected to Birch Creek by a slough. According to Murray, Edward James stated that villagers depended heavily for their livelihood on the Three Lakes, that there were campsites around the lake, and that canoes and floatplanes were utilized on it. David James told Stephenson that the lake area was used for muskratting, beaver trapping, moose and duck hunting, and berry picking. Local residents fished the lake year-round. He said no cabins were on the lake. Finally, David James stated that at low water a twelve-foot pram could be taken to the lake via the slough from Birch Creek. During high water a thirty-foot boat could make the same journey. 604/

The Alaska Department of Natural Resources proposed a linear easement around the Three Lakes. 605/ On January 22, 1976, the BLM easement and navigability task force opposed the easement since the area was heavily utilized for subsistence purposes by Birch Creek villagers. The task force wished to avoid "unnecessary conflicts with subsistence use." 606/ This rationale was echoed in the Notices of Proposed Easements issued July 14, 1976 for both Birch Creek Village and Doyon. 607/ The State Department of Natural Resources protested this stance to the Federal-State Land Use Planning Commission, contending that "Native use is public use and under that premise an easement should be designated." 608/ Nevertheless, the Land Use Planning Commission agreed with the BLM. Nothing more concerning the Three Lakes in general or the unnamed lake in particular is to be found in the BLM's files. 609/

Burman Lake

The only record found concerning Burman Lake (Ts. 14 and 15 N., R. 8 E., Fairbanks Meridian and T. 14 N., R. 9 E., Fairbanks Meridian) was generated beginning in 1975 in the course of the BLM's consideration of easements and potentially navigable waters on lands near Birch Creek Village selected by Doyon, Limited. The Alaska Department of Fish and Game (ADF&G) proposed a one-acre undeveloped campsite and boat and floatplane tie-up on the lake in Sec. 36, T. 15 N., R. 8 E., Fairbanks Meridian to serve recreationists. However, the BLM did not give further consideration to this easement since Burman Lake was not on lands selected by the Natives. But Burman Lake also was mentioned as the terminus of a trail easement proposed by ADF&G. This non-existent trail trended southward from Birch Creek Village, over Twin Island Lake, to Burman Lake. Native residents objected to this proposal in meetings with the BLM in April and June 1975. The Natives stated that they did not want public

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access permitted through their hunting grounds. They suggested a portage from Birch Creek to Beaver Creek as an alternate route to the Burman Lake area. 610/ Subsequently, the proposed Burman Lake trail easement was approved by the Federal-State Land Use Planning Commission and the BLM State Director. 611/ On April 19, 1982 the BLM easement staff again met with Birch Creek Village residents who again objected to the trail easement saying it had not been used since 1962, that it went through prime subsistence hunting and fishing grounds and an area "of many Native allotments." They again noted that alternative access was available via Beaver Creek. 612/ Within a month Doyon reiterated the villagers' concerns 613/ and on June 8, 1982 the Assistant to the State Director for Conveyance Management deleted the Burman Lake trail easement, partly because the Birch Creek-Beaver Creek portage provided access to the Burman Lake area. 614/

Chloya Lake

Little information on Chloya Lake (T. 16 N., Rs. 8 and 9 E., Fairbanks Meridian) has been found. In July 1962 a U.S. Fish and Wildlife Service team examined the lake as part of a resource study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached the lake by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 615/

In applying for lands under ANCSA, Doyon and Birch Creek Natives considered this lake to be navigable. 616/ In June 1975 Clyde Murray and John Stephenson of the BLM interviewed two residents of Birch Creek Village in connection with investigating potentially navigable water bodies in Native-selected lands near the village. The two men prepared navigability field reports on the "Three

Lakes" which include this lake and Twin Island and an unnamed lake in Secs. 15-16, 21-22, T. 16 N., R. 9 E., Fairbanks Meridian. However, in their reports of their interviews it is not clear whether Murray, Stephenson, and the men they interviewed referred to all three lakes or only to Twin Island Lake. Throughout their report "lake" is singular and they indicated that the "lake is accessable by slough from Birch Creek." According to USGS maps only Twin Island Lake is connected to Birch Creek. Murray spoke with Edward James who stated that villagers depended heavily for their livelihood on the Three Lakes. He stated that there were campsites around the lake and that canoes and floatplanes were utilized on it. David James told Stephenson that the lake area was used for muskratting, beaver trapping, moose and duck hunting, and berry picking. Local residents fished the lake year-round. He said no cabins were on the lake. David James stated that at low water a twelve-foot pram could be floated to the lake via a slough from Birch Creek. During high water a thirty-foot boat could make the same journey. 617/

The Alaska Department of Natural Resources proposed a linear easement around the Three Lakes. 618/ However, on January 22, 1976, the BLM easement and navigability task force opposed the easement since the area was heavily utilized for subsistence purposes by Birch Creek villagers. The task force wished to avoid "unnecessary conflict with subsistence use." 619/ This rationale was echoed in the Notices of Proposed Easement Recommendations issued July 14, 1976 for both Birch Creek Village and Doyon. 620/ The State Department of Natural Resources protested this stance to the Federal-State Land Use Planning Commission contending that "Native use is public use and under that premise an easement should be designated." 621/ Nevertheless, the Land Use Planning Commission agreed with the BLM. Nothing more concerning the Three Lakes in general or Chloya Lake in particular is to be found in the BLM's files. 622/

Unnamed Lake (Secs. 5, 8-10, 15-17, T. 17 N., R. 8 E., Fairbanks Meridian)

The only records found concerning this lake were generated in 1975 and 1976 in the course of conveying BLM land to Native corporations pursuant to ANCSA. In applying for lands, Birch Creek Village's Natives excluded the land under this lake from their acreage count because they believed it to be navigable. However, the BLM never considered it navigable. 623/ In 1976 Alaska's Department of Natural Resources proposed a linear easement around the lake. 624/ On January 22, 1976, the BLM easement and navigability task force opposed the easement since the area was heavily utilized for subsistence purposes by Birch Creek villagers. The task force wished to avoid "unnecessary conflicts with subsistence use." 625/ This rationale was echoed in the Notices of Proposed Easement Recommendations issued July 14, 1976 for both Birch Creek Village and Doyon. 626/ The State Department of Natural Resources protested this stance to the Federal-State Land Use Planning Commission contending that "Native use is public use and under that premise an easement should be designated." 627/ Nevertheless, the Land Use Planning Commission agreed with the BLM. Nothing more concerning this water body is to be found in the BLM's files. 628/

HADWEENZIC RIVER

In 1958, the Corps of Engineers in a report on the terrain of the Yukon Flats determined that small riverboats with hoists for propellors could travel the river except at "very low" water stages. Heavily-laden boats during low water would have to be lined or a channel would have to be dug through shoals. The shallowest part of the Hadweenzic, the report stated, was the sandy bed in the

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lowest two miles where the water level varied with the Yukon's from two feet to only a few inches. This report was based on a literature search as well as field examinations throughout the Flats in the 1940s and early 1950s. 629/

Current USGS quadrangle maps show five cabins on the old Beaver to Caro road, a portion of which was located in the Hadweenzic River drainage. At most, one of these was not an Alaska Road Commission cabin or cache. One was at the crossing of the Hadweenzic and three of the others were at the trail's intersection with Hadweenzic tributaries. Current USGS maps show one structure not associated with the Beaver to Caro road. It is on Candle Creek in T. 24 N., R. 4 W., Fairbanks Meridian. 630/

Although in the mid-1970s Beaver Village and Doyon, Limited selected Ts. 19 and 20 N., R. 4 E., Fairbanks Meridian which encompass the first twenty miles of the Hadweenzic, the BLM's files pertaining to easement and navigability investigations are almost entirely devoid of information about the stream. On July 20, 1982, Final Easements were issued. To that date only one document alluded to the Hadweenzic. On March 16, 1982, Yukon Flats National Wildlife Refuge Manager Mitchell G. Sheldon wrote to Terry Hassett of the BLM Branch of Easement Identification that he felt the Hadweenzic along with Beaver Creek and the Hodzana River should be determined navigable. Sheldon wrote that:

> Our investigations indicate that these waterways are traveled by residents using riverboats and other motor powered boats and that they receive moderate use by hunters and fishermen every year." 631/

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TONY LAKE

The earliest information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Tony Lake (T. 19 N., R. 3 E., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 632/

Following Native selection of lands around Beaver in 1974, the BLM considered proposed easements on Tony Lake which had a bearing on its navigability. 633/ The BLM itself proposed a one-acre campsite and floatplane tie-up on the lake in a January 1976 report. The agency stated that these sites had received no past or contemporary usage, but anticipated increased recreational use of the lake area. 634/ On January 22, 1976, the easement and navigability task force approved this easement which also was included in the "Notice of Proposed Easement Recommendations for Doyon, Limited" dated June 4, 1976. 635/ The Federal-State Land Use Planning Commission then took up consideration of this easement. Doyon opposed the proposal, stating that such an easement was only appropriate for major waterways, a designation which Doyon stated did not fit Tony Lake. 636/ Nevertheless, the Land Use Planning Commission approved the easement. 637/

On August 14, 1978, the BLM State Director formally approved this easement, which was located on the east side of the lake, as well as a twenty-five-foot easement on the lake bed in front of the site. The State Director stated that the lake received "significant recreational use" and that the easement was necessary to maintain continued public use. 638/ However, on February 20,

1977, the BLM easement staff met to conform easement recommendations near Beaver to new regulations. As Tony Lake was found not to be a major waterway or navigable, the site easement was dropped because it was recreational in nature and the lake was located on Native lands. 639/ The easement was formally rejected by the BLM in July 1982. 640/

GEORGE LAKE

The only information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached George Lake (Ts. 18 and 19 N., R. 2 E., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 641/

FISH CREEK

Some information about this stream was generated in the course of the BLM's consideration of easements and navigable waters on lands selected by Doyon, Limited and Kwit'chin Corporation around the village of Beaver. On June 11, 1975 Randy Van Dyke of the village corporation wrote to the BLM insisting that Fish Creek was navigable and promising to furnish evidence to support the corporation's contention. 642/ However, there is no record in the easement file that the village ever provided such evidence.

The BLM considered a trail easement leading southeast from Beaver to public lands in Ts. 16 and 17 N., Rs. 3 and 4 E., Fairbanks Meridian. This old trapper trail evidentally was a winter-only route. As depicted on the easement

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maps it left Fish Slough in Sec. 11, T. 17 N., R. 2 E., Fairbanks Meridian, headed east of Fish Creek to cross the Mud Lakes where Fish Creek enters these lakes, and then continued southward to Beaver Creek. It then followed the Beaver Creek and the Fish Creek drainages into T. 17 N., R. 5 E., Fairbanks Meridian. 643/ At a May 5, 1982 meeting attended by BLM personnel and village corporation members, the latter stated that it would be easier to use "the navigable waters" to isolated townships (Beaver Creek went through three of the four isolated townships), that the trail was on a trapline, that the trail was different from that shown on the easement map, that it could not be used year-round, and that there was alternate access to the townships by float- and ski-plane. 644/ Despite this argument, the BLM retained the trail easement through the Fish Creek drainage in its Final Easement statements to the village and regional corporations. 645/

In March 1982 both the State of Alaska and Doyon, Limited wrote to the BLM arguing that the portion of Fish Creek below Mud Lakes was part of an interconnected slough of the Yukon River flowing through Ed Berg Slough and Mud Lakes to Fish Creek. 646/ A subsequent Draft State Director Memorandum accepted these arguments and proposed Fish Creek be considered navigable downstream from a point near the center of Sec. 27, T. 17 N., R. 3 E., Fairbanks Meridian. When BLM personnel discussed this document with Beaver residents on May 5, 1982, the villagers stated that Fish Creek did not connect with the Mud Lakes until the 1950s when the stream cut through near the section line between Secs. 17 and 18, T. 17 N., R. 3 E., Fairbanks Meridian. Mitchell Sheldon of the Yukon Flats National Wildlife Refuge also was at the meeting and offered that the Mud Lakes were recharged with Yukon River water only every

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few years during periods of very high water. 647/ The BLM maintained that Fish Creek below the Mud Lakes was navigable in its Final Easement documents for the village and regional corporations on July 20, 1982. 648/

BEAVER CREEK

Gold prospectors may have been on Beaver Creek in 1887. 649/ Three guidebooks published in the late 1890s addressed the possibility of water transport on the creek. Samuel C. Dunham, a Department of Labor investigator, stated that small river steamboats could go sixty miles up Beaver Creek. 650/ In 1895 Miner W. Bruce said light river crafts could ascend the stream 100 miles, an opinion echoed two years later in a work written by Henry Wood Elliot and Ernest Ingersoll. 651/ However, no evidence has been found to indicate that these writers ascended or even saw the mouth of Beaver Creek.

The USGS commented on Beaver Creek as a route of travel following the 1904 gold strike on Victoria Creek. Relying on second- or third-hand information, Alfred Hulse Brooks noted the discovery in 1904, and wrote that small steamers could ascend Beaver Creek to Victoria Creek. 652/ However, two years later Brooks asserted that Beaver Creek was "unnavigable." 653/ In 1906, another USGS geologist, Louis M. Prindle, stated that "at times" the stream's water level was high enough to permit prospectors to raft down the creek. 654/ Neither Brooks nor Prindle had visited Beaver Creek above its mouth. But in 1905 another USGS explorer, Ralph W. Stone, traversed the area on horseback. His only published comment on the stream, however, was that he found few fording places below Big Bend. 655/

The gold-seekers of 1904 utilized the river for transportation. Circle and Rampart miners poled up Beaver Creek to Victoria Creek, while a reported 100 miners in the Fairbanks district crossed the divide between Chatanika River and Beaver Creek and, from an undetermined spot, floated downstream to Victoria Creek. During the winter of 1904-1905 supplies were hauled to Beaver Creek from Fort Hamlin via the head of Hess Creek. In 1910 a gold strike was made on the headwaters of Nome Creek, a tributary of Beaver Creek, but the creek was not used as a route to reach the new diggings. Nome Creek was developed as an extension of mining in the Fairbanks district. The Nome Creek Dredging Company was connected with the railroad at Chatanika by a fifteen-mile-long primitive road. 656/

The U.S. Geological Survey maps compiled in 1955 and 1956 indicated numerous cabins on Beaver Creek and its tributaries. Those on Nome and Ophir creeks were linked to the Steese Highway by road and trail, as was one cabin on Little Champion Creek (T. 7 N., R. 5 E., Fairbank Meridian). A pair of cabins on both Bear Creek and Champion Creek appeared not to have such an outlet. Other cabins above Victoria Creek without a land or air outlet were at the mouth of Brigham Creek, three miles down Beaver from Brigham, near the mouth of Wickersham Creek, a half mile below Colorado Creek, and in T. 10 N., R. 2 E., Fairbanks Meridian. A cabin at the large bend in Beaver Creek (T. 7 N., R. 1 W., Fairbanks Meridian) could be accessed by a trail from the Elliott Highway and a cabin in T. 7 N., R. 1 W., Fairbanks Meridian had a nearby landing field. 657/

The USGS marked a number of cabins on the lower portion of Beaver Creek and its tributaries, Victoria and Jefferson creeks. Three buildings were on Victoria Creek, the one farthest upstream being in T. 11 N., R. 1 W., Fairbanks Meridian.

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Downstream from Victoria Creek there were seven cabins on Beaver Creek--one in T. 14 N., R. 8 E., Fairbanks Meridian, three at the "Swede Boys Camp" between Beaver Creek and Olaf Lake, and three more in Sec. 17, T. 16 N., R. 2 E., Fairbanks Meridian. There were three other cabins on or near Jefferson Creek. 658/

In 1958, the Corps of Engineers reported that Beaver Creek upstream to the bend toward the south (approximately T. 17 S., R. 8 E., Fairbanks Meridian) was "navigable with little difficulty" by thirty-foot launches. Above the bend, shallow channels and a swift current made navigation difficult. Dragging, lining, and waiting for a rise in the creek sometimes was necessary in this upper portion of Beaver Creek. 659/

In 1961 Richard E. Church, then a graduate student in geology at the University of Alaska, drafted a report on a summer's investigation he and a small party had made (presumably in 1960 or 1961) in the Fossil Creek area. He noted that a former winter trail from Olnes was then used by tracked vehicles or those equipped for traversing swamps to reach the big bend. He wrote too that:

> Small boats powered by outboard motors are occasionally used on Beaver Creek, but numerous bars and the low water level encountered during most of the summer months makes this type of transportation difficult.

Church used light aircraft, which he termed the easiest method, to reach this section of Beaver Creek. Although the Shebal hunting cabin landing strip was only a little over a mile above Fossil Creek, it was a short strip often flooded by high water. Consequently, Church utilized the Bucholtz cabin strip about

five miles above the mouth of Fossil Creek. From there the party hiked down Beaver Creek and up Fossil Creek, using game trails wherever possible. Church also noted that petroleum companies had recently accessed the region by helicopter which he considered the ideal method of transport. 660/

Albert F. Weber in 1969 published an account, entitled "Aluminum--On the Rocks," of a vacation canoe trip he, his wife, and another couple made down Nome and Beaver creeks and the Yukon River in the preceding summer. About June 23, 1968 the Weber's in an aerial survey found "plenty of water, most of it churned white" in Nome Creek. However, when they arrived on the creek on July 7 they found the water much lower. The article does not make their means of access or their put-in point clear. Yet on the seventh they were just below the dredge on Nome Creek about twenty creek miles from Beaver Creek. Travel was very difficult. Weber wrote that they began to make progress by "sitting on the bow and stern of the canoes, feet hanging outside, kicking at the rocks and jumping off when necessary to lighten the load." Besides riffles they also had to clear sweepers with a saw and axes. It took three days to reach Beaver Creek. 661/

They rested two days before continuing their voyage. The first day of resumed travel brought them to the mouth of O'Brien Creek. Weber described Beaver Creek from Nome Creek to O'Brien Creek as "a wide, though shallow, river, rather than a creek" and that though there still were rapids and shallows, they now were further apart. Below O'Brien Creek "the Beaver was a sizeable river, and except on rare occasions we were able to ride the rapids." After passing the bend (T. 7 N., R. 1 W., Fairbanks Meridian), the river followed a more definite channel and "fast, deep water became the rule for many miles." On July 22 they reached Victoria Creek where they met trapper Keith Kunz and

some visitors who were building a hunting lodge. Beyond this point the river slowed very gradually as the group approached and entered the Yukon Flats. There were some shallows and riffles. They located the portage to Birch Creek where they found two "home-built portage carts." One of these, they believed, dated from the early part of the century. They elected to stay on Beaver Creek. They reached the Yukon in early August and canoed into Tanana on August 10. From there they traveled in a friend's riverboat back to Fairbanks. 662/

In the 1970s the upper portion of Beaver Creek was studied by the federal government for possible inclusion in the Wild and Scenic Rivers System. In August 1972 from the 15th to the 20th a four-man team canoed from the mouth of O'Brien Creek to a point below Victoria Creek. They traveled at a rather consistent two- to three-miles-per-hour rate and encountered no obstacles. Roger Bolstad's report of the trip described Beaver Creek as:

> a gentle, easy river to canoe . . . Only through gross negligence could one get in trouble with sweepers [or] shallow riffles. . . . During our trip, rarely was it necessary to get out of canoes to line around trees or drag boats over shallow spots.

