A WILD AND SCENIC RIVER ANALYSIS, ALAGNAK RIVER, ALASKA

by
Tileston, Jules V.

WILD & SCENIC RIVERS PL'S

Alagnak, Alatna, Ambler, American Creek, Andreafsky, Aniakchiak, Beaver Creek Rivers

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Assistant Director Eastman

DATE: JUN 1 1973

FROM : Alaska Task Force Leader

SUBJECT: Alagnak Wild River Report, Alaska

See next page for title

Enclosed are two copies of the subject report's Chapters IV and V. Copies have been sent to NWRO, BLM, NPS, BSF&W and FS planning teams.

We emphasize that conclusions and recommendations are based upon a one-day flight last summer. The on-the-ground inspection is scheduled for July 23, 1973.

Dave Daskus
for Jules V. Tileston

2 Enclosures

cc: WASO/Fred Strack

A Wild and Scenic River Analysis

Alagnak River, Alaska

THIS REPORT WAS PREPARED PURSUANT TO PUBLIC LAW 90-542, THE WILD AND SCENIC RIVERS ACT. PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THE REPORT IS TO PROVIDE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF OUTDOOR RECREATION, THE SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AGENCIES.

PRELIMINARY

Bureau of Outdoor Recreat
Alaska Task Force

June 1, 1973

PRELIMINARY DRAFT---
NOT FOR PUBLIC DISTRIBUTION OR PUBLIC USE
---SUBJECT TO REVISION

IV. DESCRIPTION AND ANALYSIS

River Setting

The Alagnak River originates at Kukaklik Lake and flows 64 miles in a west-southwest direction to empty in the broad, gently undulating valley of the Kvichak River. The Alagnak is locally known also as the Branch River. Nonvianuk River rises in a lake of the same name to the south of Kukaklik Lake. The 11 mile long Nonvianuk River is the main tributary to the Alagnak, flowing due west to join the Alagnak. Headwaters to both rivers lie approximately 60 miles northeast of King Salmon, Alaska and 240 miles southwest of Anchorage, Alaska.

Both rivers are clearwater, free-flowing small rivers rising in the lake dotted Iliamna area of the Aleutian Range of mountains. The rivers are just north of the Aleutian Peninsula. They flow from glaciated headlands on the north slope of the Aleutian Range, but most of their lengths are spent flowing through lowlands having low local relief. The entire Nonvianuk and about the upper one-third of the Alagnak run through moderately incised canyons.

The Alagnak starts in moist tundra type vegetation but after about 10 miles it beings to flow through a closed spruce-hardwood forest, as the Nonvianuk does for its entire length. The Alagnak continues through the closed spruce forest

except along its mid-reaches where the river braids out in a wetter area and the vegetation is of the open black spruce forest type.

Stream Flow

No stream gaging stations are located along the Alagnak or Nonvianuk River's. Maximum stream flow occurs during late May and early June as a result of spring breakup and snow melt. The Alagnak is the main tributary to the Kvichak River for which some information concerning stream flow is known. The Kvichak River has a drainage area of 7,700 square miles and an annual runoff in cubic feet per second of 22,000.

Both rivers move slowly from the lakes but quickly pick up a respectable amount (3-4 m.p.h.) of speed resulting in a few rapids. The Alagnak flows on at about the same rate becoming braided in its mid-reaches then becoming one broad, slower moving channel before emptying into the Kivchak.

Water Quality

Water quality data is lacking for the river itself, but some data is available for the region and particularily the Kvichak River. This data should indicate the probable water quality of the Alagnak River. The overall water quality of the Alagnak River is assumed to be good.

Sampling of the Kvichak River shows the dissolved-solids content to be 22 mg/l. Most samples of surface water in in the region had a dissolved-solids content of less than 100 mg/l. Most streams in the region have water of the calcium bicarbonate type of acceptable

quality for public supply, although many have excessive iron content. Temperature range of surface water sampled in the region is from 32° F. to 50° F. Such low temperature conditions of water elsewhere has been reported to be conductive to prolonging life of pathogenic bacteria.

Land Use

Existing land use within the river corridor consists mainly of subsistence fishing, trapping and hunting, and sport fishing and hunting. The Alagnak is one in a network of rivers and lakes which produce large amounts of salmon and trophy rainbow trout, char, and grayling. Commercial fishermen fish Kvichak Bay for salmon from the Alagnak and other rivers.

There are no agriculture lands or mining claims within the river corridor. The timber in the area is not considered to be of commercial value. It is used only for local building and for firewood. The river corridor lies within an area considered to have petroleum potential as well as an area having leaseable minerals. There are no known gold mining districts or coal reserves in the river corridor or immediate surrounding area.

Hammersly Camp at the start of Nonvianuk River consists of four cabins on the north side of the river. There are eight more cabins near the lower end of the Alagnak. Around eleven more cabins are located at the mouth of the river.

All nineteen are within Native withdrawn lands.

Water Resource Developments

Alaska Power Administration reports as follows on a potential hydroelectric power project on the Alagnak River.

The Kvichak River is one of the major tributaries of Bristol Bay, Alaska's most important salmon fishery. Development of the hydroelectric resources of the basin would be desirable only if compatible with the fisheries aspects.

Two hydroelectric potentials in the Kivchak River basin affect areas of interest to the Bureau of Sport Fisheries and Wildlife. These potentials are known as the Kukalek and and Iliamna Projects.

They were identified as among the more favorable hydroelectric potentials found in the statewide inventory of hydroelectric resources. Based upon hydroelectric relationship of cost and size, these are the best two sites in the Bristol Bay region.

Design and estimates studies to date have been made in sufficient detail to give only rough estimates of project costs, and indicate the engineering feasibility of the development plans.

These projects, although identified as the most favorable in the Bristol Bay area, are not likely to be justified as single-purpose hydroelectric developments. No active proposals to develop either proposal have been made. Development of the projects would be desirable only to the extent they are proven compatible with the area's fishery resources.

Kukaklek Project

The Kukaklek damsite is 63 miles above the mouth of the Alagnak River, and 4 miles downstream from the outlet of the Kukaklek Lake.

The inventory plan envisions construction of a 5,000 foot long concrete gravity dam with its crest at elevation 830, raising the surface of the lake 20 feet. The reservoir thus formed would have a surface area of 79.6 square miles at maximum water surface elevation 825, and would contain a total of 940,000 acre-feet of storage. This storage capacity would provide full regulation of flows from the 480 square miles of drainage area tributary to the reservoir.

Power studies have indicated the Kukaklek Project has a firm power potential of 53,000 kilowatts (50 percent annual load factor), with firm energy of about 232,000,000 kilowatt-hours. Value of the project for power would probably exceed $2,500,000 per year. The development of the project would increase flows of the Kvichak River at the Lake Iliamna site due to diversion of Alagnak River flows to the Kukaklek Project powerplant. Transmission line routes have not been identified. Access to Kukaklek Lake would be by road from Lake Iliamna.

The approximate construction cost on an October 1965 price base for the Kukaklek project is $50 million. This cost represents very preliminary reconnaissance studies. Current construction costs would be about 50 percent higher.

Land Ownership

There are 18 pending applications for land by Natives under the 1906 Native Allotment Act, within the Sec. 17 (d)(2) of ANCSA withdrawn lands along the Alagnak River. Final adjudication of these applications has not been made by the Bureau of Land Management.

Approximately 8 miles of the Alagnak River from Kukaklek Lake to the dividing line between T. 12 S. and T. 13 S., Iliamna quadrangle, lie in Native withdrawal lands. Also, approximately 20 miles of the Alagnak River downstream of the dividing line between R. 42 W., and R. 43 W., Dillingham quadrangle, except for that portion within T 13 S , R 43 W, Dillingham quadrangle, lie in Native withdrawal lands.

The remainder of the Alagnak River and all of its major tributary, the Nonvianuk River, lie within a large block of land withdrawn by the Secretary of the Inteiror under Sec. 17 (d)(2) of ANCSA.

There are no mining claims or patented lands within the lands withdrawn under Sec. 17 (d)(2) of ANCSA.

Water Rights, Navigability, and Riverbed Ownership

Under the Alaska Statehood Act the State of Alaska owns the streambeds of all "navigable" waters of the state. Under preliminary criteria developed by the State it would appear that the Alagnak River and the Nonvianuk River may be considered "navigable" for their entire lengths.

Evidence collected in this study indicates there generally is sufficient water volume to permit a pleasurable recreation

experience in small non-motorized watercraft for the entire length of the two rivers.

The Alagnak River is not on the U.S. Army, Corps of Engineers' list of approved navigable waterways.

Access

Existing

Existing access to the river is limited to the use of powerboats via Kvichak River or Kvichak Bay or aircraft landing on Kukaklek Lake or Nonvianuk Lake. The nearest landing strips are at some villages situated around Iliamna Lake and at King Salmon or Naknek, Alaska. Local use is made of snowmobiles and dogsleds as means of access.

Potential

The Alaska Highway net, as proposed by the Alaska Department of Highways in January 1973, shows a proposed road crossing the Alagnak River near its mouth. The proposed road connects villages on Iliamna Lake to Naknek and Dillingham, Alaska. The road, in the area near the Alagnak River, runs across Native withdrawal lands.

Geology and Soils

Both rivers start in glaciated headlands that are a part of the northern Aleutian Rnage. The Aleutian Range is composed of mildly deformed, folded and faulted Mesozoic and Cenozoic sedimentary rocks. These rocks are locally intruded by granite stocks and surmounted at intervals by volcanic piles of late Tertiary to Recent age.

The rivers flow for most of their distances through lowlands. The upper 1/3 of the Alagnak and all of the Nonvianuk run through moderately incised canyons. This

lowland has local relief of 50-250 feet. The lowland is underlain by several hundred feet of outwash and morainal deposits that are mantled in part by silt and peat. Outwash deposits are coarse near the mountains and grade to fine sand along the coast.

There are no glaciers in the immediate area and permafrost is sporadic or absent.

Vegetation

All of the Nonvianuk River lies in a closed spruce-hardwood forest. The Alagnak starts in moist tundra type vegetation but after ten miles flows into the closed spruce forest and remains there except for a few miles in its mid-reaches where it flows through an open black spruce forest.

Moist tundra usually forms a complete ground cover and is extremely productive in the growing season. The type varies from almost continous and uniformly developed cotton-grass tussocks with sparse growth of other sedges and dwarf shrubs to stands where tussocks are scarce or lacking and dwarf shrubs are dominant.

The closed spruce-hardwood forest consists mainly of white spruce which are found on the warm and dry south facing hillsides. These stands are rather open and may contain shrubs of alder and willow. Other trees associated with

the white spruce are paper birch and quaking aspen. Various shrubs that associate with this type of forest in Alaska include bearberry, cranberry, American red currant, cranberry, and willows.

The open black spruce forest consists mainly of the dwarf black spruce tree. This type of forest grows on poorly drained lowlands. The black spruce is slow growing and seldom exceeds 8 inches in diameter. Slow growing tamaracks associate with the black spruce and they also rarely exceed 6 inches in diameter. A thick moss mat of mosses, grasses and shrubs grow among the trees.

Wildfire can change wildlife habitats, destroy the vegetative cover of watersheds leaving the watershed subjected to damage by flash floods and causing loss of a stable water supply. White spruce, for example, can take up to 80 to 100 years to grow to 10 inches in diameter. A black spruce can be 2 inches in diameter and often be 100 year of age.

Wildlife and Fishery

Wildlife

Mammals of the region include highly valued game species such as moose, caribou, and brown/grizzly bear.

There is no known accurate estimate of the moose population within the study area. Moose are found throughout the area at elevations less than 2,000 feet above sea level though the density would be considered low. Primary calving

grounds are thought to be on the Chulitna Flats west of Lake Clark and in the area between Iliamna Lake and Kukaklek Lake. The latter area is also a wintering area for many moose. World's record class moose are taken in the region.

The Mulchatna caribou herd with an estimated population of 6,000-10,000 is one of the smaller caribou herds in the State. It experiences only limited "sport" hunting pressures; but it is thought to contribute substantially to subsistence harvest by the inhabitants of the villages within and adjacent to the study area. A harvest of 70 to 100 is thought to be taken.

Recent reports of caribou being sighted immediately south of the Kivchak River near Igiugig raise the possibility of their moving into this area from their present range north of the river. Early in the century reindeer were grazed in the general vicinity of Iliamna Lake.

The brown/grizzly bear inspires an array of emotions ranging from fear to reverence in all who observe him in his natural habitat. He is found throughout the region. There is no accurate population estimate.

The brown/grizzly's varied range extends from the alpine zone to the coastal beaches. The bears usually enter their dens, generally loacted at timberline on the northerly slopes, in November - Decenber and emerge in April - May; how-

ever, mid-winter appearances are not unknown. During spring and early summer, the bears will be found in coastal grass-sedge flats. As summer progresses and salmon being moving into their spawning grounds, the bears will leave the flats and tend to congregate along the spawning streams and beaches. The brown/grizzly bears concentrate along the Alagnak and Nonvianuk Rivers during the summer in major proportions.

Furbearers are fairly evenly scattered throughout the region. Wolves and wolverine are fairly common but not abundant. Beaver, mink, muskrat, marten, red fox, land otters, weasels and lynx can also be found.

Birdlife in the region include ptarmigan, grouse, and various waterfowl. All three types of ptarmigan - white-tailed, rock, and willow - are found in the study area. Ptarmigan are notorious for their here-today, gone-tommorow populations, pulsing between super-abundance and virtual absence in just a few years. These rapid populations changes make it impossible to discuss total numbers in the area, however, there is an abundance of suitable habitat throughout the unit in all but the heavily timbered bottoms and glacier-covered mountain peaks.

The spruce grouse is found in the wooded valleys, their usual habitat is a timbered site having a lush understory of mountain cranberry, blueberry, crowberry, and spirea growing

in a thick carpet of sphagum mosses. As in the case of ptarmigan, fluctuating populations and the extent of the area prevent an accurate spruce grouse population estimate.

Large concentrations of swans, probably whistling, have been observed throughout the Chulitna River drainage from Chulitna Bay to Nikabuna Lakes. Large numbers of swans are common throughout the western portion of the area. Scattered pairs and singles are found throughout the area below elevations of approximately 500 feet.

Game duck species found in the area are: mallards, widgeons, green-winged teal, pintail, canvasback, scaup, golden-eye, scoter, eider, bufflehead, and old squaw.

Rare and Endangered Species

The peregrine falcon is known to occur within the region because of past sighting by Fish and Wildlife personnel. It probably is the American peregrine falcon which is listed in the Department of the Interior's 1973 book "Threatened Wildlife of the United States." It's existence on the Alagnak or Nonvianuk Rivers is unknown.

Fishing

The State's sport fishing regulations single out the Kvichak River drainage as a trophy fish area, thereby placing these waters under special trophy fish regulations. Primary trophy fish of the area are rainbow trout, char, and grayling. The drainage is also the largest producer of red salmon in the world.

"Trophy" waters are managed to assure a continual stock of large fish; but angler success is not the only criteria for measuring the value of such waters. The aesthetic qualities of these remote areas must also be considered. Present trophy fish populations are not the result of extremely productive waters, but on the contrary, productivity is severely reduced by low water temperatures and watershed poor in nutrient materials. Present populations are simply the result of the relative remoteness and inaccessibility of most of the fishing waters.

Attributable to the low productivity of the waters is the age of the trophy-sized fish. A ten pound rainbow trout is between 8-12 years old; an arctic grayling in excess of three pounds is 7-9 years old. Management of these large, old-aged fish requires special consideration, thus the special "Trophy Waters" designation.

The Alagnak River is technically a tributary of the Kvichak River. It is, for sport fisheries purposes, recognized as an independent system. It drains two major lakes, Kukaklek and Nonvianuk. Nonvianuk River, draining Nonvianuk Lake, flows into the Alagnak 15 miles southwest of Kukaklek. The Alagnak then meanders over an extremely braided course westerly to the Kvichak River approximately 10 miles above the head of Kvichak Bay.

Rainbow trout, lake trout, and arctic char/Dolly Varden are the predominant species taken at the Kukaklek outlet. Red salmon are caught in both rivers in season. While only that portion of the Alagnak and Nonvianuk Rivers immediately adjacent to the lakes are fished regularly, the entire lengths of these streams hold high potentials. Rainbow and grayling are common. Pike are abundant in the many ox bow sloughs. Five species of Pacific salmon utilize the available spawning gravels with the general exception of red salmon which utilize the lake beaches.

Recreation

Resources

Alagnak and Nonvianuk Rivers and their immediate surroundings are rich in natural resources. Open space, fish and wildlife, scenery, and recreation are the outstanding resources. Both rivers are clearwater, free-flowing streams flowing through a natural pristine setting. They are highly boatable.

Existing uses

Present recreational use consist mainly of sport fishing, particularily for trophy rainbow trout and grayling. Sport hunters hunt the area for brown/grizzly bear and moose. Both rivers have been recently floated by small watercraft. The river's generally falls in Class I of the International Whitewater Scale (Appendix A), but there are some rapids

on the upper Alagnak that are probably Class II or III and one set of rapids that must be portaged.

Potential uses

The rivers and their surroundings potentially offer good quality recreation opportunities for canoeing, rubber rafting, sightseeing, nature studying, hiking, and camping.

Limitations

Major limitation to recreation is the harsh winter which allows for a relatively short summer recreation season. The cold may also limit winter recreation activities.

Some recreational activities such as All Terrain Vehicle uses may be limited by soil conditions. Surface damages can occur which may persist for long periods of time. Most surface damages occur during summer thaw periods. As human activities increase, accelerated surveillance and regulations of vehicles (particularly on any permafrost soils) may be necessary to minimize watershed damages and protect ecological and aesthetic values.

Potential limitations to recreation include the users themselves. It is quite possible that large numbers of recreationists in the river area would degrade or destroy the pristine environment and the primitive experience of the user. The most outstanding value of the river area could thereby be lost through overuse.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The conclusion of this study is that the Alagnak and its major tributary the Novianuk River and their immediate surroundings possess the qualities necessary for inclusion in the National Wild and Scenic Rivers Ssystm.

This study shows that:

- The river is in a free-flowing natural condition.
- The river is sufficiently long to provide a meaningful experience
- The river and its immediate surroundings possess outstandingly remarkable scenic, fish and wildlife and recreation activities.
- Water quality is good
- The river and its immediate surroundings are capable of being managed to protect and interpret special values and protect the river.
- The river is a pristine waterway flowing through a primitive natural area.
- The entire river meets the qualifications for inclusion in the National Wild and Scenic Rivers System as a wild river.
- The river has sufficient water volume during normal years to permit full enjoyment of the water-related outdoor recreation activities.
- The Department of Highways, State of Alaska, has proposed

a highway which would traverse the river near its mouth.

- There are presently no rivers in Alaska included in the National Wild and Scenic Rivers System. There are also no State or local plans or programs for the protection of free-flowing streams and their immediate surroundings
- Alaska Power Administration has identified a potential hydroelectric power project on the upper Alagnak River. The project is on Native withdrawal lands. If built, the project could affect the values of the river in a detrimental way causing the river not to meet the qualifications necessary for a Wild and Scenic River.
- The Bureau of Outdoor Recreation has recommended that 40 Alaskan rivers having high potential for inclusion in the National System be given detailed study. The range of outstandingly remarkable values possessed by these 40 rivers is great and consequently no one river duplicates the unique environment of another.
- The Natives have traditionally used the river for subsistence fishing, hunting, and trapping.

Recommendations.

It is recommended that:

- The Alagnak River and the Nonvianuk River where flowing through lands designated under Sec. 17 (d)(2) of ANCSA,

be added as a component of the National Wild and Scenic Rivers System.

- Approximately 47 miles of the rivers, all that within the Sec. 17 (d)(2) withdrawn lands, be classified and managed as a wild river together with approximately 47,000 acres comprising its immediate surroundings.
- The administering agency develop lateral river boundaries within one year as part of the detailed management plan for the river area. Such lateral boundaries should include the "primary visual corridor", an area generally not exceeding one mile from each river bank.
- The river be managed by the adjacent upland manager
- Native interest in the future development and use of the river be determined and the plans developed for the river reflect Native interest. This would include determining Native interest in the possible designation of portions of the river flowing through Native controlled lands as additions to the National Wild and Scenic Rivers System.
- Lands presently withdrawn along the river for Native selection but that are not selected by the Natives be considered for additions to the National Wild and Scenic Rivers System.
- Should the area surrounding the Alagnak River be designated

as a unit of the National Park System or the National Wildlife Refuge System, designation of the previously mentioned sections of the river as components of the National Wild and Scenic Rivers System need not be made. Such river designation would be unnecessary because management of the river as part of a unit of the park or refuge system would protect the river and its surroundings as sufficiently as would its designation as a National Wild and Scenic River.

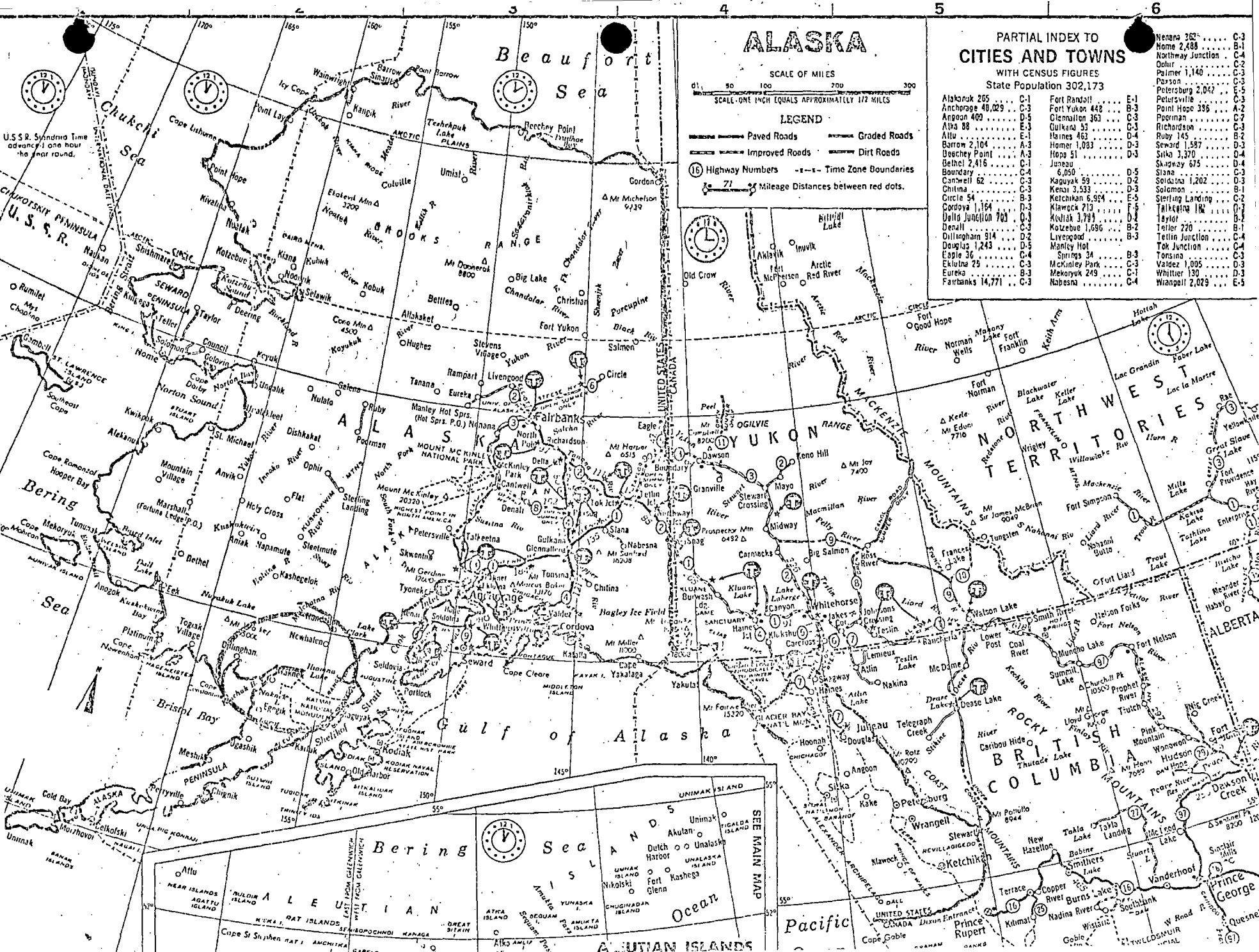
- Provisions be made by the administering agency to provide for continued Native subsistence use of the river and its immediate surroundings where traditional, in order to help preserve the cultural heritage and lifestyle.

APPENDIX A

SMOOTH AND WHITE WATER RATING SCALE:

International Difficulty Rating of canoeable waters, to be used in connection with Personal Ratings on page 12.