Bolstad noted that the Nome Creek trail and the Beaver Creek trail via Wickersham Dome were the only points of public access and that below the creek's big bend, the Beaver was only accessible "by aircraft, riverboat via the Yukon and limited short range travel by snow machine. 663/

Bolstad and his party spent the first night at the "Kiwanis Club cabin" a few miles above the sharp bend in T. 7 N., R. 1 W., Fairbanks Meridian. The

next day he passed the Herman Buckholtz cabin and air strip four miles below the bend. He found one of Buckholtz's trapping cabins a half mile farther downstream. Opposite the mouth of Fossil Creek he observed Leroy Shebil's cabin and landing strip. Shebil also had a riverboat--the only other boat observed by Bolstad on the journey. A quarter mile below Colorado Creek he visited an old cabin in which he found trapper supplies and rations dated 1954. A short distance above their take-out point Bolstad noted a trade and manufacturing site, but did not described it. 664/

In May 1973 the Bureau of Outdoor Recreation's Alaska Task Force issued a report on Beaver Creek as a potential Wild and Scenic River. The BOR stated that the creek offered "outstanding water" for "float boating (canoeing, kayaking, rafting)." "There is generally sufficient water levels the entire segment to avoid bottom scraping." However, because summer rainfall was only eight to ten inches, low water periodically could present "serious" navigational problems. The report speculated that under unspecified criteria then being developed by the State, the Wild and Scenic River segment of Beaver Creek "would appear to be 'navigable' its entire length." Yet, the report goes on to caution that "until the recent advent of the water jet attachment for an outboard motor, upstream navigation by watercraft was precluded by the swift current and shallow, rocky character of the stream bed. As there are no surface access points to the segment except by trail, there has been only a small amount of downstream travel by raft or canoe." 665/ The BOR's draft environmental statement published in December 1973 and the final environmental statement published in October 1974 concluded that a small powerboat could proceed upstream 168 miles from the Yukon to the Wild River proposal's lower boundary, and probably throughout the entire proposal area, which extended about 300 miles from the creek's mouth. However, "the extent of such access is quite limited." 666/

In August 1976 the BLM's Fairbanks District Office conducted a float trip on upper Beaver Creek to gather resource data for managing the Wild River segment of the stream. Dave Scott, Elliot Lowe, Clyde Murray, and Bruce Durtsche of the FDO as well as LaRalle Smith of the Alaska State Office and David Dapkus of the Bureau of Outdoor Recreation traveled in three seventeen-foot canoes from the confluence of Ophir and Nome creeks to a point about twelve miles below the mouth of Victoria Creek. The group helicoptered to their put-in point on August 4 where they noted a tracked vehicle and a cabin built in the past year, apparently used by a miner. Dapkus noted that Ophir Creek was ten to fifteen feet wide and "was too rocky and shallow to float." That day the group floated down Nome and Beaver creeks to the mouth of O'Brien Creek. Dapkus found Nome Creek to be a series of one- to four-inch-riffles connected by one- to two-foot-pools. The stream was twenty-five to fifty feet wide and flowed at two miles per hour over a rocky channel with rocks ranging from fist size to the diameter of a basketball. Dapkus stated that "although it was so shallow in some riffles that we needed to pull the canoes across them, Nome Creek is generally floatable from Ophir Creek. He described Beaver Creek between Nome and O'Brien creeks to be "a series of pools (1'-4') and riffles (1"-6"), 40'-60' wide, clear, and flowing at 2 mph over a rocky channel." The creek had some sweepers and boulders, but as was the entire segment of the creek traveled, it offered good Class I water on the International Whitewater scale of difficulty. 667/

On the fifth the six men floated to an old cabin about three miles below Brigham Creek. This was the fourth old cabin they had seen that day. Dapkus later wrote that the river in this stretch had pools two to six feet deep and riffles between one and twelve inches deep. The stream widened to seventy-five feet

and the current quickened to three to five miles per hour. Boulders and sweepers were about the same as the previous day. Dapkus's canoe touched bottom only a few times and he did not have to pull it through any riffles. 668/

The next day the party traveled about fourteen miles to camp at a BLM public use cabin about four miles below the "Big Bend" in T. 7 N., R. 1 W., Fairbanks Meridian. They seldom scraped bottom as they floated across five- to fifteen-foot pools and four- to eight-inch riffles. Dapkus described the creek as ranging from twenty-five to seventy-five feet wide and flowing past sweepers and occasional rocks at three to four miles per hour. Near the bend the men stopped at a Native allotment but saw no signs of use. 669/

The group floated about fifteen miles to camp near Windy Creek on August 7. The creek slowed to two miles per hour, flowed through three to twelve feet pools and varied between forty and 100 feet wide with no hazards except for occasional sweepers. The government employees noted a well-maintained log cabin near the mouth of Fossil Creek which Dapkus stated was built about 1964. 670/

The next two days the men floated twenty-five miles (to near Willow Creek; T. 11 N., R. 3 E., Fairbanks Meridian) and sixteen miles (to near Yellow Creek; T. 11 N., R. 5 E., Fairbanks Meridian), respectively. On both days the current was three miles per hour and the stream 100 feet wide and three to fifteen feet deep. On the ninth they encountered a few sweepers and small log jams, but these were easily avoided. Dapkus noted that they passed two gravel bars that day which were suitable for landing a small, wheeled aircraft though he saw no evidence that either had been used as such. 671/

August 10 was the group's last day floating Beaver Creek. They traveled eighteen miles to about twelve miles below Victoria Creek. The current was three miles per hour and the creek was 100 feet wide and three to ten feet deep. Dapkus described Victoria Creek (T. 11 N., R. 5 E., Fairbanks Meridian) as "roaring," twenty feet wide and two to five feet deep. The party stopped at two cabins on the east bank of Beaver Creek opposite the mouth of Victoria Creek. Dapkus spoke to the son of one of the owners. He stated that the owner trapped along Beaver Creek and did some guiding. Dapkus observed some "straight and deeper stretches" of Beaver Creek below Victoria Creek which he believed "could possibly" be suitable for small floatplane landings. But he did not know if planes had landed there. The next morning the group and their canoes were transported by helicopter to Fairbanks. 672/

The Bureau of Land Management first considered the navigability of Beaver Creek in connection with its solicitation of easement recommendations for lands selected, near the villages of Birch Creek and Beaver. Birch Creek Village and Doyon selected T. 17 N., Rs. 7 and 8 E., Fairbanks Meridian and T. 16 N., R. 8 E., Fairbanks Meridian through which Beaver Creek flows (river miles 130-97). The village corporation suggested four campsite easements on the creek in Sec. 33, T. 17 N., R. 8 E., Fairbanks Meridian and Secs. 24 and 21, T. 17 N., R. 7 E., Fairbanks Meridian. The BLM proposed a similar easement in Sec. 16, T. 15 N., R. 8 E., Fairbanks Meridian. The Alaska Department of Fish and Game suggested a trail easement from Fort Yukon to Birch Creek Village and then south over Twin Island Lake to Burman Lake (Ts. 14 and 15 N., R. 8 E., Fairbanks Meridian) east of Beaver Creek. The portion of this easement south of the village was a non-existent trail. At meetings the BLM conducted with

the village Native corporation in April and June 1975, the Natives only objected to the last of these proposals saying they did not want public access to their hunting grounds and suggesting a portage to Beaver Creek as an alternative route. 673/

At the second of these village meetings, John Stephenson of the BLM collected information on Beaver Creek from villager David James. James described the stream as fifty feet wide with water ranging from four feet deep at low water to thirty feet at high water. Cut banks were from three to seven feet high. He said that about fifty local villagers hunted, trapped, or fished Beaver Creek using small fourteen-foot canoes and riverboats eighteen to twenty-two feet long with outboard motors of at least twenty-five horsepower. James said the Solomon family in the 1930s and 1940s traveled 100 miles up Beaver Creek, possibly in a thirty-five-foot boat to reach their winter camp. It is not stated explicitly in Stephenson's report but this 100-mile distance apparently was upriver from the portage from Birch Creek T. 17 N., R. 8 E., Fairbanks Meridian, not from Beaver Creek's mouth. James stated that Beaver Creek was used by villagers fifteen miles both above and below the portage. He also told Stephenson that there were no log jams in Beaver Creek and that propeller-powered riverboats could ascend the stream to Victoria Creek. Finally, James said that there was some use of floatplanes on unspecified parts of the creek and that wheeled planes could land on bars both below and above Victoria Creek. 674/

On January 22, 1976, the BLM Easement and Navigability Task Force approved all the campsite easements except that in Sec. 21, T. 17 N., R. 7 E., Fairbanks Meridian. This one was dropped because river travelers only had to float several miles more downstream to reach public lands in T. 17 N., R. 6 E., Fairbanks Meridian. The recommended campsites were also to include a strip

twenty-five feet wide into the streambed extending along the entire waterfront of the sites. The Task Force recommended the portage trail to the campsite easement in Sec. 33, T. 17 N., R. 8 E., Fairbanks Meridian and the trail south from Birch Creek Village to Burman Lakes. Finally, the group rejected a proposal for a streamside easement twenty-five feet wide on both sides of Beaver Creek. 675/ These recommendations were incorporated in Notices of Proposed Easements issued to both Doyon and Birch Creek Village on July 14, 1976, except that the site easement in T. 15 N., R. 8 E. was dropped because it was not within the selection areas. 676/

The Federal-State Land Use Planning Commission concurred in these proposals on October 26, 1976 677/ and in August, 1978 these recommendations were approved by the State Director. In the final easements documents, the campsite at Sec. 33, T. 17 N., R. 8 E., Fairbanks Meridian was justified as necessary to serve as a trailhead for the portage between Beaver Creek and the lower mouth of Birch Creek which local residents had long used as well as an overnight campsite for those traveling Beaver Creek. The other campsites in Sec. 16, T. 16 N., R. 8 E., Fairbanks Meridian and Sec. 24, T. 17 N., R. 7 E., Fairbanks Meridian were justified as they were approximately a day's travel along the stream above and below the portage site. The sites had in the past been used by local residents and Beaver Creek was "the only practical summer travel route through the area" to public lands. The State Director also approved the trail easement south of Birch Creek Village to Burman Lake. 678/

On February 20, 1979 the BLM easement staff met to conform final easements and consider major and navigable waterways in the Birch Creek Village selection. It maintained the trail easement and the portage campsite on Beaver Creek. The other two campsites were in the regional selection area. The report on the

meeting stated that Beaver Creek was a major waterway. It also stated that riverboats traveled Beaver Creek up to Victoria Creek and that floatplanes used the wider portions of the stream. However, Beaver Creek was not considered navigable. 679/

In February 1982 Denny Daigger of the Alaska Department of Natural Resources raised questions concerning the BLM's position on the navigability of Beaver Creek. Dwight Hemple of the Fairbanks District Office stated on February 17, 1982 that Marion England was then in the process of writing a report contending that Beaver Creek was navigable 100 miles from its mouth. James Ducker of the BLM Alaska State Office pointed to historical evidence that miners poled up to Victoria Creek. Considering this information, as well as evidence of modern use of the stream by Beaver and Birch Creek villagers, the Chief of the Division of Resources recommended that the BLM exclude the bed of Beaver Creek in conveyances to Native corporations in the vicinity of Birch Creek and Beaver. 680/ As a result, another draft of the SD memo for the village's selection was prepared on March 22, 1982. Beaver Creek was identified as a navigable stream. 681/

On April 19, 1982 BLM easement personnel met with Birch Creek Village residents. The Natives voiced no objections to the navigability decision on Beaver Creek and the portage campsite. However, they objected to the trail easement. They said the trail had not received use since 1952 and that it ran through prime subsistence hunting and fishing grounds and an area "of many Native allotments." The villagers also stated that alternate access was available via Beaver Creek. 682/ On May 17, 1982 Doyon, Limited echoed the village's concern about this trail 683/ and on June 8 the Assistant to the State Director for Conveyance Management reversed the BLM's stand and dropped the trail easement. 684/

On June 17, 1982 Doyon opposed the campsite easement in Sec. 24, T. 17 N., R. 7 E., Fairbanks Meridian as unnecessary. In its letter Doyon stated that the U.S. Fish and Wildlife Service also opposed it, but the record of that agency's objection has not been found. Doyon wished to know the rationale for retaining the easement. 685/ On August 17, 1982 the Assistant to the State Director for Conveyance Management responded that the easement was necessary because river travelers had to travel twenty-one miles beyond it to reach public land suitable as a stopping place. This was deemed excessive "when considering the slow travel atmosphere of Beaver Creek." 686/

The navigability of Beaver Creek was also addressed in the course of the BLM's conveyance of land to the village of Beaver. The Alaska Department of Natural Resources requested a linear easement along the creek to allow access to public lands by following the stream. Public campsites and boat tie-ups were recommended along Beaver Creek by BLM in Sec. 17, T. 16 N., R. 4 E., Fairbanks Meridian, Sec. 6, T. 16 N., R. 3 E., Fairbanks Meridian, and Sec. 17, T. 16 N., R. 2 E., Fairbanks Meridian and by the Alaska Department of Fish and Game at both the "upper" and "lower" mouths of the creek. The upper mouth is what is designated on USGS Beaver (A-2) map as the main Beaver Creek emptying into the Yukon in the southwest corner of Sec. 3, T. 16 N., R. 1 E., Fairbanks Meridian and the lower mouth is an unnamed slough reaching the Yukon in Sec. 15, T. 16 N., R. 1 W., Fairbanks Meridian. The ADF&G stated that each of these sites received 100-200 man use days in 1974 by recreationists. 687/

On January 22, 1976, the BLM Easement and Navigability Task Force approved the campsite easements but rejected the streamside easement because it did not believe Beaver Creek was a "highly significant stream for recreation" and therefore was not qualified for a streamside easement. 688/ Notices of Proposed

Easements prepared on June 4, 1976 conformed to these recommendations, but did not include the easements at the mouths of Beaver Creek or the campsite in T. 16 N., R. 3 E., Fairbanks Meridian because these locations did not fall within the lands to be conveyed. 689/ The Federal-State Land Use Planning Commission's recommended easements dated September 2, 1976 690/ also repeated those in the Notice of Proposed Easements despite a protest from Doyon, Limited stating that campsite easements along Beaver Creek were unjustified because the corporation believed that the stream was not a "major waterway." 691/ The Final Easements for Doyon signed by the State Director on August 14, 1978 also supported the two campsite easements in Sec. 17, T. 16 N., R. 4 E., Fairbanks Meridian and Sec. 17, T. 16 N., R. 2 E., Fairbanks Meridian. They were justified as approximately one day's travel from other campsites on the stream. 692/ The undated State Director Memorandum submitted by the Fairbanks District Office considered Beaver Creek to be a major waterway because hunters, campers, and local residents used canoes, riverboats, and rafts on it. However, it was not considered navigable. The district office also argued against the two campsite easements, stating that public lands in T. 16 N., Rs. 1 and 3 E., Fairbanks Meridian offered alternative campsites for river travelers. 693/

As recounted earlier, the BLM Division of Resources on February 25, 1982 recommended that Beaver Creek be determined navigable within the selection areas of both Beaver and Birch Creek villages. This decision was made at the urging of the State and after considering river use information collected by Marion England of the Fairbanks District Office and James Ducker of the Alaska State Office. 694/ Mitchell G. Sheldon of the U.S. Fish and Wildlife Service on March 16, 1982 also advocated that Beaver Creek be found navigable since it was "traveled by residents using riverboats and other outboard motor powered boats" and by hunters and fishermen. 695/

On July 20, 1982 the BLM issued Final Easements for both Doyon and village selected lands. Beaver Creek was determined to be navigable. No campsite easements were recommended. 696/

Unnamed Lake (Secs. 1 and 12, T. 16 N., R. 1 W., Fairbanks Meridian, Secs. 6 and 7, T. 16 N., R. 1 E., Fairbanks Meridian, and Sec. 31, T. 17 N., R. 1 E., Fairbanks Meridian)

Following Native selection of lands near Beaver in 1974, the BLM considered a proposed linear easement around this lake. On January 22, 1976, the BLM easement and navigability task force rejected the proposal, stating that there was little public use of the lake and that it was important to the subsistence of the Natives of Beaver. 697/ The Federal-State Land Use Planning Commission agreed with this position. No further record exists of this lake in the BLM's easement file. 698/

HODZANA RIVER

Very little information is available on the use of the Hodzana River as a route of travel. There has been some mining 105 miles up the river but whether the miners traveled on the river by boat is uncertain. 699/ A report in 1918 by Christian L. Larson on an inspection tour of the upper Yukon he undertook for the Commissioner of Fisheries suggested that at least some miners traveled by dog sled. On July 25 Larson observed four men fishing with nets five miles below Beaver. They were miners on the Hodzana and used a portion of their catch to feed their twenty-eight dogs. 700/

Cabins on the river showed the area to have had moderate past use. A 1920 map by a Yukon Flats resident and former army explorer, William Yanert, showed four cabins on the Hodzana. The farthest one up was called "Mudbank" and was marked on the 1972 revised USGS map in T. 22 N., R. 4. W., Fairbanks Meridian. The other cabins were Old Adam's below the Narrows in T. 21 N., R. 3 W., Fairbanks Meridian; Nelson's in T. 19 N., R. 1 W., Fairbanks Meridian; and Whalen's in T. 18 N., R. 1 W., Fairbanks Meridian (Old Adam's and Whalen's were both still standing when field work for the USGS quad maps was undertaken in 1956). All of the cabins on Yanert's map were linked by a winter trail which followed on and alongside the Hodzana from near the lower outlet of Whirlpool Slough. 701/

In 1956 Tom Taylor of the USGS spotted from the air other cabins at Caribou Bar, the mouth of Mud Fork, the mouth of Granite Fork, the confluence of Trout Creek and Pitka Fork, and on Nelson Lake in T. 19 N., R. 1 W., Fairbanks Meridian. The uses of these structures are uncertain. There were landing fields at Caribou Bar and at Trout Creek. 702/

In 1958, the Army Corps of Engineers reported that at most water stages lightly laden thirty-foot riverboats with propeller hoists could ascend the Hodzana's first ten miles with "little difficulty" except at the riffle near the mouth. Above the bluffs ten miles from the mouth, the river became "very shallow" in summer and its numerous riffles became a severe impediment for heavily laden boats. The Corps reported that trappers in the fall moved their winter outfits upstream by boat to "well above the Forks," but this involved lining, poling, digging through riffles, and waiting for rain to raise the water level. 703/

In the early 1970s William Schneider, for his dissertation about the Natives of Beaver, interviewed several old-timers who trapped the Hodzana River. Old Adam stated he poled up the river more than 100 miles to his winter trapline (note that Yanert's and the USGS maps place a cabin associated with Old Adam only sixty-eight miles up the Hodzana). Another Native named Moses related the cycle of trapping. In the fall he and his partner went up the Hodzana River to the Pitka Fork area. When freeze-up came he traveled by dog team along his trapline to Pitka Fork. They returned to Beaver at Christmas, and after New Year, resumed trapping. At break-up they floated home to Beaver. 704/

The Bureau of Land Management first considered the navigability of the Hodzana River in connection with its solicitation of easement recommendations for lands selected, near the village of Beaver by Doyon, Limited and the village's Kwit' chin Corporation. BLM employees Clyde Murray and Sigwien Savok met with Leo Edwards, a Beaver village board member, and other village corporation stockholders on April 30 and June 25, 1975 to explain and discuss easements and navigability. At the first meeting villagers said that in high water the Hodzana provided riverboat access "to [the] mountains" and that in low water boats could go upstream about five miles. 705/ At the second meeting Murray recorded information on the Hodzana provided by Arthur Henry of Beaver. Henry stated that "only a few villagers" used the river for subsistence. He said they traveled the stream to "about 20 miles below Chandalar." (It is approximately twenty air miles from a point a few miles below the mouth of Trout Creek on Pitka Fork of the Hodzana to the Chandalar River). He stated there were fishing and hunting camps as well as Native allotments on the river. The river was only used by boat from break-up to late June after which low

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water made it difficult to determine the channel and "prohibits use" by riverboat. Aluminum riverboats were used on the Hodzana for fishing and ratting and wheeled planes could land on the sand and gravel bars during late summer. 706/

At the meeting the Natives opposed campsite easements on the rivers and lakes in their selection area, fearing that these would encourage outsiders to enter and ruin their areas of subsistence use. The villagers were especially concerned with easements along the Hodzana, their "prime hunting grounds." They commented that in recent years they had not been able to obtain their winter supply of meat due to numerous sportmen hunting the Hodzana. No mention was made of how far up the river the sport and subsistence hunters traveled or the kinds of boats used. 707/

In his Staff Easement Report dated January 16, 1976, Clyde L. Murray described four campsite easements which had been proposed along the Hodzana River. The Alaska Department of Fish and Game suggested a ten-acre floatplane and boat tie-up at the mouth of the river in Sec. 16, T. 17 N., R. 1 W., Fairbanks Meridian, stating that it received about 100 man-use days in 1974 from sport fishermen, hunters, and overnight campers. The BLM rejected this proposal because its location conflicted with a Native allotment. In lieu of it, the BLM proposed a one-acre undeveloped campsite and boat tie-up in Sec. 8, T. 18 N., R. 1 W., Fairbanks Meridian. The BLM also recommended similar easements in Sec. 15, T. 18 N., R. 1 W., Fairbanks Meridian and Sec. 21, T. 19 N., R. 1 W., Fairbanks Meridian. No past or current use of these areas was known, but BLM anticipated increased recreational travel in the area. 708/ On January 22, 1976 the Easement and Navigability Task Force approved the BLM campsite easement. They rejected that presented by ADF&G, deciding that the BLM's alternative was at a better location. The Task Force also concluded that the

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Hodzana was not navigable. 709/ These recommendations were accepted by the State Director on June 4, 1976 when he signed Notices of Proposed Easements for the village and regional corporations. Each campsite easement extended twenty-five feet into the stream. 710/

The Federal-State Land Use Planning Commission considered these proposals. Doyon wrote to the Commission objecting to the campsite easements on the Hodzana arguing that such sites were only permissable on major waterways and disagreeing with the BLM's classification of the Hodzana as a major waterway. 711/ Nevertheless, the Commission on September 2, 1976 approved all of BLM's easement recommendations. 712/ Final Easements for Beaver's Kwit' chin Corporation and for Doyon signed March 15, 1977 and August 14, 1978, respectively, also kept these easements. 713/ An accompanying document noted that these easements were justified as the campsites were approximately one day's travel from each other. 714/ These easements were also maintained in draft State Director memos prepared in January 1982. These documents also recommended the Hodzana be declared nonnavigable. 715/

After sending out copies of the draft State Director memos for public review, the BLM received responses from several sources. The Alaska Department of Natural Resources urged that the Hodzana River be determined navigable, noting the Army Corps of Engineers' 1958 report stating that trappers had boated up the waterway and an unidentified meeting held at Stevens Village during which evidence was produced that in 1927 Kilborn George guided two miners up the Dall River and then returned to the Yukon via the Hodzana. 716/ Mitchell G. Sheldon, Yukon Flats National Wildlife Refuge Manager, proposed that the Hodzana as well as Beaver Creek and the Hadweenzic River be determined navigable because these streams "are traveled by residents using riverboats and

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other outboard motor powered boats and that they receive moderate use by hunters and fishermen every year." He also believed the site easments in Sec. 8, T. 17 N., R. 1 W., Fairbanks Meridian and Sec. 15, T. 18 N., R. 1 W., Fairbanks Meridian should be dropped. The first of these, he stated, was only a "a few river-miles" from public land and, therefore, unnecessary. Sheldon felt that if the second of these easements was retained, a trail easment should be extended from it into the Hermit Ridge area in Sec. 1, T. 18 N., R. 2 W., Fairbanks Meridian. 717/ Villagers expressed their opinions at a meeting at Beaver on May 5, 1982. Ted Lipham of the Branch of Easement Identification took notes on the Natives' comments. The villagers complained that the easement in Sec. 15, T. 18 N., R. 1 W., Fairbanks Meridian lay on Clifford Adam's Native allotment and would interfere with his trapping. They also noted that the only people using this area were fall hunters. Finally, in opposing a trail easement which followed the ridges north of the river from Beaver to and through the mine site near the mouth of Trout Creek (T. 25 N., R. 5 W., Fairbanks Meridian), the Beaver residents stated that not only did this trail not exist but that public lands accessed by this trail easement were more easily reached by the Dalton Highway or the Hodzana River. 718/ After reviewing these comments, the Assistant to the State Director for Conveyance Management on June 22, 1982 decided to delete the site easement in Sec. 8, T. 17 N., R. 1 W., Fairbanks Meridian since it was within six miles of public land which would serve the same purpose. 719/

On July 20, 1982 the BLM issued its second Final Easements for the Native-selected lands around Beaver. The Hodzana was declared a major waterway because of travel by Natives and non-Natives in riverboats, canoes, and floatplanes. The

Hodzana also was determined navigable in the selected area. Only one campsite easement was considered necessary; it was in Sec. 15, T. 18 N., R. 1 W., Fairbanks Meridian. 720/

Nelson Lake

There is little information on past use of Nelson Lake (T. 19 N., R. 1 W., Fairbanks Meridian). A solitary cabin is illustrated on the current USGS map of Nelson Lake. It is uncertain what purpose this structure on the west side of the lake served. 721/

In July 1962 the U.S. Fish and Wildlife Service conducted a field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Nelson Lake (T. 19 N., R. 1 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 722/

Following Native selection of lands around Beaver in 1974, the BLM considered an easement on Nelson Lake which had a bearing on its navigability. 723/ The BLM proposed a one-acre campsite and floatplane tie-up on the lake in a January 1976 report. The agency stated that the sites had received no past or contemporary usage, but anticipated increased recreational use of the area. 724/ On January 22, 1976, the BLM easement and navigability task force approved this easement 725/ which also was included in the "Notice of Proposed Easement Recommendations for Doyon, Limited" dated June 4, 1976 and supported by the Federal-State Land Use Planning Commission in September. 726/ The State Director's final easement memorandum of August 1978 included this site and an additional twenty-five-foot-wide strip on the bed of the lake for the length of the site's waterfront.

The site was on the north shore of Nelson Lake in Sec. 2, T. 19 N., R. 1 W., Fairbanks Meridian. The memorandum noted that the water body received substantial recreational use and that it facilitated travel to public lands beyond the Native selections. 727/

A draft of another State Director memorandum was prepared following a February 20, 1979 meeting of the BLM's easement staff. It supported the site easement and a short trail northward from it to public lands in T. 20 N., R. 1 W., Fairbanks Meridian stating that these easements would provide access to public lands for those landing on the lake in floatplanes and ski planes. However, the task force was uncertain whether Nelson Lake's most northerly extension reached into T. 20 N., R. 1 W., Fairbanks Meridian. If surveyors subsequently found that it was located on these public lands, the BLM would eliminate both the site and trail easements. This draft also stated that Nelson Lake had been determined not to be a major waterway as there was no record of significant use. 728/

On July 20, 1982 another final easement document was signed by the Assistant to the State Director for Conveyance Management. It eliminated the site and trail easements pointing out that "adequate floatplane landing areas are available on public land to the north." 729/ This presumably referred to Adam Lake.

Adam Lake

The only information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that

the field examiners reached Adam Lake (T. 20 N., R. 1 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 730/

BIG LAKE

The earliest information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Big Lake (T. 18 N., R. 1 E., and R. 1 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 731/

The Bureau of Land Management first considered the navigability of Big Lake in connection with the conveyance of land selected by Natives in 1974. Within the agency's files is a June 1975 letter from Randy Van Dyke of the Beaver village corporation who stated that the village considered this lake navigable. However, the village apparently never followed up in writing Van Dyke's promise to forward information supporting the navigability of Big Lake. 732/

The Bureau of Land Management proposed a one-acre campsite and floatplane tie-up on the lake in a January 1976 report. The agency stated that the site had received no past or contemporary usage, but anticipated increased recreational use of the area. 733/ On January 22, 1976, the BLM easement and navigability task force rejected this easement. In rejecting it BLM contradicted its earlier appraisal of use, stating that Big Lake was heavily utilized as a subsistence area. A desire to minimize conflict between villagers and the general public prompted the task force to delete the easement. For a similar reason the group

rejected a State-proposed linear easement around the lake, noting that the water body was rarely used by the general public, but important to the local Natives. 734/ This stance was echoed in the "Notice of Proposed Easement Recommendations For the Village of Beaver" and supported by the Federal-State Land Use Planning Commission in September 1976. 735/

LOST CREEK AND OLD LOST CREEK

The course of Lost Creek changed some time between 1920 and 1956. In 1916 and 1920 William Yanert, a resident of the Yukon Flats and a former Army topographer, sketched elaborate maps which encompassed Lost Creek. The creek followed the same course from its source as portrayed on current USGS maps until a point in T. 15 N., R. 2 W., Fairbanks Meridian where it flowed into what is now called Old Lost Creek. The present distributary labeled Lost Creek which drains into Tincan Lake did not exist on Yanert's map. Yanert noted two cabins on Lost Creek. Horseshoe Cabin was just south of Butte Gap and Black Diamond Cabin was near a coal outcropping in T. 13 N., R. 1 W., Fairbanks Meridian. Both were located on a trail suitable only for winter use. The trail connected with the Yukon via two branches which split near Butt Gap. On his 1920 map Yanert noted that Lost Creek was not navigable. The USGS maps did not mark any cabins on Lost Creek. 736/

UNNAMED LAKE, SECS. 5-8, T. 15 N., R. 5 W., FAIRBANKS MERIDIAN;
SEC. 31, T. 16 N., R. 5 W., FAIRBANKS MERIDIAN;
SEC. 36, T. 16 N., R. 6 W., FAIRBANKS MERIDIAN;
SECS. 1, 12, T. 15 N., R. 6 W., FAIRBANKS MERIDIAN.

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The only references found to this lake were generated in the course of conveying Native-selected lands near Stevens Village. On May 4, 1977, the BLM easement task force rejected a proposal for a twenty-five-foot-wide trail around the shoreline of this lake because such an easement was not within the agency's guidelines. 737/ No further mention of the lake was found in BLM's easement files.

ALFRED CREEK

The BLM first considered the navigability of Alfred Creek in connection with its solicitation of easement recommendations through lands selected in 1974 by the village corporation and Doyon, Limited near Stevens Village. The first eleven miles of Alfred Creek is within the selected area (T. 15 N., R. 5 W., Fairbanks Meridian). 738/

In its selection application dated October 14, 1974 the village corporation considered only the Yukon River to be navigable. 739/ On May 4, 1977, the BLM Easement Task Force approved a twenty-five-foot-wide streamside easement on the left bank and an easement on the entire bed through the selected township. The easement was "to facilitate public use of navigable waters having highly significant recreational use and to provide access from the Yukon River to public lands." 740/ This easement was retained in the "Notice of Proposed Easement Recommendations for Doyon, Limited" issued October 23, 1978. The discussion stated that it was expected that the creek would receive recreational use by canoeists, kayakers, and sport fishermen and hunters. It added that: "An easement on the bed of the creek will facilitate public travel when the water is low. It will allow recreationists to get out of their floatcraft in the creek and continue their journey via the trail along the left bank." This easement was considered necessary

to provide access to public land east of the Native selections. 741/ After a review of BLM's proposals, the Federal-State Land Use Planning Commission on January 22, 1979 disagreed with this proposal because alternate routes to the public lands accessed via the creek were available. 742/ A draft State Director Final Easement memo dated November 30, 1981 echoed this logic. 743/ No subsequent mention of Alfred Creek is contained in the BLM's conveyance files.

MOON LAKE

The only information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Moon Lake (T. 15 N., R. 7 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 744/

DALL RIVER

During a few years at the turn of the century, steamboats caught in late fall in the Rampart area ascended the Dall River to escape destruction in the Yukon's ice. In 1898-1899, six steamboats--the Rideout, the St. Michael, the Reindeer, the Monarch, the Nevens, and the Mary Graft--wintered near the mouth of the Dall River. In the winter of 1899-1900 the U.S. Revenue Service steamboat Nunivak wintered one mile up the Dall River. The Nunivak was 209 feet long, thirty-five feet wide, and drew four and one half feet of water. 745/

Miners traveling from the Yukon River and to the Koyukuk River also used the Dall River and its valley as a route of travel. During the summer of 1898--while

the Klondike stampede was at its height--miners followed a trail from the Yukon River up the Dall River to the headwaters of the Koyukuk. 746/ It is not certain that boats were used that year but observations made by United States Geological Survey geologist, Walter C. Mendenhall, in 1901 suggested they may have. Mendenhall was engaged in surveying this largely unmapped region. At the mouth of the Dall, Mendenhall hired freighters to haul supplies. Boats took a portion of his supplies to the upper Dall River area. Mendenhall left no descriptions of his vessels or their cargo. One contractor began taking the provisions upriver on June 18. Mendenhall and some of his assistants began the next day and got twelve miles up the river. They traveled the same distance the following day stopping at an "old Indian camp," where they met prospectors with supplies in a red boat. On June 21 Mendenhall's group reached a log jam "over which we drag[ged] our canoes without difficulty." Mendenhall's published report contains a photo of crew men pulling a canoe. They traveled about ten miles that day. The following day they passed two log jams as the river began to fall. One of his assistants upset a small canoe. Mendenhall reported no other information on the river until he left it at a couple of cabins called Dall City (T. 18 N., R. 11 W., Fairbanks Meridian) on June 27 to portage to the Koyukuk. 747/

In 1958 the Corps of Engineers concluded that below the point where the river leaves the Flats and turns west into the uplands, small boats powered by outboard or inboard engines could negotiate the Dall at most stages of water. There were reports that log jams blocked part of this lower portion, but the Corps was not able to confirm this by a field study. The upper part of the stream was said to be difficult to navigate even by small boats; lining or digging through riffles was required. 748/

The Grumman Ecosystems Corporation in 1974 made aerial and ground observations of the Dall River as part of its navigability research project on the upper Yukon for the U.S. Army. The company estimated that it discharged 600 cubic feet per second. The report characterized the river as having a "well-defined, single channel, shallow gradient, recurrent log jams, tightly-spaced meanders and dark colored waters." During the 1974 helicopter reconnaissance, the company's researchers observed "numerous small log jams, . . . especially above mile 25." The river's velocity through the Flats as seen from the air in July 1974 was termed "negligible." No riffles were observed in the portion of the river surveyed by the researchers in 1974. (They do not appear to have extended their survey above the first thirty or forty miles.) At its mouth the river was sixteen feet deep and "good depth was observed in the surveyed section." The report writers estimated the water to have been six to eight feet below bank-full at the time they observed it. The stream gradually widened from thirty feet to 100 feet from the confluence of The Forks at rivermile twenty-nine to the mouth. They stated that The Forks added approximately 200 cubic feet per second to the river and the West Fork another seventy cubic feet per second. They added that no other tributaries augment "significantly" the flow of the Dall River. On July 9, 1974 the Grumman researchers described the river at its mouth as "very boatable." Based on their visual observations from the air in July 1974, the researchers made a "subjective evaluation that the Dall River was practically boatable only to . . . the confluence of The Forks." 749/

The Bureau of Land Management first considered the navigability of Dall River in connection with its solicitation of easement recommendations for lands selected

in 1974 by the village corporation and Doyon, Limited near Stevens Village. In its selection application the village corporation only considered the Yukon navigable. 750/

On August 31, 1975 P. Hemsath of the BLM interviewed unidentified villagers who stated that recreationists used riverboats and other "recreation types of boats" on unspecified portions of the Dall. He failed to note any additional information on the stream. 751/

A number of easements were proposed on the Dall between 1975 and 1977. The Alaska Department of Fish and Game proposed a campsite and boat and floatplane tie-up at the mouth of Dall River in Sec. 28, T. 14 N., R. 8 W., Fairbanks Meridian. Five other site easements were recommended for Sections 8, 9, 16, and 21 in the same township. The last was at the mouth of Datkokan Creek. Site easements were also recommended at the mouth of Pat Creek (Sec. 27, T. 15 N., R. 8 W., Fairbanks Meridian), on the left bank of the river in Sec. 22, T. 16 N., R. 9 W., Fairbanks Meridian, at the confluence of The Forks (Sec. 3, T. 15 N., R. 8 W., Fairbanks Meridian) and along the river in Sec. 25, T. 16 N., R. 9 W., Fairbanks Meridian. The Alaska Division of Lands and the BLM proposed a twenty-five-foot linear easement on both banks of the Dall River. 752/

On May 6, 1975 an unidentified BLM employee took notes on Stevens Village residents' views on easements. The employee stated that the villagers did not want easements of any type. They stated that usually low water restricted travel on the Dall River. 753/

On May 4, 1977 the Easement Task Force met to discuss the easement recommendations. The site easements at the Forks and in Sec. 25, T. 16 N.,

R. 9 W., Fairbanks Meridian for some reason were not considered. All the other easements were approved. The site easements and the streamside easements were justified because of the "highly significant recreational value" of the stream. 754/

On October 23, 1978, the BLM issued Notices of Proposal Easements for village- and regional-selected lands. The Dall was not considered navigable. The BLM recommended all the easements supported by the Task Force, but the site easements at the mouth of Pat Creek, in Sec. 22, T. 16 N., R. 9 W., Fairbanks Meridian, and in Secs. 8, 9, and 16, T. 14 N., R. 8 W., Fairbanks Meridian were outside the lands then being considered for conveyance. All the site easements were to include a twenty-five-foot wide strip of the riverbed along the waterfronts of the sites. The site and streamside easements were stated to be necessary to provide access for recreationists to rich moose, bear, and water fowl hunting lands and to good pike fishing spots. The Dall was said to afford "floatcraft opportunities for kayakists, canoeists and other boater enthusiasts." 755/

On January 22, 1979 the Federal-State Land Use Planning Commission submitted its comments on BLM's easement proposals. It disagreed with the streamside easement stating that it was inappropriate under existing regulations and that public lands could be reached via travel on the river or by two trails. The Land Use Commission also disapproved of the site easement at the mouth of Datkokan Creek in Sec. 21, T. 14 N., R. 8 W., Fairbanks Meridian stating that public land on the river was located nearby. The only Dall River easement within the selected area that the Commission supported even in part was the site easement at the mouth of the river. However, the Commission suggested

the site be reduced to one acre and be relocated from Sec. 28, T. 14 N., R. 8 W., Fairbanks Meridian to Sec. 33, T. 14 N., R. 8 W., Fairbanks Meridian. The latter was on the Yukon below the Dall where it would serve Yukon River travelers. The Commission stated that there was adequate public lands along the Dall to supply the needs of recreationists. 756/

According to a note in the file initialed "M.P.," in February 1979 Sherman Berg of the Alaska State Office's navigability group said that Dall River "has been used commercially and is navigable to [a] slough in Section 9, T. 14 N., R. 8 W., Fairbanks Meridian." The same note stated that the Fairbanks District Office held that the river was navigable to the same section and that above that point it was a major waterway in the conveyance area, which extended through T. 15 N., R. 9 W., Fairbanks Meridian. 757/

On July 23, 1979 the Fairbanks District Office submitted its Draft State Director Memoranda for conveyance of lands to the village and regional corporations. The Dall River was found navigable up to the unamed slough in Sec. 9, T. 14 N., R. 8 W., Fairbanks Meridian. The justification for this was that "three steamers wintered near this slough between 1899 and 1901." These steamers were said to have provided supplies for winter travelers "along the Dall and Yukon Rivers." The two draft reports also stated that the Dall was a major waterway through the selection area because it was used annually by recreationists, hunters, and fishermen and because residents of Stevens Village used riverboats on this tributary to reach subsistence areas. The only easement recommended on the river was a one-acre site in Sec. 28, T. 14 N., R. 8 W., Fairbanks Meridian on the river's right bank. This was justified to provide "temporary camping and vehicle parking" for those traveling the Yukon and Dall rivers and to furnish a

loading and unloading point for users of a trail easement leading from the site westerly to public lands. 758/ These recommendations were unchanged in a draft State Director's memo dated November 30, 1981. 759/

The BLM subsequently received comments on these drafts. On December 28, 1981, James E. Culbertson of the State Department of Natural Resources reviewed the drafts without making comments on the navigability or easement recommendations. 760/ Mitchell G. Sheldon, Yukon Flats National Wildlife Refuge Manager, proposed that the Dall be considered navigable to the confluence of Pat Creek in Sec. 27, T. 15 N., R. 8 W., Fairbanks Meridian. He stated that U.S. Fish and Wildlife Service's investigations "indicate riverboat travel is possible to at least this point and often possible many miles upstream except during severest dry climate conditions." 761/ On February 5, 1982 realty specialist Robert E. Hiller, Jr. of the BLM met with village corporation members at Stevens Village. At the meeting he learned that the villagers opposed the river campsite easement because it was near a Native allotment, because they feared it might adversely affect the Dall which they used as a fresh water supply, and because public lands on the Dall could more easily be reached from the Little Dall River or the Dalton Highway. The villagers also stated they boated on the Dall River up to "Dall City" and that boats carrying as much as 500 pounds and using ten to fifteen horsepower motors traveled the river to Pat Creek. Villager Kilbourne George stated that in 1927 he was paid to ferry a group of miners up the Dall River to the Hodzana drainage using twenty-five-foot pole boats. On hunting and trapping trips, Henry Moses, Kilbourne George, and George's brother had descended the Dall after portaging from a point on the Little Dall River 762/ later identified as Sec. 30, T. 15 N., R. 8 W., Fairbanks Meridian. 763/ On March 16 Hiller learned in a phone conversation

with village president Alfred Stevens that these men "often take canvas for making a canoe [because it] is easier to portage with than a boat." 764/ Doyon supported the village corporation's objections to the campsite easement. 765/

On March 17, 1982 Sherman Berg of the Alaska State Office's navigability unit considered this newly-acquired information. He wrote that besides steamboats wintering near the river's mouth, "pole-boats had been used in the early days (around 1902) to take men and supplies to Dall City . . . which was considered the head of navigation on the Dall R." Berg also stated that the Master Title Plats showed five Native allotments on the river. On the basis of this information, he recommended the Dall be considered navigable through the selection area and up to the site of Dall City. 766/ Shortly thereafter, on April 15, 1982, the Assistant to the State Director for Conveyance Management wrote to the president of the village corporation stating his decision on easements following review of all comments. He stated that the site easement on the Dall and its accompanying trail easement would be dropped because both the village and the Fish and Wildlife Service indicated that public lands to the west of the site were reached by the Dall and Little Dall rivers and by the Dalton Highway. 767/

The State Director on May 11, 1982 issued Final Easements for both the village and regional corporations. The site and trail easements were dropped for the reasons earlier stated by the Assistant to the State Director for Conveyance Management. The Dall River was found to be a major waterway and navigable to Dall City for the reasons put forward by Sherman Berg's memo of March 17. This navigability decision was also reflected in Decisions to Issue Conveyance to the village and regional corporations dated June 24, 1982. 768/

The Forks

The Grumman Ecosystems Corporation in 1974 made aerial and ground observations of the Dall River as part of its navigability research project on the upper Yukon conducted for the U.S. Army. The company estimated that The Forks added 200 cubic feet of water per second to the river. 769/

The Bureau of Land Management first considered the navigability of The Forks in 1982. Doyon, Ltd. selected lands in T. 16 N., R. 8 W., Fairbanks Meridian, which included a segment of The Forks as well as a couple hundred feet of its West Fork about six and one-half miles from its confluence with The Forks. Except for a campsite easement proposed for Geese Lake on the West Fork, no mention was made of this stream in BLM's files until realty specialist Robert Hiller's notes on a phone converstation he had March 3, 1982 with Dennis Daigger of the State of Alaska. Daigger told Hiller that the State's information indicated that The Forks and its West Fork were navigable to Geese Lake. No support for this statement was given over the telephone. 770/

On March 17, 1982 Sherman Berg of the Alaska State Office's navigability unit summarized data gathered on The Forks and Geese Lake. He wrote that there was no evidence of historic commercial use of the water bodies, that the Master Title Plats showed one Native allotment on Geese Lake in the selection area, and that the information found in the case files showed subsistence and recreational use of the stream. He recommended that the BLM continue to consider The Forks nonnavigable. 771/

On April 21, 1982 James Culbertson of the State transmitted to BLM his notes of a meeting he, BLM, and U.S. Fish and Wildlife representatives had had in

February with residents of Stevens Village. His notes indicated that villagers "travel . . . up The Forks to Geese Lake for hunting." 772/ However, this did not cause BLM to alter its position that The Forks were nonnavigable. This position was upheld in the Final Easements for the village and regional corporations dated May 11, 1982. 773/ On June 29, 1982 Dennis Daigger restated Culbertson's information that the residents of Stevens Village "travel by motorized boat" to Geese Lake. 774/

Tulebagh Lake

The only information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Tulebagh Lake (Ts. 17 and 18 N., R. 5 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 775/

Flat Lake

The only information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Flat Lake (T. 17 N., R. 5 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 776/

Fishnet Lake

The earliest information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Fishnet Lake (Ts. 16 and 17 N., R. 6 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 777/

Some evidence of use of Fishnet Lake was discovered by the BLM in the course of conveying Native-selected lands near Stevens Village. An unsigned report on water bodies in the area dated May 6, 1975 noted that this was a "fly-in" lake. 778/ On May 4, 1977, BLM's easement task force rejected a proposal for a twenty-five-foot-wide trail around the shoreline of this lake because such an easement was not within the agency's guidelines. It also rejected a five-acre site in Sec. 2, T. 16 N., R. 7 W., Fairbanks Meridian as other easements provided adequate access. 779/ No further mention of the lake was found in the BLM's easement files.

Geese Lake

The earliest information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Geese Lake (T. 16 N., Rs. 7 and 8 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 780/

The BLM discovered some evidence of use of Geese Lake when conveying Native-selected lands near Stevens Village. An unsigned report on water bodies in the area dated May 6, 1975 mentioned that this was a "fly-in" lake. 781/ On May 4, 1977, the BLM's easement task force rejected a proposal for a trail along the entire shoreline of the lake because it was against easement guidelines, but approved a site easement on the lake in Sec. 7, T. 16 N., R. 7 W., Fairbanks Meridian. This easement was to include a twenty-five-foot-wide, 500-foot-long easement on both sides of the one-acre site and a twenty-five-foot-wide strip of the lake bed along the entire waterfront of the site and its wings. The easement was intended for camping, staging and vehicle use along waters "having highly significant present recreational use." 782/ However, the "Notice of Proposed Easement Recommendations for Dinyea Corporation" issued October 23, 1978 dropped the proposed boat moorage and a floatplane tie-up site easement because it was located outside the conveyance area. 783/ No further mention of the lake was found in the BLM's easement files.