Rating	Water Characteristics
Smooth Water	
A	Pools, Lakes, Rivers with velocity under 2 miles per hour.
B	Rivers, velocity 2-4 mph.
C	Rivers, velocity above 4 mph (max. back-paddling speed) may have some sharp bends and/or obstructions.
White Water	
I	Easy — Sand-banks, bends without difficulty, occasional small rapids with waves regular and low. Correct course easy to find but care is needed with minor obstacles like pebble banks, fallen trees, etc. especially on narrow rivers. River speed less than hard back-paddling speed.
II	Medium — Fairly frequent but unobstructed rapids, usually with regular waves easy eddies and easy bends. Course generally easy to recognize. River speeds occasionally exceeding hard back-paddling speed.
III	Difficult — Maneuvering in rapids necessary. Small falls, large regular waves covering boat, numerous rapids. Main current may swing under bushes, branches or overhangs. Course not always easily recognizable. Current speed usually less than fast forward paddling speed.
IV	Very Difficult — Long extended stretches of rapids, high irregular waves with boulders directly in current. Difficult broken water, eddies, and abrupt bends. Course often difficult to recognize and inspection from the bank frequently necessary. Swift current. Rough water experience indispensable.
V	Exceedingly Difficult — Long rocky rapids with difficult and completely irregular broken water which must be run head on. Very fast eddies, abrupt bends and vigorous cross currents. Difficult landings increase hazard. Frequent inspections necessary. *Extensive* experience necessary.
VI	Limit of Navigability — All previously-mentioned difficulties increased to the limit. Only negotiable at favorable water levels. *Cannot be attempted without risk of life.*

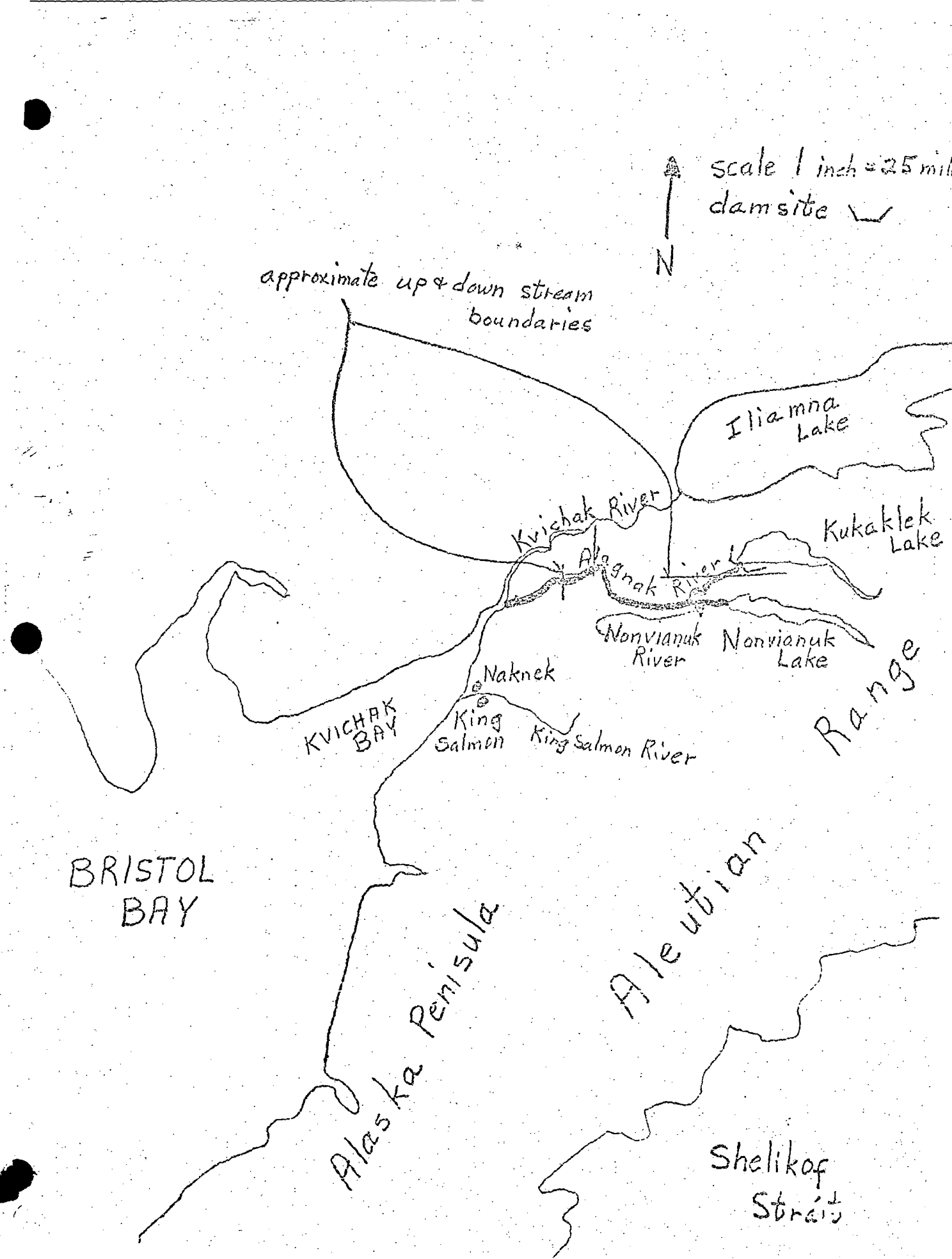


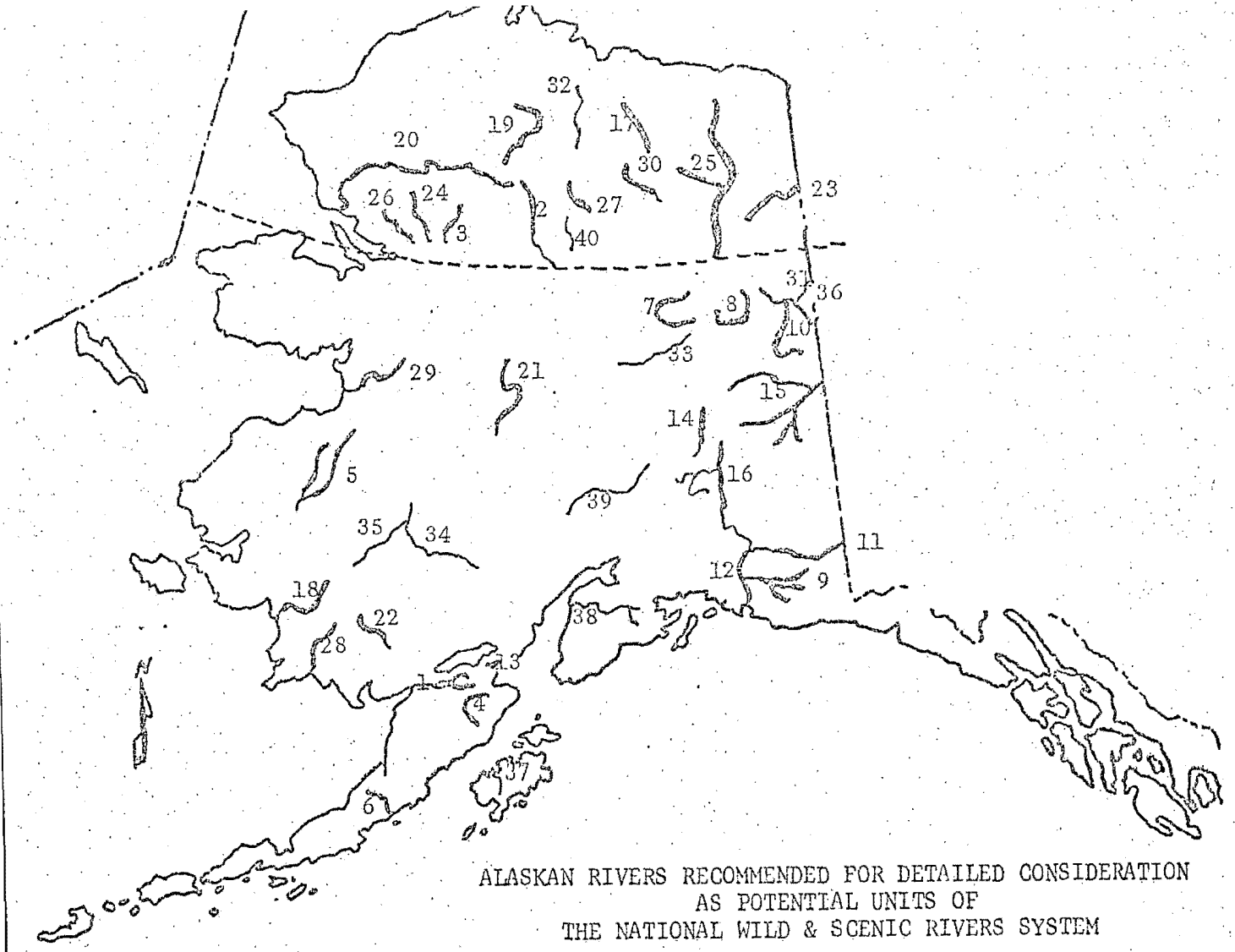
ALASKA

PARTIAL INDEX TO
CITIES AND TOWNS
WITH CENSUS FIGURES

State Population 302,173

Alakanuk 265	C-1
Anchorage 48,029	C-3
Angoon 400	D-5
Atka 88	E-3
Attu	E-1
Barrow 2,104	A-3
Beechey Point	A-3
Bethel 2,416	C-1
Boundary	C-4
Cantwell 62	C-3
Chitina	C-3
Circle 54	B-3
Cordova 1,164	D-3
Delta Junction 703	D-3
Denali	C-3
Dillingham 914	D-2
Douglas 1,243	D-5
Eagle 36	C-4
Eklutna 25	C-3
Eureka	B-3
Fairbanks 14,771	C-3
Fort Randall	E-1
Fort Yukon 448	B-3
Glennallen 363	C-3
Gulkana 53	C-3
Haines 463	D-4
Homer 1,083	D-3
Hope 51	D-3
Juneau 6,050	D-5
Kaguyak 59	D-2
Kenai 3,533	D-3
Ketchikan 6,994	E-5
Klawock 713	E-5
Kodiak 3,799	D-2
Kotzebue 1,696	B-2
Livengood	B-3
Manley Hot Springs 34	B-3
McKinley Park	C-3
Mekoryuk 249	C-1
Nabesna	C-4
Nenana 362	C-3
Nome 2,488	B-1
Northway Junction	C-4
Ophir	C-2
Palmer 1,140	C-3
Paxson	C-3
Petersburg 2,042	E-5
Petersville	C-3
Point Hope 336	A-2
Poorman	C-2
Richardson	C-3
Ruby 145	B-2
Seward 1,587	D-3
Sitka 3,370	D-4
Skagway 675	D-4
Slana	C-3
Soldotna 1,202	D-3
Solomon	B-1
Sterling Landing	C-2
Talkeetna [illegible]	[illegible]
Taylor	B-2
Teller 220	B-1
Tetlin Junction	C-4
Tok Junction	C-4
Tonsina	C-3
Valdez 1,005	D-3
Whittier 130	D-3
Wrangell 2,029	E-5


scale 1 inch = 25 mil
damsite
N
approximate up & down stream boundaries
Iliamna Lake
Kvichak River
Kukaklek Lake
Alagnak River
Nonvianuk River
Nonvianuk Lake
Naknek
King Salmon
King Salmon River
KVICHAK BAY
Range
BRISTOL BAY
Alaska Penisula
Aleutian
Shelikof Strait



ALASKAN RIVERS RECOMMENDED FOR DETAILED CONSIDERATION
AS POTENTIAL UNITS OF
THE NATIONAL WILD & SCENIC RIVERS SYSTEM

* All or substantial portions classified under 17(d)(2) of ANCSA.
\# Detailed studies have been initiated on segments shown in heavy line. Other rivers could be studied upon request by land manager.

*# 1. ALAGNAK
*# 2. ALATNA
*# 3. AMBLER
4. AMERICAN CREEK
5. ANDREAFSKY (2 FORKS)
*# 6. ANIAKCHAK
*# 7. BEAVER CREEK
*# 8. BIRCH CREEK
*# 9. BREMNER
*# 10. CHARLEY
*# 11. CHITINA
*# 12. COPPER
*# 13. COPPER (ILIAMNA)
14. DELTA
*# 15. FORTYMILE (SYSTEM)
16. GULKANA
*# 17. IVISHAK
18. KANEKTOK
*# 19. KILLIK
*# 20. NOATAK
*# 21. NOWITNA
*# 22. NUYAKUK
*# 23. PORCUPINE
24. SALMON
*# 25. SHEENJEK-KONESS
26. SQUIRREL
*# 27. TINAYGUK
*# 28. TOGIAK
*# 29. UNALAKLEET
*# 30. WIND
*# 31. YUKON

32. ANAKTUVUK
33. CHATANIKA
34. HOHOLITNA
35. HOLITNA
36. KANDIK
37. KARLUK
38. KENAI-RUSSIAN, SWANSON - SWAN LK
39. SUSITNA
40. WILD

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UNITED STATES GOVERNMENT

Memorandum

Clay Hardy
RA
PLS
42

TO : Assistant Director Eastman

DATE: JUN 1 1973

FROM : Alaska Task Force Leader

SUBJECT: Alatna Wild River Report, Alaska

Enclosed are two copies of the subject report's Chapters IV and V. Copies have been sent to NWRO, BLM, NPS, BSF&W, and FS planning teams.

We emphasize that conclusions and recommendations are based upon a one-day flight last summer. The on-the-ground inspection is scheduled for June 20.

Dave Dapkus
for Jules V. Tileston

2 Enclosures

cc: WASO/Fred Strack

A Wild and Scenic River Analysis

Alatna River, Alaska

THIS REPORT WAS PREPARED PURSUANT TO PUBLIC LAW 90-542, THE WILD AND SCENIC RIVERS ACT. PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THE REPORT IS TO PROVIDE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF OUTDOOR RECREATION, THE SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AGENCIES.

PRELIMINARY

Bureau of Outdoor Recreati
Alaska Task Force

June 1, 1973

PRELIMINARY DRAFT---
NOT FOR PUBLIC DISTRIBUTION OR PUBLIC USE
---SUBJECT TO REVISION

IV. DESCRIPTION AND ANALYSIS

River Setting

The Alatna River is a clearwater, free-flowing intermediate-sized river flowing southeast out of the heart of the Endicott Mountains. Its source is the Alatna Lakes which lie at the very edge of the Continental Divide (of the Brooks Range, the northern extension of the Rocky Mountains). The river flows for 145 miles then empties into Koyukuk River, a major tributary to the Yukon River. The Alatna Lakes are approximately 300 miles north-northwest of Fairbanks, Alaska.

The Endicott Mountains surrounding the source of the river are 6,000 to 7,000 feet high. The glacier-topped 7,000 feet high Arrigetch Peaks tower majestically to the right of the river one-third way downstream. The Continental Divide parallels the river for half the river's length. The mountains are composed chiefly of Paleozoic rocks: limestone, shale, quartzite, slate, and schist. These rocks are metamorphosed and found in giant plates or nappes thrust to the north. The upper half of the river,which includes the entire reach under study, lies with the central Brooks Range.

The lower half of the river upon leaving the mountains flows through the 2,000 to 3,500 foot high Alatna Hills

and Helpmejack Hills. It then flows through the northwest portion of the Kanuti Flats to empty into the Koyukuk River at the villages of Alatna and Allakaket, approximately one mile north of the Arctic Circle.

For approximately 20 miles downstream from its source the Alatna flows through a mile wide valley covered with moist tundra. The valley remains under two miles in width for as long as the river flows through the mountains but the vegetation quickly changes to a closed spruce-hardwood type forest. Alpine tundra occupies the higher mountain slopes throughout the passage of the river in the Brooks Range. The river valley widens to 5 miles as the now meandering river passes through Alatna and Helpmejack Hills and then continues meandering through the Kanuti Flats. Closed spruce-hardwood forest also continues to cover the surrounding land. Robert Marshall in his book, "Alaska Wilderness," said of the lower river: " . . . it twisted in inceasing bends through flat land with no points within vision rising more than 50 feet above the river."

Stream Flow

There are no stream gaging stations along the river. Maximum stream flows occur in June as a result of spring breakup and snow-melt. Rain-induced high water can be expected, but not predicted, a few times during the summer months. Low flows begin in September with freezeup occurring

in October. Although narrow and shallow in its upper reaches, the river begins to widen and deepen while still in the mountains. It reaches intermediate size by its mid-point and remains thus to its mouth. However, it flows rather sluggishly through the "flats."

Water Quality

Water quality data are lacking for the river. However, it is assumed that overall water quality is good.

Some surface water samples have been taken in the region. This limited sampling indicates that the surface water is of acceptable quality. Samples analyzed show a range in dissolved-solids content from 5.5 mg/l to 213 mg/l and all samples have been of the calcium bicarbonate type. A few of the streams carry excessive iron content during parts of the year.

The normal summer surface-water temperatures in the region range between 44 and 50 degrees F. and normal winter temperatures range between 32 and 36 degrees F. Such low temperature conditions of water elsewhere has been reported to be conductive to prolonging life of pathogenic bacteria.

Land Use

Existing land use within the two-mile wide river corridor consists primarily of subsistence hunting, fishing, and trapping, and a fair amount of sport hunting and fishing. There are no agriculture land or timber areas of known

commercial value along the river. There are two cabins within the study portion of the river. There are three more cabins along the lower river outside the study portion.

The lower half of the river, outside the study portion, lies within an area identified in Geological Survey Circular 647 as being "valuable prospectively" for geothermal resources. Various sections around the river are considered to have high metallic mineral and coal potential. The general "flats" area is in a possible petroleum province as defined in U.S.G.S. Bulletin No. 1094, 1959. There are at least seven gold mining claims in a 20 mile by 30 mile rectangle area in the middle reach of the river. These claims are inactive, not patented, and their exact location and therefore nearness to the river is unknown. One active mining claim (mineral not known) lies near the river across from the confluence of Helpmejack Creek. This claim is outside the study portion of the river.

Water Resource Developments

There are no known existing, authorized, or proposed water resource development projects on the Alatna River.

However, the Alaska Power Administration's proposed Kanuti Project reservoir on the Koyukuk River would flood out the Alatna River up to the 500 foot elevation (the project's water surface elevation) mark. The portion of the reservoir flooding the Alatna River would be entirely on Native withdrawn lands. It would also flood out

the villages of Alatna and Allakaket. The approximate construction cost for the project based on October 1965 price base is 430 million dollars according to APA and represent very preliminary reconnaissance studies. APA believes that current construction costs would be about 50 percent higher.

Land Ownership

There are two pending applications, by Natives under the 1906 Native Allotment Act, within the Sec. 17(d)(2) of ANCSA withdrawn lands along the Alatna River. Final adjudication of these applications has not been made by the Bureau of Land Management.

There is one private land application on the southernmost portion of the Alatna Lakes and two others just downstream from the study portion of the river. The two pending applications under the 1906 Native Allotment Act and one patented land tract are located at Takahula Lake. The lake lies adjacent to the river within the lower end of the study portion. There is the previously mentioned active mining claim near Helpmejack Creek.

The Alatna River from its source to the dividing line between T. 22 N., and T. 21 N. - Survey Pass Quadrangle, lies in a large block of land withdrawn by the Secretary of the Interior under Sec. 17(d)(2) of ANCSA. This section of the river is approximately 75 miles in length and is the section under present study. Approximately the next

40 miles fall within land withdrawn for the State of Alaska to select under terms of the Alaska Statehood Act. The last approximate 30 miles fall within land withdrawn for Native selection under terms of ANCSA.

Water Rights, Navigability, and Riverbed Ownership

Under the Alaska Statehood Act the State of Alaska owns the streambeds of all "navigable" waters of the state. Under preliminary criteria developed by the State it would appear that the Alatna River may be considered "navigable" from its mouth upstream to the vicinity of Takahula Lake.

Evidence collected in this study indicates that there generally is sufficient water volume to permit a pleasurable recreation experience in small nonmotorized watercraft for the entire length of the river and in small motorized watercraft from the river's mouth upstream to where the river flows out of the mountains.

The Alatna River is not on the U.S. Army, Corps of Engineers' list of approved navigable waterways.

Access

Existing

Present access is limited to the use of aircraft, snowmobiles, dog sleds, and riverboats via the Koyukuk River. A good airstrip is located at the village of Allakaket; there are no other airstrips which can serve the river. Small aircraft equipped with floats can land on the Alatna Lakes and possibly other lakes along the river.

Potential

The Alaska Highway net, as proposed by the Alaska Department of Highways in January 1973, shows a proposed road crossing the river on its route from Bettles, Alaska, to Kobuk, Alaska. The proposed road would traverse the river to its south side approximately 15 miles upstream of its mouth, then at several miles distance parallel the river for 20 miles. The road and river then go in different directions. The road is in Native and State selection lands when it is in the vicinity of the river.

Geology and Soils

The central Brooks Range are composed chiefly of Paleozoic rocks: limestone, shale, quartzite, slate, and schist. These rocks are metamorphosed and found in giant plates or nappes thrust to the north. The deformation is of Laramide age. High bluffs are exposed in various spots along the river.

The Alatna Hills and Helpmejack Hills are east-west trending ridges and are composed in part of resistant massive greenstone (metamorphosed basalt). The river valley is underlain largely by Cretaceous sedimentary rocks, folded into synclines.

Geology of the Kanuti Flats is unknown.

Parts of the river corridor, at least the Alatna and Helpmejack Hills area, are underlain with continuous permafrost.

A thin mantle of peaty ground lies on top of the permafrost. The ground varies from 6 inches to several feet in depth.

Vegetation

Moist tundra occupies the Alatna valley floor from the river's source downstream approximately 20 miles. This tundra is almost continuous cottongrass tussocks with sparse growth of other sedges and dwarf shrubs. Various birches, willows, and mountain-avens are among the dwarf shrubs found.

Alpine tundra covers the higher mountain slopes where the river flows through the Brooks Range. Alpine tundra consists of low mat herbaceous and shrubby plants interspersed between bare rocks and rubble. Dominant in this area of the Arctic are low mats of white mountain-avens. Associated with the white mountain-avens can be moss-campion, black oxytrape, arctic sandwort, and several grasses and sedges.

The moist tundra type vegetation soon gives way to a closed spruce-hardwood forest as the river flows on through the mountains. This forest type is the vegetative type for the remainder of the river's course. Large stands of white spruce as well as paper birch and aspen make up the forest while the river runs through the mountains. Along the river valley in the Alatna-Helpmejack Hills area are found stands of willows reaching 6 inches

in diameter and 25 feet in height. Black spruce occupy much of the "flats" area along with willows.

Wildfire can change wildlife habitats, destroy vegetative cover of watersheds leaving the watershed subjected to damage by flash floods and causing loss of a stable water supply. For example, it takes 80 to 100 years to grow a 10 inch (diameter) white spruce. Wildfire could be devastating to the Alatna River valley, causing loss or reduction of many of its values.

Wildlife and Fishery

Wildlife

Various large mammals may be observed while floating the Alatna River including: grizzly bear, black bear, wolverine, wolf, Dall sheep, moose, and caribou.

The grizzly bear usually occupies the alpine and subalpine habitat and sporadically occur in the forested lowlands. They spend their active season in the valley or on the lower hillsides where food is plentiful. The black bear lives mainly in the forested area but seasonally uses the alpine and subalpine habitats. They are highly mobile and omnivorous,eating grasses, berries, carrion, and fish. The black bear is usually the more readily seen bear. Wolverines are sparsely distributed in the region and are actively hunted and trapped for their valuable fur. There is reported to be a high population

of wolves in the region. Little is known of their summer distribution but in winter substantial numbers frequent the main river valleys where moose congregate.

Dall sheep occupy the mountain slopes surrounding the upper Alatna River in fair to abundant numbers. Fair numbers of moose inhabit the Alatna River valley, concentrating in the lower valley in winter. Willow communities along the river valley are of great importance as moose habitat and may result in supporting high densities of moose. Part of the arctic caribou herd, 242,000 head, migrate through the Alatna valley. Spring migration is up the valley and on to the Arctic Foothills calving grounds, while the fall migration is down the valley to the winter range along the Kanuti Flats.

Small mammals found in the valley include marten, mink, lynx, and beaver. Hares, arctic ground squirrels, hoary marmots, red squirrels, shews, voles, and lemmings inhabit the valley.

From Takahula Lake downstream the valley is a nesting and molting area for waterfowl. The most abundant nesting species are American widgeon, lesser scaup, pintail, green-winged teal, mallard, and American goldeneye. Canada and white-fronted geese are also abundant.

Rare and endangered species

The arctic peregrine falcon is listed in the Department

of the Interior's 1973 book "Threatened Wildlife of the United States." Its distribution or even existence along the Alatna River is unknown; however, its habitat is the arctic treeless tundra like part of the Alatna area.

Fishery

The Alatna River fishery includes chum salmon, sheefish, whitefish, grayling and arctic char. The burbot, a fresh-water cod, also inhabits the river. Alaska blackfish, northern pike, trout, perch and sculpins may inhabit the waters of the Alatna. The grayling, char, pike, and burbot grow slow in these cold waters. The grayling and char have long been favorites of sport fishermen.

History and Archeology

Little is known of the history of the Alatna River area. The native villages of Alatna and Allakaket were started in 1906 by Archdeacon Stuck. Alatna on the north side of the Koyukuk River is an Eskimo village while Allakaket on the south side is Indian. They were located about 10 miles upstream of the then present native Moses Village. Natives have apparently not, during the past century, used the Alatna River valley in the mountainous area.

Some prospecting, mainly for gold, has been done during the last 70 years. Little gold has been found and that has apparently not been of sufficient economic value to pursue. Philip Smith and Robert Marshall on separate trips with several years between the trips, were the first to explore and map the river.

Little archeological research has been done in the area to date. However, a large number of sites have been discovered in the adjacent John River valley and also near Chandler Lake just over the Continental Divide.

Recreation

Resources

The Alatna River and its immediate surroundings has an abundance of natural resources to offer. A variety of changing scenery, open space, plentiful and varied wildlife, fishing, and recreation opportunities. The river is a clearwater, free-flowing intermediate-sized river running through a still primitive natural setting of snow-capped mountains, freshwater lakes, and a green Arctic forest. There is air access to the river's mouth and its headwaters, as well as limited access by motorized water-craft via the Koyukuk River.

Existing Uses

Present known recreation use consists mainly of sport hunters after trophy Dall sheep, grizzly bear, caribou, and moose. Some recreational canoeing has been done on the river in recent years. Water level determines the particular daily navigability of the river for all boating use. The river falls in Class I and II of the International Whitewater Scale (Appendix A).

Potential Uses

Such recreational activities as family canoeing, sightseeing, nature studying, hiking, and camping could be enjoyed in the river valley.

Limitations

A major limitation to recreation use is the long and harsh winters of the area which allow for a short "summer" recreation season. The extreme cold winters may limit winter recreation.

Some recreational activities such as All Terrain Vehicle uses may be limited by soil conditions. Surface damages can occur which may persist for long periods of time. Most surface damages occur during summer thaw periods. As human activities increase, accelerated surveillance and regulations of vehicles (particularly on any permafrost soils) may be necessary to minimize watershed damages and protect ecological and aesthetic values.

Potential limitations to recreation include the users themselves. It is quite possible that large numbers of recreationists in the river area would degrade or destroy the pristine environment and the primitive experience of the user. The most outstanding values of the river area could thereby be lost through overuse.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The conclusion of this study is that the Alatna River and its immediate surroundings possess the qualities necessary for inclusion in the National Wild and Scenic Rivers System.

This study shows that:

- The river is in a free-flowing natural condition.
- The river is sufficiently long to provide a meaningful experience.
- The river and its immediate surroundings possess outstandingly remarkable scenic, fish and wildlife, and recreational values.
- The river has sufficient water volume during normal years to permit full enjoyment of water-related outdoor recreation activities.
- Water quality is good.
- The river and its immediate surroundings are capable of being managed to protect and interpret special values and protect the river.
- The river is a pristine waterway flowing through a primitive natural area.
- The entire river meets the qualifications for inclusion in the National Wild and Scenic Rivers System as a wild river.

- The Department of Highways, State of Alaska, has proposed a highway which would traverse the river near its mouth then parallel the river on its south side for a short distance before leaving the river entirely.
- There are presently no rivers in Alaska included in the National Wild and Scenic Rivers System.
- There are also no State or local plans or programs for the protection of the free-flowing streams and their immediate surroundings.
- The Bureau of Outdoor Recreation has recommended that 40 Alaskan rivers having high potential for inclusion in the national system be given detailed study. The range of outstandingly remarkable values possessed by these 40 rivers is great and consequently no one river duplicates the unique environment of another.
- A reservoir project would inundate a portion of the lower river valley.
- The Natives have traditionally used the river for subsistence fishing, hunting, and trapping.

Recommendations

It is recommended that:

- That Alatna River, where flowing through lands designated under Sec. 17(d)(2) of ANCSA, be

added as a component of the National Wild and Scenic Rivers System.

- Approximately 75 miles of the river from its source to the dividing line between T. 22 N. and R. 21 N. - Survey Pass Quadrangle be classified and managed as a wild river together with approximately 85,000 acres of land comprising its immediate surroudings.
- The administering agency develop lateral river boundaries within one year as part of the detailed management plan for the river area. Such lateral boundaries should include the "primary visual corridor," an area generally not exceeding one mile from each riverbank.
- The river be managed by the adjacent upland manager.
- Native interest in the future development and use of the river be determined and the plans developed for the river reflect Native interest. This would include determining Native interest in the possible designation of the portions of river flowing through Native controlled lands as additions to the National Wild and Scenic Rivers System.

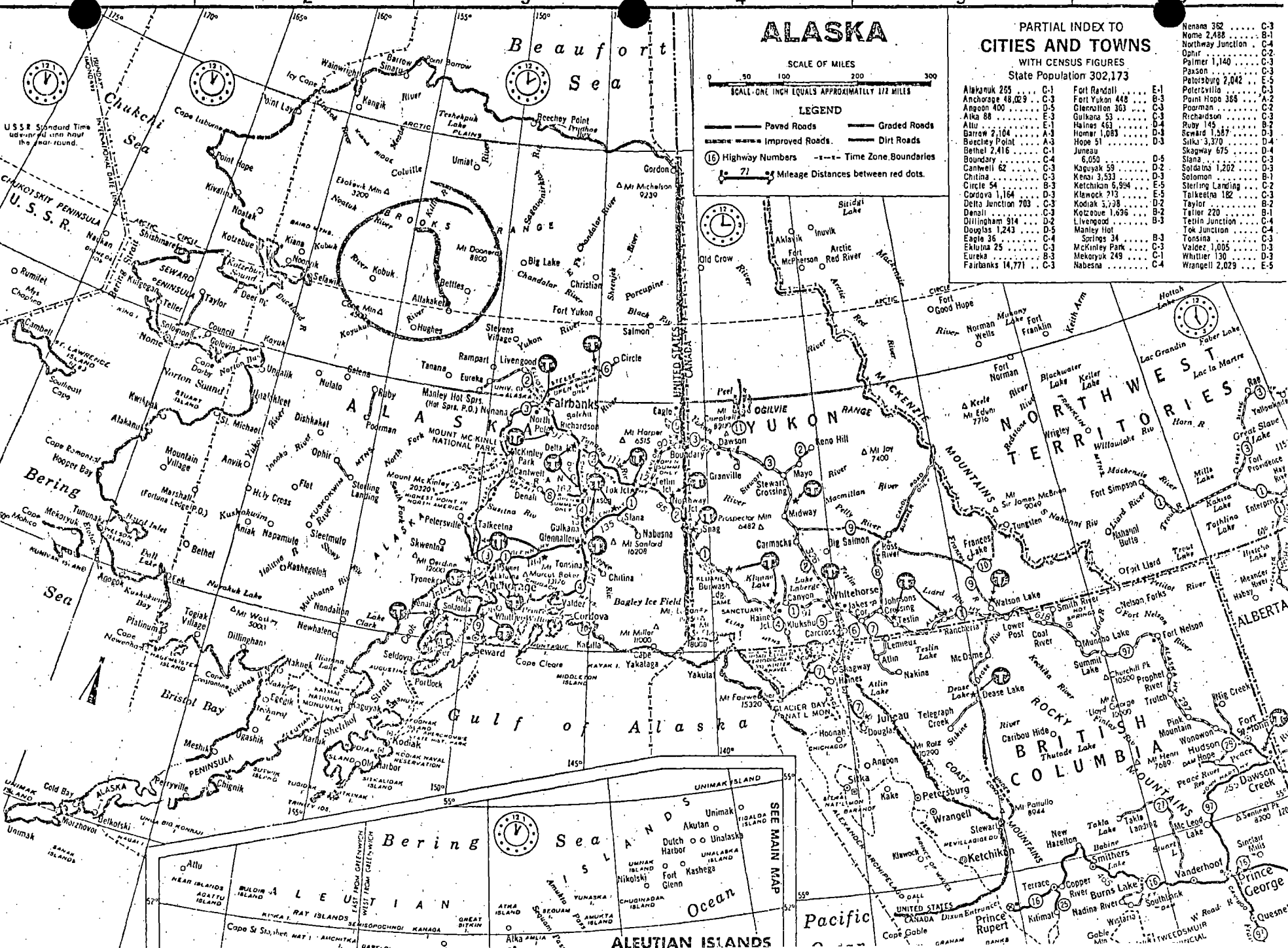
- Lands presently withdrawn along the river for Native or State selection but that are not selected by the Natives or State be considered for additions to the National Wild and Scenic Rivers System.
- Should the area surrounding the Alatna River be designated as a unit of the National Park System, designation of the previously mentioned section of the river as a component of the National Wild and Scenic Rivers System need not be made. Such river designation would be unnecessary because management of the river as part of a unit of the park would protect the river and its surroundings as sufficiently as would its designation as a National Wild and Scenic River.
- Provisions be made by the administering agency to provide for continued Native subsistence use of the river and its immediate surroundings, where traditional, in order to help preserve the cultural heritage and life style of America's oldest inhabitants.

APPENDIX A

SMOOTH AND WHITE WATER RATING SCALE:

International Difficulty Rating of canoeable waters, to be used in connection with Personal Ratings on page 12.

Rating	Water Characteristics
Smooth Water	
A	Pools, Lakes, Rivers with velocity under 2 miles per hour.
B	Rivers, velocity 2-4 mph.
C	Rivers, velocity above 4 mph (max. back-paddling speed) may have some sharp bends and/or obstructions.
White Water	
I	Easy — Sand-banks, bends without difficulty, occasional small rapids with waves regular and low. Correct course easy to find but care is needed with minor obstacles like pebble banks, fallen trees, etc. especially on narrow rivers. River speed less than hard back-paddling speed.
II	Medium — Fairly frequent but unobstructed rapids, usually with regular waves easy eddies and easy bends. Course generally easy to recognize. River speeds occasionally exceeding hard back-paddling speed.
III	Difficult — Maneuvering in rapids necessary. Small falls, large regular waves covering boat, numerous rapids. Main current may swing under bushes, branches or overhangs. Course not always easily recognizable. Current speed usually less than fast forward paddling speed.
IV	Very Difficult — Long extended stretches of rapids, high irregular waves with boulders directly in current. Difficult broken water, eddies, and abrupt bends. Course often difficult to recognize and inspection from the bank frequently necessary. Swift current. Rough water experience indispensable.
V	Exceedingly Difficult — Long rocky rapids with difficult and completely irregular broken water which must be run head on. Very fast eddies, abrupt bends and vigorous cross currents. Difficult landings increase hazard. Frequent inspections necessary. *Extensive* experience necessary.
VI	Limit of Navigability — All previously-mentioned difficulties increased to the limit. Only negotiable at favorable water levels. *Cannot be attempted without risk of life.*



PARTIAL INDEX TO
CITIES AND TOWNS
WITH CENSUS FIGURES
State Population 302,173

Town	Grid
Alakanuk 265	C-1
Anchorage 48,029	C-3
Angoon 400	D-5
Atka 88	E-3
Attu	E-1
Barrow 2,104	A-3
Beechey Point	A-3
Bethel 2,416	C-1
Boundary	C-4
Cantwell 62	C-3
Chitina	C-3
Circle 54	B-3
Cordova 1,164	D-3
Delta Junction 703	C-3
Denali	C-3
Dillingham 914	D-2
Douglas 1,243	D-5
Eagle 36	C-4
Eklutna 25	C-3
Eureka	B-3
Fairbanks 14,771	C-3
Fort Randall	E-1
Fort Yukon 448	B-3
Glennallen 363	C-3
Gulkana 53	C-3
Haines 463	D-4
Homer 1,083	D-3
Hope 51	D-3
Juneau 6,050	D-5
Kaguyak 59	D-2
Kenai 3,533	D-3
Ketchikan 6,994	E-5
Klawock 213	E-5
Kodiak 3,798	D-2
Kotzebue 1,696	B-2
Livengood	B-3
Manley Hot Springs 34	B-3
McKinley Park	C-3
Mekoryuk 249	C-1
Nabesna	C-4
Nenana 362	C-3
Nome 2,488	B-1
Northway Junction	C-4
Ophir	C-2
Palmer 1,140	C-3
Paxson	C-3
Petersburg 2,042	E-5
Petersville	C-3
Point Hope 386	A-2
Poorman	C-2
Richardson	C-3
Ruby 145	B-2
Seward 1,587	D-3
Sitka 3,370	D-4
Skagway 675	D-4
Slana	C-3
Soldotna 1,202	D-3
Solomon	B-1
Sterling Landing	C-2
Talkeetna 182	C-3
Taylor	B-2
Teller 220	B-1
Tetlin Junction	C-4
Tok Junction	C-4
Tonsina	C-3
Valdez 1,005	D-3
Whittier 130	D-3
Wrangell 2,029	E-5

Hunting and trapping are the primary uses of the ~~study~~ proposed segments. This use is very light and is principally associated with the subsistence life styles of a few Native persons residing in the village of St. Marys and possibly neighboring villages along the Yukon. Most of the hunting and trapping takes place during the fall and winter months. At this time the commercial and subsistence salmon catching activities are finished ~~over~~ on the Yukon River, and access into the ~~study~~ proposed segments is available by snowmobile and dog sled.

Commercial Salmon harvesting (other than sport fishing) is not permitted under State regulations in the Andreafsky and East Fork. Subsistence fishing occurs to a small extent in the extreme lower river.

~~Fur harvesting has diminished appreciably since 1969 in the region. Changing local economies and declining fur markets have reduced the relative importance of trapping in the area.~~

Potential

Areas of the Yukon Delta region as well as the Seward Peninsula area to the north were once used as grazing areas for reindeer in the early 1900's. The herds grew extremely large, but due to range limitations and the lack of comprehensive herding practices, the population experienced a "crash" in the early 1940's. Reindeer grazing was discontinued, and the few animals remaining which were not slaughtered integrated with caribou herds in adjacent regions.

Several villages in the lower Yukon region including St. Marys have proposed to reintroduce reindeer into the region at some future time. Specific plans have not been developed for this future use and herding areas and numbers of animals have not been identified. Vegetation on the slopes and ridges adjacent the Andreafsky and East Fork is suitable for reindeer grazing and use of areas adjacent the ~~study~~ proposed lengths may be proposed by Native groups in the future. However, this potential use would be limited by the amount of winter range available in the region; this amount comprises a small fraction of the total regional area. Virtually none of the study river areas would be suitable for winter grazing.

No dams, channel improvements, water diversions, or other water resource projects have taken place or are proposed on the Andreafsky or the East Fork.

Land Ownership

The entire ~~study~~ river drainages are owned by the Federal government and are presently managed by the Bureau of Land Management.

There are applications filed for ~~four~~ three Native Allotments adjacent the Andreafsky ~~study~~ proposed length and for ~~three~~ one Allotment adjacent the East Fork. Each application is for a parcel of land not exceeding ~~120~~ 160 acres. These applications are pursuant to the Native Allotment Act of 1906 and are based on historic subsistence uses of these lands.

No mining claims or mineral leases are known to exist in the river~~s~~ areas.

In The upper ~~20 miles~~ reaches of the main stem 15 miles are in (d)(1) lands. ~~flow through unreserved public domain lands~~. These lands are ~~open~~ closed to appropriations under the public land laws and the U.S. mining and mineral leasing laws except for the location of metalliferous minerals. 10 miles of the Native selection. The ~~downstream 80~~ 60 miles of the ~~study~~ proposed segment have been withdrawn from all forms of appropriation including the mining and mineral leasing laws, under Section 17 (d)(2) of the Alaska Native Claims Settlement Act (ANCSA, P.L. 92-203). The upper 40 miles of the East Fork flows through ~~unreserved public domain lands~~ lands classified under Section 17(d)(1) of ANCSA. The ~~remaining~~ 55 miles of the ~~study~~ proposed segment has been withdrawn under Section 17 (d)(2) of ANCSA (see Figure ___, Land Status). All these lands are being ~~studied by the BSF&W and will be~~ proposed for inclusion in a Yukon Delta Wildlife Refuge.

The lower ~~25~~ 40 miles and 30 miles of the Andreafsky and the East Fork respectively, flow through lands withdrawn under the terms of ANCSA for potential Native selections. Native selections are not, as yet, completed in the area, and the river segment within this potential selection area are not a part of the wild and scenic river ~~study area~~ proposal.

If portions of the Andreafsky or its East Fork are determined to be navigable (see following section), the ownership of the stream bed on such portions would be retained by the State of Alaska.

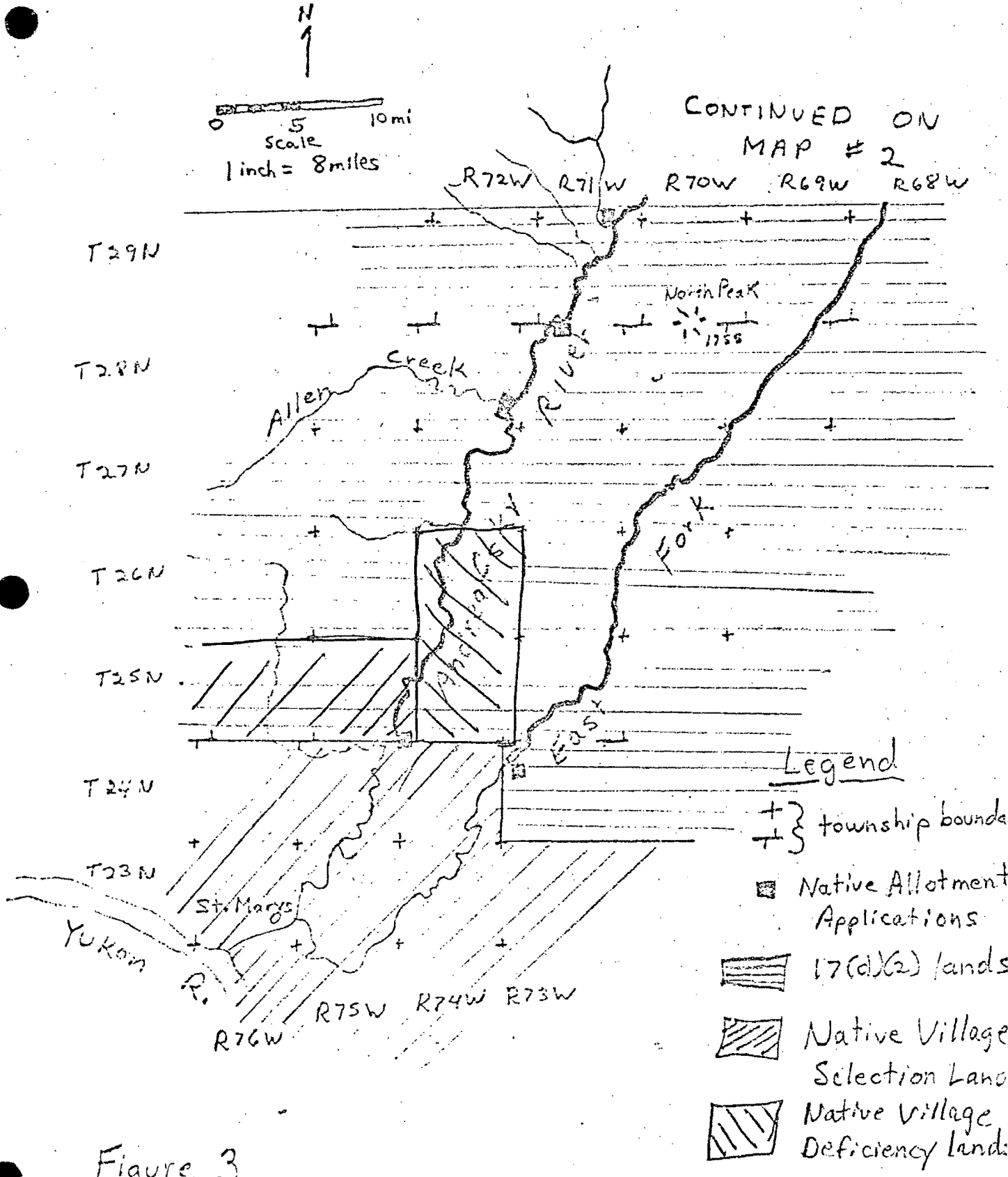


Figure 3

Land Status: Andreafsky River, Alaska

Map #1

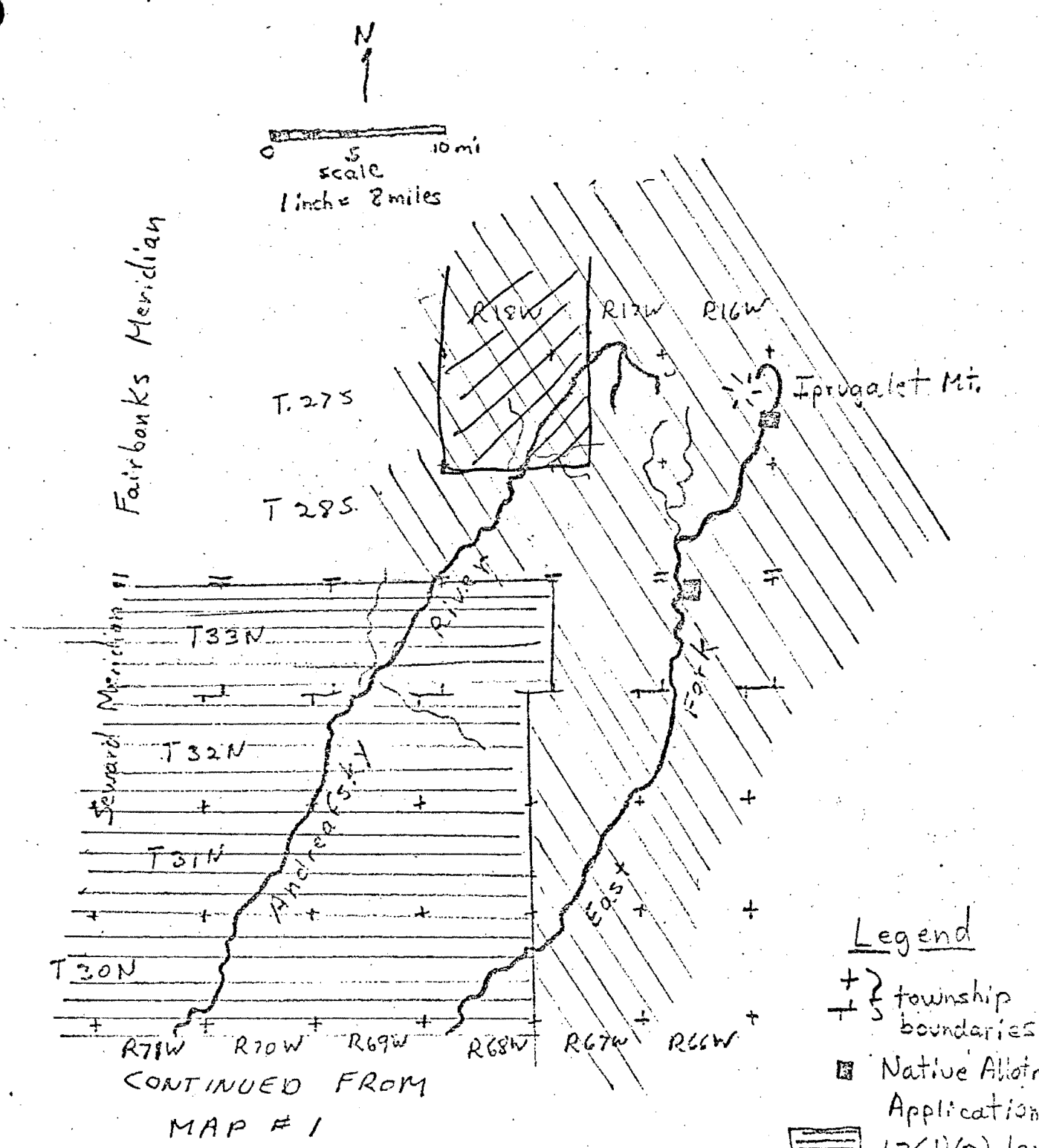


Figure 3
Land Status: Andreafsky River, Alaska
Map #2

Under the Alaska Statehood Act, the state owns the river bottom of all "navigable" streams and rivers. The question of which streams are "navigable" has not yet been determined in Alaska. However, under criteria being developed by the State of Alaska to determine streambed ownership, these rivers would appear to be "navigable" much of their lengths.

~~It is most unlikely that the rivers have been used as "navigable" waterways in terms of trade or the movement of goods.~~ Shallow riffles in the ~~study~~ proposed segments prohibit upstream navigation by ~~motorboats~~ large commercial vessels. ~~No production activities or markets for goods exists in the study segments.~~

Access

Existing

There is no road access to or near any point of the rivers. The nearest segment of the state highway net lies over 400 miles to the east.

Primary access to the ~~study~~ proposed segments is by aircraft and small boat. ~~Although~~ There are no developed airstrips, and very fe gravel bars provide natural landing strips for small planes ~~at many locations~~ along the rivers. In the middle and lower sections of the rivers floatplanes can land on the river in several locations.

Access upriver from the Yukon and St. Marys is possible by motorboats for about ~~25-30~~ 35-40 miles with normal water levels. Thus, the extreme lower reaches of the ~~study~~ proposed segments ~~(5 miles)~~ are accessible by motorboats. Occasional shallow riffles prevent further upstream access. Jet boats and air boats could probably reach the upper river area.

Access during the winter by snowmachine, ATV's or dog sleds is possible.

The village of St. Marys located approximately ~~25~~ 30 and 40 miles below the ~~study~~ proposed segments is served by ~~daily~~ commercial air transportation from Anchorage and Bethel, Alaska. St. Marys is also linked with other villages along the lower Yukon River by a winter trail.

Potential

The Alaska State Department of Highways is currently studying and locating potential routes for future extensions of the state highway system. One such extension would follow the Yukon River, linking the villages of the Delta area with the Fairbanks-Anchorage region. This route would cross the Andreafsky near St. Marys below the ~~study~~ recommended segments, ~~(see Figure __)~~. ~~The road is labeled a~~ "supplemental route" ~~(as distinct from a "trunk route")~~. No feasibility studies have been done for such a road, and it is considered a long-range development by the State Department of Highways.

A ~~similar~~ "supplemental route" is proposed from the Yukon Delta north to Unalakleet. This route approaches the extreme headwaters of the Andreasfsky to within 3 miles but is not located within the drainage.

Soils

The severe winters, short growing and decaying season and low temperatures of the Andreafsky and East Fork river areas result in extremely thin and fragile soils. The soils are generally formed from deep deposits of fine alluvial

[illegible] silts. The surface layers usually are characterized [illegible] undecomposed organic materials which are acidic and low [illegible] nutrients. The organic materials at the soil surface acts both as a sponge and an insulating blanket. Sub-surface horizons are frequently wet and cold. These layers are largely underlain by permafrost which may extend to depths of over 100 feet. Permafrost is generally lacking immediately adjacent the rivers and on favorable south-facing slopes.

When the organic layers are destroyed, the thawed surface layer may reach a depth of several feet during one summer. This thawing process can result in serious soil destruction and terrain damage. Such damage is extremely slow to heal due to slow growth of vegetation and soil building processes.

The fine alluvial or eolian materials on which the soils are formed are conducive to rapid erosion when unprotected by vegetative cover. Streambanks may be cut or rapidly altered during periods of high water.

With respect to agriculture, the soils are generally infertile, particularly in the tundra areas. The harsh climate further excludes the potential for economic crop production.

Vegetation/Timber

Major vegetation types identified for the river areas include closed spruce-hardwood forest and alpine tundra (Alaska Trees and Shrubs, U.S. Department of Agriculture, Forest Service, Handbook No. 410.).

Similar to Interior Alaska, fire plays an important part in plant communities and forest succession in these river areas.

PRELIMINARY

BOR/ATF
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Ambler River, Alaska

Based upon office research of available information and an aerial reconnaissance performed in June 1972, it appears that the Ambler River meets the criteria for inclusion in the National Wild and Scenic Rivers System in that:

- The river is in a free-flowing natural condition.
- The river, in its entirety, is of sufficient length to provide a meaningful experience to the river user.
- There is sufficient volume of water during normal years to permit, during the recreation season, full enjoyment of water related outdoor recreation activities.
- The river and its immediate environment possess outstandingly remarkable values.
- Water quality is good.
- The river and its immediate environment are capable of being managed to protect and interpret special values and protect the user.

The Ambler River heads in the Schwatka Mountains of the Brooks Range at Nakmaktuak Pass and flows in a southeasterly direction for 75 miles to its confluence with the Kobuk River, approximately 130 miles east of Kotzebue.

Outstanding values of the Ambler include its scenic, fish and wildlife and recreational resources. The river flows through a true "wilderness" environment in a relatively inaccessible region of North America. The steep mountains rise abruptly from the narrow river corridor in the upper reaches and throughout the reach mountains are visible from the river in all directions. The river character changes from whitewater in the upper reaches, through multi-braided channels, to extensive meanders with many oxbow lakes and ponds nearby in the Ambler lowland. Spruce, birch, willows and alder border the river below 2,000 feet in elevation.

The Ambler is a salmon spawning area and wildlife in the region includes moose, caribou, Dall sheep, grizzly bear, wolf, lynx, fox, wolverine, beaver and marten.

Existing and potential opportunities for wildlife and nature photography, hunting, fishing, backpacking, rafting, canoeing and, in the lower reaches, power boating are some of the recreational values of the river corridor.

Access to the Ambler is by power boat from the Koluk or by light aircraft. The State of Alaska has a proposal for a road in their 20-year program which may cross the river in the Ambler lowland if constructed.

There are no hydroelectric power sites on the Ambler. There is, however, a potential hydro-site on the Kobuk below the mouth of the Ambler which, if constructed, would

affect the lower reaches of the Ambler River.

It has been reported by the U.S. Geological Survey in a 1921 bulletin that gold was discovered in the Ambler Basin by James Cross and Harry Brown early in this century and that at least $1,000 was taken out during the summer of 1919. There is no information on any recent mining activity in this area.

The Metallic Mineral Resources Map of the Ambler River Quadrangle which was compiled in 1972 by Edward Cobb indicates no metallic mineral resources within the Ambler River study corridor. The only reported location of mineral resources in the Ambler drainage is a nickel lode deposit on Miluet Creek, a tributary which flows into the Ambler approximately 4 miles above its confluence with the Kobuk River.

An interagency study team is being formed to study the Ambler River. During the winter months the study team will be collecting data and preparing a report on the scenic, fish and wildlife, recreational, geologic, historic, cultural and other similar values of the area. Next August the study team is tentatively scheduled to conduct a field evaluation of the Ambler River. A detailed report will be prepared at the conclusion of the study for submittal to the Secretary of the Interior.

Of the total 75 mile length, the first 25 mile reach was withdrawn under provisions of section 17(d)(2) of Public Law 92-203 in March 1972. This reach extends from the source in Nakmaktuak Pass to approximately 4 miles south of the confluence of Ulaneak Creek. Below this point the Ambler flows through unreserved public land for 12 miles. The lower 38 mile reach of the river flows through lands classified as Native Village Withdrawals.

The study team will concentrate on the area within the (d)(2) withdrawal and the unreserved public lands. They will not, however, study that segment of the Ambler which lies within the Native Village Withdrawal unless the NANA Regional Corporation requests and indicates a willingness to fully participate in this comprehensive study effort.

Should the Native corporation request that the study effort include the lower 38 mile river reach, and designate a member of the corporation to serve as a member of the study team, the entire river will be studied for possible inclusion in the National Wild and Scenic Rivers System.

In the event that the NANA Regional Corporation determines that it is not in the best interest of the Natives, the study team will restrict its efforts solely to those lands along the river which lie outside of the Native Village Withdrawal.

In order for the Ambler to qualify for inclusion in the national system, it appears at this time, that the entire reach must be recommended. The 37 mile reach within (d)(2) and open public land may not be of sufficient length to be considered nationally significant and warrant inclusion in the national system. This determination will be made upon completion of the study.

If the entire river were to be included in the national system, management would be the joint responsibility of the Federal government and the NANA Regional Corporation.

5 JANUARY '73

Mr. Clay Hardy

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

D4225 Alaska
(W&SRS)

TO : Assistant Director Eastman

DATE: May 21, 1973

FROM : Alaska Task Force Leader

SUBJECT: Ambler Wild and Scenic River Report

Enclosed are two copies of a preliminary draft of Chapters IV and V of the subject report. A copy of this report has been provided to NWRO and BLM, BSF&W, NPS and FS planning teams in Anchorage. Chapter IV ~~will~~ be distributed to study team participants.

It is emphasized that the conclusions and recommendations are based upon a single aerial examination of June 14, 1972, and upon office review of available information. On-site field examination is scheduled for this summer.