Savayeit Lake

The only information found concerning this lake stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached Savayeit Lake (T. 17 N., R. 8 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. 784/

Pat Creek

The Bureau of Land Management first considered the navigability of Pat Creek in connection with its solicitation of easement recommendations in lands selected in 1974 by the village corporation and Doyon, Limited near Stevens Village. Most of Pat Creek to within a few hundred feet of its source fell within these selections. 785/ Yet in its selection application of October 14, 1974 the village corporation considered only the Yukon River to be navigable. 786/

Only one easement was considered on the creek. It was a twenty-five-foot-wide streamside easement proposed along both banks of Pat Creek. However, it was rejected by the Easement Task Force "because there is not a significant amount of recreational use to warrant this easement." 787/

No more consideration appears to have been given to Pat Creek until the BLM issued a draft final easement statement in November 1981. Realty specialist Robert E. Hiller, Jr. on February 5, 1982 visited Stevens Village to obtain village corporation members' reactions to the draft document. At the meeting unidentified individuals told Hiller that area residents used four-horsepower motorboats on Pat Creek through the entire selection to reach public lands. 788/

On March 17, 1982 Sherman Berg of the BLM Alaska State Office summarized data gathered on Pat Creek and nearby Twin Lakes. He wrote that there was no evidence of historic commercial use of the water bodies, that the Master Title Plats showed one Native allotment on Pat Creek in the selection area, and that the information found in the casefiles showed subsistence and recreational use of the stream. He recommended that the BLM continue to consider Pat Creek nonnavigable. 789/

On April 2 James Culbertson of the State provided the BLM with his observations during the same village meeting. He noted that the villagers said they used four-horsepower inboard boats up Pat Creek to its source in Twin Lakes (T. 16 N., R. 5 W., Fairbanks Meridian) and that fifteen-horsepower inboards traveled an unstated distance up Pat Creek. He also wrote that the villagers claimed three Native allotments on the creek. Culbertson urged the BLM to find Pat Creek navigable through the selection area. 790/ However, the State Director on May 11, 1982 determined Pat Creek to be nonnavigable. On June 29, 1982 Culbertson protested this decision, and reiterated the information in his letter of April 2. He contended that Pat Creek met the criteria of navigable waters. 791/

Gushiate Lake

The only references found to Gushiate Lake (T. 16 N., Rs. 6 and 7 W., Fairbanks Meridian) were generated in the course of conveying Native-selected lands near Stevens Village. At a May 4, 1977 meeting, BLM's easement task force approve a one-acre site easement on this lake in Sec. 13, T. 16 N., R. 7 W., Fairbanks Meridian which also included a twenty-five-foot-wide, 500-foot-long wing on the bank of the lake on both sides of the site and a twenty-five-foot-wide easement on the lake bed along the entire waterfront of the site. The site was meant for camping, staging, and vehicle use and was to provide facilities on recreational waters. 792/ However, the "Notice of Proposed Easement Recommendations for Dinyea Corporation" issued October 23, 1978 dropped this proposal, which was to provide boat moorage and a floatplane tie-up, because it was located outside the conveyance area. 793/ No further mention of the lake was found in BLM's easement files.

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Minkoshchaliton Lake

The only references found to Minkoshchaliton Lake (T. 16 N., R. 7 W., Fairbanks Meridian) were generated in the course of conveying Native-selected lands near Stevens Village. An unsigned description of water bodies in the area dated May 6, 1975 mentioned that this was a "fly-in" lake. 794/ On May 4, 1977, the BLM's easement task force rejected a proposal for a trail along the entire shoreline of the lake because it was against easement guidelines, but approved a site easement on the lake in Sec. 7, T. 16 N., R. 7 W., Fairbanks Meridian. This easement was to include a twenty-five-foot-wide, 1000-foot-long easement on both sides of the one-acre site and a twenty-five-foot-wide strip of the lake bed along the entire waterfront of the site and its wings. The easement was intended for camping, staging, and vehicle use along waters "having highly significant present recreational use." 795/ However, the "Notice of Proposed Easement Recommendations for Dinyea Corporation" issued October 23, 1978 dropped this proposal which was to provide boat moorage and a floatplane tie-up because it was located outside the conveyance area. 796/ No further mention of the lake was found in BLM's easement files.

Abraham Lake

The only references found to Abraham Lake (Ts. 15 and 16 N., Rs. 6 and 7 W., Fairbanks Meridian) were generated in the course of conveying Native-selected lands near Stevens Village. An unsigned description of water bodies in the area dated May 6, 1975 mentioned that this was a "fly-in" lake. 797/ On May 4, 1977, BLM's easement task force rejected a proposal for a twenty-five-foot-wide trail around the shoreline of this lake because such an easement was not within the agency's guidelines. It also rejected a five-acre site in

Sec. 36, T. 16 N., R. 7 W., Fairbanks Meridian stating that other easements provided adequate access. 798/ No further mention of the lake was found in BLM's easement files.

Gushdoiman Lake

The only references found to Gushdoiman Lake (T. 15 N., R. 7 W., Fairbanks Meridian) were generated in the course of conveying Native-selected lands near Stevens Village. On May 4, 1977, the BLM's easement task force rejected a proposal for a twenty-five-foot-wide trail around the shoreline of this lake because the easement was not within the agency's guidelines. 799/ No further mention of the lake was found in BLM's easement files.

Datkokan Lake

The only references found to Datkokan Lake (Ts. 14 and 15 N., R. 7 W., Fairbanks Meridian and T. 15 N., R. 8 W., Fairbanks Meridian) were generated in the course of conveying Native-selected lands near Stevens Village. On May 4, 1977, BLM's easement task force rejected a proposal for a trail along the entire shoreline of the lake because it was against easement guidelines, but approved a site easement on the lake in Sec. 25, T. 15 N., R. 8 W., Fairbanks Meridian. This easement on the western shore was to include a twenty-five-foot-wide, 1000-foot-long easement on both sides of the one-acre site and a twenty-five-foot-wide strip of the lake bed along the entire waterfront of the site and its wings. The easement was intended for camping, staging, and vehicle use along waters "having highly significant present recreational use" as well as to provide overnight camping for those using two adjacent trails. 800/ However, the "Notice of Proposed Easement Recommendations for Dinyea Corporation"

issued October 23, 1978 dropped this proposal, which was to provide boat moorage and a floatplane tie-up, because it was located outside the conveyance area. 801/ No further mention of the lake was found in BLM's easement files.

LITTLE DALL RIVER

Information on the Little Dall River is sparse. In 1958 the Army Corps of Engineers reported that the Little Dall "is probably locally blocked by log jams but may be navigable for a short distance to small boats and canoes without portaging." The Corps believed the river in the marginal uplands was nonnavigable. 802/ The U.S. Fish and Wildlife Service in 1964 stated that at its mouth the stream's flow was almost imperceptible and that a log jam existed about fifteen miles upriver. 803/

The Bureau of Land Management first considered the navigability of the Little Dall River in connection with its solicitation of easement recommendations for lands selected by the village corporation and Doyon, Limited near Stevens Village. These selections included most of the river up to its rivermile 52.5.

The Alaska Department of Fish and Game and the BLM proposed several easements on the Little Dall River. The Alaska Department of Fish and Game recommended a boat and floatplane tie-up and overnight camping site at its mouth in Sec. 17, T. 13 N., R. 8 W., Fairbanks Meridian "to assure . . . free public access and full use of the state waters and fish and game resources of the Yukon and Little Dall River." 804/ An unsigned and undated document in the Stevens Village selection file indicated that at one time the BLM recommended campsite and boat tie-up easements in Secs. 2 and 36, T. 14 N., R. 9 W., Fairbanks Meridian and Sec. 12, T. 15 N., R. 9 W., Fairbanks Meridian. However, no

other record of these recommendations exists. 805/ Another unsigned document which appears to have been notes taken of a May 6, 1975 meeting at Stevens Village stated that villagers did not want campsites on the Little Dall and that "upstream travel is restricted low water usually." 806/ On May 4, 1977 the Easement Task Force considered and rejected the site easement at the mouth of the Dall and a trail easement along both banks of the river. The Task force disapproved of the former because other sites provided the same facilities and the latter "because the river is too small and there does not appear to be any significant use of the stream bank." 807/ The Federal-State Land Use Planning Commission agreed with these rejections in January 1979. In a draft State Director Memo dated November 30, 1981 the Little Dall was considered neither a major waterway nor navigable. 808/

In the course of public review of the draft State Director Memo, the BLM received information on use of the Little Dall which led to a decision that the river was navigable for a portion of its length in the selected area. Mitchell G. Sheldon, Yukon Flats National Wildlife Refuge Manager wrote on January 29, 1982 that area residents used riverboats and other outboard motor-powered boats on the Little Dall and that hunters and fishermen used the river annually. 809/ A month later Sheldon stated in a phone conversation with Robert Hiller that he considered the Little Dall navigable. 810/ Villagers at a February 5, 1982 meeting told Hiller that they used twenty-five-horsepower motors to take boats up the river to at least Sec. 1, T. 13 N., R. 9 W., Fairbanks Meridian to gain access to public land for hunting, fishing, and trapping. Hiller also learned that on hunting and trapping expeditions Henry Moses, Kilbourne George, and George's brother used to travel up the Little Dall to an unnamed portage and then descend the Dall. 811/ Alfred Stevens, president of the village corporation, in a letter to Hiller located this portage in Secs. 29 and 30, T. 15 N., R. 8 W.,

Fairbanks Meridian and in a subsequent phone conversation said that Natives used sixteen-foot boats with twenty-five-horsepower motors on the Little Dall in the spring for muskrat hunting. Travel on the river normally was for subsistence, although occasionally villagers took outsiders up the river for money. Stevens also told Hiller that "when the river is open, it's not the usual time of the year for Native travel on the river." He said that Moses and the George's usually traveled together on the Little Dall because of the bear threat in the area and that they "often take canvas for making a canoe [because it] is easier to portage with than a boat. 812/ On March 8, 1982 Dennis Daigger of the State told Hiller that the State had gathered information showing the Little Dall River to be navigable. 813/

On March 17, 1982 Sherman Berg of the Alaska State Office's navigability unit reviewed and summarized the information on the Little Dall River cited above. He recommended that the Little Dall be considered navigable to the northeast boundary of the SE¼, Sec. 30, T. 15 N., R. 8 W., Fairbanks Meridian. 814/ On April 21, 1982, the State notified the BLM that it wanted the Little Dall considered navigable throughout the selection area. 815/ On May 11, 1982, the Final Easement document issued by BLM stated that the Little Dall was not a major waterway but was navigable to the northern boundary of the SE ¼, Sec. 30, T. 15 N., R. 8 W., Fairbanks Meridian. 816/ This decision was reflected in the Decision to Issue Conveyance dated June 24, 1982. 817/ On June 29, 1982 the State wrote to BLM suggesting that BLM's location of the portage was "an educated guess" and that the portage may have been elsewhere "well upstream" from this point. The State suggested the BLM contact Kilbourne George to pinpoint the location of the portage. 818/

Sussaymin Lakes

The only information found concerning these lakes stemmed from a July 1962 U.S. Fish and Wildlife Service field study of lands potentially affected by the building of a Rampart Canyon dam. Although the report does not explicitly state that the field examiners reached the lakes (Ts. 15 and 16 N., R. 10 W., Fairbanks Meridian) by floatplane, only lakes on which "a small float-equipped airplane" could land were visited. The Fish and Wildlife employees surveyed the largest two of these lakes. 819/

RAY RIVER

There was some activity along the Ray River in the first decade of this century. In the spring of 1904 men from Rampart removed the boilers from the wreckage of the small steamer Dwyer at the Ray River. It may have met its end after having sought shelter in the mouth of the river and then being crushed when the Yukon's spring ice backed up the tributary. 820/ Two years later Indian reports of a hot sping (located in Sec. 10, T. 13 N., R. 16 W., Fairbanks Meridian) coaxed men to travel much farther upstream. Before the snow disappeared in the spring of 1905 Clement Anderson traveled to the spring. Later that year a trip by boats was stymied by the canyon's rapids forty-five miles from the mouth of the Ray. In July Anderson, J. H. Hudgin, and A. D. Williams succeeded in taking a light canvas boat and supplies to the Ray River canyon which they portaged and then proceeded ten miles farther to the spring. The trio made the trip because Hudgin wished to assess the spring area as a site for a farm. Hudgin liked what he saw and planned on taking supplies in once the snow began to fall. In September 1905 Allen Dale blazed a trail to the hot springs. If interest emerged to develop the spring into a resort, the press

stated that Dale was prepared to make the twenty-mile trail suitable for horses which "would obviate the torturous journey in poling boats up the Ray River." An area newspaper reported in 1906 that the owners of the spring's property built a chicken house directly over the spring, planning to use its heat to keep the chickens warm through the winter. 821/ However in the 1940s area residents told a visitor that the project had failed and that the local wildlife feasted on many of the hens. 822/

In a 1948 article in Alaska Sportsman, Ted Muth told of two journeys on the Ray--his own of the previous summer and an earlier one described to Muth by Ira Wiesner, a merchant and miner living at Rampart. In late winter Wiesner and a Swiss, known only as "Shorty," traveled with dog teams overland to prospect south of the Kanuti River. On their way out they shot all but five of the dogs and packed with them back to a point on the Ray somewhere above the canyon area, which was about forty-five or fifty miles from the river's mouth. Taking advantage of the high spring water they built a raft and floated to the Yukon, only being upset once when they struck a rock in midstream. 823/

Muth also was motivated by the desire to find gold on the Kanuti. A friend flew him to a lake at the head of a southern tributary of the Kanuti. On August 2 he started to hike out of the area. He reached the top of a divide and on the following evening, mistaking the valley of the Ray River for that of Squaw Creek, Muth dropped into the headwaters of the Ray. Having descended into the Ray valley, he found the climb back out too difficult to contemplate. Building a raft also was out of the question because there were "too many boulders in the swift, shallow river." However, after five days of hiking along the stream he built a small raft on which he intended to carry his pack. He anticipated adding more logs to the raft so he could ride once the river widened.

But Muth immediately entered the canyon area. He found the raft more trouble than it was worth and abandoned it. Muth hiked the rest of the way down the river. On his way he noted several buildings. Near the head of the canyon he observed the old chicken ranch. Farther downstream he saw a cabin below the mouth of an unnamed tributary (T. 14 N., R. 13 W., Fairbanks Meridian) which he later learned trapper John Parker had abandoned fifteen years earlier. (These two buildings are the only ones marked on USGS maps produced since the mid-1950s). And a short distance below Parker's cabin he spotted a trapper's stop-over cabin. 824/

The U.S. Fish and Wildlife Service gathered some information on the Ray River in the 1960s and 1970s. In 1962 the U.S. Fish and Wildlife Service surveyed fish in the area whose habitat would be impacted by the proposed Rampart dam. The agency's personnel using unspecified transportation visited an unspecified portion of the Ray in late July and found that it "was so low at this time that travel by riverboat was difficult." 825/ In mid-July 1971 Fish and Wildlife personnel visited the stream by aircraft and may have conducted some ground observations. They described the North Fork of the Ray as twenty-five to thirty feet wide and one to four feet deep. They reported that the lower stretch of the Ray River was fifty to seventy-five feet wide and one to five feet deep. 826/

The Grumman Ecosystems Corporation in 1974 made aerial and ground observations of the Ray River as part of its navigability research project on the upper Yukon for the U.S. Army. It reported that the amount of open season river flow was highly variable. Maximum flow, sometimes exceeding 2,000 cubic feet per second, normally was reached at break-up. It stated that "where practically boatable, the Ray River is usable only during periods of high (above average)

flow, immediately after breakup and after a prolonged period of summer mountain precipitation." Grumman found no historic or present use of the river, but stated that the Ray's "apparent boatability" extended five miles from its mouth. The company also believed that there was "seemingly little potential for increased recreation usage" and that it was unlikely that the river had potential for freight shipment. During a helicopter reconnaissance of the river in July 1974 the investigators noted its sinuous course with numerous snags, sweepers, and beached trees. The report described it as having pools up to eight feet deep and riffles "only inches deep." At the pools the river was up to 100 feet wide while at riffles it was as little as ten feet wide. Based on visual observation on the 1974 trip, the company's report "resulted in subjective evaluation that due to the inhibiting physical nature of the river, boatability was not practical above mile 5 under any conditions." The report, therefore, recommended that the river be considered navigable only for its first five miles.

The Grumman survey party also landed its helicopter at three spots on the Ray River and made ground observations. At its mouth the river was 100 yards wide, nine feet deep, with a flow rate of one foot per second. Although the water was lower than "normal," the river was boatable. A mile upstream the river was fifty feet wide, two feet deep, and flowed at one and a half feet per second. The field examiner noted that the river was "pedering [sic] out fast" and was still boatable. And six to seven miles upstream the Grumman personnel found the river to be sixty feet wide, three feet deep in a pool, with a flow rate of six inches per second. They commented that this was a "tight area . . . boat could go thru [sic] with caution." 827/

In December 1975 Doyon selected lands in T. 13 N., R. 16 W., Fairbanks Meridian. 828/ On August 24, 1981 Marion England of BLM's Fairbanks District

Office submitted a navigability recommendation for this township. England stated that there was "no pertinent data available, historic or present" that indicated that the Ray was navigable or had been used as a highway of commerce. He recommended that the river be considered nonnavigable due to lack of use and susceptibility to use. 829/ On January 18, 1982 Jules Tileston, Chief of the BLM's Division of Resources, Alaska State Office, concurred with this recommendation. 830/

BIG SALT RIVER

In 1902 prospectors told USGS geologist Arthur J. Collier, who was on a survey of coal deposits along the Yukon, that coal occurred at an unspecified location on this stream. No evidence of prospecting or coal production on the river is known to exist. 831/ The USGS map of the area produced in 1956 noted only one cabin on the river and that was at its mouth. 832/

HESS CREEK

Two government officials made comments concerning Hess Creek at the turn of the century. Josiah Spurr, a USGS geologist who passed the stream in 1896, recorded that the Native name for Hess Creek, Yukutchkaket, meant "big shallow creek." 833/ James T. White, a doctor on the U.S. revenue cutter Nunivak, visited the creek in September 1900. Apparently out of curiousity, White and the boat's engineer canoed an unstated distance up Hess Creek, which White termed as "very swift." About two miles up the river they encountered a riffle which took ten minutes to ascend but only one to race through on their return. 834/

During the gold rush to the Tolovana area in 1915, Hess Creek was an important transport route to the new diggings. Some gold-seekers brought their supplies in from Rampart. Although the creek was impossible for steamers in all but the highest water levels, poling boats were able to ascend the river. Alfred H. Brooks of the USGS wrote that riverboats could get to points within fifteen miles of the Tolovana River. 835/

A USGS map compiled in 1956 and revised in 1972 showed numerous cabins and other buildings in the Hess Creek drainage. Two structures and the ruins of four others were marked near a tunnel built about 1940 to carry water from the South Fork of Hess Creek to Livengood placers. These operations continued into the mid-1950s but it is uncertain whether the tunnel was used to conduct water from the Hess Creek drainage since then. A road leads from these buildings to Livengood. The USGS map indicated that mining operations along Troublesome Creek were connected to Rampart by trail and to other locations by an air strip. Only a cabin on Bear Creek (T. 11 N., R. 2 W., Fairbanks Meridian) had no ground or air transportation associated with it on the USGS maps. 836/

Two studies of the river in the 1960s and 1970s claimed that while Hess Creek may not be easily navigable, riverboats can travel an unspecified distance up it. A U.S. Fish and Wildlife Service report based on observations in 1962 stated that the creek was "quite deep" at its mouth but "a short distance away from the Yukon, the stream becomes so shallow that riverboat travel is difficult." 837/ A 1971 Fox-Yukon Planning Group report simply stated that Hess Creek was "usable by riverboat." 838/

The Bureau of Land Management first considered the navigability of Hess Creek in connection with its solicitation of easement recommendations for lands selected by the village corporation and Doyon, Limited near Rampart. In its December 2, 1974 selection, the village corporation, Baan-O-Yeel-Kon Corporation, excluded Hess Creek in T. 10 N., R. 11 W., Fairbanks Meridian, possibly because it considered the creek navigable. 839/ The U.S. Fish and Wildlife Service recommended a boat pullout and floatplane tie-up on Hess Creek at its mouth. The Alaska Department of Fish and Game used the site as a base camp for sheefish research from 1971 to at least 1976 and the Fish and Wildlife Service estimated that there were twenty-five canoe float trips down Hess Creek from the haul road to the Yukon River in 1974. The Alaska Division of Lands proposed a trail from the mouth of Hess Creek eastward alongside the stream to public lands in T. 10 N., R. 10 W., Fairbanks Meridian. 840/

In early May 1976 Paul Costello of the BLM examined the river in T. 10 N., R. 11 W., Fairbanks Meridian. He described it as about one quarter of a mile wide with sandbars on its inside bends. He stated that the water was "generally low" and the river bed was gravel. Costello wrote that the "biggest obstruction to navigation is lack of water in June-August. Lower reaches within withdrawal can be maneuvered by boat most of the time." He stated that riverboats, canoes, and rafts were used and that Hess Creek was a popular recreational water body. 841/

On May 15, 1976 Paul Costello, Sigwein Savok, Doran Ward, and Tim Dylina, all BLM officials, conducted an easement meeting with Rampart villagers. Mary Jane Fate objected to the location of the U.S. Fish and Wildlife site easement, saying it was located on Sally Hudson's Native allotment. It was suggested that this site be moved to the opposite side of the Yukon. Fate regarded the estimate

of twenty-five canoe trips on the stream in 1974 with skepticism and suggested that if there were this many trips, they were very difficult and few were completed. The Native villagers also opposed the location of the trail along the creek, saying it passed through some proposed Native allotments. In the course of the discussion the villagers stated that the right side of Hess Creek was the only practical point to land near its mouth because most of the left side had high cut banks. 842/ In a written report on the site easement in June 1976, Dylina and Costello noted that the left side of the creek near its mouth was "too shallow to get a boat to." Because of this and the presence of a Native allotment, the two employees recommended the ten-acre site be reduced to two acres and another two-acre site be placed on the opposite side of the Yukon. Costello and Dylina suggested an alternate trail route on the north bank of the Hess which avoided the Native allotments. The authors wrote that this trail was necessary since Hess Creek received "a fair amount of use . . . by recreationists, hunters, and fishermen." Finally, Costello and Dylina wrote:

> The State of Alaska, Baan O Yeel Kon Corporation, and the Bureau of Land Management assert that Hess Creek is a navigable body of water. . . . There are eight native allotments on Hess Creek, most within the first five miles from the mouth. These appear to be recreationally [sic] and subsistence fishing-oriented.
>
> The Hess Creek drainage is known for its moose hunting during the fall season. It is popular for float trips at that time especially. Persons using riverboats generally enter from the mouth of Hess Creek and travel upstream. During the dry months upstream travel is difficult if not impossible. This is one of the factors that have made float trips popular and more numerous in the last few years.