Following field work, the preliminary draft will be revised as appropriate and the remaining portions of the report completed.

for/ Jules V. Tileston

2 enclosures

cc: WASO/Fred Strack

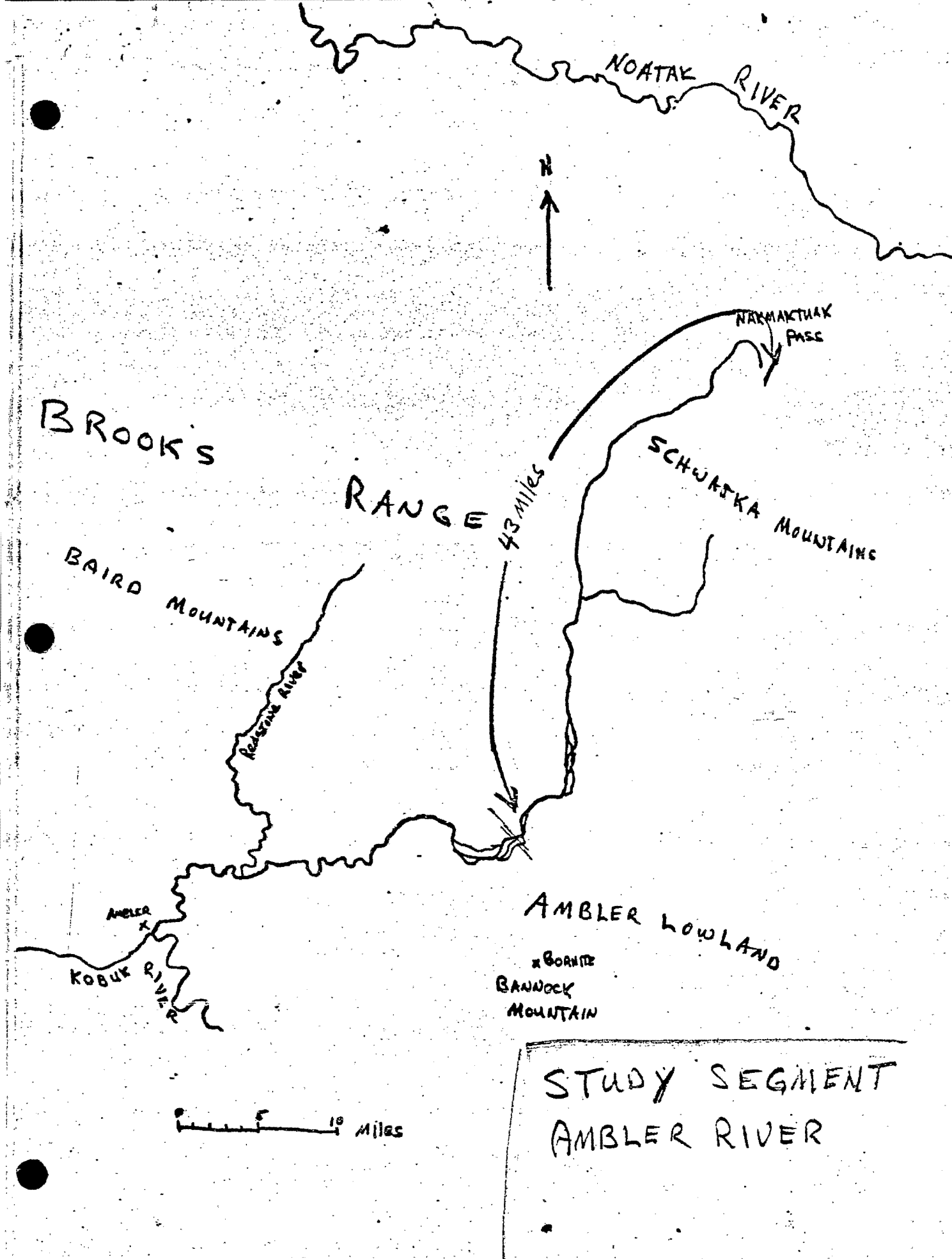
IV. DESCRIPTION AND ANALYSIS

River Setting

The Ambler River heads in the Schwatka Mountains of the Brooks Range at Nakmaktuak Pass and flows in a southeasterly direction for 75 miles to its confluence with the Kobuk River, approximately 130 miles east of Kotzebue.

Originating above the timberline, the river traverses primitive country which is as yet unaltered by man. The clearwater stream flows through a narrow valley and stretches of whitewater are not uncommon in the first 20 miles. Below 2,000 feet the river valley is forested while the steep mountains so close at hand are not. At the confluence of Ulaneak Creek the valley broadens and, 8 miles below the confluence, the river begins to braid. The main channel is readily apparent through the braided segment. A mile and a half below Naniratkohort Creek the braiding ends and the Ambler resumes its flow in one channel as it meanders through a broad flood plain to its confluence with the Kobuk.

The study segment begins at the source and extends 43 miles to the eastern limit of T. 21 N., R. 8 E. of the Kateel River Meridian at which point the Ambler passes into land withdrawn under provisions of the Alaska Native Claims Settlement Act (ANCSA) as a "Native Village Withdrawal."



STUDY SEGMENT
AMBLER RIVER

The Ambler River drains a terrane that is largely made up of carbonate rocks, and the river gravels are mostly derived from the carbonate units. The carbonate rocks do not support as much vegetation as the more iron and mineral-rich pelltic and metamorphic rocks in adjacent drainages. Consequently, the gravel bars and stream terraces of the Amblerk River valley are more free of the choking brush and swampy sloughs than is typical of this part of the Brooks Range. This greatly increases the scenic values of the river, and also results in the gravel bars being relatively free from mosquitoes and black flies during the summer months. Apparently, these pesty insects prefer the more brushy areas and the tundra to the broad, white gravel bars along the Ambler River-

The headwaters of the Ambler rise at approximately 3,600 feet above sea level and the lower end of the study reach is just over 200 feet in elevation. The gradient within this 43 mile river segment is 92 feet per mile. This is a misleading figure, however, as within the first 10 miles in the headwaters the river drops 2,600 feet for an average gradient of 260 feet per mile. Below the first 10 mile reach, the study segment has an average gradient of less than 22 feet per mile, not nearly as steep as the overall average indicates.

Stream Flow

There are no gaging stations on the Ambler River; therefore, stream flow data are nonexistent. Maximum discharge of the river occurs after spring breakup as a result of snow melt. High water levels can also occur during the summer after extensive rains. Generalized relative runoff estimates indicate that peak monthly runoff occurs in early June with late June through August not far behind, dropping rapidly from September to November. Minimum runoff occurs from December through April.

Water Quality

There have been no water quality studies performed on the Ambler River; consequently, there are no data available to compare with water quality standards. The Ambler does however meet the "Aesthetics-General Criteria" developed by the National Technical Advisory Committee on Water Quality, FWQA, Water Quality Criteria, April 1, 1968. There are no known sources of chemical or biological pollution on the Ambler or any of its tributaries.

In discussing water quality, Sec. 12(c) of the Wild and Scenic Rivers Act states that:

> "The head of any agency administering a component of the National Wild and Scenic Rivers System shall cooperate with the Secretary of the Interior and with the appropriate state water pollution control agencies for the purposes of eliminating or diminishing the pollution of waters of the rivers."

Sec. 9(a) of the same Act also directs the administering Secretary to issue mining regulations which " . . . shall among other things, provide safeguards against pollution of the river involved . . . "

Water quality standards are being revised in accordance with latest regulations and guidelines resulting from the enactment of the Federal Water Pollution Control Act Amendments of 1972.

Land Use

Land use patterns along the Ambler River have changed little over time. There are no developed areas along the river with the exception of a few cabins in the lower reach within the Native Village Withdrawal.

The river is used fairly extensively by the natives of the area for subsistence hunting and fishing. A portion of the Arctic caribou herd winters along the lower Ambler.

There are no mineral claim locations within the study corridor. Placer gold mining is reported to have taken place in the Ambler valley and the lower 50 miles is within the important metallogenic belt that includes the major copper discovery at Bornite.

Within the study corridor there have been no commercial timber harvests in the past. The forests along the river occur in stringers and are not considered of commercial value.

Water Resource Developments

There are no existing, authorized or proposed water resource development projects within the Ambler River basin.

Below the mouth of the Ambler there is a potential hydroelectric power site on the Kobuk River. If constructed as proposed, this $180,000,000 project would create a reservoir with a maximum surface elevation of 150 feet. Although it would not affect the study corridor, it would inundate the lower Ambler valley, the metallogenic belt, and the village of Ambler.

Land Ownership

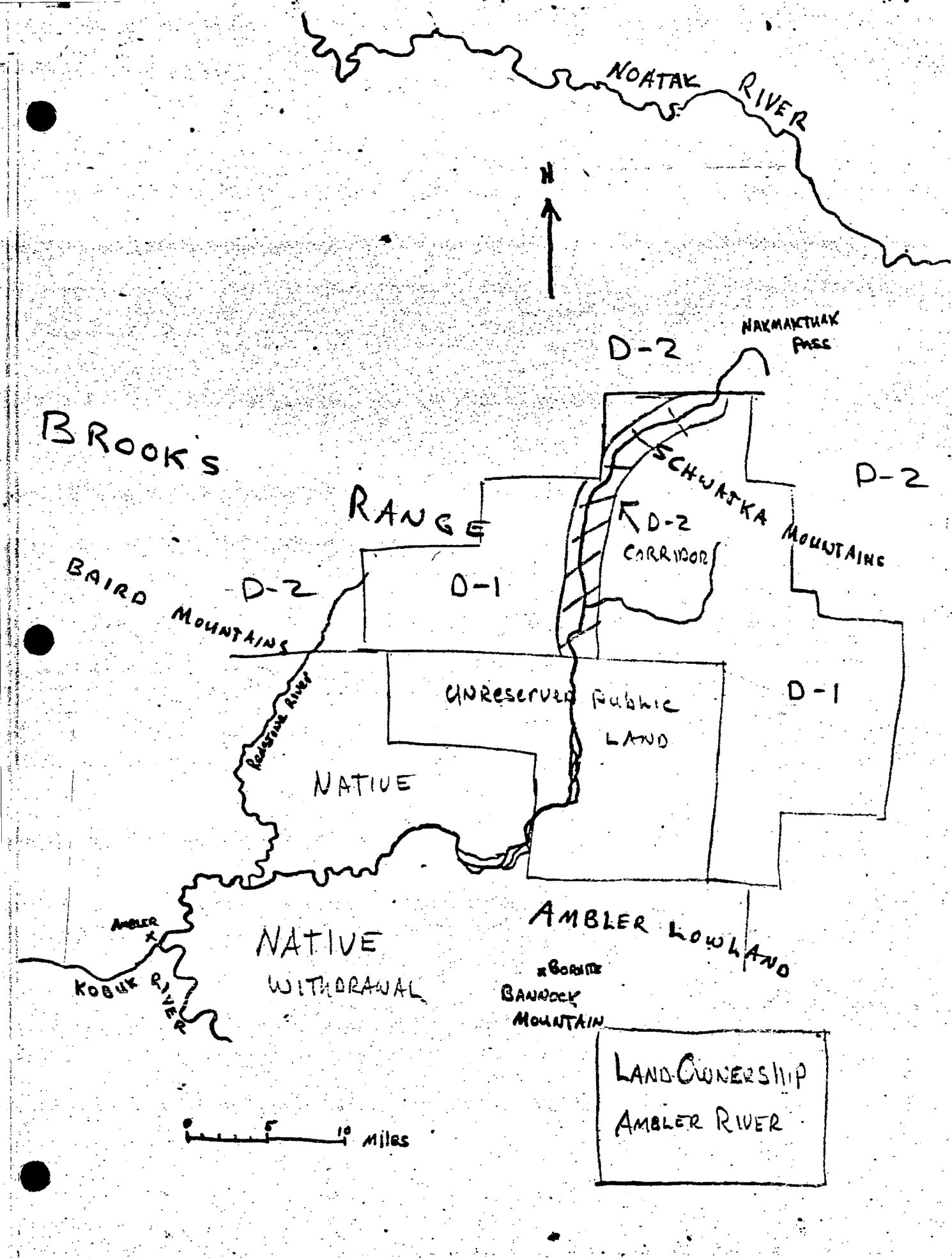
Generalized land status for the Ambler River from its source is as follows:

Initial 7 miles (9 percent) - Withdrawn as a large block of land under Sec. 17(d)(2)

Next 24 miles (32 percent) - Withdrawn as a 2-mile wide corridor under Sec. 17(d)(2) adjoined by land classified under Sec. 17(d)(1) as "public interest" land

Next 12 miles (16 percent) - Unreserved public domain land open to entry and settlement under the various homesteading and land laws.

The lower 32 miles (43 percent) - Withdrawn for potential Native selection


NOATAK RIVER
N
NAKMAKTUAK PASS
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BROOKS
RANGE
SCHWATKA MOUNTAINS
D-2
D-2 CORRIDOR
BAIRD MOUNTAINS
D-2
D-1
UNreserved Public LAND
D-1
REDSTONE RIVER
NATIVE
AMBLER
KOBUK RIVER
NATIVE WITHDRAWAL
AMBLER LOWLAND
BORITE
BANNOCK MOUNTAIN
5
10 Miles
LAND OWNERSHIP
AMBLER RIVER

All of the river area is presently administered by the Bureau of Land Management. There is no private land owenrship within the upper 43 miles of the Ambler River. There are several Native allotment applications pending under the "1906 Native Allotment Act" along the lower 32 mile segment withdrawn for potential Native selection. Final adjudication of these applications has not been made by the Bureau of Land Management.

Federal land managing agencies expressing interest in the upper 43 miles (57 percent) of the Ambler River area are the Bureau of Land Management and the National Park Service.

Water Rights, Navigability and Riverbed Ownership

There are no adjudicated water rights within the reach of the Ambler which is under study.

The State of Alaska, under the Alaska Statehood Act, owns the streambeds of all "navigable" waters of the State.

Under criteria being developed by the State of Alaska to determine streambed ownership, the lower Ambler River would appear to be "navigable." A careful review of available information points out that it is most unlikely that the Ambler River has been used as a "navigable" stream in terms of movement of commerce or trade. The river is navigable by small riverboats in the lower reaches.

The U.S. Army, Corps of Engineers, does not consider the Ambler a "navigable" stream. As of the date of this writing, streambed ownership has not been determined.

Evidence collected in this study indicates that there generally is sufficient water volume to permit pleasurable recreation experience in canoe or kayak.

Access

Existing

The Ambler is not road accessible, Access may be gained by light aircraft as there are many gravel bars in the study reach suitable for landing small planes. The river is also accessible by small riverboat from the Kobuk River.

Potential

Other possible means of access include ATV use overland, snowmachine during the long winter months, or by the traditional dogsled. The state is considering construction of a road from Kobuk to Barrow; tentative plans indicate the road would traverse the Ambler lowland and cross the river below the study segment.

Geology and Soils

Geology

The physiographic divisions through which the Ambler flows are the "Baird Mountains" and the "Ambler-Chandalar

Ridge and Lowland" as defined by the U.S. Geological Survey.

The headwaters rise in moderately rugged mountains having rounded to sharp summits. These mountains were centers of glaciation in Pleistocene time. As the river flows south into the lowlands it passes ridges composed in part of massive greenstone. The lowlands are underlain largely by cretaceous sedimentary rocks folded into synclines. Pleistocene glaciers from the Brooks Range extended across the lowland and through passes in the line of ridges. This area today contains no glaciers but is underlain by continuous permafrost.

Soils

Soils in the headwaters of the Ambler consist of shallow rubble and sandy gravel. These soils occur principally in glacial and colluvial deposits associated with rugged, steeply sloping mountain areas. Soils along the lower study segment are deep silty, sandy gravel with boulders. The valley appears to hold little potential for agriculture.

Vegetation

Closed spruce-hardwood is the dominant forest type along the Ambler River. The best stands of white spruce are found on the warm, dry, south-facing hillsides and adjacent to the river where drainage is good. The forest

occurs in stringers along the river in the lower river segment. Associated with white spruce are paper birch, balsam poplar, bearberry, red current, prickly rose, several willows, mountain-cranberry and bog blueberry.

This region of Alaska is subject to extensive fires. In general, fires or surface disturbances where at least some topsoil is left are first covered with light-seeded willows, prickly rose, labrador-tea, dwarf blueberry and mountain cranberry.

Following the willow stage, fast growing quaking aspen stands develop in upland areas on south-facing slopes. After 60 to 80 years quaking aspen are replaced by white spruce in all but the dryest conditions. If the disturbance or fire occurs on well drained lowland river terraces, the quaking aspens are often replaced by black spruce. Other plants commonly associated with the quaking aspen type are white and black spruce, several willows, bearberry, prickly rose, buffaloberry and mountain-cranberry.

If the fire or surface disturbance occurs on east or west facing slopes (and occasionally on north-facing slopes and areas of low relief) the paper birch type is the initial tree community. Paper birch stands may be in pure stands but are more often in mixed stands of black and white spruce. Understory plants are commonly labrador-

tea and mountain cranberry.

The headwaters of the Ambler are above timberline and the major vegetative type is alpine tundra. Interspersed between bare rocks and rubble are low root plants, both herbaceous and shrubby. Low roots of white mountain-avens are dominant along with many root forming herbs such as moss-campion, black oxytrope, arctic sandwort and several grasses and sedges.

Wildlife and Fishery

Wildlife

Black bear are present in the Ambler drainage. Their distribution coincides with forest distribution although they also use subalpine and alpine areas seasonally.

Grizzlies reside in the area and reports from residents and limited surveys indicate that population levels are moderate to high in the game management unit surrounding the Ambler River relative to much of the interior of Alaska. Grizzlies are sometimes hunted for food by the Natives.

Wolves range throughout the Ambler watershed. Their distribution seems to be strongly affected by caribou movements through the area, especially during the fall. Both moose and sheep are available in addition to caribou and these species constitute important food sources. Wolves are actively hunted by local residents and by guided hunters.

Wolverines, like wolves, range throughout the area and their distribution is also strongly affected by the distribution of large ungulates, which provide a substantial portion of the carrion they rely upon. Wolverines occupy both forested and tundra areas, provided food is available.

Barren ground caribou in the Ambler drainage consists of a portion of the arctic herd. In most winters the arctic herd winters south of the Brooks Range, very often along the lower Ambler River. One of the fall migration routes is down the Ambler River valley from the north. The popuation of the arctic herd was estimated at 300,000 in 1964. In 1970 an aerial photographic census gave a minimum population estimate of 242,000.

Wintering area, calving grounds and major migration routes are critical habitat areas for all caribou herds. From the winter range, which includes the Ambler lowlands, the herds return to the calving area, usually beginning in March, and follow river valleys and pass through the Brooks Range. Variation in weather and snow depth cause variation in the progress of spring migration, and calving may occur before the calving ground is reached. This occurred in 1962 and again in 1972.

The critical habitat area important to the arctic herd including the migration routes through the Ambler River valley have thus far been protected primarily by their remoteness.

Dall sheep abundance in the Brooks Range is little known as a result of logistics problems. It is known that Dall sheep are present in the mountains surrounding the upper reaches of the Ambler River. Subsistence hunting is known to occur and sport hunting by both residents and non-residents has increased since the 1940's. The trend in number of hunters and sheep harvest will probably continue upward. Because only three-fourths curl rams have been legal game, the only obvious population change due to hunting has been lower percentages of legal rams in the herd.

Photography and hiking in the Brooks Range are becoming more popular each year, with Dall sheep one of the attractions for this type of use.

Moose apparently were scarce or absent in this area until 50 to 75 years ago. Presently they are found throughout the Ambler drainage, except for the higher elevations, with concentrations along the major streams. Moose appear to be both expanding their range and increasing their numbers and have become an important source of meat in early fall.

Limited aerial surveys and field observations suggest low populations in most of the area. Moose are dispersed throughout timbered regions. In timber areas they concentrate in winter along the river where riparian willow stands provide food.

Waterfowl are found along the lower Ambler River valley. Breeding pair counts, in the game management unit within which the Ambler River lies; suggest an average of 44 ducks per square mile of suitable habitat. Pintail, greater and lesser scamp and widgeon comprise about two-thirds of the breeding population.

Rare and Endangered Species

The American peregrine falcon (*Falco peregrines anatum*) is the only species found along the Ambler which is listed in the Department of the Interior's 1966 "Red Book of Rare and Endangered Species." The peregrine falcon is listed as rare.

Fishery

The Ambler River is a spawning stream for chum salmon. In addition the river also supports sheefish, round whitefish, humpback whitefish, least cisco, grayling, northern pike ;

arctic char, burbot, suckers, and sculpins. It is good sport fishing for grayling and arctic char.

History

Little is known of history in the Ambler River basin. It has been reported in a 1921 bulletin that gold was discovered in the Ambler basin by James Cross and Harry Brown early in this century and that at least $1,000 was taken out during the summer of 1919. There is no information on the specific location of the discovery nor any reports of discoveries since that year.

The Ambler River in its upper reaches remains a remote and primitive wild river area where evidence of man's activity is conspicuous by its absence. In its lower reaches, where the river flows through lands withdrawn for Native selection, subsistence use by Natives is evident. A new village was established by Natives in the late 1950's on the river near its mouth. This village was appropriately named Ambler.

Recreation

Resources

The Ambler River is an excellent recreational resource offering outstanding scenic vistas, sport fishing, canoeing and camping opportunities in a truly primitive setting. The river flows through a wilderness environment in one of the more remote and inaccessible regions of the North

American continent. Steep mountains rise abruptly from the narrow river corridor in the headwaters area and throughout the river study reach mountains are visible from the river in all directions.

The river character changes from whitewater in the upper reaches, through multi-braided channels to extensive meanders with many oxbow lakes and ponds nearby in the Ambler lowland.

The Ambler is a salmon spawning area and wildlife along the river include moose, caribou, Dall sheep, grizzly bear, wolf, lynx, fox, wolverine, beaver and marten. The animal life and their ecological communities are available for interpretation.

Existing Use

Although an outstanding resource, existing recreational use is minimal due to lack of easy access and the friction of distance between the river and major population centers. There is some fly-in hunting and fishing but this use is exceptionally light.

Potential Use

The area has potential for sport fishing as the Ambler is a salmon spawning stream and hosts several sport fish.

The river is a superlative canoeing stream. The gravel bars and stream terraces of the river valley are not

choked with brush as are most rivers in this section of Alaska. Consequently, the gravel bars are relatively free of the ubiquitous mosquitoes and black flys. This factor makes for a much more enjoyable canoeing experience.

The wildlife, clearwater and scenic qualities of the river valley provide subjects for the nature photographer and sightseer. Hiking opportunities along the river, up the side drainages and into the foothills of the mountains are available to the backpacker.

Primitive camping, associated with the above activities, can also serve as an activity in itself as more and more city dwellers are seeking solitude and quiet in a remote, primitive region. There are numerous opportunities for camping along the river. The gravel bars are excellent for this purpose.

Limitations

The climate of the Ambler valley limits recreational use. The river is frozen from October through May. Winters are quite cold and long. The average annual temperature is 20 degrees F. with winter lows of nearly 60 degrees below zero.

Recreational use is also limited by the lack of easy access. Only those who can arrange to fly into the river valley or who can boat upstream from the Kobuk can readily utilize the resource.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The conclusion of this study is that the entire Ambler River and its immediate environment possess values which qualify for inclusion in the National Wild and Scenic Rivers System.

Careful review of available information together with on-site inspection shows that:

- The river is in a free-flowing natural condition.
- The entire river is of sufficient length to provide a meaningful experience to the river user.
- There is sufficient volume of water during normal years to permit full enjoyment of water-related outdoor recreation activities.
- The river and its immediate environment possess outstandingly remarkable scenic, aesthetic, wildlife, and recreational resources.
- Water quality is good and meets the "Aesthetics - General Criteria" as defined by the National Technical Advisory Committee on Water Quality in the Federal Water Pollution Control Administration's Water Quality Criteria, April 1, 1968.
- The river and its immediate environment are capable of being managed to protect and interpret special values and protect the user.

- The wildlife, mountains, river character, and the primitive setting of simple vastness offer spectacular recreation opportunities. Limited hunting and fishing are presently the only major recreational activities along the Ambler River; however, potential exists for many forms of outdoor recreation. The river offers an exceptional experience for skilled canoeists and kayakers in the upper reaches and river boats in the lower reaches. The immediate environment offers splendid scenery for the hiker or photographer. Sightseeing, nature study, and camping in a primitive environment are also activities for which the Ambler River valley offers outstanding opportunity.
- The recreation opportunities, both existing and potential, in the Ambler River corridor are distinctive. The values of the Ambler River are not duplicated by any of the 39 other Alaskan free-flowing rivers identified by the Bureau of Outdoor Recreation as having high potential for inclusion in the National Wild and Scenic Rivers System.
- Although the entire river qualifies for inclusion in the national system, land ownership of the lower 32 miles has not been adjudicated. The

middle reach of 12 miles has not been withdrawn under provisions of ANCSA and remains unreserved public land. Only the upper 31 miles of the Ambler River has been withdrawn under Sec. 17(d)(2) of P.L. 92-203.

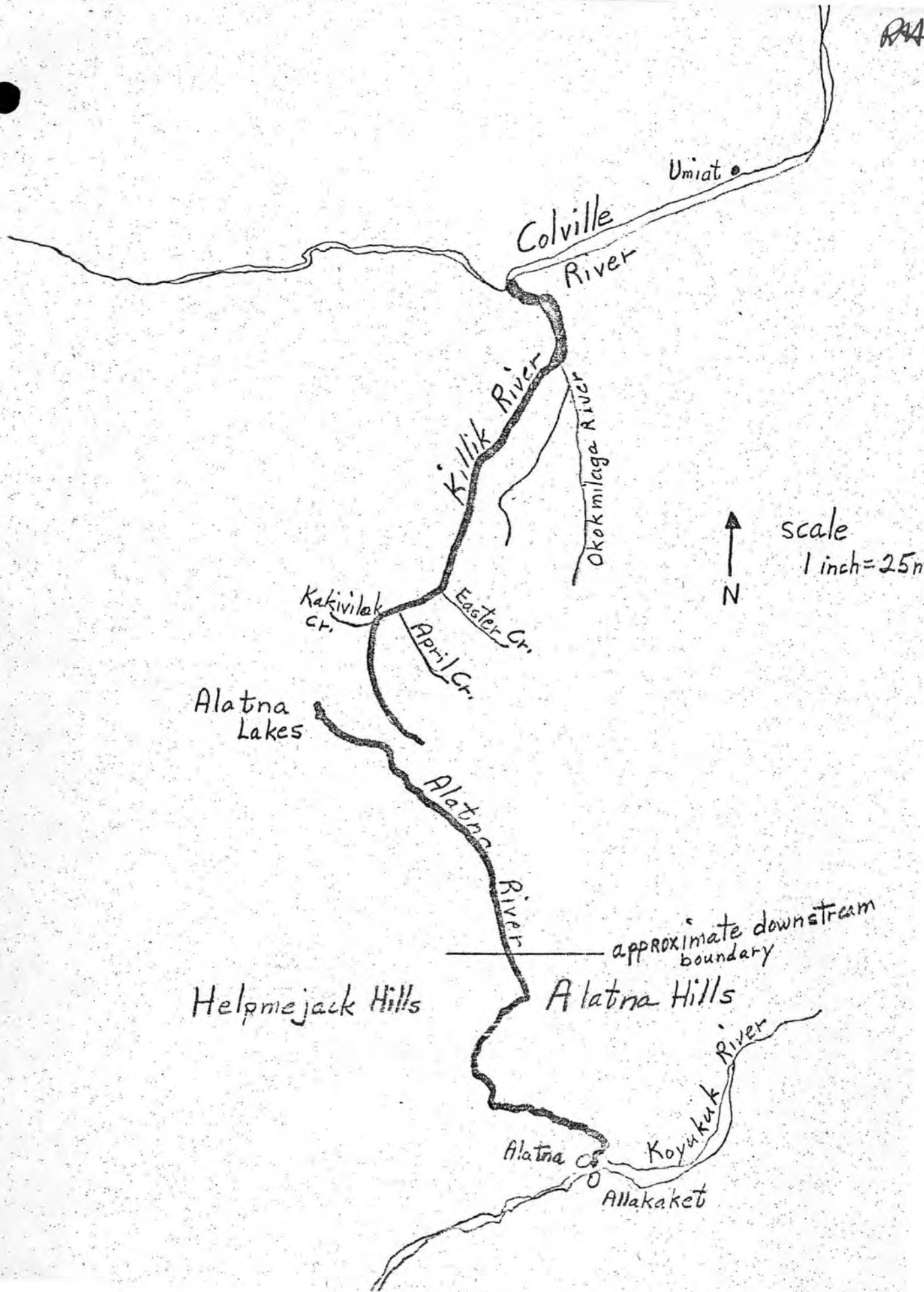
- It is doubtful whether the upper segment of the Ambler River which is in Federal ownership would be a viable unit for inclusion in the Wild and Scenic Rivers System.