> There hasn't been any travel on Hess Creek for trade or commerce. It is a significant recreational experience both from the quality of the experience and the quantity of users. . . . A 25' linear shoreline easement on one if not both of the stream banks would serve the public use of this stream where not in conflict with the native allotments. 843/

On June 24, 1976 the BLM easement task force recommended a five-acre site on the right side of Hess Creek at its mouth and a two-acre site on the opposite side of the Yukon. Both were justified as serving travelers on the Yukon. A streamside easement on both banks and a streambed easement were also recommended because the stream had "highly significant present recreational use" and received "a moderate to heavy amount of use by recreationists, hunters and fishermen." Hess Creek was recommended to be nonnavigable. 844/ These recommendations were reflected in the Notice of Proposed Easement Recommendations issued September 6, 1977. 845/

The Federal-State Land Use Planning Commission considered these proposals. In a letter to the Commission, Baan-O-Yeel-Kon stated that neither of the site easement locations witnessed "significant" use for anything other than subsistence. The corporation opposed the streamside easement because "Hess Creek has no signficant recreation or hunting use" and because it conflicted with Native allotments. 846/ The Land Use Commission on December 2, 1977 supported only a two-acre site at the Hess Creek mouth and this only if it did not conflict with any Native allotments. Otherwise, the Commission believed, the site should be located on the opposite side of the Yukon. The Commission also recommended

dropping the streamside easement and retaining that on the bed only because this would "allow access to public land and water by boat during open water and snow machines, dogsleds, skiing or foot during freeze-up." 847/

On March 10, 1978 the BLM easement and navigability staff accepted the Commission's suggestion to reduce the site easement at the mouth of Hess Creek. However, it retained the streamside easement because "portions of Hess Creek are shallow." 848/

New regulations necessitated a second final easement meeting on February 20, 1979. These regulations caused the BLM to drop the streamside and streambed easement. By then a 1978 field investigation had indicated to BLM personnel that the site on the right bank of the Yukon was excellent for public use and thus negated the need for the easement at the mouth of Hess Creek. 849/

In April 1981, the Fairbanks District Office of the BLM recommended that Hess Creek be determined navigable up to the confluence of the North and South forks. This decision was based on Brook's statement that riverboats could get up Hess to within fifteen miles of the Tolovana. The fork is approximately that distance from Livengood. The State Director on April 22, 1981 concurred in this recommedation. 850/

Troublesome Creek

Troublesome Creek, which heads opposite some of the gold-bearing tributaries of Minook Creek, was also the scene of some minor mining operations. C. E. Ellsworth of the USGS visited Quail Creek, a tributary, in the summer of 1909 as part of a tour to investigate the water supply of the Yukon and Tanana

rivers area. Although he did not visit the lower portions of Troublesome Creek, others informed him that it followed "a winding course, meandering from one side of the valley to the other through soft mucky soil abounding with 'niggerheads' and a thick growth of small trees which make travel slow and tedious. It also has steep, high slopes, which make it very difficult of approach." 851/

A 1956 USGS map revised in 1972 indicated that mining operations along Troublesome Creek were connected to Rampart by trail and to other locations by aircraft via a strip near the mouth of Quail Creek. Cabins were located near the confluence of Troublesome and Quail creeks and at mines near the mouth of Gunnison Creek. 852/

In the course of preparing to convey land near Rampart to Native corporations, the BLM received requests in the mid-1970s from the U.S. Bureau of Mines, the Alaska Division of Lands, and private individuals that a trail easement be granted from the Rampart to Manley Hot Springs road via Hunter Creek and Troublesome Creek to mines near Quail Creek. According to local residents, this trail served as the prefered summer route to the mines. 853/ The trail easement was supported by the Federal-State Land Use Planning Commission in December 1977 and was included in a draft State Director Memo issued in March 1979. 854/

MINOOK CREEK

According to USGS geologist Josiah Edward Spurr, who visited Minook Creek in 1896, the Natives called the stream, Klanarkaket, meaning "creek suitable for

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small boats." 855/ Guidebooks and reports published from 1895 to 1899 described the stream as navigable for "light draft boats" for between twenty-five and forty miles. 856/ These claims are dubious--the stream is barely twenty-five miles long. 857/ Only one instance of recorded water traffic has been found. In 1901 a local paper noted that Sam Heeter, a local contractor, was "rafting a select lot of logs on Big Minook." It is uncertain how far up the stream these logs had been cut. 858/

Most travel was overland alongside the creek. A trail paralleling the stream was followed by Spurr in 1896. 859/ In 1906 and 1907 the Alaska Road Commission upgraded the trail to wagon road standard. 860/ And at least since Spurr's time the main trail up Minook Creek accessed spur trails up various tributaries of Minook. 861/

Land selections in the Minook Creek area have twice brought the issue of the navigability of Minook Creek to the attention of the BLM. Or rather, the issue should have been addressed twice. In 1974 the Native corporation of Rampart selected lands surrounding the creek from the southern boundary of T. 6 N., R. 13 W., Fairbanks Meridian to the stream's mouth. 862/ However, nowhere in the files dealing with this selection is there any evidence that consideration was given to Minook Creek as a potentially navigable water body. The State did not indicate it as a navigable stream on its water delineation maps 863/ and no one urged campsite easments along its banks. Only a 100-foot-wide easement for the road originally constructed in the first decade of this century was recommended, along with numerous trail easements adjacent to tributaries of Minook Creek. All parties--Natives, local miners, the State, and several federal agencies--accepted the road easement without serious complaint. 864/ In a

March 1979 draft State Director memo the road was termed "a main travel artery between Rampart and Eureka," with spur trails to mining claims and isolated public land. 865/

When the State selected lands in T. 6 N., R. 13 W., Fairbanks Meridian and T. 7 N., R. 12 W., Fairbanks Meridian, the BLM more directly addressed the question of the navigability of Minook Creek. On April 8, 1981 the Fairbanks District Office took note of the stream's Indian name and references in the gold rush guidebooks to potential boat use, and decided that Minook Creek "is navigable in fact to some point." The district office chose the point at the northern boundary of T. 6 N, R. 13 W., Fairbanks Meridian where the stream became a braided channel as the upward limit of navigability. Thus, the district office recommended that Minook Creek be considered nonnavigable in this township, but navigable in T. 7 N., R. 12 W., Fairbanks Meridian. 866/ The State Director concurred in this recommendation on April 22, 1981. 867/

Chapter Six-Water Transportation

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3. Gordon Bennett, Yukon Transportation: A History, Canadian Historic Sites: Occasional Papers in Archaeology and History No. 19 (Ottawa: Parks Canada, 1978), pp. 28-48.

4. U.S., Department of the Interior, Report of the Governor of Alaska to the Secretary of the Interior 1924 (Washington, D.C.: Government Printing Office, 1924), p. 9; Board of Road Commissioners for Alaska, Annual Report 1923, pt. 2 (Juneau, Alaska: Alaska Daily Empire Print, 1923), p. 60; Bennett, Yukon Transportation, p. 106; William R. Siddall, "The Yukon Waterway in the Development of Interior Alaska," Pacific Historical Review 28 (November 1959): 373-374.

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9. McQuesten, Recollections, p. 9; Curtin, Yukon Voyage, pp. 276-78.

10. William Ogilvie, Early Days on the Yukon (London: J. Love, 1913), p. 76; Israel C. Russell, "A Journey Up the Yukon River," Bulletin of the American Geographical Society 27 (1895): 143-57; Francois Mercier, untitled manuscript.

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12. Yukon Press, June 1896; Chase, Reminiscences of Captain Billie Moore, pp. 226-27; Curtin, Yukon Voyage, p. 278.

13. Virginia S. Burlingame, "John J. Healy's Alaskan Adventure," Alaska Journal 8 (Autumn 1978): pp. 310-319; Cantwell, Report of the . . . Nunivak, pp. 280-81.

14. Ibid.; Curtin, Yukon Voyage, pp. 278-84, 288; William D. MacBride, "Saga of Famed Packets of Mighty Yukon River," a listing and description of boats in Alaska Weekly, July 21, 1944; July 28, 1944; August 11, 1944; August 18, 1944; August 25, 1944; September 1, 1944; September 8, 1944; September 15, 1944.

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CHAPTER SEVEN

ROADS AND TRAILS

The first overland routes in Alaska, as throughout all America, were pioneered by unknown Natives hundreds, if not thousands, of years before whites came to this hemisphere. Natives used snowshoes and sleds to pass over the trails in the winter. During the summer, travel would be on foot with dogs often helping by carrying baggage in satchels draped over their backs. The trails were used to reach upland hunting areas, to travel to favorite fishing spots, and to trade, visit, and fight with other Indian bands. Frank C. Schrader observed in 1899 that these Alaskan trails usually were not foot-beaten paths or well-worn lines of travel, but vague stretches of relatively easily traversed country. Unlike river routes which whites could follow without Indian assistance, pioneering whites on overland excursions frequently recruited Native guides to show the way. 1/

In the 1880s and 1890s prospectors used these trails and cleared some of their own to get to isolated gold lands. In 1898 a score or more traveled through the Copper River Valley, Mentasta Pass, and the Tanana Valley to the headwaters of the Fortymile. Shortly after the turn of the century an old Indian trail in the Chatanika and Birch Creek drainages provided the principle overland route from the upper Yukon to the new gold discoveries near Fairbanks. However, most trails in the upper Yukon area led from the Yukon or one of its tributaries to mining areas. Rich mining districts became honeycombed with trails. The boom in activity prompted the military to explore the area. In the first years of the twentieth century it cut a trail and erected telegraph lines from Valdez to Eagle. In response to a general concern by mining and commercial companies for better transportation, Congress organized the Alaska Road Commission in 1905.

The ARC improved the Natives' and miners' primitive trails and was, until statehood, the prime builder and maintainer of pack trails, sled routes, wagon roads, and ultimately, auto roads in Alaska. The following table, excerpted from Alfred Hulse Brooks' Blazing Alaska's Trails, illustrates the savings improved transportation routes offered and explains the eagerness of merchants for facilities which could give them a competitive advantage in providing goods to the interior.

Relative Efficiency of Alaska Means of Transport

Type	Weight Carried	Miles traveled in 24 hours	Approx. cost per ton mile	Notes
Back packing	50 lbs. per man	12	$25.00	Wages $7.50 per day
Pack horse	200 lbs. per horse	12	12.00	Based on actual charges
Dog sled	100 lbs. per dog	15	2.50	Based on actual charges
Wagon road	500 lbs. per horse	20	.60	Two-horse team at $20 per day
Railroad	700 lbs. per train	700	.08	Frontier railroad
Canoe or poling boat	1000 lbs. per boat	20	1.50	Two men, wages at $7.50 per day
River steamers	500 tons	250	.05	Average of river steamer freight 2/

DAWSON-TANANA TRAIL

The ice of the Yukon has long served as a means of winter travel through the upper Yukon. During the gold rush era prospectors often travelled the frozen river to get to a promising field rather than wait for the river to break up. In the winter of 1900 Ed Jesson rode a bicycle on the ice from Dawson to Nome.

Heavy equipment was pulled by large horse sleighs and the river provided a highway for mail carriers from before the beginning of the century. The portion of the mail route below Fort Yukon was abandoned about 1915 but the route connecting Fort Yukon, Circle, and Eagle continued to the 1930s when air service took over. 3/

Because of overflow ice and the bends in the river, several overland shortcuts were made in the 1920s. The most prominent among these were a cutoff up Boulder Creek (north of Eagle) to Ford Lake and the mouth of the Seventymile River, a shortcut across the flats near the mouth of Montauk Creek, a trail parallel to the river above the mouth of the Kandik, and a series of overland cutoffs between Circle and Fort Yukon. 4/

In 1926 the ARC considered creating an alternative route around the Tacoma Bluff stretch of the trail which was plagued with warm springs, slow freezes, and frequent overflows. The alternative was to leave the Yukon at Woodchopper or Thanksgiving Creek and reach Circle via Circle Hot Springs. It is not clear that this route was adopted. Similarly undeveloped is a roadway from Circle to Fort Yukon. Residents of the area petitioned for this road in 1931. 5/

FORTYMILE RIVER AREA

Maps drawn prior to the formation of the Alaska Road Commission reveal two routes to the Fortymile from the Tanana River drainage. Both undoubtedly were of Native origin as Tanana Indians were known to travel overland to the upper Yukon long before whites entered the region. The Mentasta Pass route was the one most useful to whites. It led from the Copper River valley, through the Mentasta Pass and the Lake Mansfield area, to the Mosquito Fork near

Kechumstuk. The last portion of this trail was utilized by Lake Mansfield Indians to get to caribou hunting grounds at Kechumstuk. It was the trail which Lieutenant Henry Allen sketched on his 1885 map. The trail, which Allen did not traverse, left the Tanana at "Tetling's Village" and reached the Yukon at the mouth of an unnamed stream. The location of this stream strongly suggests that it was the Fortymile. In the late 1880s Walter H. Pierce may have portaged back and forth from the Mosquito Flats to the Tanana drainage by this route. In 1890 E. H. Wells used the "well beaten" Indian trail to traverse the divide from the Flats to the Tanana. 6/

The route came into greater prominence after 1898 when gold-seekers heading from Valdez advanced to the Fortymile via the Mentasta trail. How many crossed into the Fortymile basin is uncertain. Many and possibly most of the three thousand or more men who landed at Valdez by the early summer of 1898, turned back before reaching the Mosquito Flats. Would-be gold magnates continued to penetrate into the Fortymile area by way of the Mentasta trail. This was the all-American overland route to the gold fields, but a much better trail was needed. In 1898 British and Canadian interests began building the White Pass Railroad from Skagway. Commercial advantages, including the cost exacted by Canadian customs officials, argued for a competing American trail or road to an ice-free port. Also sensitive negotiations with Canada over the location of the Alaskan boundary interjected a strategic factor. Thus in 1899 the War Department ordered Captain William R. Abercrombie to begin exploration and construction of a trail from Valdez to Eagle.

In 1899 a party led by John F. Rice, a quartermaster's clerk, traveled into the Fortymile drainage from Valdez via Lake Mansfield. Accompanying Rice's group was U.S. Post Office Inspector, C. L. Wayland who set up post offices at

mining camps along the way. After reaching Eagle the group retraced its steps. On the return trip they encountered Andrew Hohman, the mail contractor, traveling north establishing stations to aid in winter mail deliveries. The route they took was a vaguely known trail following the ridge north of the Mosquito Fork, down Franklin Gulch, overland to the head of Steele Creek, down that creek, across the Fortymile, north along the ridges east of Dome Creek, and down to the Yukon. They erroneously descended Boundary Creek instead of American Creek and thus struck the Yukon twelve miles above Eagle. On their return they took the correct path up American Creek, blazing it as they went so others would not lose their way as they had. 7/

Captain Charles S. Farnsworth, the commander of Fort Egbert at Eagle reconnoitered a separate route in 1900 for a military telegraph. The following summer he began clearing a trail and setting up the telegraph line. However, by 1902 he was transferred and the work he had begun was completed by Lieutenant Billy Mitchell. The telegraph parted from the mail trail at Kechumstuk, following a more northerly path via Hutchinson Creek, the North Fork of the Fortymile, Champion Creek (a tributary of the North Fork), and American Creek. A trail to supply telegraph stations along the line coincided with the route taken by the telegraph, usually lying somewhat farther upland along the ridges taken by the telegraph. Like the mail trail, this route was to be used in both summer and winter. In order to better accomodate winter travel an alternate supply and repair trail for the telegraph followed the ice of the North Fork and Champion Creek. 8/

Besides the Lake Mansfield-Kechumstuk entryway into the Fortymile, a second route followed the Goodpaster, a tributary of the Tanana, down Joseph Creek and the Middle Fork of the Fortymile to the North Fork. The first recorded

use of this trail was in 1892. Freeze-up that year caught the North American Trade & Transportation Company's steamboat, "Porteus B. Weare", on the Yukon below the Tanana. In order to arrange for sending supplies in the following year, C. H. Hamilton left the boat with guides and three dogsleds. At the mouth of the Tanana, missionary Jules L. Prevost joined Hamilton to visit the Indians on the Tanana River. They traveled along that river and engaged another Indian guide who led them up the Goodpaster River to the headwaters of the Fortymile. Prevost and Hamilton parted company upon reaching the Yukon at the mouth of the Fortymile; Hamilton continued his trek to the outside while the missionary turned back to preach among the Indians. 9/

Nothing more is heard of the route in the historical record until early 1903 when Chief Joseph, the leader of an Indian band on Joseph Creek, guided Lieutenant Mitchell over it. Mitchell, that summer, directed a force which cleared a route and constructed a telegraph line stretching out from Kechumstuk rather than Joseph Creek. However, within two years this line was abandoned in favor of the Joseph Creek route. It tied into the Valdez telegraph line and trail at the confluence of the Middle and North forks. 10/

In the years until the formation of the Board of Road Commissioners in 1905, both routes between the Tanana and Fortymile rivers saw important use. The trail cleared by Mitchell via the Goodpaster was used by stampeders rushing to the new gold fields around what would become Fairbanks. Indeed, even before Mitchell had cleared the route, miners in their haste to reach the Fairbanks mines before breakup in 1903 rushed through the Fortymile region over the Goodpaster route. Beginning in 1899 mail passed over the Mentasta Pass trail to Eagle. Andrew Hohman's contract called for him to carry not more than

100 pounds on regular mail trips between Valdez and Eagle. In the next few years the time required for the mail run decreased from about three weeks one way to less than two weeks. At this pace the Valdez trail was as quick as the Skagway route in bringing mail to Eagle. In 1902 the Post Office granted Oscar Fish a four-year contract to deliver mail from Valdez to Eagle, including mail bound for Nome. He was to provide two trips a month carrying up to 300 pounds of mail. The mail was carried over the trail in relays, with fresh dogs and horses stationed about every sixty miles and shelter cabins placed about every ten miles. Developments along the trail encouraged men from Valdez to Eagle to call for the route to be improved to wagon road standard. Prompted by these urgings, Congress sponsored a 1904 survey for a wagon road. J. M. Clapp, assistant engineer in the U.S. Engineer Office at Seattle, had charge of the survey and estimated the per mile cost at $3,500 for a total of over one and a half million dollars for the road. 11/

Clapp's investigation was the highwater mark for proponents of the Valdez-Eagle route. The wealth of the Fairbanks gold district gave the interior its newest and by far, its largest settlement. Now most traffic heading north from Valdez left the Mentasta Pass Trail at Gulkana for Fairbanks. The question of a road to Eagle was no longer relevant. A Valdez-Fairbanks mail route began in late 1903.

In 1906 the Signal Corps constructed a telegraph along the trail to Fairbanks; as a consequence the Goodpaster-Joseph Creek line was abandoned. In 1908 a wireless station was constructed at Fort Egbert and the telegraph line over the Mentasta Pass was likewise abandoned. By then the overland mail runs to Eagle had also ended. In 1907 mail contractor J. R. Crittenden improved the route to horse and sled standard, building barns and cabins along the trail in hopes of

establishing an express and passenger service to Eagle. However, his mail contract was terminated the following year and there is no evidence that his transit service outlived the mail contract. Mail service from Chicken to Tanana Crossing was re-established in 1921. William Mitchell, who ran a hay ranch near the Mosquito Flats, held a contract for this mail route at least to 1930. 12/

As important as were the inter-regional trails, more people used the local trails within the Fortymile Basin. These stretched out from Eagle, the Fortymile River, and connecting Canadian routes to serve the placers in the valley. Josiah Edward Spurr traveled some of these routes in his pioneering USGS voyage among the gold fields in 1896. Just inside American territory, he and his two companions left their boat on the Fortymile and hiked more than thirty miles up the Moose Creek drainage, and over a divide to mines on Canada's Miller Creek. Spurr later followed a trail of "blazed trees" up Franklin Gulch and down into Chicken Creek. This latter route probably was largely incorporated into the mail route to Eagle later in the decade. 13/

The Moose Creek trail was one of several which led south from the Fortymile to rich placers over the ridge on the Sixtymile River and Walker Fork. In the 1890s boats carrying six to eight tons of supplies would come up the Fortymile and unload at Moose Creek. From there miners, Natives, and dogs packing up to fifty pounds carried the supplies up the creek trail to Miller Creek. In 1894 two small horses worked well on the route. The cost of freighting to Miller Creek in summer ran at thirty dollars per 100 pounds. For ten to thirteen dollars dog sleds could bring supplies to Miller Creek over roughly the same

route. Possibly because of custom difficulties on the short trip into the U.S. by way of the Fortymile, nothing was heard of the Moose Creek path after the turn of the century. 14/

Yet trails up Canyon and Steele creeks were utilized to transport most people and supplies to Walker Fork and Wade Creek. In 1900 "Klondike" Mike Mahoney traveled on foot and by dog team and freighted by horse and dog sled up the Fortymile and over the Steele Creek Pass to Wade Creek. This route was chosen by most of those men who worked the Wade Creek diggings. The presence of three roadhouses but only eighteen people at Steele Creek in the 1900 census contrasted with well over 100 miners and one roadhouse keeper on Wade Creek suggests the importance of the Steele Creek-Wade Creek route. The Canyon Creek trail, which served as an entryway to the headwaters of Walker Fork was less used, reflecting in part the relative wealth of Wade. Heavier equipment and supplies, such as the two-and-one-half-ton boiler Mahoney brought to Wade Creek in 1900 and the dredges which others later took to Walker Fork and Wade Creek, traveled on the ice of the Fortymile and its South Fork. 15/

Thus the Board of Road Commissioners inherited a fairly extensive, if not a high quality, transportation network in the Fortymile basin. The Board promptly moved to improve it. An all-American route from Eagle would be built to offer an alternative to transportation up the Fortymile from Canada. This would link into a number of trails touching the valley's primary mining centers. In 1907 the Road Commissioners sponsored, though local mine owners footed more than $1,000 of the cost for, a sled road ten miles long and a pack trail of twelve miles on the Canyon Creek route to Walker Fork. Most if not all the traffic on this route passed through Fortymile and Dawson rather than Eagle. However, the introduction of dredging operations on the headwaters of Walker Fork demanded

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these improved facilities. After 1909 no more funds were spent on this route until rehabilitation was undertaken in 1921 (the Walker Fork dredges had both ceased operation by 1913). About this time the Board of Road Commissioners cleared a sled road from Steele Creek along the Fortymile's banks passed Canyon Creek to the mouth of Moose Creek. In 1925 a summer pack trail was constructed on the south side of the river between the mouths of Steele and Canyon creeks. The Steele Creek to Walker Fork via Canyon Creek route carried 155 persons and seven tons using 158 pack horses between June and September 1925. The first four months of the next year witnessed 212 persons, 68 tons, and 90 sleds on the route. A 1921 ARC report also noted those at the headwaters of Walker Fork could travel almost all the way to Dawson on a wagon road the Canadian government had built from that town to the border. By 1921 a pack trail extended up Robinson Creek, a branch of Wade Creek, eastward along a ridge to the placers at the Walker Fork headwaters. This was a crude summer trail from which the brush was rarely cleared. In 1931 when a private mail carrier used it three times a month to bring mail to a dragline and hydraulic operation on Walker Fork, the only detectable ARC efforts were a few trail signs. The mines at Wade Creek and the headwaters of the fork were also connected by sled routes over the ice of the two streams, though this route was impeded in the early 1920s by large boulders. In 1921 miners on Squaw Creek, a tributary of Canyon Creek, also followed a trail westward over a divide to Steele Creek; in winter a branch led off this trail to Wade Creek. This Squaw Creek-Steele Creek route was a difficult one in the winter since the grade in points exceeded fifteen degrees and drifting snow could make the summit virtually impassable. 16/