Recommendations

It is recommended that:

- The Ambler River not be included in the National Wild and Scenic Rivers System until such time as the status of the lower 32 miles withdrawn for potential Native selection has been determined for the entire river area.
- A two-mile wide corridor along the upper 43 miles of the Ambler (57 percent) including the 12-mile segment flowing across unreserved public domain be retained in Federal management and administered in a manner to maintain its existing primitive character pending final determination of the ownership of the downstream area.

- Federal portions of the Ambler's immediate environment be managed by the Federal agency having primary responsibility for the adjacent area.
- The Bureau of Land Management and National Park Service work with the downstream Native landowners to explore the feasibility and desirability of developing a comprehensive plan for the entire river area to help maintain existing values and preserve the cultural heritage and life style of local residents.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OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

D4225 Alaska
(W&SRS)

TO : Assistant Director Eastman

DATE: May 30, 1973

FROM : Alaska Task Force Leader

For your review & comments

SUBJECT: American Creek Wild and Scenic River Report

Enclosed are two copies of a preliminary draft of Chapters IV and V of the subject report. A copy of this report has been provided to NWRO and BLM, BSF&W, NPS and FS planning teams in Anchorage. Chapter IV will be distributed to study team participants.

It is emphasized that the conclusions and recommendations are based upon a single aerial examination of October 31, 1972, and upon office review of available information. On-site field examination is scheduled for this summer.

Following field work, the preliminary draft will be revised as appropriate and the remaining portions of the report completed.

Jules V. Tileston

2 Enclosures

cc: WASO/Fred Strack

AMERICAN CREEK, ALASKA

A Wild and Scenic River Analysis

THIS REPORT WAS PREPARED PURSUANT TO PUBLIC LAW 90-542, THE WILD AND SCENIC RIVERS ACT. PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THE REPORT IS TO PROVIDE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF OUTDOOR RECREATION, THE SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AGENCIES.

PRELIMINARY

Bureau of Outdoor Recreation
Alaska Task Force

May 25, 1973

PRELIMINARY DRAFT---
NOT FOR PUBLIC DISTRIBUTION OR PUBLIC USE
---SUBJECT TO REVISION

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

American Creek meets the criteria for inclusion in the National Wild and Scenic Rivers system in that:

- The river is free-flowing.
- The river and its immediate environment possess outstandingl remarkable values.
- There is sufficient volume of water to permit full enjoyment of these values.
- The river is of sufficient length to provide a meaningful high quality recreational experience.
- Water quality is excellent.

The river and its immediate environment are capable of being managed to protect and interpret special values and protect the user.

The special values and resources of American Creek include the following:

- The 55 mile long river, its immediate environment, and the source lakes are pristine and untouched in character. No habitation, lumbering, mining, or other development is presently taking place in the river area.
- American Creek (and its west branch) provide spawning habita for as much as 60% of the red salmon escapment in the Naknek River system. The red salmon production in American

Creek is a significant contribution to the Bristol Bay red salmon commerical fishery and the local and state economy. The river and its source lakes are exceptional cold water fisheries and offer excellent sport fishing for rainbow trout, grayling, arctic char, (and/or Dolly Varden) and lak trout.

- The scenic qualities of the American Creek area are exceptional. Glacial features, lofty mountains, a variety of vegetation patterns and colors, transparent alpine lakes, and an extended narrow gorge.
- The river is an exceptional whitewater boating and rafting stream. Almost its entire length swift currents and extended stretches of rapids provide challenges to the advanced boatsman.
- Big game animals are abundant in the river area. Concentrations of brown bear and moose along the river provide excellent wildlife photography and nature study opportunities.
- The wide variety of vegetation types found along the river, offers outstanding opportunities for scientific study.
- Aircraft presently is the only practical means of access to the river area.

- The entire river is presently owned by the federal government and, except for the lower one mile within Katmai National Monument, managed by the Bureau of Land Management. A block of land surrounding the entire river drainage is withdrawn under Section (d)(2) of ANCSA.
- No water resource projects have taken place or are proposed for the river.
- No significant potential for mining or lumbering development has been identified.
- Some subsistence hunting and trapping uses by Native peoples is taking place along the river.

Recommendations

- It is recommended that the entire 55 miles of American Creek along with the west branch and Hammersly and Murray Lakes be included in the National Wild and Scenic Rivers System by Congress.
- It is recommended that the 65 mile long river system be managed by the National Park Service, because of the river's proximity and interconnection with the drainage and eco-systems of Katmai National Monument.
- It is recommended that the river system be classified as a "wild river area" as defined in Section 2 (b)(1) of the Wild and Scenic Rivers Act:

"Wild River areas -- Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines, essentially primitive and waters unpolluted. These represent vestiges of primitive America."

- It is recommended that boundaries of the wild river area include Murray Lake in the headwaters in T. 16 S., R. 35 W., (Seward Meridian), to its confluence in T. 16 S., R. 38 W., (Seward Meridian). Precise lateral boundaries should be determined by the National Park Service within one year of inclusion of American Creek in the national system by Congress. In general, lateral boundaries should not exceed an average of 1 mile to either side of the river.
- It is recommended that approximately 60,000 acres of the immediate river environment be included in the National System.
- Should all or a substantial portion of the recommended American Creek wild river area be included within an extension to Katmai National Monument under the management of the National Park Service, it is recommended that separate legislation to include American Creek in the National Wild and Scenic Rivers System not be pursued.
- It is recommended that, subject to valid existing rights, the minerals in Federal lands which are made part of this wild river area be withdrawn from all forms of appropriation

under the the mining laws and from operation of the mineral leasing laws. Minerals (including oil and gas) have not been identified within the immediate river environment in commercially exploitable amounts. However, even small "try-your-luck" prospecting and extraction activities could seriously detract from the existing primitive values of the river environment.

It is recommended that any traditional Native subsistence uses of the river and its surroundings be protected by the administering agency in order to help preserve the cultural heritage and lifestyle of local inhabitants.

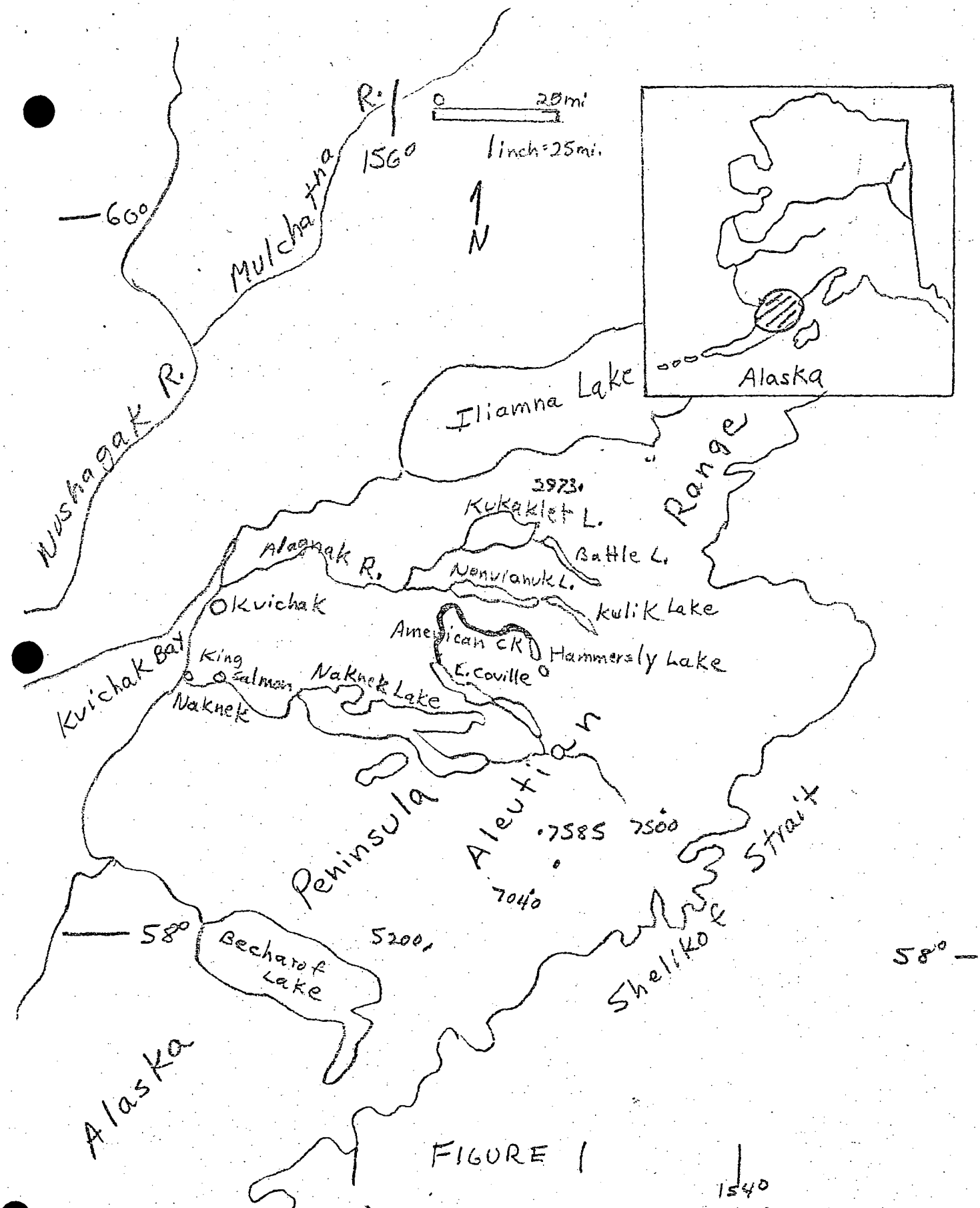


FIGURE 1

Location Map; American Creek, AK.

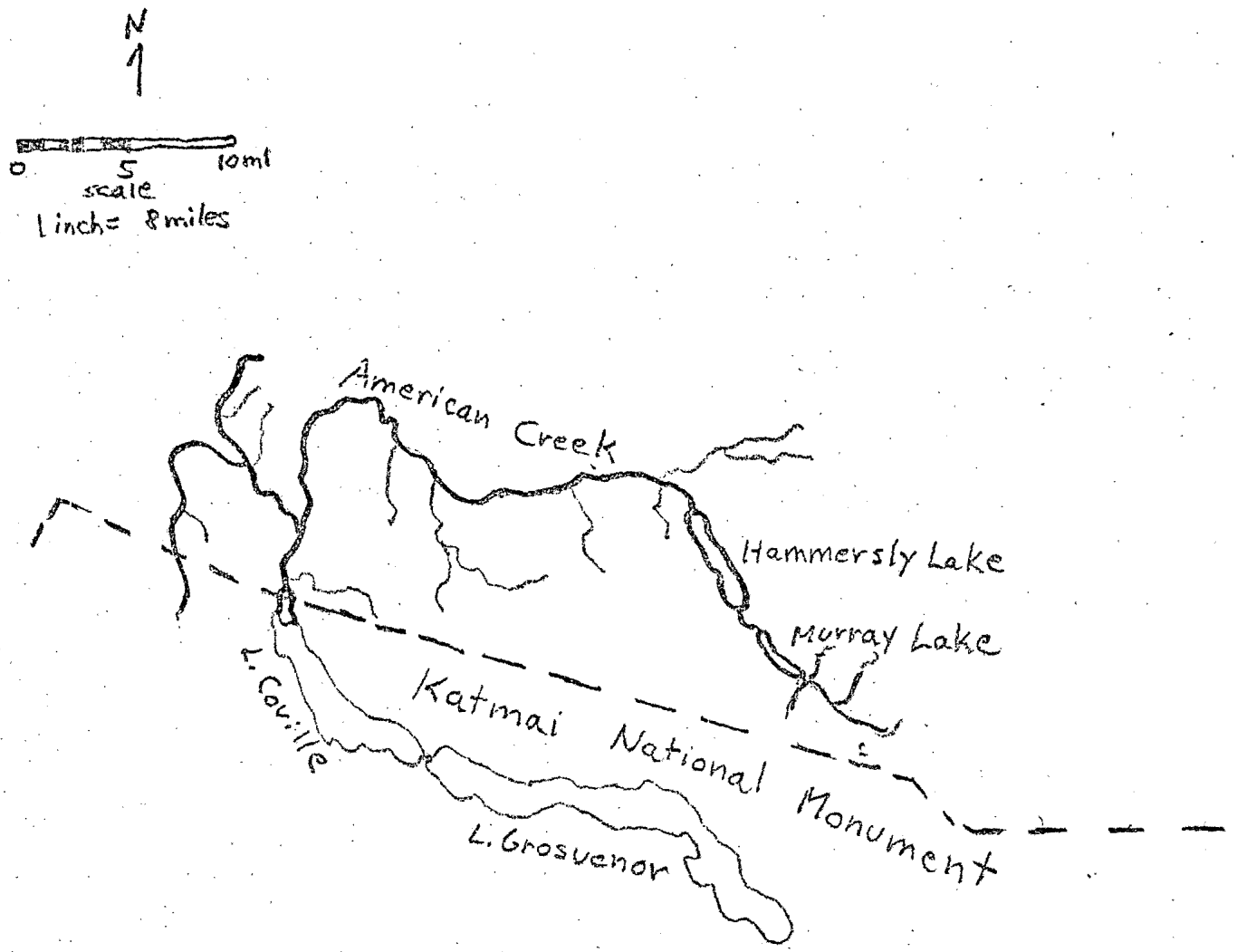


Figure 2 The Proposed American Creek Wild River

I. DESCRIPTION AND ANALYSIS

The River and its Setting

American Creek is a part of the extensive Naknek River and lake system located at the head of the Alaskan Peninsula and is approximately 225 miles southwest of Anchorage and 45 miles east of King Salmon, Alaska. This clearwater stream is approximately 55 miles long and flows northwest from Murray and Hammersly Lakes, then south into Lake Coville within Katmai National Monument. The entire river is under study running from its upper source lake, Murray Lake, in T. 16 S., R 35 W., (Seward Meridian) to its mouth in T. 16 S., R. 38 W. (Seward Meridian).

The headwater lakes lie in a narrow Pleistocene glacial valley surrounded by towering peaks of the Aleutian Range. Several of the peaks rise over 2500 feet above the lakes and remain snow-covered much of the year. From Murray and Hammersly Lakes American Creek soon leaves the sweeping alpine landscape as it begins to carve a gorge through the surrounding uplands. For over half its length the river tightly meanders its way through a striking canyon at times less than 400 yards wide and more than 400 feet below the adjacent rolling hills. The tongue of boreal spruce forest which protrudes up the canyon broadens out as the river leavesthe confines of the gorge in its lower 15 miles. Before entering Lake Coville,

one mile inside the National Monument boundary, the forest landscape is broken by large areas dominated by grasses providing scenic vistas across Lake Coville and of adjacent hills and ridges.

The mountains surrounding Murray and Hammersly Lakes range in elevation between 3500 and 4500 feet. Small mountain streams cascade into Murray Lake, which lies at an elevation of approximately 1625 feet, and covers the 5 mile wide valley floor for roughly three miles. A small stream less than two miles long drains Murray Lake into Hammersly Lake. The lower lake is over twice the size of the upper lake averaging 3/4 of a mile across and five miles long.

American Creek "officially" begins where the river has cut a channel through the glacial moraine blocking Hammersly Lake. From its source at nearly 1600 feet, American Creek drops almost 1500 feet before its confluence with Lake Coville an average gradient of 30 feet per mile. Through the gorge this gradient approaches 60 feet per mile over one six-mile section. Except in the extreme lower reaches, the current is swift throughout and, at times, literally cascades through the narrow canyon. The current averages 6 to 7 miles per hour and exceeds 10 m.p.h. in some sections.

Although located within a heavily glaciated physiographic area, both past and present, no glaciers are presently located

in the American Creek drainage. Consequently, the waters of the source lakes and the river are generally clear. Because the river flows over old glacial till, and because active erosion is taking place in the headwater mountains and in the river canyon, spring run-offs and heavy summer rains can temporarily cause some amounts of sediment in the river, thus lessening the transparency of the waters. The extremely swift current also contributes to this turbidity causing waters in the lower reaches to take on a milky color.

The bottom is generally gravelly to stoney in character, although large rocks are common in the canyon where the river has cut through the glacial till into the underlying bedrock. No major falls exist along the river although rapids and riffles are frequent throughout. These rapids are especially rugged over a 15 mile middle section of the river through the canyon. Here, the river plunges over three to four foot drops in several places.

In the upper reaches, the river averages 30 yards wide and about one foot deep. In the middle section the river constricts in the canyon to about 20 yards wide and a foot and half deep. At its mouth it again spreads out to over 50 yards wide and 2-3 feet deep. The configuration of the stream channel is generally meandering except in the lower 12 miles where the river is braided and new channels cuts are common. The canyon rock exerts a heavy influence on the river in its

middle section forming an almost perfect continous S-shaped channel for about 10 miles.

In terms of relative size American Creek is a small river. It drains an area of just over 300 square miles and has a reported average stream flow of between 50 and 60 cfs. (measured August 15 and September 29, 1956, by Bureau of Commercial Fisheries). Over much of its length only a few small tributaries contribute waters to American Creek. Most of the river's water comes from the overflow of Hammersly Lake. The only major tributary significantly supplementing this original water volume joins the river five miles above its mouth. This unnamed west branch of the river is approximately 15 miles long and 20 yards wide and 1 foot deep at its confluence with American Creek. The west branch is largely slow moving, and is somewhat coffee colored.

Maximum discharge of the river is usually reached after spring break-up in early May and also sometimes after extended summer rains. Water temperatures range from near 32° F. during the winter up to 60° F. in the summer. However, summer water temperatures vary considerably day to day and from day to night. During the period July 28 to August 22, 1962, daily water temperatures ranged between 49° and 60° F. (Bureau of Commercial Fisheries). Ice begins forming by the end of November and by mid-winter the river freezes to the bottom in many places. Murray and Hammersly Lakes are frozen generally from the end of November to the middle of May.

Water Quality

No water quality studies have been done on American Creek. However, there are presently no known sources of sewage or chemical pollution in the drainage that could significantly degrade water quality. Thus, the river's waters are believed to be of exceptionally high quality.

Water quality has been reported to be diminished in some Alaskan rivers when large numbers of decaying salmon are present. American Creek is a significant salmon spawning stream, but it is not known what effect, if any, the decomposition of dead salmon has on the water quality of the river during the spawning season.

Land Use

The entire river flows through an extremely primitive environment showing almost no evidence of man. Very little human use is presently taking place in the river drainage.

A small amount of subsistence hunting and trapping is reported to take place in the area. This use is reported to be by a few individuals from Native villages in the King Salmon area.

A small amount of sport hunting (bear and moose) and possibly sport fishing also is reported to take place in the river area. Because this use is by fly-in sportsmen utilizing Murray or Hammersly Lakes, most of this use occurs in the headwaters area. Hunting is not allowed in Katmai National

Monument which includes Lake Coville and the lower one mile of American Creek.

The National Marine Fisheries Service (formerly Bureau of Commercial Fisheries) has maintained a camp over the past 12 years on American Creek to count and study spawning salmon and their progency. This camp is located approximately four miles up river from the mouth.

No past or present mining, lumbering, grazing or other such land uses have taken place or are taking place in the river area.

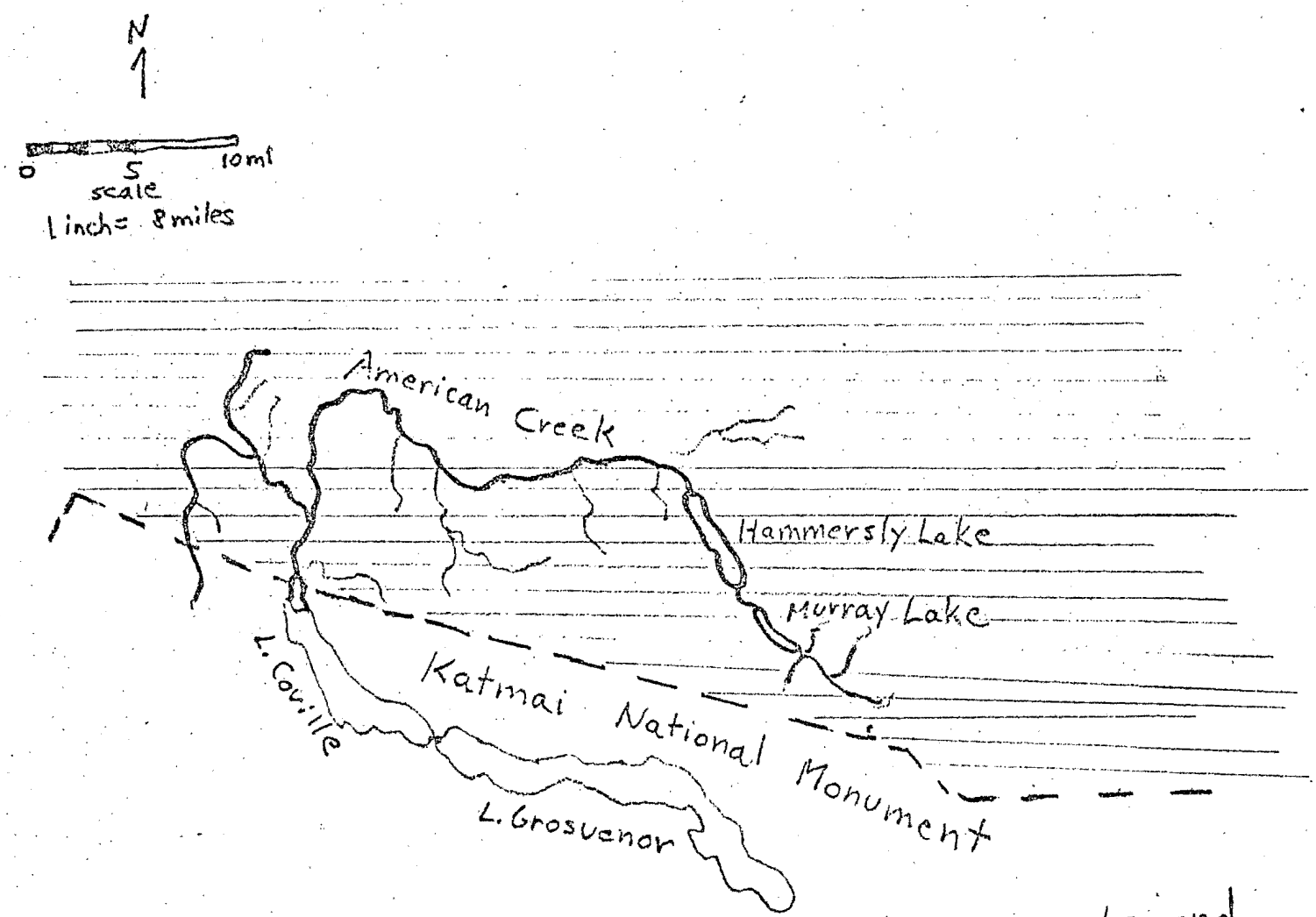
Water Resources Developments

No dams, channel imporovements, or stream diversions have taken place or are proposed on American Creek.

Land Ownership

The entire river flows through lands owned by the Federal government. Except for the lower one mile of the river which is inside Katmai National Monument, these Federal lands are presently being managed by the Bureau of Land Management.

There are no active mining claims, mineral leases, Trade and Manufacturing Sites, Native Allotments, homesites, or other appropriations or claims under the public land laws or U.S. mining and mineral leasing laws. There is record of only one mining claim (filed in 1918) in the area; no assessment work is known to have been recorded on this claim.



Legend

17(d)(2) lands

Figure 3

Land Status: American Creek, Alaska

The entire river drainage outside of Katmai National Monument has been withdrawn from all forms of appropriation under section 17(d)(2) of the Alaska Native Claims Settlement Act (ANCSA, P.L. 92-203). This (d)(2) area is presently under study by the National Park Service and will be proposed as an extension to Katmai National Monument.

Water Rights, Navigability and Riverbed Ownership

No rights to water in American Creek have been applied for or granted by the State of Alaska.

Under the Alaska Statehood Act, the State owns the river bottom of all "navigable" streams and rivers. The question of which streams are "navigable" has not yet been determined in Alaska. However, under criteria being developed by the State of Alaska to determine streambed ownership, American Creek would appear to be "navigable" most of its length.

The river has never been used as a "navigable" stream in terms of trade or the movement of goods. There is no permanant habitation along the river and no easy passes or portages from the upstream reaches to other rivers or regions. In addition, the extremely swift current and numerous rapids prevent virtually any upstream travel and all travel downstream except by raft, kayak, and possibly canoe.

Access

There are no roads or designated trails to or near any point of the river.

Primary access to the river is by aircraft. The source lakes of Murray and Hammersly and Lake Coville at the mouth

provide good float plane access to either end of the American Creek. The intervening 55 miles of river is generally inaccessible except by foot or by raft, kayak or canoe downstream from Hammersly Lake.

Motorboats can travel up American Creek four to five miles but are then blocked by shallow riffles. However, boats and motors used within Katmai National Monuments are flown in, as travel up the Naknek river and lake system is extremely long and difficult (portages) from King Salmon.

Access during the winter is possible by snowmachine, ATV, or dog sled.

No roads are proposed for this area.

Soils

No soil studies have been done in the area but the severe winters, short growing season and decaying season, and low year-round temperatures result in thin and fragile soils. Permafrost is generally lacking although scattered patches exist in low-lying and north-facing areas.

The valley floor is susceptible to marshiness and/or flooding, and soils are largely composed of riverbed glacial debris.

The stoney soils on the adjacent slopes are exceptionally fragile and are subject to solifluction. Disturbance of the vegetative cover can result in severe erosion.

Vegetation/Timber

The vegetation is quite varied along the river and several distinctive vegetative eco-zones are encountered over the relatively short 55 mile length of American Creek.

The source lakes lie well above timberline in alpine tundra. Although clumps of willows can be found near the lakes' edges, most of this upper area is covered by low growing plants that can resist cold summer temperatures, strong winds, often limited moisture availability, shallow soils, and a short growing season. Interspersed between rocks and rubble are both herbaceous and shrubby plants including cassiopes and mountain heaths.

For approximately 15 to 20 miles below Hammersly Lake the river area is dominated by moist tundra accompaied by willow and alder thickets immediate adjacent the river. The moist tundra is composed of grass tussocks interspersed with dense low heath shrubs and various berries, willows, dwarf birch and other low-growing tundra species.