The Steele Creek to Wade Creek route was a continuation of the pack trail from Eagle to Franklin, Chicken, and beyond, besides being the crucial shortcut

from the Fortymile to Wade. In 1906 the road commission's local superintendent, F. E. G. Berry located and improved the old horse and dog trail. During the late 1910s and early 1920s the first two and one-half miles of the route south of the Fortymile were considered suitable for wagons while the rest was adequate as a sled road in winter and a pack trail during the summer. The improvement to sled road standard, Berry said, was necessary because the Fortymile habitually over-flowed its ice near Wade, making winter travel on the streams problematic. The upgrading to wagon road standard of the first two and one-half miles near lower Steele Creek probably was a response to the wretched condition that stretch had often fell into during previous open seasons; in 1911 E. A. Porter, a USGS geologist, commented that the first few miles became "so boggy as to be impassable." Even in October, 1920 Judge Charles Bunnell commented disparagingly that in the first eight miles south of Steele Creek Roadhouse the route crossed Steel Creek thirty-seven times. 17/

A trail from Wade Creek, over a divide to the head of Napolean Creek, and down to and across the South Fork of the Fortymile, connected the more easterly mining camps on Wade and Canyon creeks and Walker Fork to Franklin and ultimately, Chicken. In 1929 the ARC placed a cable ferry at Franklin to cross to the opposite side. A tram ferry continued to work there at least to 1939. Prior to 1929, rowboats provided transport though horses could ford the South Fork. From Franklin a trail essentially the same as that taken by Spurr in 1896 brought travelers to Chicken. The Wade Creek to Franklin portion was kept as a pack horse trail. Winter sled traffic between Jack Wade and Franklin used the ice of Walker Fork and the South Fork. Sled traffic from Eagle and the mouth of the Fortymile could take the river. However, the ARC did clear a ten-mile sled route from Franklin to Chicken by way of Franklin Creek which

halved the distance between the two places over the alternate trail on the South Fork and Mosquito Fork ice. From June 1925 through May of the following year, 192 tons and 951 people traveled with 151 sleds and 244 horses over the Franklin to Chicken route. Pack horses were used in the summer. This overland sled route was suspect, though; the ARC sometimes listed it as only suitable for pack horse or dog sled travel. West from Chicken the ARC made a minimal effort to improve an old mail trail leading alongside Mosquito Fork to Kechumstuk and thence to Tanana Crossing. However, in the late 1910s there was renewed interest in mining on the Mosquito Fork headwaters. In 1921 mail service over the route resumed and in the following year the ARC began making repairs, clearing the trail, and erecting bridges. The ARC provided one branch sled road up Ingle Creek in the late 1920s at the request of a miner with property on Lillywig Creek. 18/

The trail network among the Fortymile placers received virtually all of its incoming freight and passengers from Eagle by trail, from the mouth of the Fortymile by way of the river both in summer and winter, or from Dawson via a wagon road completed by 1907. Lieutenant Wilds P. Richardson, writing in 1898 shortly after Eagle was founded, reported that he had been told that "an easy trail" from the boom town led to the rich placers on the Fortymile. In the same year E. C. Barnard noted that Eagle was a good point from which to supply the interior. He said that pack horses would find hard travel in the valleys due to "niggerhead" marshes, but that the ridges were bare and dry providing good travel. C. A. Bryant, a shipper based in Eagle, took advantage of the countryside's openness when in the summer of 1900 he spent three to four days packing supplies from Eagle to Gold Run Creek, a tributary well up on the North Fork and far from any established trail. 19/

Two years later under contract (probably from the government) Bryant cut a trail from Eagle to Steele Creek. This route may well have been the "New Trail" marked on a 1902 map by E. J. Chamberlain. In contrast to the "Old Trail" along a ridge used by earlier travelers, this one dipped down into the valleys of Liberty, Dome, and Dick Dale creeks and thus avoided a wide swing to the east. Yet even this more direct trail could not eliminate Eagle's transportation disadvantage in its competition with the town of Fortymile to supply miners in the Fortymile district. Chester W. Purington wrote in a 1905 USGS bulletin that Eagle "on account of its remoteness and the absence of good roads, is at present of only subordinate importance to the miners." This was hardly surprising since poling boats from Fortymile could at least match pack horse prices from Eagle. And over the ice supplies could reach Steele Creek, Franklin, Jack Wade, or Chicken at about a fifth the pack horse rate. Indeed, when Bryant and another Eagle resident wished to take supplies to their mining claim on Wade Creek in 1901 they travelled over the Yukon's ice to Fortymile and then up that river. 20/

One of the Board of Road Commissioners' first priorities was to improve American access to the Fortymile. With the Valdez route diverted to Fairbanks, better transportation between Eagle and the mining camps was needed. In 1906 F. E. G. Berry reconnoitered the route, making a final location the next summer. By then a separate party had constructed nine and one-half miles of wagon road from Eagle with a further seven and a quarter miles of sled road. In 1908 the sled road was upgraded to wagon standard and twenty-six more miles of sled road was constructed. The next year four more miles of sled road were completed. The wagon road extended alongside American Creek to the headwaters of O'Brien Creek. From there a sled road followed near or on the ice of this tributary to the Fortymile. 21/

During the 1910s and into the 1920s little more than maintenance was done on this route. In the late 1910s improvements were made on the sled trail to allow a four-horse sled to carry up to four tons. Previous to that, 4,500 pounds was the maximum. Similarly, nothing but maintenance was done on the summer pack trail alternate from the O'Brien Creek headwaters to Steele Creek (this latter route was roughly the same as that cleared by Bryant in 1902 though it dipped down Dome Creek to near its mouth to service a hydraulic operation there). In the mid and late twenties the pack trail received a number of minor improvements. In 1926 the ARC installed a current ferry over the Fortymile at Steel Creek. The roadhouse owner operated the ferry collecting one dollar for each horse and fifty cents for each person he took across the river. In 1932 a fifty dollar a month payment from the ARC to the roadhouse keeper replaced fees levied on the general public. The ferry was shut down in 1940. Hawley Stirling of the ARC noted that horse travel had declined to the point where no animal had used the ferry the preceding year. In 1932 eight miles of the pack trail from the end of the wagon road to Liberty Creek was upgraded to wagon standard. 22/

During this post-boom era of steady, if uninspiring mining, transportation from Eagle to the Fortymile country became synonymous with John B. Powers. Powers arrived in Eagle at the age of twenty-nine one year after the town was platted. Until 1944 he engaged in mining and merchandising and served at various times as U.S. Commissioner, U.S. Marshall, and mayor of Eagle. He began freighting as early as 1903. In 1908 Powers got the mail contract to Chicken. Throughout the 1910s he acted as the local ARC foreman. In 1921 the mail contract called for semi-monthly service with a weight limit of 600 pounds. By 1929 he was charged to make three monthly trips with a 600 pound limit in the summer and 400 pound limit in the winter. The contract, which he

retained until 1938, was crucial to Powers' finances and important to the viability of all overland transport from Eagle to the Fortymile and all business operations in Eagle. The mail contract, which paid about $8,000 annually, subsidized Powers' trips to supply his store in Chicken and other freighting needs of the Fortymile district. Lobbying to retain his contract, Powers wrote in 1921 that if mail was to be delivered via the Canadian towns of Dawson and Fortymile the main reason for the Eagle to Steele Creek overland route would be eliminated "for as would go the mail, so would go the most if not all the other business." He predicted the loss of revenue would spell disaster to Eagle. Powers maintained his mail contract and with it his small, near-monopoly on transportation from Eagle. J. G. Christianson estimated in 1929 that Powers handled more than 90 percent of all freight moved from Eagle to the Fortymile drainage. This operation required fifteen horses and mules, and forty buildings. Christianson went on to say:

> If Mr. Powers and the transportation system which he has provided should become non-existent tomorrow, the 40-mile country would probably receive its deathblow as there is no one in this area with money enough to replace it. It is therefore evident that Mr. Powers is most benefitted by the road and trail system and also is the greatest user of the system; in fact, he is the only real user of the system. 23/

Powers may have had a near monopoly on transportation out of Eagle but much and possibly most supplies for the Fortymile came from Canada. Because of the far cheaper rates of transporting goods in winter, almost all freight was moved then. J. S. Kemp, the proprietor of the Steele Creek roadhouse, argued in 1924 against spending more ARC money on the road from Eagle saying that "NO

MATTER WHAT IS DONE ON THE EAGLE ROAD the bulk of all freight for the Fortymile will come up the Fortymile River." He claimed that 125 to 150 tons was typical of the amount of supplies brought over the river ice annually. Assistant Superintendent of the ARC, R. J. Shepard, wrote the following year that no matter what was done to improve the Eagle route, the ascent of the frozen Fortymile was efficient enough to overcome the Canadian disadvantage of having to pay customs fees. He estimated that 60 percent of the 175 tons to enter the Fortymile area each winter came up the river; the remainder came from Eagle. USGS geologist J. B. Mertie Jr. claimed in 1928 that most of the freight for Wade Creek and Chicken came up the river in the winter at rates of four-and-one-half to five cents a pound compared with the six to seven cents which Powers charged. Summer rates from Eagle were fifteen cents to Steele Creek, twenty cents to Jack Wade, and twenty-five cents to Chicken. He added that most of the goods Powers transported were for his own store at Chicken. The only document to suggest that less than half of the area's supplies came over the river ice was a 1929 report by J. G. Christianson which guessed that only forty tons of approximately 125 tons for the Fortymile came up the river in winter. However, he added that "the mine at Walker's Fork, which is the largest in the 40-mile District, . . . is supplied direct from Dawson," doubtlessly over the Canadian road to the border. 24/

Commenting on transportation to the Fortymile district in 1936, Mertie stated that nearly all the heavy equipment and a large portion of other supplies reached the area via Skagway and the upper Yukon and was then deposited at Dawson, Fortymile, or Eagle. Miners on Walker Fork, principally the Walker Fork Gold Corporation, got their supplies from Dawson by way of an automobile road to

Glacier Creek on Sixtymile River. From this point tractors transported goods to Walker Fork. Mertie estimated the actual cost of such transport at $50 a ton. 25/

Mertie stated that freight unloaded at Fortymile normally went up to Steele Creek, Wade Creek, and Chicken in the winter at rates varying from $70 to $100 a ton. However, he noted that "some supplies" were boated up the river in the spring and summer. 26/

The equipment and supplies deposited at Eagle in the mid-1930s headed south to the Fortymile area both in summer and winter. According to Mertie, summer freighting was restricted "almost entirely" to the area north of Steele Creek. He described the road from Eagle to Liberty near the head of O'Brien Creek as adequate for small wagons in good summer weather. The winter rates from Eagle to Steele Creek, Wade Creek, and Chicken ranged from five to seven cents a pound, but the summer rates to the same locations had in the past ranged from fifteen to twenty-five cents. 27/

Mertie remarked that the airplane and tractor were having an impact on the region. He attributed the "practical cessation" of summer freighting from Eagle south of Steele Creek to the introduction of the airplane and the clearing of landing fields at Eagle, Wade Creek, Franklin, Walker Fork, and Chicken. Although no roads had been constructed in the basin, the use of tractors was gradually carving out regular throughfares and reducing the costs of local transportation within the region. Mertie recorded that tractors took supplies between Walker Fork and Wade Creek, Chicken, and a dredge on the South Fork, and from the South Fork to Wade Creek. He did not state whether this travel was done in summer or winter or both. 28/

The 1930s boom in dredging on the Fortymile required further transportation improvements. The dredges themselves used the customary route over the Fortymile in winter, although in 1935 700-pound buckets for a dredge on Wade Creek were flown in one at a time to Lassen Field near the mine. However, mine owners began agitating for a road to facilitate summer supplying. Dredge operators were responsible for providing their employees with food and medical care. Quick access to parts in case of a breakdown was also very desirable. An American hook-up with the Canadian auto road from Dawson to the Sixtymile River near the boundary would put Fortymile placers within a seven or eight hour drive to Dawson. Yet due to inadequate budgets the ARC had to deny several requests for a tractor-standard road from the border to Walker Fork, Wade Creek, Franklin, and Chicken. However, in 1936 the governor of the Yukon Territory offered the commission the use of Canadian machinery. Donald MacDonald, the ARC's assistant superintendent in Fairbanks, enthusiastically recommended accepting this offer, since "with the activity in that section now it is clearly evident that pack horse transportation to Eagle is altogether inadequate." He stated that a truck road to Eagle was impractical; an assertion his superior, Ike Taylor, concurred in when writing Governor Troy proposing the agreement. Indeed, with the Canadian government offering the free use of its equipment for thirty days and the dredge operators supplying diesel fuel and lubricating oil, all the ARC had to pay for was the wages and food of the crew of about ten men loaned by the Yukon Territory. In one month in 1937 this arrangement produced a low standard auto road through the Walker Fork headwaters to Wade Creek. The ARC requested further work in a similar arrangement for 1938, but the Canadians were unwilling to participate. 29/

The late 1920s and 1930s saw other innovations in transportation in the Fortymile. Air fields were built at Chicken, Wade Creek, and other mining areas. Some

miners had their supplies flown in by planes which landed on the river ice near their cabins. This was the case with the Bytell brothers who had their supplies landed on Hutchinson Creek in 1941. By the thirties, horses were exchanged for tractors in drawing sleds. Ann Ayers, who with her husband ran the Steel Creek roadhouse in 1938, commented that by the time the ice froze solid enough to hold the tractor and sled, the roadhouse's supplies were almost gone. Twenty tons then were routed through Dawson. Perishables were covered with comforters and lanterns, and charcoal foot warmers were placed about the sled to prevent freezing. And in the last half of the thirties, ARC road crews gradually rebuilt the road south from Eagle until it was passable for trucks to the headwaters of O'Brien Creek. 30/

Some hoped for an American auto route to the Fortymile. A 1930s proposal for an International Highway from the Lower 48 into Alaska suggested the road pass through the Goodpaster and Fortymile drainages to Dawson. Donald MacDonald, who surveyed this route in 1932, found it to be a poor alternative to a more southerly one up the Tanana Valley. The Goodpaster-Fortymile route's high elevations made for a shorter season in which the roads could be kept open. MacDonald instead proposed a branch road from the Richardson Highway which would enter the Fortymile area by way of a ridge east of the Dennison Fork. 31/

The construction of the Alaska Highway during WWII made an American auto route to the Fortymile a realistic possibility. A 1947 map of the Alaska Highway showed two winter sled and cat trails leading from the highway. One left the vicinity of Tetlin Junction and proceeded to Chicken via the west ridge of Dennison Fork; the other entered the Fortymile from Tok through the Mosquito Flats. The same map showed the Taylor Highway completed north almost to

Mount Fairplay. By the fall of that year the ARC had completed the survey for the rest of the road to Eagle. The Taylor Highway avoided the Kechumstuk swamps by leaving the Alaska Highway twenty-five miles east of Tanacross. The road followed the ridge west of Dennison Fork to Chicken, thence along the South and Walker forks to Wade Creek. It followed up that creek and may have capitalized on a short truck road miners had built above the mouth of Robinson Creek. It turned east at Warner Creek, a headwater tributary of Wade Creek, before swerving north to the Fortymile opposite O'Brien Creek. The route along O'Brien was the only significant part of the old trail system in the Fortymile basin used by the Taylor Highway. The highway then followed down American Creek on the old roadway built out of Eagle forty years earlier. The steel for the bridge across the Fortymile was moved by truck to the South Fork from where tractors pulled it over the ice to the mouth of O'Brien Creek. The Taylor Highway opened to all traffic in the fall of 1953. In 1956 the Alaska Freight Lines sent a dozen twenty-four-ton trucks and as many thirty-ton trailers over the road to Eagle on their way to DEW line facilities on the Arctic Coast. A study of the highway in 1963 showed that a preponderance of its traffic was between Eagle and the Alaska Highway. Very little traffic took the spur leading to Dawson. 32/

AMERICAN CREEK ROUTE

This route was well-established prior to the ARC building a road south along American Creek from Eagle to the headwaters of O'Brien Creek. Natives who camped near what would become Eagle used a trail on the ridge west of the creek to get to good hunting grounds in the hills long before whites appeared on the scene. Gold was discovered on American Creek by 1895. Spurr noted the next year that pack trains proceeded by trail

along Mission and American creeks to the placers. C. A. Bryant used horses to pack supplies up the creek for ten cents a pound in 1900. In 1902 E. J. Chamberlain noted three trails along American Creek. One was the old Indian trail. A 1905 report by Louis M. Prindle suggests that part of this trail was taken by miners who descended from it into the creek valley making another trail alongside the streambed. Chamberlain located a second trail on the east side of the creek from near its mouth to its head. Finally, Chamberlain marked the trail to Steele Creek which took the ridge east of the creek. Prindle said that miners could also take this route to their claims by taking a branch trail ten miles from Eagle which led down a steep descent to Star Gulch. 33/

Sleds also were used out of Eagle, presumably on or adjacent to the streambed. In early November 1895 James Anderson made five sled trips sixteen miles up the creek. Each of these trips took less than a day. In early 1903 Bryant and Powers hauled 90,000 feet of lumber twelve miles from Eagle to build a flume on American Creek. The two used a pair of four-horse teams to pull their sleds. 34/

The ARC's road up American Creek followed the right limit to Discovery Fork and then proceeded up the latter to Gravel Gulch where it crossed a divide to the O'Brien Creek drainage. The road was built in 1907 and 1908 and it is likely that the other trails were rarely used for travel thereafter. However, the army probably used a small portion of the Steele Creek trail to build and supply a wireless station four miles from Eagle from 1908 to 1911. This trail has since been used as a trapline. 35/

MISSION CREEK TRAIL

USGS geologist Josiah Edward Spurr, who visited Mission Creek in 1896, stated that pack trains proceeded by trail along Mission Creek and ascended to the American Creek placers. 36/ No further notice of a trail along the stream besides the Eagle-Seventymile route was found except for documents generated in BLM's consideration of easements in the area in the 1970s. A map describing easements submitted by the city of Eagle showed a trail leading up Mission Creek to its intersection with the Eagle-Seventymile River trail. The Mission Creek trail followed Mission and Clifford creeks to a divide to Comet Creek. The trail was drawn directly on the creeks suggesting it was strictly a winter use route, though this was not made clear in the easement file records. 37/

EAGLE-SEVENTYMILE ROUTE

The first document containing information on land transport in the Seventymile area was Sam Dunham's 1898 report for the Bureau of Labor. Dunham commented that because the summer alternative to the river, which was "almost impossible" to ascend in boats, was a "bad trail," "miners, . . . sled their supplies up during the winter." According to Dunham, claims had been located at both five to six miles from the mouth and also about eighty-five miles farther upstream. 38/

E. J. Chamberlain's 1902 map, which pinpoints the bars on the Seventymile River and displays the trails through the American Creek and Fortymile areas, does not indicate any trails along the Seventymile. However, by 1905 miners used a trail from Eagle to the Seventymile; Louis M. Prindle of the USGS claimed in that year that the widely separated placers along the river were "generally"

reached by the trail. The route left the Mission Creek drainage into that of Bryant Creek, a Seventymile tributary. It crossed Bryant Creek four miles from its mouth, climbed a ridge west of the stream, and descended to the Seventymile. The trail continued on the south side of the river to the falls where it crossed the stream. About a half mile above Barney Creek the trail ascended the ridge on the river's north side and began a long-distance overland route to Birch Creek. Little is known of this extension of the Eagle-Seventymile route. 39/

Possibly contradicting Prindle's assertion on trail use, an ARC report in 1907 noted that "freight to this region has always been hauled [presumably in winter] down the Yukon River to the Seventymile, . . . and then up the Seventymile River to the diggings." However, in August 1907 F. E. G. Berry located a sled road which the ARC completed in mid-September. The sled road left the Eagle-Fortymile wagon road at American Creek, one and a half miles from Eagle. From there it proceeded up Excelsior Creek and crossed a divide to Rock Creek, whose right limit it followed to the Seventymile. From there sleds could be pulled up the ice of the river. This route saved twenty of the forty miles of the old winter route via the Yukon and Prindle in a 1907 report noted that miners in the Seventymile promptly took advantage of it. 40/

In 1921 the ARC cleared a pack trail from the sled road upstream. This trail of forty miles left the sled road several miles up Rock Creek, crossed a bridge over that creek and made its way into the Bryant Creek drainage. From that point it took roughly or precisely the same path as that described by Prindle in 1905 up the Seventymile to Barney Creek. Here, however, it made two quick jogs back and forth across the river. It continued up the Seventymile along its north side to above Placer Creek. It then climbed a nearby ridge which it

followed for ten miles until dropping down into the river valley where it crossed the main stream just below Nugget Creek. The trail crossed a bridge over Nugget Gulch which otherwise could not be crossed at medium high water and proceeded along the right bank of the Seventymile nearly to Alder Creek. Two years later the ARC rerouted ten miles of trail along the ridges between Barney and Nugget creeks to avoid the boggy conditions frequently encountered near the streambed. By then the trail extended to Flume Creek. In 1925 the ARC put a ferry on Nugget Creek. Another ferry had then been used for seven years farther downstream somewhere on the Seventymile. 41/

In 1911 E. A. Porter, a USGS geologist who visited the area, observed that Seventymile miners had invested much hard work during the winter in maintaining the sled road from Eagle. He wrote that during the winter it was "fairly serviceable for small loads," but that in the "summer this road is so wet and spongy as to be almost impassable." Ten years later the sled road still was of use for summer travel only during dry seasons. However, in the early 1920's the ARC began to improve the sled road. In late 1924 this led John W. Scheele, who worked a claim on Crooked Creek, to anticipate that once the improvements were finished and "goods [could] be transported as far as Fox Creek on the 70 Mile River, it will save a lot of time, and avoid the dangers, by not having to run the 70 Mile and then pole up to Eagle, and back again down the Yukon and pole up the 70 Mile." However, it is not clear that the route was ever improved to make it a suitable summer route for heavy supplies. 42/

C. A. Bryant, the Eagle freighter who aiso worked claims in the upper Seventymile valley, left a record of his extensive travels in the area. In June 1904 Bryant and four others packed horses from Copper Creek to Eagle. They reached the Seventymile at Flume Creek but otherwise the precise route they took is unknown.