Beyond this eco-zone the boreal forest penetrates up the canyon. At an elevation of roughly 1100 feet small stands of cottonwoods and aspens replace the willow and alder thickets adjacent the river. Within several miles white spruce become dominant. In the lower reaches more and more birches integrate the forest resulting in a climax mixed white spruce-paper birch forest. In the extreme lower sections of the river broad grasslands break the forest cover.

Some of the white spurce and paper birch may be considered of commercial size. However, the extremely small stands of such trees and the remoteness of the area preclude any economic marketing of these trees.

The great variety of plant species and eco-zones present along the river is of significant scenic and biologic interest from a recreation as well as a scientific standpoint.

Geologic and Mineral Resources

An extremely small amount of geologic work has been done in the American Creek area. Most of the information available has been gathered from photointerpretation and aerial recommaissance.

In general, bedrock associated with the Katmai area is composed of sedimentary rocks of Jurassic, Cretaceous, and early Tertiary age which has been intruded by igneous intrusives of Jurassic and Tertiary age. Volcanic extrusives of Tertiary and Quaternary age overlie the sedimentary and igneous intrusives. Moderate folding is exhibited in northeast-southwest trending anticlines while several major faults generally parallel these structured folds.

The region was subjected to extensive glaciation during the Pleistocene period. Most of the extensive lakes of the Naknek system, including Murray, Hammersly and Lake Coville are the result of glacial scouring and damming by moraines.

The scenic U-shaped valleys such as that in which Murray and Hammersly lie are a result of this recent glaciation.

Volcanic activity has also dominated the geologic processes in recent time. In 1912 Mt. Katmai and Novarupta Volcano located to the south of American Creek erupted with tremendous magnitude and ejected enormous amounts of ash and pumice. This activity and the subsequent development of numerous streams and gas producing vents in the Valley of Ten Thousand Smokes led to the creation of Katmai National Monument.

Although this and additional volcanic activity has occurred in areas adjacent the American Creek drainage, no such phenomena has yet taken place in the American Creek area.

Since the Alaskan gold rush at the turn of the century the American Creek area has been prospected, although probably not intensively. There have been reports of gold and cinnabar deposits along the river. However, there minerals are believed to be in quantities too small for commercial exploitation.

No significant amounts of other minerals have been reported adjacent the river, and no past or present mining has taken place. No active claims exist along the river.

Wildlife and Fishery Resources

Wildlife

Big game animals are abundant along the river and include brown bear, moose, wolves, and occasionally caribou.

The Alaska Department of Fish and Game has identified the entire river as an area of brown bear concentrations (Alaska's Wildlife and Habitat, 1973). Bear are attracted by the spawning salmon during the summer and fall and can be frequently seen catching and eating salmon along the river.

The lower half of the river is also identified as a moose concentration area in the fall. During this season when early snows have driven the moose out of higher elevations, it is common to see them feeding on willows and other brushy plants in the river area.

Fur bearing animals common to the river include wolves (also a big game animal) wolverine, lynx, beaver, marten, mink, weasel, fox, otter and others.

The lakes, beaver ponds, and backwater areas of the American Creek area provide nesting and molting areas for a variety of waterfowl. These include greater scaup, mallards, pintails, green-winged teal, shovelers, widgeons, gadwalls, barrows goldeneye, harlequin, bufflehead, Pacific eider, common scoter, common merganser, whistling swan and others.

Rare and Endangered Species

The following wildlife species associated with American Creek are listed in the Department of the Interior's 1968 "Red Book of Rare and Endangered Species":

Timber wolf (*Canuis lupus lycon*)--endangered (only in conterminous 48 states)

Wolverine (Gulo luscus)--Status undertermined

Canada lynx (Lynx canadensis)--Status undertermined

American Osprey (Pandion haliaetus carolineusis)--
Status undetermined

In addition, the northern bald eagle (Haliaeetus leucocaphalus alascanus) is frequently observed. Although similar in overall appearance, the northern bald eagle is not the same as the endangered southern bald eagle (Haliaeetus l. luecocephalus).

Fishery

American Creek is both an outstanding anadromous and cold water fishery. Red (or sockeye) salmon, arctic char (and/or Dolly Varden), rainbow trout, and grayling are abundant in the river and lake trout are common in Murray and Hammersly Lakes. Also present are humpback whitefish, cottids, and occassionally chum salmon.

Sockeye salmon constitutes almost the entire Bristol Bay commercial fishery. The annual wholesale value of this fishery averaged $30 million for the period 1960-1971, or approximately a quarter to a half of the entire State's annual fisheries output over the same period. The Naknek system, with its average annual sockeye salmon escapement of 933,000 fish or about 10% of the Bristol Bay escapement, is the third most important watershed in the Bristol Bay drainage, in terms of escapement, and hence constitutes a significant part of the Bristol Bay salmon spawning habitat.

American Creek, in turn is one of the most important sockeye spawning streams in the Naknek system. Based on counts conducted by the National Marine Fisheries Service, spawning escapements have varied from 84,000 in 1962 to 285,000 in 1971; the stream receiving between four percent and 62 percent of the total spawning escapement to the Naknek River system.

Salmon spawn the length of American Creek and up its west branch. Excellent spawning gravels have been identified above and below the canyon near the mouth and near its source from Hammersly Lake (see Appendix A). This exceptional red salmon spawning habitat directly contributes to the principal activity in the regional, if not State, economy. The importance of this habitat is further marked by the designation of American Creek and Hammersly Lake under the State of Alaska's "Anadromous Fish Act" as waters important for the spawning or migration of anadromous fish. This act requires notification of and advance permission from the Department of Fish and Game prior to initiating work affecting the designated waters.

Red salmon generally spawn in American Creek and its west branch from July through September with peak numbers of fish in the river in the middle of August.

In a region of "super" trout fishing, American Creek is overshadowed by other rivers and lakes in the region which offer larger rainbow and lake trout. However, by most

comparisons the trout fishing in Murray and Hammersly Lakes and in American Creek would be termed outstanding. Fish are abundant and rainbows average _____ inches and lake trout _____ inches.

Historical and Archeological Resources

No historic trails or explorations are known to have crossed this drainage, and no signs of early trappers or prospectors have been reported.

Although it is assumed Eskimo people hunted, trapped, and traveled on occasion in the area before the coming of the white man, no archeological work has been done in this area and no evidence of early man has, as yet, been found along American Creek.

Recreation

Resources

The lack of man's presence, the remoteness of the area, and the pristine environment of American Creek make this a true wilderness area. Its value from a primitive recreation standpoint is exceptional--even in Alaska. The virtually undisturbed vegetation and wildlife provide a rare view of life in a natural setting adapting to the unique environments of the Alaskan Peninsula.

The recreational resources of the river and its immediate environment include its scenic variety--ranging from alpine terrain to low-lying boreal forests and open grasslands. The

snow covered peaks surrounding Murray and Hammersly Lakes are often flawlessly reflected in the transparent waters of these "post card" lakes. Downstream, the river has carved a striking canyon where the river constricts and, at times plunges, between boulders and over bedrock.

In addition to their scenic qualities, the array of plant communities associated with the river offer the recreationist a multitude of ecological "niches" for nature study within a relatively short distance. The effects of elevation, drainage, snow cover, sunlight, slope and many additional factors on vegetative types and plant species are all in evidence.

From a boating standpoint, American Creek is one of the finest small rivers in the state for rafting, kayaking, or whitewater canoeing. For over 50 miles the river flows swiftly, requiring little paddling. Over half of its length almost continous rapids offer numerous challenges for the advanced whitewater boatist. The river appears to be Class III whitewater (see Appendix B - International Difficulty Rating) with several Class IV rapids requiring a high degree of skill. For the less experienced boatsman, portages around rugged rapids appear to be possible. Firewood and camp sites are plentiful and the lakes at either end provide ideal primitive access for bringing rafts or boats in and out.

The abundance of moose and bear in the area also enhances the recreational experience and offers the boater or hiker

an opportunity to observe and photograph wildlife in their natural habitat. This can be especially rewarding during the salmon spawning season when the interaction of the various links in the fish-predator-scavenger ecosystem are especially visible for study (assuming caution is taken not to involve oneself in this interaction).

The cold water fishing also offers sport fishermen an outstanding recreational experience.

Existing Use

A very small amount of moose and bear hunting and some associated fishing probably constitute the only recreational activity presently occurring in the river area. No counts have been made of this use but it is estimated to the fewer than 50 visits per year.

Future Use

Hunting and possibly fishing can be expected to increase slowly in future years as the pressure of an expanding Alaska population is felt in other hunting areas.

Although tourism will increase steadily in the future, much of this increase in the region will be centered on the existing Katmai National Monument. Some backpacking and rafting or kayaking could take place in the future as recreationists seek out the fewer and fewer quality primitive areas.

Limitations to Recreation

Higher levels of recreation use are primarily limited by access and the remoteness of the area. Presently, aircraft

is the only practical means of access to the river. Although the river is located less than 1/2 hour flying time from King Salmon by charter aircraft, this village is more than 300 air miles by commercial air service from Anchorage, the major population center and primary focal point of out-of-state tourists.

Coupled with this is the domination of Katmai National Monument in the minds of visiting recreationists. Thus, recreationists in the area generally focus on Katmai rather than on other nearby areas whose recreational resources may equal or exceed those of Katmai, such as the American Creek area.

The climate also limits recreational uses considerably. The short recreating season--June through September offers a minimum of time to enjoy the vegetation folage and ice-free waters. Freezing temperatures can occur in any month except possibly July and water temperatures remain cool all summer prohibiting prolonged body contact. Strong winds and extended summer rains can further limit recreation and aircraft access. The sky is clear or partly cloudy only 20% of the time during the summer.

Standing water in the area gives rise to hordes of mosquitos and flies which at times can seriously limit recreational use because of the great intensity of the winged attack.

Boating by novice or by families with younger children is also limited by the extremely swift current of the river and the presence of rugged rapids. Several of the rapids could dangerous to careless or inexperienced raft or floatboat users.

Possible uses such as off-road vehicle "exploration" could be limited by the natural terrain and fragile soils especially during times of no snow cover. Disruption of the thin soil can cause surface damages which may persist for long periods of time.

Potential limitations to recreation include the users themselves. It is quite possible that larger numbers of recreationists in the river area could degrade or destroy the pristine environment and the primitive experience of the user. The most outstanding recreational value of the river area could be lost through overuse.

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

D3426 Alaska
(W&SRS)

TO : Joe Yovino, ANCSA Coordinator, F&WS

DATE: October 23, 1974

FROM : Chief, Alaska Field Office

SUBJECT: Andreafsky Wild and Scenic River Analysis

Enclosed is a recently revised copy of our May 30, 1973, report on the Andreafsky River. The revisions are based on our field inspection of the Andreafsky during July, 1974, and on recent legislative proposals and land status changes.

We apologize for the longhand corrections but feel it is important to get this to you as soon as possible for your use in connection with the Yukon Delta Wildlife Refuge proposal. Also enclosed for your information and use is a copy of our field inspection log.

If we can provide you more information on this or other proposed wild and scenic river areas, give us a call.

William R. Thomas

William R. Thomas
Chief, Alaska Field Office

Enclosures

ANDREAFSKY RIVER

A Wild and Scenic River Analysis

PRELIMINARY

Bureau of Outdoor Recreation

Alaska Task Force

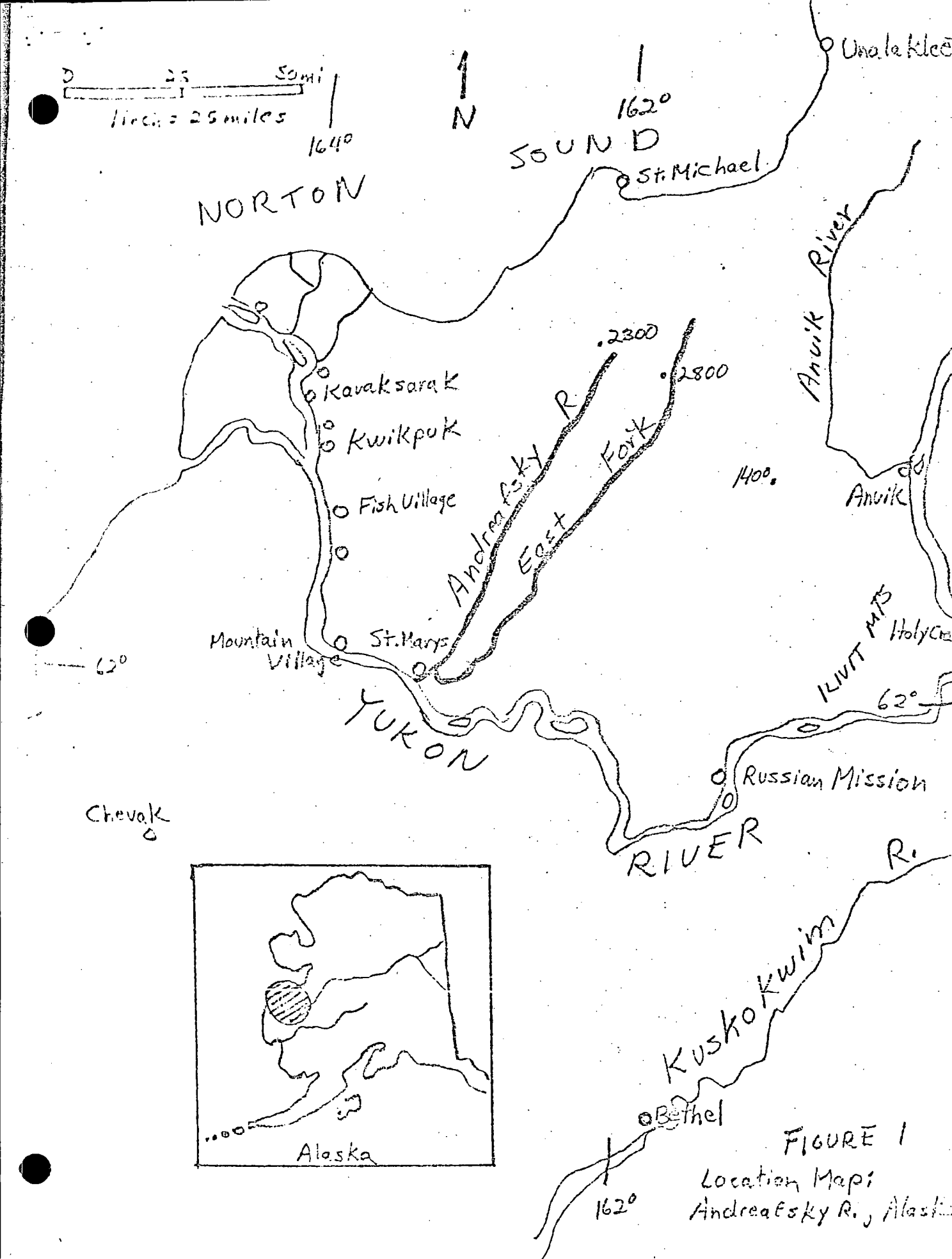


FIGURE 1
Location Map:
Andreafsky R., Alaska

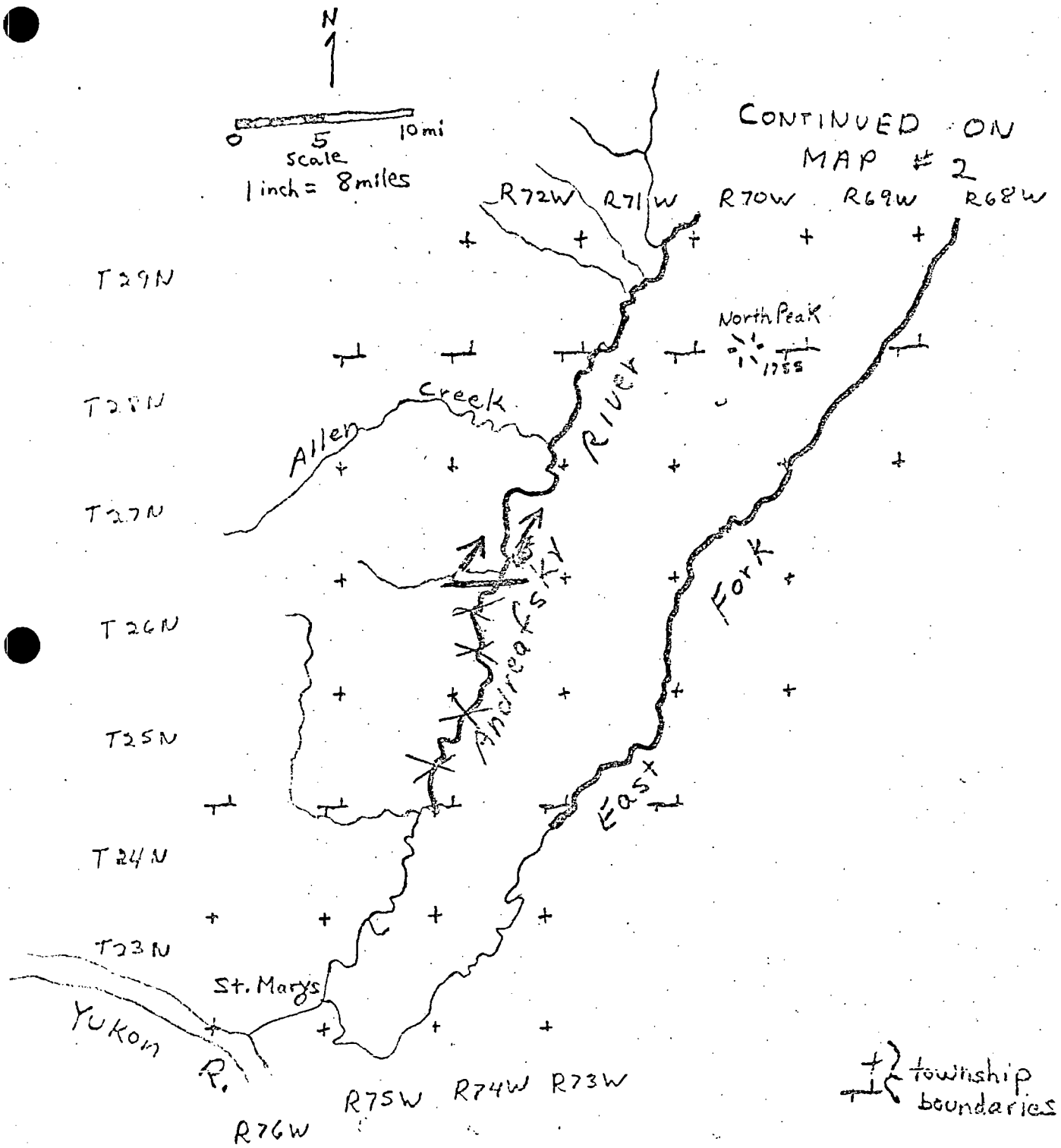


Figure 2
The Proposed Andreafsky Wild River - Map #1

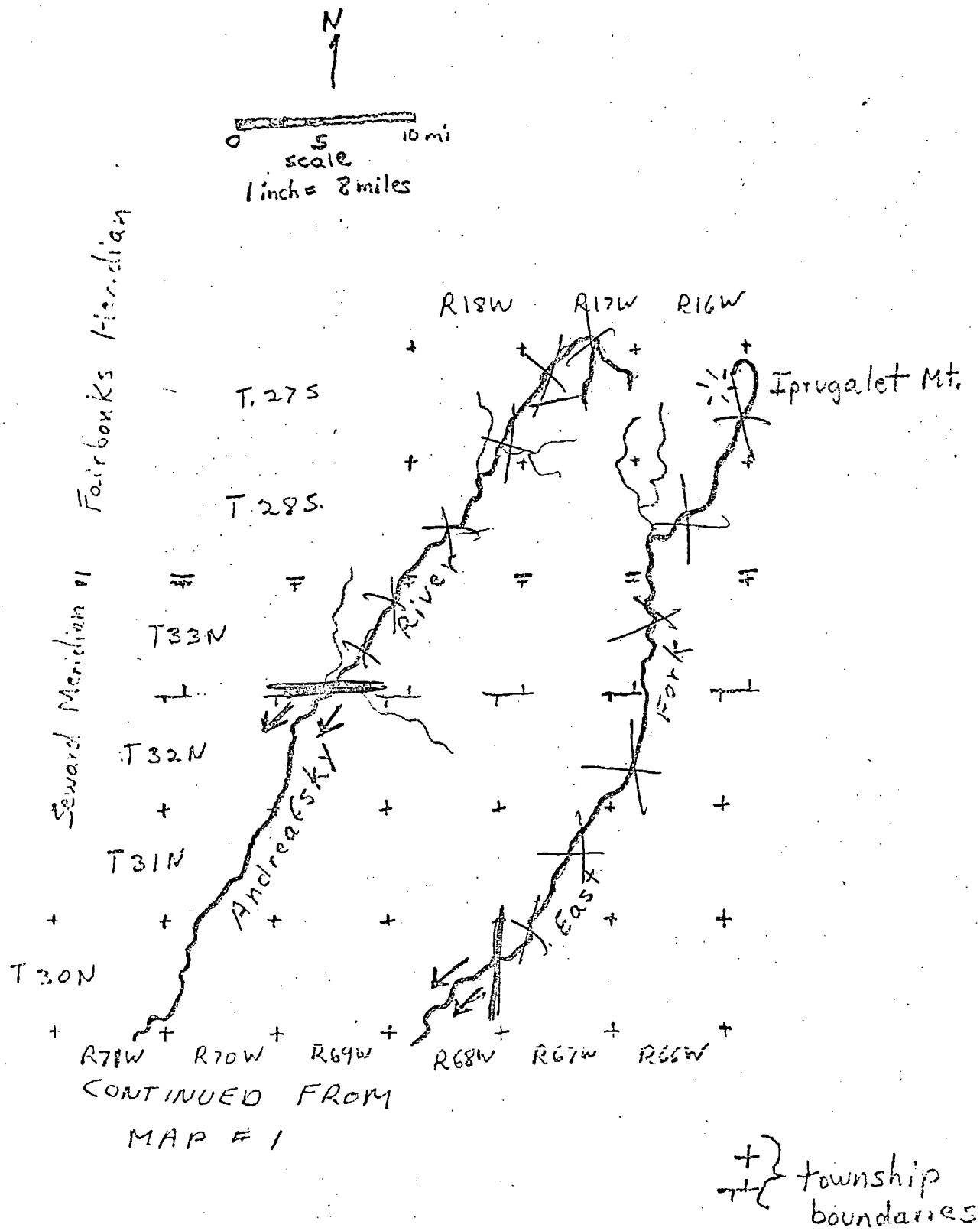


Figure 2
The Proposed Andreafsky Wild River - Map #2

IV. DESCRIPTION AND ANALYSIS

The River and its Setting

The Andreafsky River and its East Fork are located approximately 420 air miles west of Anchorage, Alaska, and approximately 100 miles north of Bethel, Alaska. The main river and the East Fork (a major river in its own right) are each roughly 125 miles long and parallel each other 10-15 miles apart as they flow south to the Yukon River. The East Fork joins the main river near the village of St. Marys ~~five~~ four miles above the confluence with the Yukon River. The two rivers drain a combined area of over 2200 square miles.

The segment of the main stem ~~under study~~ proposed for inclusion in the National Wild & Scenic Sy as a "wild ri area" is approximately ~~100~~ 60 miles long running from ~~the headwaters in~~ T. ~~27 S~~ 34 N., R. ~~16~~ 68 W. (~~Kateel River~~ Seward Meridian) to a point approximately ~~25~~ 40 miles above the Yukon confluence (southern boundary of T. ~~25~~ 27 N., R. ~~74~~ 73 W., Seward Meridian). ~~The upper 95~~ About 55 miles of the East Fork from ~~the headwaters in~~ T. ~~27 S.~~ 30 N., R. ~~15~~ 68 W., ~~Kateel River~~ Seward Meridian) to a point approximately 30 miles above the confluence with the main stem (western boundary of T. 24 N., R. 73 W., Seward Meridian) is ~~under study~~ proposed.

The Andreafsky flows through a physiographic province generally referred to as the Nulato Hills. The topography consists largely of northeast-trending even-crested ridges having rounded summits and gentle slopes. The narrow valleys of the main stem and the East Fork are bordered throughout

their lengths by these ridges and low mountains. The valley floors are generally 1/2 to 1 mile wide and ridgetop-to-ridgetop distances average 2-3 miles. Relief is moderate with an average elevation difference of 500 feet between the valley floors and the tops of adjacent ridges.

Both the main stem and the East Fork begin forming ~~near~~ at an elevati of 1100 feet, ~~in elevation~~. The main stem draws its headwaters from small mountains averaging 1500 feet in elevation, while the East Fork forms on the east side of 2350 foot Iprugalet Mountain. The mouths of the rivers are less than 20 feet above sea level although located nearly 100 miles upriver from the ~~confluence~~ mouth of the Yukon River ~~with~~ in the Bering Sea.

The average gradient over the entire river lengths is almost 9 feet per mile. The elevation of the rivers at the lower boundaries of the ~~study~~ proposed segments is ~~25~~ about 50 feet resulting in an average gradient of ~~11~~ 18 feet per mile in the ~~study~~ proposed segments. Only a ~~.2~~ .8 or foot per mile gradient occurs between the lower ~~study~~ proposed segment boundaries and the rivers' mouths. Current is moderate throughout the study lengths ~~exceeding~~ averaging four miles per hour.

Math

The valley floors are largely covered with ~~a mixed~~ balsam poplar groves, willow thickets and stringers of white spruce broken by large areas of moist tundra ~~spruce-hardwood forest~~. ~~This forest~~ Major tree stands extends up the rivers approximately 3/4 of their lengths. The upper reaches of the rivers as well as the adjacent hills and ridges are covered by alpine moist tundra.

Headwaters 1100 ft
− Lower boundary 50 ft
1050

1050 ÷ 60 = 17.5
1050 ÷ 55 = 19.1

The Andreafsky and the East Fork are nonglacial rivers with extremely clear waters. The watershed is generally stable and sediment load in the water is minimal. Active streambank erosion contributes some sediment during periods of high water. The bottom is generally ~~sandy~~ stoney to gravelly in character. No major rapids or falls exist along the rivers.

In the upper reaches, the rivers average 10-15 yards wide with depths of 1 to 2 feet. At the lower ~~study~~ proposed boundaries both rivers are nearly ~~150~~ 100 yards wide. The width of the Andreafsky at its confluence with the Yukon is over 400 yards. Depths of over 10 feet are common in the lower reaches, although shallow riffles exist near the lower ~~study~~ proposed boundaries.

No stream flow characteristics have been measured, but maximum discharge of the river is most often reached after break-up in late May or early June resulting from snow melt and spring rains. High water levels also occur occasionally during July or August after extended summer rains. Water temperatures range from near 32° F. during winter to between 50-55° F. in July. Ice ~~beings~~ begins forming in late October and by mid-winter thicknesses of 4 feet or more are common.

Water Quality

No water qualities studies have been done on the Andreafsky or the East Fork . However, there are presently no known sources of sewage or chemical pollution in the drainage (except the village of St. Marys at the rivers' mouths below

the ~~study~~ proposed segments) that could significantly degrade water quality. Thus, water is believed to be of the highest quality and could be used for drinking purposes.

It has been reported that in some Alaskan rivers having large salmon runs, water quality is diminished somewhat during peak periods of spawning salmon when the numerous dead salmon are decomposing in the water. Although these rivers have large salmon runs, the low concentrations of dead fish in any one area and the relatively large volumes of water in the rivers are believed to minimize this effect.

Low temperature conditions have been reported to be conducive to prolongation of the life of pathogenic bacteria. Although present low use of the river area appears to pose no health problems, indiscriminate disposal of wastes by larger numbers of river users could lead to health risks in the future.

Land Use

Existing

The entire study segments flow through an extremely primitive environment showing little evidence of man. No year-round habitation, farming, lumbering, grazing, mining, or similar land uses are known to exist along the ~~study~~ proposed lengths. Furthermore, no signs of such activities in the past are evident along the rivers. The lower ¼ of the main stem shows evidence of local wood gathering and log cutting in the spruce stands along the river banks.

JAN 8 1973
BOR/ATF

PRELIMINARY

Andreafsky River, Alaska

Based upon aerial reconnaissance and available information, it is concluded that the Andreafsky River (including the East Fork) meets the criteria for inclusion in the National Wild and Scenic Rivers System in that:

- The river is free-flowing
- The river and its immediate environment possess outstandingly remarkable values
- There is sufficient volume of water to permit full enjoyment of these values
- The river is of sufficient length to provide a meaningful high quality recreational experience
- Water quality is good
- The river and its immediate environment are capable of being managed to protect and interpret special values and protect the user

The outstanding values of the river area include its scenic, recreational and fish and wildlife resources. These resources are exceptionally well illustrated in this river area and are associated with no other river under consideration in this region.

The Andreafsky River and the East Fork are medium-sized clearwater streams located approximately 440 miles west of Anchorage and about 125 miles north of Bethel. The river flows southerly 120 miles to its confluence

with the Yukon River. The East Fork parallels the Andreafsky for approximately 125 miles before joining it 5 miles above the Yukon confluence. Both rivers flow through low, tundra-covered hills. The rivers meander gently in valleys lined with spruce-birch forests. Swift currents and many open vistas offer good canoeing or rafting potential. Both cold-water and anadromous fish are present. It is reported that this river area is one of the few nesting locations of the endangered bristle-thighed curlew.

About 20 percent of the total length of the Andreafsky is in Native Village Withdrawal (around the mouth), 65 percent is classified under section 17 (d)(2) of ANCSA (middle), and 15 percent is in "open" status (upper). The East Fork consists of about 22 percent in Native village Withdrawal (around the confluence), 47 percent in (d)(2) (middle), and 33 percent in "open" status (upper). No highways or dams are proposed for this river area.

An interagency field team is being formed to make an on-the-ground inspection in the summer of 1973. A detailed report evaluating the river area and its values will be prepared in the next several months and will be concluded upon completion of this field work.

A wild and scenic river analysis of the Andreafsky River will be limited to river sections flowing outside of lands withdrawn for Native selections. The lower sections

PRELIMINARY JAN 8 1973

of the Andreafsky and the East Fork will only be studied with the full cooperation and support of concerned Native groups.

Although less frequent than in the Interior, fires are common in the region. ~~No~~ Evidence of one recent fire~~s~~ exists in the river areas, ~~but~~ and many present vegetative patterns can be traced to historic burns.

Slope and aspect, presence or absence of permafrost, flooding and new channel cutting in the Andreasfsky and the East Fork areas also influence vegetative types and patterns. Ravines, shaded and unshaded slopes, wind exposed areas, recently exposed soils, natural levees, backwater areas, gravel bars, ox-bows, floodplains and other features are all associated with specific plant communities.

~~The closed spruce hardwood forest~~ Trees are found along ~~covers~~ the valley floor and up tributary drainages along the lower 2/3 of the river segments. The dominant trees ~~of~~ ~~this~~ the ~~forest~~ are ~~is~~ white spruce and balsam poplar. ~~but~~ Other tree types include a few paper birch, + isolated quaking aspen. ~~balsam poplar, and black spruce~~. Common shrubs associated with these trees include several varieties of berries, willows, alders and dwarf birch. ~~roses~~. Treeline extends generally from 500 ~~1000~~ feet for poplar and 325 for spruce. ~~in elevation.~~

The best stands of white spruce are found on the warm, dry, south-facing hillsides and adjacent the river where drainage is good and permafrost lacking. Some of the larger spruce ~~may~~ average 10-12 ~~15-20~~ inches in diameter. ~~Aspen are found on south-facing slopes. The aspen mature in 60-80 years and are eventually replaced by white spruce, except in excessively dry sites.~~ Occasional Paper birch ~~is~~ are found ~~common~~ on east and west facing slopes. ~~and~~ ~~occasionally on north slopes and flat~~

~~area~~. Balsam poplar are very common ~~sparsely located~~ in the river floodplain and average 10-12 ~~may exceed 20~~ inches in diameter, with some exceeding 20 ~~On north-facing slopes and in poorly drained lowlands open black spruce occasionally break the closed forest. These trees are slow growing and seldom exceed 8 inches in diameter. The black spruce trees are widely separated by thick moss mats and hummocks of sphagnum mosses, sedges and grasses.~~

Some of the white spruce, ~~paper birch~~, and balsam poplar may be considered of commercial size. However, the extremely small stands of such trees and the remoteness of the area preclude any economic marketing of these trees.

Approximately the upper 30 miles of each river segment and the valley slopes over much of the river segments are covered by alpine tundra, consisting of Herbaceous and shrubby low mat plants, ~~are interspersed between bare rocks and rubble~~. The most important plants are the low heath shrubs, especially cassiopes and mountain heaths. They are most abundant where snow accumulates in the winter and lingers into late spring. Also associated with this alpine tundra are a variety of berries, resin and dwarf arctic birch and several low-growing willows.

Geologic and Mineral Resources

The Andreafsky River and its East Fork drain a southwestern segment of the Nulato Hills composed of thick sediments deposited in the Yukon-Kuskokwim geosyncline in the Crataceous time. The rivers flow generally parallel to the strike of

the bedded rocks which have been intensly folded and cut by faulting in at least two prominent directions. The sediments, based on surface information, are mainly siltstones and fine-grained sandstones of relatively low permeability.

The entire region has been defined as the Yukon-Koyukuk Crataceous Province which has been considered a possible area of petroleum bearing formations ("Geology of Possible Petroleum Provinces in Alaska", U.S. Geological Survey Bulletin No. 1094, 1959). However, the low permeability of the local sediments coupled with the degree of deformation suggest that petroleum deposits in the main stem area are remote. A 5,000 square mile tract within the Yukon-Koyukuk Cretaceous Province has been identified as having the greatest potential for petroleum deposits in the province. Much of the East Fork study segment is included in this immense area which stretches from north of Unalakleet to Pilot Point on the Yukon River (Memoir 15, Volume I "Future Petroleum Provinces of the United State--Their Geology and Potential." American Association of Petroleum Geologists, 1971.)

No exploratory wells have been drilled and no oil and gas leases have been let in the river areas.

The river areas are located far outside of the nearest metallagenic province recently defined by the USGS. The only noted intrusives in the watershed occur between the rivers in their upper reaches. Sediments near the contacts of these

large felsic sills or dikes in the upper drainage exhibit little or no metamorphism, and iron-stained or hydrothermally altered zones have not been reported. The potential for mineral deposits appears very low in the river areas.

No past or present mining operations exist in the river areas, and there are no known mining claims near the ~~study~~ proposed segments.

Several invertebrate fossils (clams and snails) and plant fragments have been found in cut banks along the Andreafsky below the ~~study~~ proposed segment. From a scientific as well as a recreational standpoint the potential for "fossil hunting" appears great along the ~~study segment~~ rivers.

Wildlife and Fishery Resources

Wildlife

In contrast to other areas of the Yukon Delta region, the Andreafsky river area supports ~~abundant~~ larger populations of big game animals. Moose, black bear, grizzly bear, caribou, and wolves are all present. (Alaska's Wildlife and Habitat, Alaska Department of Fish and Game 1973). The caribou herd of perhaps 5,000 animals which migrates between the Yukon and Norton Sound is believed to consist of some animals descended from interbreeding reindeer which were dispersed after the "crash" in the early 1940's. These animals are recognized by their unusual (for caribou) markings. Part

PP Both rivers and especially the main stem are ~~in~~ concentration areas for grizzly bear during the summer salmon migration. Unusually large numbers of bears can be observed along short stretches of the proposed rivers during July and August

of this herd ~~periodically~~ occasionally crosses the Andreafsky drainage in their migrations.

Fur-bearing animals ~~common to~~ found in the river areas include wolves (also a big game animal), wolverine, lynx, beaver, marten, mink, weasel, fox and others.

The lower sections of the ~~study~~ proposed segments have been identified as waterfowl nesting and moulting areas. A variety of ducks are present during the summer months:

Rare and Endangered Species

~~The following wildlife species associated with the Andreafsky and East Fork are listed in the Department of the Interior's 1968 "Red Book of Rare and Endangered Species":~~

~~Timber wolf (Canius lupus lycon)--endangered (only in conterminous 48 states)~~

~~Grizzly bear (Ursus arctos) - endangered (only in conterminous 48 states)~~

~~Wolverine (Gulo tuscus)--status undetermined~~

~~Canada lynx (Lynx candensis)--status undetermined~~

~~Bristle-thighed Curlew (Numenius tahitiensis)--status undetermined~~

The Andreafsky drainage is believed to be extremely important as a nesting area for the Bristle-thighed curlew. The Nulato Hills (which includes the Andreafsky and its East Fork) to the north of the Yukon River is the only

but recent [illegible] suggest this curlew [illegible] Seward Peninsula

known nesting location for this bird in the world. It migrates to islands in the South Pacific after the summer nesting season.

Closely related to the endangered Eskimo curlew, little is known about the bristle-thighed curlew population. Although proposed for consideration as a rare or endangered species, more information is needed to officially determine its status.

Fishery

The Andreafsky and its East Fork are two of the most important salmon spawning rivers in the entire Yukon drainage. Four species of salmon spawn at different times in the river: king (chinook), chum (dog), pink, and silver (coho) (undocumented). In addition, large populations of Arctic char, grayling, northern pike, and whitefish are found in the rivers. Sheefish have been report in the lower river areas.

Based on aerial surveys made by the Alaska Department of Fish and Game over the past 12 years, the Andreafsky (including the East Fork) is one of the top three king salmon spawning rivers in the entire Yukon drainage in terms of numbers of fish in the river during spawning seasons. It is also one of the top chum salmon spawning rivers (see Table ___, escapement counts).

Commercial salmon fishing is the single most important sector of the cash economy in the lower Yukon River area. The king salmon, because of its great size (up to 80#,mean weight

24#) and good taste is the most important species in this commercial fishing. However, chum salmon (mean weight 7#) also form a significant part of the annual catch. In the summer of 1972, estimated mean prices paid to fishermen for king salmon were nearly $6.00 per fish, for chum salmon 75¢ ~~74¢~~ per fish. For the Yukon River district, commercial fishing accounted for over 1 million dollars in income to fishermen and in wages paid to processing plant employees ~~fishermen~~ in 1972. The wholesale value of the total pack was over 2 million dollars. Tax revenues to the state on the Yukon river catch exceeded $40,000.

Most of the Yukon River district King salmon catch is taken in the Delta region below the Andreafsky mouth (except for sport + subsistence fishing is not permitted in tributary rivers). Thus, the spawning ground of the Andreafsky and the East Fork are critical to the continued harvesting of king salmon in the Delta area (see Table __, salmon harvesting statistics). Peak spawning takes place between the middle of July and the middle of August.

In addition to commercial fishing the harvesting of salmon is the most important activity in the subsistence lifestyle of local Natives. Although king salmon are important in subsistence catches, chum salmon are by far the leading fish taken in terms of numbers. The king and chum spawning grounds of the proposed ~~study~~ segments are extremely important in maintaining a continued yield for local subsistence salmon fishing.

Table ___. Aerial survey of salmon escapement counts, August 1, 1971 (one-day) 1/

	Kings	Chums
Andreafsky	1,285	71,745
East Fork	1,904	90,095
Total	3,188	169,840

1/ Source: Alaska Department of Fish and Game, Division of Commercial Fisheries, Annual Management Report, 1971.

Table ___. Commercial and Subsistence Salmon Catches in the Yukon River District, 1971 1/

Commercial	Kings	Chums	Total
Below Adreafsky	98,216	41,476	139,692
total Yukon	110,507	289,684	400,191
Subsistence			
Below Andreafsky	5,923	36,088 2/	42,011
total Yukon	24,755	200,568 2/	225,323

1/ Source: Alaska Department of Fish and Game, Divison of Commercial Fisheries, Annual Management Report, 1971.

2/ May include some pink and silver salmon

Local sport fishing in the Andreafsky and the East Fork (primarily for Arctic Char) is considered excellent. Most of this use takes place near the village of St. Marys below the ~~study~~ proposed segments.

Historical and Archeological Resources

Most of the human activity in the region historically has centered around the Yukon River. Prior to Russian exploration in the 1830's and 40's, Eskimo groups hunted, fished and trapped along the Yukon. Their settlements include many of the sites on which today's villages are located. At the time the Russians came into the Delta region, a village (they named Andreafsky) was located at the mouth of the river near the present village of St. Marys.

Although early as well as recent Native people traveled, hunted, and trapped along the study segments, no historical or archeological evidence of these activities has been reported. No Russian or later U.S. expeditions are known to have traveled into the study segments. Some Native people have been known to follow the river valleys in crossing from the Yukon to Norton Sound in the winter, although no trail, as such, exists.

Recreation

Resources

The lack of man's presence and the pristine environment of the Andreafsky and East Fork rivers make these superlative areas for primitive recreational pursuits. Opportunities for hiking, river floating, nature study, wildlife photography,

primitive camping, fishing, hunting and similar activities are exceptional.

The slopes and ridges surrounding the river are well suited for hiking. The absence of thick vegetation and large tussocks makes walking pleasant and the views from these vantage points are exceptional.

The rivers themselves are beautiful floating streams, especially for family or novice canoeists or kayakers. Currents are moderate making paddling optional; waters are extremely clear; few obstacles are present (Class I and II water throughout, see Appendix A-International Rating System); scenery is varied and interesting throughout; fishing is excellent; campsites and firewood are plentiful.

The presence of big game in the area and the potential for seeing bristle-thighed curlew further enhances the recreational potential through nature study and photographic activities. During the salmon spawning season the opportunity to observe and photograph grizzly bears is especially great.

Existing use

Very little recreational use currently takes place in the Andreasfsky river area. Although unknown, it is ~~est~~ believed that Fewer than 50 visits ~~are estimated to~~ occur annually in the river areas for strictly recreational uses. Most of this use is for sport hunting (moose and bear) and some fishing. More use is believed to occur for subsistence hunting than for sport hunting.

Future use

Because of the remoteness of this area and the lack of access, recreational uses are not expected to change significantly in the near future. Some increase can be expected for hunting and fishing, but this increase in use will be minimal in terms of absolute numbers.

In recent years more remote areas of Alaska have been frequented by aircraft and off-road vehicles in increasing numbers. As the frontier is pushed further and further from population centers, modern-day explorers travel further and further into the "bush". It can be expected that the Andreafsky and East Fork river areas will be subject to increased numbers of aircraft landings and off-road vehicles penetrations in future years.

Should a road ever be constructed across the main stem near its mouth, much more recreation use can be expected. Similarly, a road near the headwaters would also stimulate use in the river areas. However, the construction of these roads, if justified by future needs, is probably 50-100 years away.

Limitations to Recreation

Higher levels of recreational use are primarily limited by access. Presently aircraft and motorboat are the only practical methods of access to the river areas. Although landing sites for floatplanes exist in the middle and lower reahces, access into the headwater areas is limited to ~~small~~ a very few places where specialized fixed-wing aircraft can land or to helicopter access.

~~aircraft on wheels~~. Consequently, only rafts or foldboats could be brought into the upper reaches (assuming helicopters would not be available to the public). Motorboats are generally able to reach only the extreme lower reaches of the ~~study~~ proposed segments due to occasional shallow riffles.

Other limitations are due to the harsh sub-arctic climate. A "summer" season from mid-June through September allows only a brief period of time for most recreational uses. Freezing temperatures can occur in all months except possibly July. Water temperatures remain cool all summer, prohibiting any prolonged body contact. Winters are extremely severe with cold temperatures (down to -40° and lower) and deep snows (45-60 inches) limiting winter sports use.

Because of permafrost soils, much standing water is present in the area. These waters give rise to hordes of mosquitoes and flies which at times can seriously limit recreational use because of the great intensity of the winged attack.

Future recreational activities are also limited by the natural conditions. Off-road vehicle uses may be limited by soil conditions in times of no snow cover. Disruption of the thin soil can cause surface damages which may persist for long periods of time. Most surface damages occur during summer thaw periods.

Potential limitations to recreation include the users themselves. It is quite possible that larger numbers of recreationists in the river area would degrade or destroy the pristine environment and the primitive experience of the users. The most outstanding recreational value of the river areas could be lost through overuse. Unregulated increases in recreational use and sport hunting + fishing, could also detract from the wildlife + fishery values of the river. Local populations of fish + game could be altered and the "visibility" of animals could be affected by increased hunting + fishing pressures ~~"people pressures"~~ by the presence of larger numbers of people.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The Andreafsky River and its East Fork meet the criteria for inclusion in the National Wild and Scenic Rivers System in that:

- The rivers are free-flowing.
- The rivers and their immediate environments possess outstandingly remarkable values.
- There are sufficient volumes of water to permit full enjoyment of these values.
- The rivers are of sufficient length to provide a meaningful high quality recreational experience.
- Water quality is excellent.
- The rivers and their immediate environments are capable of being managed to protect and interpret special values and protect the user.

Special Values

The special values and resources of the Andreafsky and its East Fork include the following:

- The rivers (each approximately 125 miles long) and their immediate environments are pristine and untouched in character over most of their lengths. No habitation, commercial timber harvesting ~~lumbering~~, mining or other development is presently taking place place in the river areas except near the mouth around the village of St. Marys.

- The Andreafsky and its East Fork are outstanding salmon spawning streams for king, chum, ~~pink~~, ~~and silver~~ salmon. The Andreafsky (including the East Fork) is one of the top three king salmon spawning rivers in the entire Yukon drainage. It is also one of the top chum salmon spawning rivers. These two rivers are a significant contributor to both the commercial and subsistence salmon catches in the Yukon Delta and hence, the regional and state economies.
- The scenic qualities of the Andreafsky River and its East Fork are regionally exceptional. Rolling hills and mountains and a variety of vegetation patterns and colors provide relative high aesthetic values.
- Excellent populations of Arctic char and grayling are found in the rivers.
- The river is exceptional for river floating by novice boatsman and adjacent lands offer outstanding hiking opportunities.
- Significant concentrations of grizzly bear are found seasonally ~~Big game animals are common~~ in the river area.
- The Andreafsky region is the only reported nesting area of the bristled-thighed curlew in the world.
- ~~Aircraft and motorboat presently are the only practical means of access to the river areas.~~

Potential Resource Conflicts

Land status is fragmented with potential Native lands in both lower and headwater river areas. A substantial upper [illegible] portion of the river included in the Wildlife Refuge or Wild river proposal. Trespass problems could occur in the lower river area with increased numbers of recreationists.

- Virtually the entire river is presently owned by the federal government and managed by the Bureau of Land Management. A block of unreserved lands surrounds the upper 20 miles of the main stem and the upper 40 miles of the East Fork. The downstream 80 miles of the main stem and the downstream 55 miles of the East Fork are located within a block of land withdrawn under Section (d)(2) of ANCSA. The lower 25 miles of the main stem and the lower 30 miles of the East fork are withdrawn as lands for potential Native selection under the terms of ANCSA.
- No water resource projects have taken place or are proposed for the river.
- No potential for mining or lumbering development has been identified. The East Fork area has been identifield as a potential area for oil and gas deposits based on favorable geology.
- A potential extension to the state highway net has been identified which would cross the Andreafsky River somewhere near the mouth.
- Some subsistence hunting and trapping uses by Native peoples is taking place along the river which could be affected by increased recreational use.
- The Andreafsky area has been identified by Native groups as potential area for future reindeer grazing.

Recommendations

- It is recommended that the upper 100 miles of the Andreafsky River and the upper 95 miles of the East Fork be included in the National Wild and Scenic Rivers System by Congress.
- It is recommended that the river segments be managed by the federal manager of the adjacent lands.
- It is recommended that the river segments be classified as a "wild river area" as defined in Section 2 (b)(1) of the Wild and Scenic Rivers Act:

  "Wild River areas -- Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines, essentially primitive and waters unpolluted. These represent vestiges of primitive America."

- It is recommended that boundaries of the wild river area be from the headwaters of the main stem in T. 27 S., R. 16 W. (Kateel River Meridian), to a point approximately 25 miles above the mouth (the southern border of T. 25 N., R. 74 W., Seward Meridian). Boundaries of the East Fork would run from the headwaters in T. 27 S., R. 15 W., Kateel River Meridian, to a point approximately 30 miles above the confluence with the main stem (western boundary of T. 24 N. R 73 W., Seward Meridian). Precise lateral boundaries should be determined by the land manager within one year of inclusion of the Andreafsky River segments in the national system by Congress. In general,

lateral boundaries should not exceed an average of 1 1/2 miles to either side of the river.

It is recommended that approximately 220,000 acres of the immediate river environment be included in the National System.

- Approximately 25 miles of the Andreasfky and 30 miles of the East Fork lie between the lower recommended river boundaries and the confluences. This segment of the river has been withdrawn as village selection lands for potential selection by Native corporations under the terms of ANCSA. Ownership, public access, navigability, and other land questions will not be settled in this area for several years. However, this segment of of river has been found to have outstanding values and would be a logical extension to a wild and scenic river designation upstream. Thus, although not proposed for inclusion at this time, it is recommended that this section be studied at a later date for inclusion in the National System. Any lands not selected by Natives corporations should be included in the National System where appropriate.
- It is recommended that, subject to valid existing rights, the minerals in Federal lands which are made part of this wild river area be withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws. Minerals have not been

identified within the immediate river environment in commercially exploitable amounts. However, even small "try-your-luck" prospecting and extraction activities could seriously detract from the existing primitive values of the river environment.

- It is recommended that any traditional Native subsistence uses of the river area be protected by the administering agency in order to help preserve the cultural heritage and lifestyle of local residents.

- It is recommended that the 15 miles of the main stem in the upper river area which have been classified under Section 17(d)(1) of ANCSA be included with the proposed downstream 60-mile segment in the National Wild and Scenic Rivers System as a "wild river area". Similarly, the upper 40 miles of the East Fork flowing through (d)(1) lands is recommended for inclusion along with the proposed downstream 55-mile segment.

- Lands classified for Native selection in the upper and lower river areas which are not selected are recommended for inclusion in the proposed "wild river area".

- It is recommended that federal and Native land managers cooperate in a management plan for the entire rivers which would reduce or eliminate potential resource conflicts and problems which may arise due to increased recreation uses stimulated by the proposed refuge and wild river.

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Files

DATE: October 18, 1974

FROM : Patrick Pourchot

SUBJECT: Log of Andreafsky River Field Inspection - July 22-July 31, 1974

The following is a day by day log of a field inspection of the main fork of the Andreafsky conducted as part of a BOR study of the river area for potential inclusion in the National Wild and Scenic Rivers System as authorized under the Alaska Native Claims Settlement Act.

The following personnel participated in the inspection:

Ed Bailey	U.S. Fish & Wildlife Service, Anch.
Nate Johnson	Alaska Dept. of Fish & Game, Anch.
Dick Tindall	BLM, Anchorage Dist. Office
Bill Resor	NPS Task Force, Anchorage
Dave Christy	Alaska Methodist University, Anch.
Pat Pourchot	BOR, Alaska Field Office, Anchorage

July 22. Left Anchorage 9:00 a.m. in OAS DC-3 with 3 17-foot fiberglass canoes (rented from Shaw Tool) and gear. Bill, Ed, and I arrived in St. Marys about 12:30 p.m. after stopping in McGrath to drop off BLM fire-fighting gear. Although Chugiak Air Service was previously arranged to fly us over the river that afternoon, they didn't show up and we overflew the East Fork and the main stem in the evening in a Cessna 185 with St. Marys Air Charter Service.

The weather had just cleared after a week of rain according to the pilot. We flew up the East Fork to its headwaters and down the main stem in about 2 hours. The East Fork was very high and muddy while the main stem was surprisingly clear. Both rivers had virtually no rapids or whitewaters although both appeared fairly swift in the headwaters. The lower 20 or 30 miles of the East Fork looked very sluggish. Both rivers appeared navigable by canoe within 10 miles or less of their extreme headwaters. Very few gravel bars on either fork.

On the East Fork 2 bull moose, a bald eagle, many ducks and geese, and much beaver sign were observed. A black bear was seen on a ridge top between the headwaters of the 2 rivers. On the main stem

7 grizzlies, including a sow with 2 cubs, were observed along the river above treeline. Also a cow and bull moose were spotted. Because of water conditions and wildlife we decided to float the main stem.

In the absence of a hotel in St. Marys, we slept in the Pitkas Point school house as the guest of Ron Anderson, principal, teacher and St. Marys Air Service operator.

July 23. Early in the morning Dick, Dave, and Nate arrived from Anchorage by charter plane. The helicopter that was to arrive from Aniak failed to show at 9:00 a.m. and we spent the day trying to reach someone outside of St. Marys (radio and telephone out of commission). Finally got through to Anchorage and a 205 helicopter showed up at 5:30 p.m. The 3 canoes and I made the first trip in. Because the pilot said he only had a one-way range of 75 air miles we put-in about 5-10 miles downstream of where I had preferred but still got high into upper river - about 102 river miles above St. Marys and about 20 miles from extreme headwaters. Saw 3 grizzlies on first trip in. Rest of party arrived in second trip by 9:00 p.m. One roundtrip took about 1 hour 45 minutes. They saw 3 more grizzlies.

Camped on grassy bank above small gravel bar. Surrounding country rolling hills covered mostly by tundra, a few patches of alder on hillside and ravines and tall willow along river. No trees. In evening, weather clear; 9:30 p.m. water temp. 51°F, air 42°F; 11:30 p.m. air temp. 39°F.

River at camp very clear; 25 yds wide, 2 feet deep, 4-5 mph with many swift riffles.

In evening, caught 14" grayling and 18" Dolly Varden on spinners. No luck with flies.

July 24. After early morning fog, beautiful clear day; 9:30 a.m. air temp. 48°F; 11:00 a.m. water 48°F, air 53°F; 3:30 p.m. water 55°F, air 66°F. River dropped several inches overnight.

Spent day in camp and took short hikes. Climbed hill just east of river. From 500 foot river elevation, hiked up about 850 feet to 1,345 foot high hill in about 45 minutes. Hiking very easy on smooth dry alpine tundra and rock ridges. Great view from top of expansive rolling hill country. Needle Mountain to east especially striking. From top could see major fork in river 2 miles above camp - both forks looked canoeable up as far as we could see (1 or 2 miles).

Nate snorkeled about 1/2 mile of river around camp and saw 8 nearly spawned out chum salmon, six whitefish, three Dolly Varden, and many grayling. Caught and ate 15 grayling, 3 17-inchers and most over 14". Bugs light most of day, some white sox flies. A beaver and land otter were spotted in a beaver pond near camp.

July 25. Again, early morning fog, then mostly sunny windy most of day. Looked like rain in late evening. 2:30 p.m. air 58°F, wind 10-15 mph from south; late p.m. winds 20-30 mph; 10:30 p.m. air 50°F, water 52°F. Major tributaries about 10 miles below camp; p.m. temps of 51°F and 52°F.

Camped 13 miles downstream from put-in. River fast (4-6 mph) shallow, 25-30 yds wide, many riffles, very few chutes or large rocks in channel. Except for one or two Class II chutes, all Class I, easy canoeing. Hit bottom a couple times in riffles. Largest tributary from west 15 yds wide/foot deep.