As recounted in the Water Transportation chapter, Bryant sometimes took boats up the river. Most freighting however, was done during the winter. In the summer of 1907 Bryant, his wife, and Charles Yost worked on claims on Flume Creek. They waited until freeze up to freight in a winter outfit. Three years later he built a cabin on Alder Creek and returned to Eagle to await freeze up to bring in supplies. In the winter of 1916-17 Bryant paid Powers $700 to use two four-horse teams to bring a hydraulic to a claim two and a half miles below Barney Creek. He also waited for that year's freeze to bring a stove down from Alder Creek. That winter it took almost six weeks to transport two hydraulics weighing a total of 5,500 pounds from Eagle to Alder Creek. It required three weeks to go the first twelve miles. The next two weeks they covered nearly fifty miles, presumably because travel over the frozen river was much easier than the trip on the sled road over the divide from Mission Creek. However, the last four miles took four days because the river broke and they had to make a trail overland. 43/

There is little information on travel in the Seventymile basin after the twenties. In 1935 R. C. Steel, writing to the ARC, said that everyone who went into the area used the trail. Steel complained that the trail was in such poor shape that he carried his provisions on his back rather than taking a horse or mule over the soft spots. A year later USGS geologist John B. Mertie, Jr. reported that since no road connected Eagle with the Seventymile River district "all supplies for the Seventymile Valley have to be transported in winter". 44/ Twelve years later twenty-nine residents and miners of Eagle and the Seventymile district called for improvements and some extension of the Seventymile trail. 45/

TATONDUK-NATION-KANDIK RIVERS AREA

Few trails have been developed in Alaska on the right bank of the Yukon above the Porcupine River. Ernest Ingersoll, in his 1897 guidebook to the Canadian and Alaskan goldfields, mentioned a canoe trail which followed the Tatonduk. He stated that good mining country could be reached from Fort McPherson, presumably by way of the Peel and Oglivie rivers, and then by portaging "over rough mountains to the head of the Tatonduk River and descend[ing] almost straight to Forty-mile". 46/

The International Boundary Commission followed several different overland routes from its base camp at the mouth of the Tatonduk River. Members of the demarcation group built and used a summer trail up the Tatonduk to within two miles of the border where it ascended Funnel Creek to its head. From here a short walk brought the men to Hard Luck Creek which they descended for a mile and one half. The group then went up Pleasant Creek and crossed a divide to Cathedral Creek a short distance from the border. An extension of this trail went to the headwaters of Waterfall Creek: one alternative descended Tindar Creek to the Nation River and climbed alongside that stream to the boundary; the other descended Waterfall Creek five or six miles before crossing into the Tindar and joining the other trail. A wholly different route used by the commission, especially at times of high water on the Tatonduk, descended the Yukon several miles from the mouth of the Tatonduk before crossing a divide into the valley of Hard Luck Creek. J. B. Mertie, Jr. in 1930 followed still another route, following the Tatonduk River halfway to the boundary and then crossing into the Hard Luck Valley. 47/

There is no evidence that these government-made trails were used by anyone else. Most trails have been poorly marked winter trapping pathways through low boggy country making them poorly suited for summer pack horse use. The most prominent example of this is the trail along Rock Creek. Although it may have originated in aboriginal times, this trail is best identified with twentieth century trappers who used it as a route into the Kandik basin. It paralleled Rock Creek between the flat muskeg and black spruce and the birch and white spruce. 48/

In the 1970s a BLM navigability report filed in conjunction with Native land conveyances around Eagle noted a trail which went five or six miles up the Tatonduk River and provided local residents with access to sheephunting grounds. 49/

The only road in the area is one a quarter of a mile long near the mouth of the Nation River. It was built and used around the turn of the century to bring coal from the Nation River mines to the Yukon. 50/

TROUT CREEK TRAIL

At an undetermined date, Jack Duvald brought a caterpillar up Trout Creek and over a divide on to his and his partners' Seventymile mining claims. The trail joined a cabin at the confluence of Trout and Gillman creeks with the Yukon River and was used for trapping and carrying in supplies. 51/

FOURTH OF JULY CREEK ROAD

In 1906 Alfred H. Brooks wrote that transportation up Fourth of July Creek was by way of a trail out of Nation. Five years later two other government geologists stated that the miners in the Woodchopper and Fourth of July creeks area got their supplies from the Yukon by trails and sled roads. Not until 1920 and 1921 did the ARC work on the streams, though its effort was limited to brushing out a pack and dog sled trail. At the time, the commission's local supervisor argued that a road was needed to replace the ten miles of trail. By 1925 a road was under construction. In 1930 this wagon route was extended five miles up the creek valley. USGS geologist John B. Mertie, Jr. described the road in 1936 as "poor, . . . little better than a skid road." By 1939 the bridge over Fourth of July was rotting. Also, a six and one half mile section which ran through the creek valley was so wet that a horse could not repeatedly make trips through it without becoming bogged down. Oscar Enstrom who operated the mine at the end of the road offered to help install a bridge and relocate the boggy section of road to a ridge. Apparently these improvements were not made before the war shut down mining operations. After WWII a bulldozer operation worked the stream until 1951. Apparently, the mine owner used this machinery to cut an alternate ridge line branch road. 52/

WASHINGTON CREEK ROAD

One winter around the turn of the century, dog teams sledded five tons of coal to the Yukon from a mine about ten miles up Washington Creek. In the winter of 1905-06 a steam tractor thirteen feet high and twenty-six feet long with wheels eight-feet high was utilized to haul large sled loads of coal in the winter. This machine followed a road from the mine along the left side of the creek for

about half the distance to the Yukon. There the road switched over to the right side. However, lacking an adequate roadbed, the project failed. Today most of this road is filled with scrub spruce and alder. 53/

CHARLEY RIVER AREA

Two overland routes and one ice route reached the upper Charley River drainage from Eagle. One overland route entered from the Seventymile River drainage while another came by way of the North Fork of the Fortymile and Champion Creeks. These may well have been of pre-contact origin as the headwaters of the Charley River were a good hunting ground. C. A. Bryant and four others packed with horses over the first route in June 1904 on their way back to Eagle from Copper Creek. The Board of Road Commissioners' 1905 report contained a recommendation by Wilds P. Richardson that a branch road be built from Big Delta to Eagle via the Goodpaster, the head of the Charley, and down the Seventymile. This route was never built. Nor was another proposed by Fred Price of the ARC in 1921. Price suggested improvement of the old government trail down Champion Creek to the North Fork of the Fortymile. Although he did not propose the extension of this route into the Charley drainage, he stated it would provide a necessary outlet to that river basin. C. A. Bryant and three others used another, and probably the best means of hauling heavy supplies into the area in late 1904. From the mouth of the Charley in October, they took a month to pull a ton and a half of equipment to their mine on Copper Creek, a tributary sixty-five miles up the Charley River. 54/

SAM AND BEN CREEK TRAIL AND ROAD

For the first three decades of this century, the handful of men mining on Ben Creek used a trail up Sam Creek from its mouth as their major supply trail. Winter mail carriers would sometimes detour onto this trail and follow down neighboring Coal Creek when they encountered bad ice on the Yukon. However, in the few years before WWII, local miner Ernest Patty built a spur to Ben Creek from the ARC road on Coal Creek. Subsequently supplies reached Ben Creek over this road or via air to a landing strip whose construction was made possible when the road enabled heavier machinery to reach Ben Creek. The Sam Creek trail has since been used as a trapping trail. 55/

COAL AND WOODCHOPPER CREEKS ROAD

Responding to a 1921 petition by area miners, the ARC in 1922 assumed responsibility for an eight-mile trail up Woodchopper Creek. From this there were private branch trails to Ben, Sam, Boulder, and Coal creeks. The ARC did little work on the pack and dog sled trail, except to construct bridges. In 1932, after two of the bridges were washed out, the ARC funded repair work. It included floating logs one half mile down the creek to one of the bridge sites. The exact location of the bridge was not mentioned. 56/

When miners installed dredges on the two creeks in 1936 and 1937, the ARC spent over $10,000 in building a road along the left side of Coal Creek and then over a divide to Woodchopper. The road was in good enough condition to be driven in 1977. 57/

CIRCLE-ARCTIC CAT TRAIL

USGS maps compiled in the mid-1950s show a cat trail from Circle thence northward through the Sucker River drainage to Chalkyitsik. From here the tractor trail ran northward to and alongside the Coleen River and then into Canada by way of the Bilwaddy Creek valley. 58/ According to Chalkyitsik residents the Alaska Freight Line cleared this trail in the 1950s to supply military installations along the Arctic coast in Canada and the U.S. 59/ The trail was only used one winter, though Chalkyitsik residents have since used a portion of it to reach nearby lakes. 60/

CHANDALAR, HODZANA, AND HADWEENZIC BASIN ROUTES

In 1899 Frank C. Schrader and a small party made the first USGS exploration of the Chandalar basin. His observation that the word "trail" in Alaska referred "more particularly to the passable condition of the country than to any foot-beaten path or well-worn line of travel" was "especially true of the Chandalar and Koyukuk regions." With this liberal definition of trails he inventoried those routes he either traveled or of which he heard from Natives or prospectors. 61/

A Native trail left a fish camp on the Yukon and proceeded to a Native village eight miles above the mouth of the Chandalar. This village was also accessible by a winter overland route from Fort Yukon. From the above named fish camp on the Yukon, Schrader wrote there was a trail which continued up the Chandalar and then overland in a northwesterly direction to East Fork Village, on the East Fork of the Chandalar. He also noted that in the winter the East Fork Natives sometimes traveled eastward to the Porcupine and then down that river to Fort

Yukon. (It should be noted that this is the only mention of a village on the East Fork before the establishment of Arctic Village. Schrader never saw this settlement so its precise location is uncertain). A third trail, which Schrader said was used only by the Natives on hunting and fishing trips, ran between the main Chandalar River above Chandalar Lake to the Middle Fork by way of the valleys of Lake and Grave creeks. 62/

The other trails described by Schrader connected the western Chandalar drainage with the Hodzana or Koyukuk river areas. Chandalar Natives were said to have traveled between the Chandalar and the Koyukuk along a divide between the Koyukuk and the Yukon or alternately ascended "Granite Creek and by way of a low portage down 'Swift River,' and possibly the lower part of the Dall to the Yukon near Fort Hamlin." There is no Granite Creek on maps of the Chandalar today, but Schrader described it as leaving the river below the West Fork. Pre-WWI maps of the area designate present-day West Fork as Granite Creek and present-day Crooked Creek as West Fork. Evidently this route utilized the modern-day West Fork drainage. The Swift River was another name for the Hodzana. Trails to the Koyukuk left the Chandalar above the 68th parallel and made for the Dietrich River (a portage that Natives denounced as very rough), by a slope alongside Portage Creek reaching the Koyukuk via Robert Creek (Schrader took this route and remarked that "this has long been an old camping ground used by the natives, both Koyukuk and Chandalar"--Schrader met Natives of both groups in the area), from Geroe Creek (passable with light pack), from Baby Creek (this trail appeared to Schrader to be exceptionally rough and he stated that "the route is probably but little used, even by the Natives, and then only in their hunting trips"), and from the West Fork of the Chandalar (As mentioned earlier, this may have been modern-day Crooked Creek. Schrader said the portage between headwaters navigable for canoes was

only ten miles and that in the summer of 1899 miners contemplated sledding their supplies from Fort Yukon to their claims on the upper Koyukuk by this route). 63/

From 1898 to 1906 whites prospected the Hodzana and Chandalar basins with minimal success. In the winter of 1904-05 Gordon Bettles related news of a gold find on Pitka's Fork of the Hodzana. That winter Fort Yukon and Fort Hamlin provided supplies for the miners. Bettles stated the mines could be reached in three easy days' travel from Fort Hamlin over "a perfectly level country." Bettles had not been over the route. But as the trader at Fort Hamlin, he had an interest in the region's prospects. He promised to make a trail into the area, though it is uncertain if he ever did so, and the Hodzana rush quickly subsided. 64/

Prospectors traveling to the Koyukuk and Chandalar rivers followed a winter trail from Fort Yukon through the Chandalar Valley or used boats up the river. The most regular transport into the area was A. E. Carr's twice monthly mail service. Carr, who had a store at Fort Yukon, began his service in 1902. He characterized his route as difficult in the winter and impractical in the summer. His winter trail crossed thirty-two lakes and sloughs in one twenty-eight mile stretch. Carr's attempts to find a practical summer pack trail had been fruitless. Consequently, most open season travel in the Chandalar Valley in this period was by boat. 65/

Intense use of the area's trails came with the discovery of gold east of Chandalar Lake in the late summer of 1906. Samuel J. Marsh, one of the early stampeders to the scene, stated that the first supplies came from Coldfoot. Marsh does not state the precise route, but the West Fork portage is most likely. A man who

traveled to the mines from Coldfoot wrote in early December, that nothing much had been done in the region because "it was almost impossible to get grub over there until the past few weeks." Whether this was due to the difficulty of transporting goods to the mines before freeze-up or to other logistical problems is unknown. The more popular supply route followed the Chandalar Valley from Fort Yukon. In February 1907, Billy Mann, a Rampart prospector, described the winter trail as "a boulevard" enabling some men to carry in 800 pounds with four dogs in only two days. Marsh recommended that mail be brought in over the same route from Fort Yukon. (Evidently Carr's mail service had ceased to function). He said that in winter a 110-mile dog and horse trail provided access from Fort Yukon in three to four days. (He did not say if this was on the river ice). Marsh felt steamboats might reach Caro in June and July and that horses and dogs could tow small boats and barges throughout the summer. He estimated the summer upriver journey would consume six to eight days and the return to Fort Yukon an additional two to three days. 66/

In making his mail route recommendations in April 1907, Marsh anticipated an overland route to the Chandalar mining district from the Yukon near the mouth of the Hodzana. Marsh later recorded that in the summer and fall of 1907 others confirmed that a good pack trail and wagon road route over dry gravel ridges was available by leaving the Yukon about ten miles above the Hodzana. This route reached the mouth of the West Fork of the Chandalar via the banks of Trail Creek. It then followed the main river by a series of benches to Chandalar Lake. 67/

This, however, was not the precise route over which the Alaska Road Commission built a road to the Chandalar mines from 1909 to 1911. A. G. Maddren described the trail as leaving the Yukon, as Marsh predicted, at the newly-found town of

Beaver and following along the ridges which separate the Hodzana and Hadweenzic. When it reached the divide with the Chandalar, the trail forked. One branch continued in a northwesterly direction to the upper part of West Fork, across the South Fork of the Koyukuk, and down Slate Creek to Coldfoot. This fork, which may have been identical with the 1907 route to the West Fork, was not subsequently developed and nothing more is heard of it. 68/

The ARC's greatest efforts focused on the other fork to Caro. The ARC began to work in the area in 1909 upgrading a pack trail from Beaver to Cairo to sled road standard by 1911. In 1910 three freighting companies supplied Caro from Beaver along this route. Yet the Chandalar gold boom soon dwindled and consequently so did traffic on the road to Caro. The Eskimos at Beaver eventually set up traplines from the road, but it is uncertain if they did so during the 1910s. 69/

In 1920 new discoveries were made in the Chandalar area. That on Big Creek was especially important. A newspaper account of mining activities that year mentioned that O. J. Nicholson, one of the discoverers of the new Big Creek payload, freighted all his wood with dogs from twelve miles down Big Creek or six miles over the divide from Tobin Creek. The newspaper stated that all the supplies came in by dog sled from Beaver or White Eye (suggesting some winter transportation on or alongside the Hadweenzic) during nine months of the year so that mining might be done during the three summer months. 70/

Lack of use may explain how in 1920, after nearly a decade of neglect by the ARC, a road inspector would proclaim the Beaver-Caro route in excellent condition as a sled and pack trail. The new miners however, complained that bridges on the trail would not support loads pulled by horse team. The following year the

ARC made some road improvements. Wagons used the road by 1923, though they sometimes had difficulty with mud in the early summer. By 1924 the road was improved and the ARC claimed a team with a ton and a half of supplies could travel the road. However, in 1932 the route was again downgraded to a sled road. 71/

Some of the routes miners and freighters used to the Chandalar gold field from Caro before the 1920s are not known. Those which the ARC maintained in the 1920s probably were utilized earlier. In the early 1920s the ARC entered the area to help facilitate the revived mining. In 1921 and 1922 the ARC examined a trail from Caro to Coldfoot which was already passable for Yukon and double-ender sleds as far as Big Creek. Because of the great expense improving the route to bobsled road standard, the Commission decided to maintain it only as a trail. This route left Caro heading northwest. It crossed the Middle Fork six miles above its mouth and traveled along the edge of a ridge four to six miles north of the Chandalar. It crossed the Chandalar below Goldbug Creek and then headed through the Crooked Creek drainage toward Coldfoot. By 1924 the ARC had brushed out and marked the trail, built shelter cabins, and placed cable trams over the Chandalar and the South Fork of the Koyukuk. In 1926 and 1927 the Commission improved the trail from Caro to the Big Creek trail to sled road standard. Westward to Coldfoot the route remained a summer foot trail and winter dog sled trail. Miners used the sled road in the late twenties, but the trail farther west was rarely used and by 1929 was in poor condition. 72/

Two ARC trails reached the mines east of Chandalar Lake. The Big Creek trail left the Caro-Coldfoot route about twenty-three miles out of Caro. It followed on or alongside Big Creek to mines at the head of that creek and over a divide

on Tobin Creek. The ARC classified it as suitable for Yukon and double-ender sleds in the early twenties. In 1927 and 1928 the Commission improved the route to sled road standard. But the 1930 ARC report claimed it to be no more than a trail. In 1922 a more important route to the Chandalar mines was a sled road originally built by miners parallel to and just west of Flat Creek, over a divide to the Middle Fork drainage and through the Grave Creek drainage. Operators in the Big Squaw and Little Squaw areas, including the owners of the newly-revived quartz mine used tractors on this route to supply their camps. Over 100 tons moved over the road the previous year. Later in the decade the ARC made some improvements. At the end of the decade it was considered a good bobsled route. 73/

A 1958 Corps of Engineers publication on the Yukon Flats area reported on the condition of the Beaver to Caro road. It said that it was abandoned and maintenance of it had ceased "long ago." Moreover, following fires in the area, trees had fallen across the route. The Corps stated it was suitable for winter use but difficult in summer because of marshes and muskegs. In 1947 a D-7 tractor traveled the first twenty miles out of Beaver to haul supplies to a Corps of Engineers survey of a possible airfield near Hadweenzic Bluff. At a 1982 meeting with BLM officials examining the old road for an easement, Beaver residents stated that a cat train traveled over the route in 1954. A decade later, only the part of the route close to Beaver was well cleared, as residents used it as a wood trail. Natives, primarily the Eskimo population of Beaver, continued to utilize the road to gain access to traplines at least to the late 1970's. At the 1982 easement meeting, Beaver villagers stated the trail was over grown with vegetation and no longer used. However, they objected to having an easement for the road because travel on it would interfere with their trapping. 74/

BIRCH CREEK AREA

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Some of the first stampeders to enter the Birch Creek diggings in the spring of 1894 took an old Indian trail by way of Medicine Lake. However, later miners entered the drainage through Circle. Since Natives frequently portaged between the Yukon and Birch Creek, the trail out of Circle may have been of pre-contact origin, though there is no documented support for this supposition. Most other trails branching off to reach the numerous placer streams probably found their beginning with the hundreds of miners who tramped the area in the mid-1890s. 75/

When Josiah Spurr visited Birch Creek in August 1896, he acquired an unfavorable opinion of the area's trails. Of the one leading from Circle to the creek, he wrote, "It was called a wagon road, the brush and trees having been cut out sufficiently wide for a wagon to pass; taken as a footpath, however, it was just fair." The trail his party took to Hog'em Junction was a fine winter trail; in the summer it was "a continuous bed of black, soft, stinking, sticky mud, for it had been well traveled over." There was thick moss, broad pools, long stretches of niggerheads, and voracious mosquitoes. Spurr had hoped to avoid the Hog'em trail by finding an alternate route to the west on higher ground. However, in 1896 this route had been blazed from Central House toward, but not all the way to, the northern part of the Hog'em trail. Because part of the trail was incomplete most travelers could not find it on their way into the mines, but took it on their return trip to Circle. 76/

By the time Miner W. Bruce sketched a map of the Birch Creek gold fields for his 1899 study of Alaska, the lowland Hog'em trail was no longer evident. The trail to Central House served as the trunk line from Circle. A 1902 map submitted

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as part of an application for a post office at Mastodon Creek continued to show a trail along the left banks of Birch and Crooked creeks to Jump Off roadhouse, thence to a roadhouse near the mouth of Albert Creek, and then on to Central. A direct trail from Jump Off to Central by-passing the roadhouse at Albert Creek was labeled a winter trail and the route from the Birch Creek crossing to Central was a summer trail. 77/

Bruce's map indicated that south of Central the trail crossed Crooked Creek and then followed the right bank of that stream. Branch trails led to the producing placers, including one up Mastodon Creek and over a divide to Eagle Creek. Miners during the summer carried provisions on their backs, hired Natives to carry it, boated it up to the creeks from the Circle portage, or had horses pack it in. During the 1890s the cost for summer freighting was forty to forty-five dollars per hundred pounds. Passengers who could not find a ford paid a dollar to be ferried across Birch Creek at the end of their first day's trip from Circle. By 1905 the freight rate in summer had fallen to the twenty-five to thirty dollar range. 78/

Most freighting was done in the winter when the summer's swampy quagmires became smooth thoroughfares of ice and snow. Freight landed at Circle by steamboats commonly waited until winter to be moved inland. Sam Dunham wrote for the Department of Labor that while summer transport from Circle to Mastodon Creek cost forty cents a pound, in the winter the rate was fifteen cents. By 1905 this was down to three to six cents. Between mid-October and early May dog teams were able to make the round trip in five days pulling 200 pounds per dog. Arthur T. Walden, who worked as a "dog-puncher" in the Circle area in the late nineties, described his operations. He used six or seven heavy dogs to pull three sleds. The sleds weighed sixty to eighty pounds

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each, were about seven feet long, and carried an average of 400 pounds. The sleds were chained together. The driver walked in front of the first sled. 79/

In April 1898 Second Lieutenant George McManus scouted a route between Circle and the Tanana Valley. He traveled much of the way with a Tanana Indian guide following a Native route over which other Tananas had just returned home from a trading visit to Circle. Although McManus does not give a detailed description of his excursion, it is evident that in the Birch Creek drainage, he hugged close to what today is the route of the Steese Highway. He wrote that this trail and other less well described Native trails were "as goods as can be found" between Circle and the Tanana. 80/

In the same year Fred Currier of Fort Chena, a settlement near present-day Fairbanks, drew a map of the upper Birch Creek and Chena River drainages. On it he sketched the trail over which McManus probably traveled as well as a second which climbed the left bank of Deadwood Creek, crossed the headwaters of Harrison and Birch creeks to the headwaters of the Chena. 81/

An 1898 USGS map sketched another inter-regional trail from the South Fork of Birch Creek to the Salcha River. A notation on the map stated the trail followed, at least in part, an old Native trail. A Native, called Birch Creek Joe and a party of prospectors described the same route to McManus. 82/

In early 1903 Judge James Wickersham followed a trail similar to that taken by McManus from Circle, through the Birch Creek drainage to what would become Fairbanks. He was far from alone on this dog sled trip. Roadhouses about

every ten miles to Miller House and numerous cabins as far as Faith Creek made this the preferred route for men rushing that winter to the Fairbanks gold field by horse and dog sleds. 83/

The route from Circle to the headwaters of the Chatanika passed near almost all the major placers along Birch Creek. Therefore, when the Board of Road Commissioners came into existence in 1905 there was already a single well-known route which could bring supplies from the Yukon to the Birch Creek diggings and could also serve as a major connection between the Tanana and the Yukon. In the summer of 1907 H. H. Edgerton, Jr. surveyed a line out of Circle and the following year, the first ten miles of a wagon road was built. In 1909 the ARC extended the road to Central. Leaving circle this new road ran roughly parallel but south of the old trail. It did not climb the ridge on the west side of Birch Creek but stayed in the lower area--a route very similar to that taken by Spurr over the Hog'em Trail. Otherwise, what was to become the Steese Highway followed the established route along Crooked, Miller, Eagle, and Twelvemile creeks. Immediately, cheaper summer freight rates came into effect. In 1909 the rate dropped to ten to fifteen cents per pound and by 1913 Louis Prindle suggested it was even lower. 84/

The ARC also was mindful of the route's inter-regional importance. In the years shortly after the founding of the commission, mail passed over the trail once a week during winter. In 1907 the ARC located and built a thirty-nine-mile sled road following the stream bottom of the Chatanika River from Cleary to Birch Creek and staked a summer trail on a nearby ridge. The sled road was completed to Miller House the following year. Although the stretch from Central to Miller House had not been cleared by the ARC, it still was in good enough condition to serve as a sled road. In the dry season of 1909 it was adequate to

allow a few wagon trips from Central to Miller House. In 1912 the wagon road was extended to the mouth of Mammoth Creek. Through the rest of the decade the commission did little more than maintain the road. This was a considerable task as a deputy marshal in Circle wrote to Wilds P. Richarson in 1917. The problem was that the soft soil could not handle the heavy wagons. As a result the roadbed settled lower than the surrounding country becoming more of a ditch than a well-drained road. 85/

In 1921 the ARC announced that it intended to extend Alaska's road system from the Richardson Highway to the Yukon. The next year the commission improved four miles of sled road out of Chatanika to wagon road standard. By 1924 improvements made it possible to travel by auto to a point twenty-one miles out of Chatanika. At the same time the road from Circle to Central was in good enough condition for automobiles. Four years later the entire route was open to light auto traffic. By 1933 the road was suitable for two-ton trucks. No effort has ever been made to keep this road open in the winter. Rather, at least through the 1920s, a sled road followed on or closely paralleled the highway to provide winter access. 86/

The Steese Highway, as the road was called, shifted the summer supply route to Circle. John B. Mertie, Jr., a USGS geologist familiar with the area, noted in the mid 1930s that while steamboats from Whitehorse continued to supply Eagle, "since the completion of the Steese Highway . . ., a considerable part of the supplies for Circle come overland by autotrucks from Fairbanks". 87/ In 1958 four trucking companies were estimated to have shipped 6,000 tons to the upper Yukon; much if not all of it via the Steese Highway. Weaver Brothers carried three-fourths of the total freight and Nick Demintiff, Don Peterson, and

Jewell and O'Leary hauling the rest. A Mr. Berdahl of Circle Hot Springs also trucked supplies to that resort as well as small quantities for traders and individuals on the Steese Highway. 88/

However, the primary purpose for this road was to improve transportion to the Circle mining district. There has been relatively little through traffic. Rather, traffic served mines along the highway or spurs built or improved by the ARC during the 1920s and 1930s. Branch routes off the main Birch Creek trail dated from the 1890s. The longest of these probably was the forty-five-mile trail built by G. H. Mills in the first years of the century from his Central roadhouse to Preacher Creek. The most westerly of the branches left the Steese Highway at U.S. Creek about thirty miles from Chatanika. In 1927 and 1930 the ARC, with funds provided by the Nome Creek Dredging Company, built this seven mile road over a ridge to the dredging company's property on Nome Creek, a tributary of Beaver Creek. About forty miles to the east a one mile spur suitable for autos provided access to a hydraulic mining operation on Eagle Creek by 1929. An eleven mile road begun in the mid-1910s reached the mines on Porcupine Creek from Miller House. From the same area of the highway, the ARC, between 1933 and 1935, built a road to Harrison Creek for about $11,000. Later in the thirties this route was extended three-quarters of a mile with the assistance of a miner who wanted the road to reach his claim. In 1920 the ARC took over a road out of Central which forked to reach both the Deadwood Creek mines and Circle Hot Springs. The territory had previously maintained them. The route was regularly used by F. M. Leach, the proprietor of the Hot Springs, to market his vegetables at the Deadwood mines. Indeed, in 1917 and 1918 when Leach was in charge of repairing the Deadwood road he re-routed part of it, thus shortening his trip from the springs to the mines while lengthening the route from the mines to Central. The ARC improved the nine-mile route to

the springs in 1922 and the following year an auto passed over it for the first time. Throughout the twenties the route was considered adequate for autos in dry weather. An eight-mile road to the Deadwood mines left the springs road two miles from the Steese Highway. The ARC improved part of it to wagon road status by 1931. Also in the late 1920s and 1930s an alternate sled route left the highway at mile 137.5 for the Circle Hot Springs. 89/

Heavy freighting, such as that involved with moving dredges, was a winter occupation. Clarence J. Berry moved the first dredge into the Circle mining district in the winter of 1911-12. Other Berry dredges were located on area streams in the winter of 1914-15 and in winters in the mid-1930s. 90/

Through the 1920s the ARC's annual reports quantified travel along the route. Fairly typical, were the result of 1924, when counts were kept at Miller House for November and December, and at the Twelve Mile Roadhouse at the Birch Creek crossing from October through December. In two months at Miller House, 204 people, sixty-nine sleds, and nine tons passed by. In three months at Twelve Mile Roadhouse ninety-three people, sixty-eight sleds, two pack horses, and eight tons were counted. Summer traffic was first measured in 1925. In that year 139 tons passed Miller House; most of it in 136 wagons. Motor vehicles did not become important on the route until 1928. From February through December 1927 only one auto passed Miller House. For the following year the number of motor vehicles passing Miller House climbed to 357. In 1928 the number of sleds, wagons, and pack horses held fairly close to the 1927 totals. Thus, the auto and truck capabilities of the road must have accounted for nearly all the increase in tonnage from 100 to 240. Statistics for 1929 and 1930 indicated further increases in tonnage and motor vehicles, while pack horse use died out and wagon use fluctuated uncertainly. Published data on traffic is not

again available until shortly after statehood when about twenty-five motor vehicles a day passed by Miller House and Central. However, this statistic was based on a 365 day year. Since the road was closed half of the year, fifty vehicles a day is a more realistic indicator of summer traffic. The report for 1978 indicated only a modest increase to sixty-five a day. In that year the branch roads at Eagle, Miller, Harrison, Porcupine, Ketchum, and Portage creeks all averaged five to ten vehicles a day. Twenty a day traveled the Deadwood Creek road and seventy utilized the one to Circle Hot Springs. The road to Nome Creek is no longer maintained. Four wheel drives, ATV's, and snowmobiles can use the route. 91/

CHATANIKA/SNOWSHOE-BEAVER TRAIL AND OTHER BEAVER CREEK AREA TRAILS

The first evidence of substantial overland travel in the Beaver drainage came in the latter half of 1904 in response to a gold strike on Victoria Creek. Possibly as many as 300 prospectors from the Fairbanks district made their way to the creek by an undetermined route that summer. Others reached the mining areas with supplies in the late fall or early winter from Fort Hamlin via the head of Hess Creek. One load of supplies weighed 3,500 pounds. However, the area was soon deserted as men became disappointed with the prospects. 92/

Six years later, spurred by the Chandalar gold strikes, the Alaska Road Commission allotted $2,500 for the location and construction of a winter trail from Chatanika to Beaver. The project was more complex than anticipated. The crews could work efficiently only when the ground was frozen and before the first heavy snow. Only thirty-five miles was built during the winter of 1910-11 and the

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project already had run $800 over budget. The next winter the Commission completed all but twenty miles of the narrow dog sled route. The crews finished the remaining work around Victoria Creek by the fall of 1912. 93/

By 1920 this trail was little used. Indeed, the general population knew almost nothing about it except that it was about 120 miles long and afforded no roadhouse accommodations. A party of four soldiers stranded in Beaver in mid-October nearly starved to death on the trail in 1920. 94/

The lull in mining in the Chandalar area minimized the need to maintain this trail. In 1920 the ARC allotted $500 to repair bridges but it was impractical to send men into the area and no local labor was available. Three years later the ARC reconnoitered the route intending to improve it in response to revived mining activity on the Chandalar. The Commission decided to relocate the southern portion of the trail. Instead of beginning at Chatanika, the route now struck northeast out from Snowshoe, a point on the Olnes-Livengood sled road. It reached the original trail to Beaver approximately twenty-six miles from Snowshoe. This trail then proceeded downstream along the sides of Beaver Creek, crossed over a divide to the headwaters of Victoria Creek, and continued overland northward to Beaver. In 1924 the ARC brushed out this trail to eight feet in width, built bridges, and repaired and installed stoves in three old cabins on the route. By 1930 there were six shelter cabins on the trail which was the general winter travel route from the Chandalar district. 95/

As with the Chandalar trails, there is little information on this route's use after the twenties. Presumably airplanes made the ground route obsolete. In the early 1960s people used a portion of it in the summer to reach the Big Bend of Beaver Creek from the Elliott Highway (their reasons for doing so are unclear).

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A BOR report issued in the 1970s cited this trail as an access trail to the Wild and Scenic River section of Beaver Creek. It stated that snowmobiles and cross-country skiers utilized the trail. 96/

Several other routes connected the Tanana drainage to Beaver Creek. The most important was the old ARC road from the Steese Highway to the Nome Creek Dredging Company's properties on Nome Creek (see p. 639). Another route leads from the Steese Highway at Mile 42 to Nome Creek four miles upstream from Beaver Creek. It is unknown when this placer mining trail was built. As of the early 1970s it was passible only for four-wheel drives, ATVs, and snowmobiles beyond the first seven miles of the ten mile route. Other trails leave the Elliot Highway. The BLM maintains a summer hiking trail from Mile 28 of the highway to Beaver Creek near the mouth of Wickersham Creek. And a winter trail leaves the Elliot Highway at Mile 56 and follows Colorado Creek to Beaver Creek. 97/

HODZANA RIVER TRAIL

In 1920 William Yanert, a former explorer and map-maker for the U.S. Army and a long-time resident of the Yukon Flats, made a map of the Flats area showing a winter trail along the Hodzana River connecting three cabins. The trail followed the east side of the river, crossing to the right side just below Whalen's cabin (T. 18 N., R. 1 W., Fairbanks Meridian). It continued on this side of the Hodzana, in the process crossing several lakes. The trail recrossed the Hodzana below Adam's cabin (T. 21 N., R. 3 W., Fairbanks Meridian) and then followed the north side of the river to Mudbank cabin. 98/

LOST CREEK TRAILS

In 1920 William Yanert, a skilled cartographer and long-time resident of the Yukon Flats, made a map of the Flats area showing two winter trails along this creek. One led from a trapper's cabin owned by a Mr. Droulette (T. 16 N., R. 4 W., Fairbanks Meridian) southward across some lakes and Lost Creek, then southeastward over a ridge to Lost Creek near the mouth of Butte Creek. It then followed Lost Creek to its head. A second winter trail left the Yukon near the east end of T. 16 N., R. 2 W., Fairbanks Meridian and headed south through Buttes Gap, thence ascending Lost Creek upstream to the previously named trail. These trails provided access to a cabin in Buttes Gap and another one farther up Lost Creek near a coal outcropping (approximately T. 13 N., R. 1 W., Fairbanks Meridian). 99/

ROSS CREEK TRAIL

In 1920 William Yanert made a map of the Flats area showing a winter trail along this creek leading to Hess Creek and ultimately to Livengood. The trail followed the creek from its mouth to its headwaters, crossed Rogers Creek, and traversed the headwaters of an unnamed stream (possibly Alfred Creek) before descending the divide to reach Hess Creek near the confluence of its North and South forks. From there, other trails led to Livengood by way of the South Fork. 100/

HESS CREEK AND DALL AND RAY RIVERS AREA

Although the Koyukuk Indians, who lived both in the Koyukuk drainage and along the Yukon below the Flats, probably had trails through the Dall and Ray

river valleys, the first trails mentioned in historical documents were those of the miners traveling from the Fort Hamlin area to the Koyukuk gold fields in 1898. A Corps of Engineers party led by Oscar A. Piper in 1904 described a pack trail cut by prospectors six years earlier. It began at the mouth of the Dall and headed west across flats to the base of the hills along the side of the valley. In early spring this route was often flooded. To avoid this an alternative starting point was four miles below the mouth of the Dall. It followed along the ridges for five miles before descending to join the other trail on the flat. Piper charted still another route from the Yukon. His trail left the river six miles below the mouth of the Dall, joining the older trail shortly before reaching Dall City. From there Piper's trail followed the same route as that of the earlier prospectors. Part of the route north of Dall City was the same path taken by Walter C. Mendenhall's party to portage from the Dall to the Kanuti in 1901. After passing along the divide between the Hodzana and Kanuti rivers the trail left the upper Yukon area about sixty miles from the start of the route and nearly half the distance to Coldfoot. Piper noted that the Dall River trails were not practical for freighting because of the great distance to the Koyukuk mines and because steamboats could reach the gold fields via the Koyukuk. Nevertheless, he observed that the Dall River route was the shortest and the most traveled overland path; twenty-five men traversed it in 1904, a decline in numbers from previous years. Of these, most became lost. Since 1900, Piper reported, five men died after losing their way on the route. The trail was marked on a map accompanying A. G. Maddren's report on his trip to the area in 1909 for the USGS. Maddren traveled along the trail to the Koyukuk. The published report made no comment on the trail but the map shows it as a "summer mountain route difficult to follow". 101/

In 1905 Allen Dale blazed a trail from the mouth of "Salt Creek" to the hot spring on the upper part of the Ray. Had the spring developed into an important tourist attraction, Dale was prepared to improve the trail to horse standard. The discoverers of the spring, who had earlier said they would wait until winter to bring supplies in, had established a chicken farm and small farm operation by the fall of 1906. They called for a road to the spring, but the venture soon failed, and there is no evidence that any improvement was made on overland transit to the spring. 102/

A 1920 map sketched by William Yanert, long-time resident of the Flats, showed some trails on Hess Creek. A winter trail went up the creek from its mouth and then along its East Fork (Bear Creek). Another trail ran down Flat and Moose creeks and up the South Fork to Livengood. And the Ross Creek Trail provided access to Hess Creek's headwaters from the north. 103/

The Hess Creek Valley never developed into an important travel route. In 1904 some miners traveled through it to reach the Victoria Creek placers (see p. 641). Eleven years later in the Tolovana gold rush some men entered the mining region via Hess Creek. George Woods traveled up the valley twice--once by sled and once by poling boat. Both trips took five days. The Fairbanks Daily News Miner reported that Wood "doesn't think much of this route from the Yukon unless one follows the high grade from Rampart straight through." 104/

Before WWII several Scandinavians working a dredge on the Jim River took a cat train with supplies and a wannigan from Stevens Village through the Dall River drainage. Their route crossed the Dall below its West Fork, crossed to the north side of that tributary in T. 18 N., R. 12 W., Fairbanks Meridian, and fell into the Kanuti River drainage several miles east of Olsons Lake. In

the winter of 1955-56 Hugh Matheson took a cat train from Livengood to the Chandalar mines. He cut his own trail across the headwaters of Hess Creek and then along the banks of Ross Creek to Stevens Village. From there he followed the Scandinavians' route into the Koyukuk area. 105/

The supply road built to Prudhoe Bay followed a more westerly route. It branched off the road between Eureka and Livengood a few miles south of Livengood. It crossed Lost Creek and Hess Creek to reach the Yukon at the mouth of Woodcamp Creek. This section was begun in August 1969 and was nearly completed by June 1970. On the north side of the Yukon the road followed a ridge east of the Ray River, traversed the headwaters of the West Fork of the Dall, and descended into the Kanuti Valley after passing to the west of Olsons Lake. A 1973 edition of a USGS map for the area indicated trails branching off the Scandinavians' route on either side of the West Fork of the Dall to the path of the pipeline road. Presumably, these routes were used in the course of construction. 106/

MINOOK CREEK AREA

The first mention of travel along Minook Creek can be found in the writings of Josiah Edward Spurr. In the late summer of 1896, he and two others in his USGS exploration party hiked in the Minook Creek area. They took three different routes accompanied by Native packers. One of the men proceeded up Hunter Creek but no detail of his trip has been found. Spurr probed Little Minook Creek. He and his packer hiked three hours up Minook Creek along a trail on a steep bluff. From there they followed a trail up Little Minook to the producing area. He later proceeded farther upstream to visit the old-time prospector, Oliver Miller. No trail existed to Miller's works so Spurr followed

the creek bank to a tributary of Little Minook and walked its bank up to Miller's operation. The day after beginning his journey he returned to the Yukon the same way he came. 107/

William Ballou and a partner acquired a claim on Little Minook Jr. Traveling to the area on October 19, 1898 they followed the trail up Minook Creek. But no trail had yet been cleared up Little Minook Jr., and they, therefore, had a difficult time reaching their claim. In January 1900 Ballou employed five men and two horses to bring a steam thawer to the placer site from the mouth of Fish Creek, thirty miles below Rampart. The last two miles up Little Minook Jr. were the most difficult, alone consuming three days. 108/

In the years before the creation of the Alaska Road Commission, miners such as Ballou, and Sam Heeter, the major freighter in the region, established an extensive, if not very high quality, trail network. By the turn of the century the mines on Little Minook, Hunter, and Alder creeks could all be reached by trail from Rampart. In the early winter of 1900 two miners built a horse trail to their Hoosier Creek claim to haul in a boiler. At the same time Heeter and nine others improved the main trail up Minook Creek to the Eureka mines to sled condition. Ballou in October 1904 built a road one and one-half miles long up Ruby Creek from this main trail. Louis Prindle and F. L. Hess, who investigated the Rampart mining district in 1904, sketched the main trail, which followed the west side of Minook to its head and crossed over to Boston Creek. An alternate trail branched off five miles from the head of Minook Creek and traversed a divide to Eureka Creek. Another trail followed the north bank of Little Minook Creek and crossed a divide to Quail Creek, a mining stream in the Hess Creek drainage. Prindle and Hess stated that at low water Minook Creek was easily forded by horse and that pack trains could travel the bars. At high water,

though, the bars were impassable. They described the summer trails as "generally bad" every year. The cost of transport varied with destination and season. In 1901 Heeter charged twenty-five cents a pound to carry provisions thirty miles on his pack train to Glenn Gulch in the Eureka area. Four years later Prindle and Hess stated that summer pack horse rates from Rampart ranged from four to fifteen cents a pound, while winter dog or horse sled rates were between two and six cents depending on the destination. 109/

In 1906 the ARC spent $15,000 on Rampart area routes. By the following year the commission had finished a wagon road six and one half miles from Rampart along Minook Creek. From its end a sled road extended to the Hot Springs-Eureka road. Now freight, instead of being carried by pack trains over the river bed whenever water stages allowed, could take wagons to the mouth of Little Minook. Summer rates plummetted in this lower stretch of the Minook Basin from four and five cents a pound for summer transit to only half a cent. Winter, though, remained the primary transportation season. In 1907 fifty to sixty tons moved over the route in the summer; four to five times that amount was hauled in the winter. 110/

During the 1910s the ARC did no more than maintain the route and in 1922 it admitted that the wagon road was only "fair" and the sled road "mediocre." In 1923 the ARC made very substantial repairs which raised five and one-half more miles to wagon road standard. But this additional good road quickly fell back into the sled road category. Through the rest of the territorial period the ARC seems to have done little to maintain the road. Instead, local miners financed by the territory made occasional repairs. 111/

This route provided Rampart with winter mail service at least from the 1910s. Between 1922 and 1926 Emil Bergman brought mail not to exceed 300 pounds per trip to Rampart from Manley Hot Springs. He made one trip a week from November 1 through May 1 and was paid $850 a year. Thomas G. Evans worked under a similar contract in the winter of 1930-31. However, the following winter air delivery began. Dog sled mail service from the springs to Rampart revived, at least during WWII. Miners also made greatest use of the route from Rampart to the Minook basin mines during winter. J. B. Mertie of the USGS observed that in the early 1930s "most of the supplies are transported to the outlying mining properties by winter sledding over the winter trail." 112/

Documents BLM gathered in the mid-1970s while preparing easements through Native-selected lands in the Rampart area provided insights into road and trail development in the Minook basin. The Minook-Eureka route was still an important travel route. There were at least thirty mining claims filed within one mile on either side of the route, while other claims could be reached by spurs from it. Among these branch roads were approximately ten miles Ira Weisner constructed alongside Little Minook, Little Minook Jr., and Hoosier creeks. In 1976 there were at least five mining claims on each of these trails and one miner was working about four miles up the Hoosier Creek route with $50,000 of mining equipment. Short trails followed western tributaries of the Minook up Slate and Ruby creeks. Finally, an extensive trail system led to the active mines of Quail Creek. The primary summer route followed alongside Hunter Creek and Forty-Seven Gulch to Troublesome Creek, thence along that creek to an airfield near the mouth of Quail Creek. From this point another trail led easterly to the Manley Hot Springs-Livengood road. An alternative route from the Hunter Creek trail to Quail Creek followed Ninety-Two Hunter Creek. In the winter, these trails to Quail Creek were impassable because of

glaciating from frozen Hunter Creek. As an alternative, miners in 1952 constructed the "Tok Road" from a point on the Rampart-Eureka road about a mile and a half from Rampart to the Hunter Creek trail on the divide between Forty-Seven Gulch and the Troublesome Creek valley. It followed the high country north of Hunter Creek. 113/

Chapter Seven--Roads and Trails

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