First poplar tree seen 2 or 3 miles down from camp but virtually all sweeping tundra views from river. Fishing slow but several nice grayling and dollies caught. Saw several king salmon and chum salmon in river during day. Also several dead chums along banks.

Near 2nd camp, a grizzly was seen along river. At camp while 2 of guys were cleaning fish along river, saw grizzly trailed by 3 cubs charge up river and down bank across from them. After much yelling and swift retreat, the bears turned and ran over nearby ridge. Later we climbed hill above camp and saw 2 more adult grizzlies playing and fishing in the river about a mile above camp.

Saw 2 rough-legged hawk nests, at least one rough-legged hawk and a gyrfalcon.

July 26. Mostly cloudy, and windy. 9:30 a.m. 46°F air; p.m. high near 60°F; 8:00 p.m. 52°F air, water 54°F. Started to rain in late evening.

Traveled 18-1/2 miles to new camp. River still fairly swift (3-5 mph), shallow, clear, 25 yds wide, Class I. Paddling hard sometimes against wind.

6 or 7 miles from previous night's camp we saw first spruce. At first grove were remains of what looked like a winter tent camp with poles, cut stumps, blazo cans, food cans. Also bear scratching tree with hair up 7 to 8 feet on tree. One to two miles further

downstream were the first birch trees. New camp still in country mostly covered with tundra, poplar, and willows.

Good scenery, lots of hills, bluffs, ridges near either bank most of day. Bugs good due to wind.

In early morning at previous night's camp, a grizzly was looking for fish across river from camp, then swam across to our bank about 75 yds from camp, then back across before hearing us. After posing, he ran downriver. During day, we saw 4 more adult grizzlies along river, all to within 100-200 yds. One lay down just off gravel bar in brush. We beached canoes and got out on bar about 50 yds from bear and shot up several rolls of film. We left before he did. Despite abundance of dead chum and a few pink salmon along banks, we saw one bear in berry patch eating blueberries.

Saw several fresh chums and kings in river. At new camp tied into several large salmon but got away. Two fresh jack kings caught, one 22" long, 3 pounds. Saw another gyrfalcon.

July 27. Rain all night and all day with strong winds 20-30 mph and low overcast. 9:30 a.m. air 50°F, water 48°F; 3:15 p.m. air 55°F, water 50°F, a tributary from east 48°F.

River more mature, slightly less current 3-4 mph, high cut banks, broad meanders, much deeper (3-6 feet), 25-35 yds wide, very clear, all Class I with occasional smooth riffles. Traveled 15 miles today.

Saw 2-3 more birch trees, one aspen grove, mostly willow and poplar vegetation along river with scattered spruce stands.

More dead chum on banks and in river, a few pinks. Saw occasional schools of fresher chums and a few kings. Caught a couple of chums, no kings. Fishing good today more dollies caught than before. Grayling 16-18", one 20", 2 lb. Dollies between 18-20".

In early morning, at previous night's camp saw a grizzly fishing across river directly opposite camp. Saw 2 more grizzlies along river during day. Otter and lynx tracks at new camp.

Passed old camp site with what looked like caribou hair and fire grate or stove. Another site had blazo can. No airplanes have been heard yet.

July 28. Rainy, windy all day with 20-25 mph head winds. Air most of day 53°F, water 50°F. Traveled 12-1/2 hard miles against

wind and whitecaps.

Fishing, no good. Lots of dead chum, more pinks. More spruce. No bears. River 25-30 yds wide, 3-5 feet depp, 3-4 mph, no riffles. Good camp sites hard to find, very few gravel bars throughout river and virtually no sand. Most camp sites in grassy areas among trees and willows.

Tributaries turning muddy.

July 29. Light rain ending later in day. Wind died down. Air 48°F a.m., 53°F p.m., water 49°F p.m. Tributary near new camp 45°F at 5:30 p.m. River rose 15 inches overnight and a total rise of 2-3 feet from previous days. Water in willows and grass on banks. Much less clear, visibility about one foot.

River much deeper, broader, sweeping curves, all Class I, no riffles. No fishing, no game seen. Pair of swans and 3 cygnets spotted on large lake adjacent river. Saw merganser with 18 ducklings.

Heard first planes at new camp. Passed more camp sites and one good cabin. Cut stumps, poles, cans in spruce groves periodically along from Allen River vicinity.

Lots of bugs at new camp. Picked bucket of blueberries near new camp. Also saw first cow parsnips, prickly rose, and high brush cranberries at new camp. A few more birch trees but mostly spruce, poplar, willows, and moist tundra. High ridges occasionally border river on one side and are continuous at a distance of 1 to 3 miles from each side of river.

Traveled 20-1/2 miles.

July 30. Cloudy to partly cloudy in late p.m., a little sun in evening. A.m. water 49°F; p.m. water 50°F, air 60°F. River down one foot overnight, a little clearer.

Traveled 18 miles to within 4-1/2 miles of St. Marys. Camped on nice grassy, smooth island. Water backing up from Yukon confluence causing 1-2 mph current upriver past camp in evening.

In lower river area many more ducks and geese seen. Hunters from St. Marys shooting from motor boats near camp in evening at waterfowl. No game seen or fish caught. Bugs bad in evening as wind died. Saw osprey.

River slow and large near camp. Current 1-2 mph, 200-400 yds wide,

unknown depth.

July 31. Partly cloudy, sunny day. We arrived at St. Marys about 11:30 a.m. covering 4-1/2 miles in a little over an hour.

We visited with Father Astruk of Anchorage who was substituting for the Director of St. Marys Catholic School. Father Astruk had been the Director in St. Marys for many years. We left St. Marys about 5:00 p.m. with Bob Johnson in OAS turbo-goose after arranging for shipment of canoes on Wien. Arrived back in Anchorage about 7:30 p.m.

General.

Covered approximately 102 miles of river in 6-1/2 days on the water. Canoeing was very highly enjoyable and easy; no rapids, moderate to swift current most of the way. We paddled lightly to moderately over distance except during periods of strong head winds when hard paddling was needed to make any headway despite current. We did not feel pressed for time, spending approximately 4 to 5 hours on the water daily.

Although rain and wind disrupted fishing and observing in the lower half of the river, sport fishing was good in the upper half for grayling and Dolly Varden. Exceptionally large numbers of chum and king salmon have been counted by Fish and Game personnel in both the East Fork and the main stem, but we saw a relatively few chum and kings in the river. However, we saw no dead kings so they were probably still spawning and migrating up through the lower river area where we couldn't see them because of silty water. Many dead chum were seen along the banks over most of the river and their main spawning time was almost over.

In the upper half of the trip we saw at least 14 grizzly bear along the river. The presence of this number of animals made for great excitement and lots of photographic opportunities. In contrast, no other large game animals were seen and only a few signs of moose were present. Attached is a list of birds identified by Ed Bailey.

Hiking opportunities along the river were very good, especially in the upper half. Ridges and hills periodically sloped down to the river's edge offering fairly smooth, dry hiking avenues away from the river. The sweeping tundra-covered rolling hill country was especially scenic.

Although good commercial air service is available at St. Marys

3 miles above the Andreafsky confluence with the Yukon, access into the upper river area is difficult. No suitable lakes or river stretches of gravel bars exist for most small-plane access above the Allen River vicinity (roughly 50 miles above St. Marys). River boats can normally be taken only about 35 to 40 miles upriver. The St. Marys Air Charter operator said, however, that he has landed his Heliocourier aircraft (specially designed for short take-off and landing) on bars and tundra in the upper area. Rafts and fold-boats could possibly be taken in this way, but canoes and rigid kayaks would be limited to helicopter access.

Table 1. Birds observed on the Andreafsky River -- July 22 - 31, 1974

Common Loon
Red-throated Loon
Whistling Swan
Canada Goose
Pintail
Green-winged Teal
American Wigeon
Harlequin Duck
Surf Scoter
Common Merganser
Red-breasted Merganser
Bald Eagle
Marsh Hawk
Osprey
Gyrfalcon
Rock Ptarmigan
Semipalmated Plover
Ruddy Turnstone
Common Snipe
Spotted Sandpiper
Wandering Tattler
Greater Yellowlegs
Lesser Yellowlegs
Pectoral Sandpiper
Least Sandpiper
Rough-legged Hawk
Western Sandpiper
Parasitic Jaeger
Glaucous Gull
Mew Gull
Bonaparte's Gull
Arctic Tern
Belted Kingfisher
Say's Phoebe
Tree Swallow
Bank Swallow
Cliff Swallow
Gray Jay
Common Raven
Black-capped Chickadee
American Robin
Water Pipit
Northern Shrike
Yellow Warbler
Blackpoll Warbler
Wilson's Warbler
Rusty Blackbird
Common Redpoll
Savannah Sparrow
Tree Sparrow
Fox Sparrow
Lapland Longspur

Edgar Bailey

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

D4225 Alaska
(W&SRS)

TO : Assistant Director Eastman

DATE: May 30, 1973

For your review & comment

FROM : Alaska Task Force Leader

SUBJECT: Andreafsky Wild and Scenic River Report

Enclosed are two copies of a preliminary draft of Chapters IV and V of the subject report. A copy of this report has been provided to NWRO and BLM, BSF&W, NPS and FS planning teams in Anchorage. Chapter IV will be distributed to study team participants.

It is emphasized that the conclusions and recommendations are based upon a single aerial examination of June 22, 1972, and upon office review of available information. On-site field examination is scheduled for this summer.

Following field work, the preliminary draft will be revised as appropriate and the remaining portions of the report completed.

Jules V. Tileston

2 Enclosures

cc: WASO/Fred Strack

ANDREAFSKY RIVER

A Wild and Scenic River Analysis

PRELIMINARY

Bureau of Outdoor Recreation

Alaska Task Force

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The Andreafsky River and its East Fork meet the criteria for inclusion in the National Wild and Scenic Rivers System in that:

- The rivers are free-flowing.
- The rivers and their immediate environments possess outstandingly remarkable values.
- There are sufficient volumes of water to permit full enjoyment of these values.
- The rivers are of sufficient length to provide a meaningful high quality recreational experience.
- Water quality is excellent.
- The rivers and their immediate environments are capable of being managed to protect and interpret special values and protect the user.

The special values and resources of the Andreafsky and its East Fork include the following:

- The rivers (each approximately 125 miles long) and their immediate environments are pristine and untouched in character over most of their lengths. No habitation, lumbering, mining or other development is presently taking place place in the river areas except near the mouth around the village of St. Marys.

- The Andreafsky and its East Fork are outstanding salmon spawning streams for king, chum, pink, and silver salmon. The Andreafsky (including the East Fork) is one of the top three king salmon spawning rivers in the entire Yukon drainage. It is also one of the top chum salmon spawning rivers. These two rivers are a significant contributor to both the commercial and subsistence salmon catches in the Yukon Delta and hence, the regional and state economies.
- The scenic qualities of the Andreafsky River and its East Fork are exceptional. Rolling hills and mountains and a variety of vegetation patterns and colors provide high aesthetic values.
- Excellent populations of Arctic char and grayling are found in the rivers.
- The river is exceptional for river floating by novice boatsman and adjacent lands offer outstanding hiking opportunities.
- Big game animals are common in the river area.
- The Andreafsky region is the only reported nesting area of the bristled-thighed curlew in the world.
- Aircraft and motorboat presently are the only practical means of access to the river areas.

- Virtually the entire river is presently owned by the federal government and managed by the Bureau of Land Management. A block of unreserved lands surrounds the upper 20 miles of the main stem and the upper 40 miles of the East Fork. The downstream 80 miles of the main stem and the downstream 55 miles of the East Fork are located within a block of land withdrawn under Section (d)(2) of ANCSA. The lower 25 miles of the main stem and the lower 30 miles of the East fork are withdrawn as lands for potential Native selection under the terms of ANCSA.
- No water resource projects have taken place or are proposed for the river.
- No potential for mining or lumbering development has been identified. The East Fork area has been identifield as a potential area for oil and gas deposits based on favorable geology.
- A potential extension to the state highway net has been identified which would cross the Andreafsky River somewhere near the mouth.
- Some subsistence hunting and trapping uses by Native peoples is taking place along the river.
- The Andreafsky area has been identified by Native groups as potential area for future reindeer grazing.

Recommendations

- It is recommended that the upper 100 miles of the Andreafsky River and the upper 95 miles of the East Fork be included in the National Wild and Scenic Rivers System by Congress.
- It is recommended that the river segments be managed by the federal manager of the adjacent lands.
- It is recommended that the river segments be classified as a "wild river area" as defined in Section 2 (b)(1) of the Wild and Scenic Rivers Act:

> "Wild River areas -- Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines, essentially primitive and waters unpolluted. These represent vestiges of primitive America."

- It is recommended that boundaries of the wild river area be from the headwaters of the main stem in T. 27 S., R. 16 W. (Kateel River Meridian), to a point approximately 25 miles above the mouth (the southern border of T. 25 N., R. 74 W., Seward Meridian). Boundaries of the East Fork would run from the headwaters in T. 27 S., R. 15 W., Kateel River Meridian, to a point approximately 30 miles above the confluence with the main stem (western boundary of T. 24 N. R 73 W., Seward Meridian). Precise lateral boundaries should be determined by the land manager within one year of inclusion of the Andreafsky River segments in the national system by Congress. In general,

lateral boundaries should not exceed an average of 1 1/2 miles to either side of the river.

It is recommended that approximately 220,000 acres of the immediate river environment be included in the National System.

- Approximately 25 miles of the Andreasfky and 30 miles of the East Fork lie between the lower recommended river boundaries and the confluences. This segment of the river has been withdrawn as village selection lands for potential selection by Native corporations under the terms of ANCSA. Ownership, public access, navigability, and other land questions will not be settled in this area for several years. However, this segment of of river has been found to have outstanding values and would be a logical extension to a wild and scenic river designation upstream. Thus, although not proposed for inclusion at this time, it is recommended that this section be studied at a later date for inclusion in the National System. Any lands not selected by Natives corporations should be included in the National System where appropriate.
- It is recommended that, subject to valid existing rights, the minerals in Federal lands which are made part of this wild river area be withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws. Minerals have not been

identified within the immediate river environment in commercially exploitable amounts. However, even small "try-your-luck" prospecting and extraction activities could seriously detract from the existing primitive values of the river environment.

- It is recommended that any traditional Native subsistence uses of the river area be protected by the administering agency in order to help preserve the cultural heritage and lifestyle of local residents.

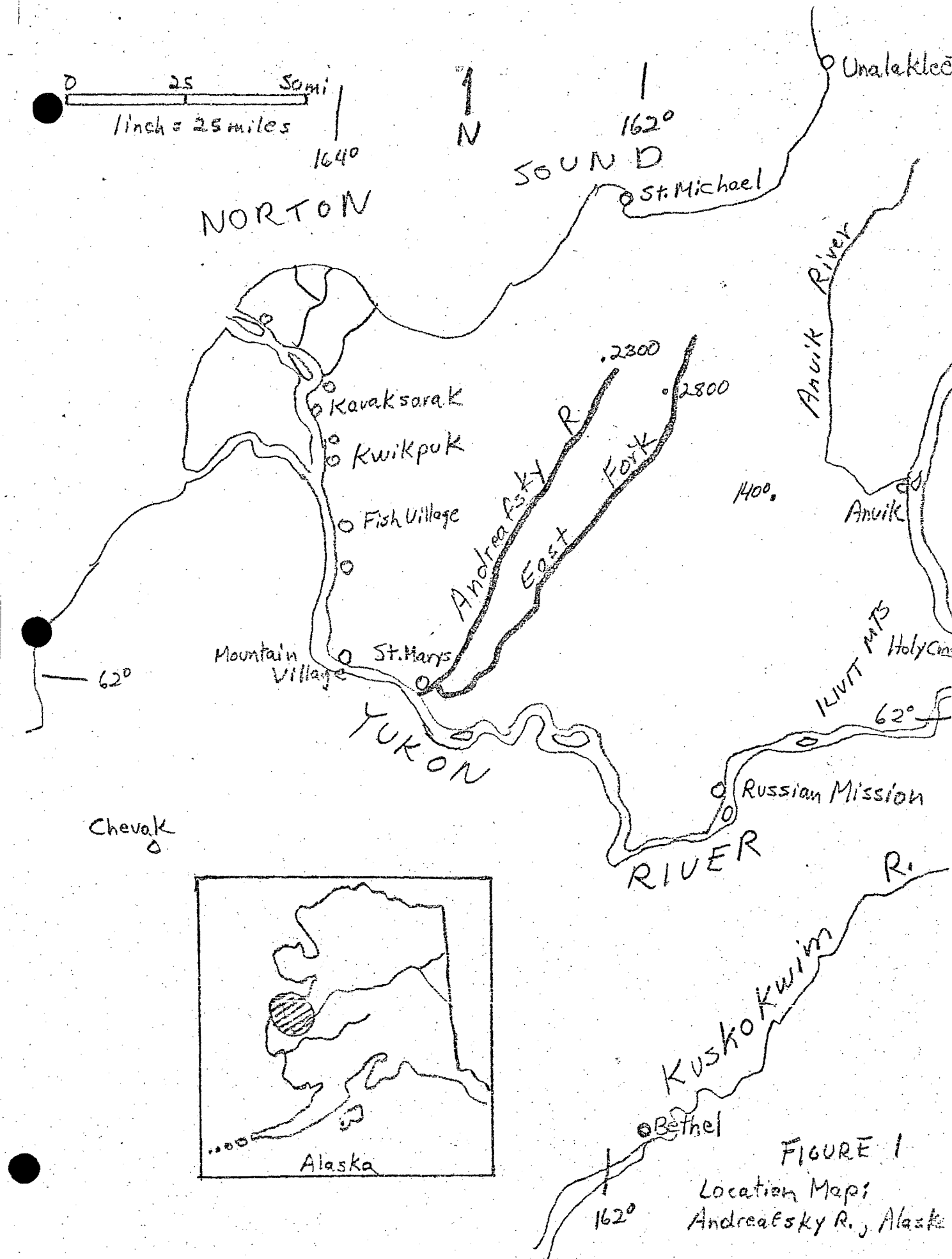


FIGURE 1
Location Map:
Andreafsky R., Alaska

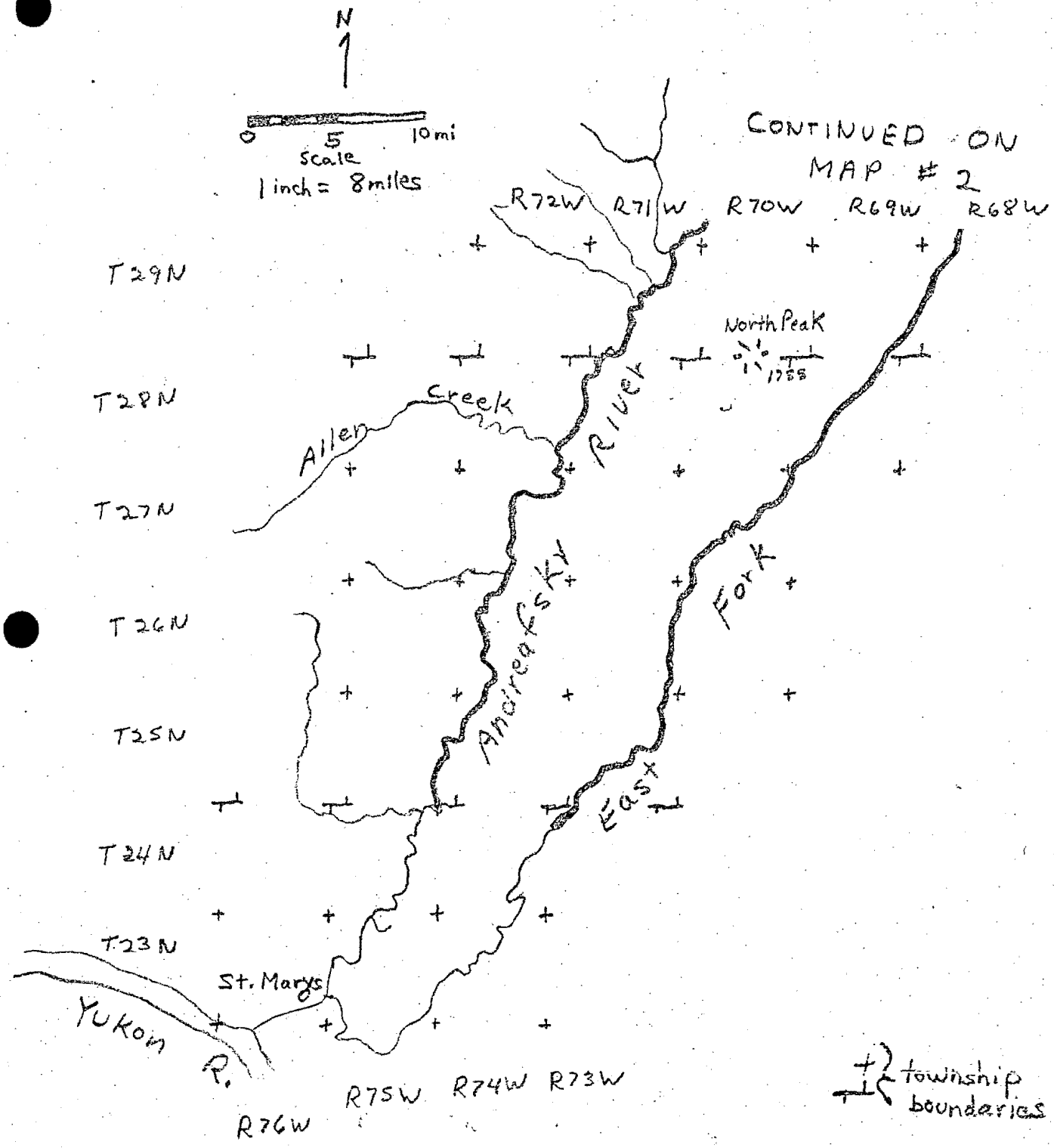


Figure 2
The Proposed Andreafsky Wild River - Map #1

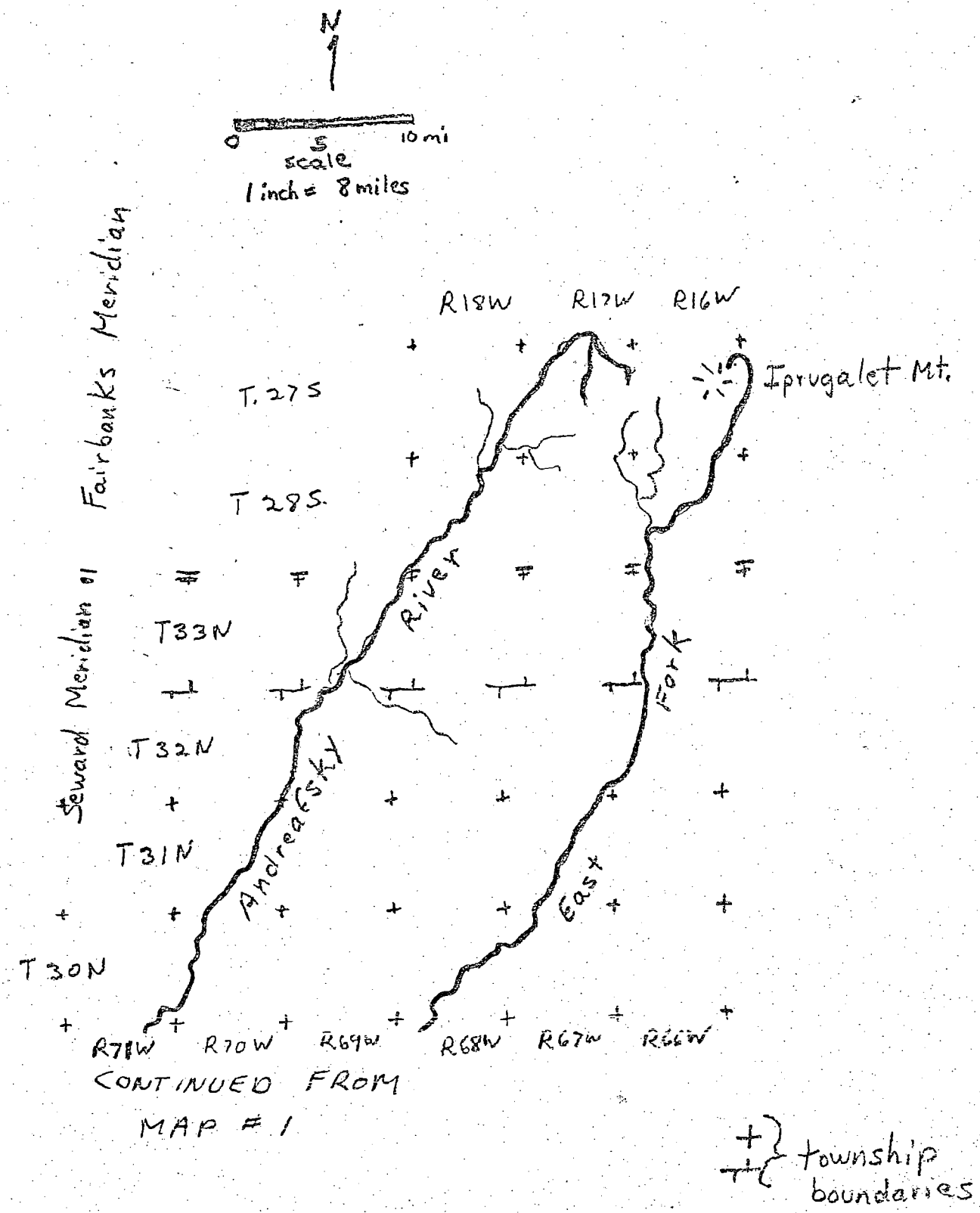


Figure 2
The Proposed Andreafsky Wild River - Map #2

IV. DESCRIPTION AND ANALYSIS

The River and its Setting

The Andreafsky River and its East Fork are located approximately 420 air miles west of Anchorage, Alaska, and approximately 100 miles north of Bethel, Alaska. The main river and the East Fork (a major river in its own right) are each roughly 125 miles long and parallel each other 10-15 miles apart as they flow south to the Yukon River. The East Fork joins the main river near the village of St. Marys five miles above the confluence with the Yukon River. The two rivers drain a combined area of over 2200 square miles.

The segment of the main stem under study is approximately 100 miles long running from the headwaters in T. 27 S, R. 16 W. (Kateel River Meridian) to a point approximately 25 miles above the Yukon confluence (southern boundary of T. 25 N., R. 74 W., Seward Meridain). The upper 95 miles of the East Fork from the headwaters in T. 27 S., R. 15 W., Kateel River Meridian) to a point approximately 30 miles above the confluence with the main stem (western boundary of T. 24 N., R. 73 W., Seward Meridian) is under study.

The Andreafsky flows through a physiographic province generally referred to as the Nulato Hills. The topography consists largely of northeast-trending even-crested ridges having rounded summits and gentle slopes. The narrow valleys of the main stem and the East Fork are bordered throughout

their lengths by these ridges and low mountains. The valley floors are generally 1/2 to 1 mile wide and ridgetop-to-ridgetop distances average 2-3 miles. Relief is moderate with an average elevation difference of 500 feet between the valley floors and the tops of adjacent ridges.

Both the main stem and the East Fork begin forming near 1100 feet in elevation. The main stem draws its headwaters from small mountains averaging 1500 feet in elevation, while the East Fork forms on the east side of 2350 foot Iprugalet Mountain. The mouths of the rivers are less than 20 feet above sea level although located nearly 100 miles upriver from the confluence of the Yukon River with the Bering Sea.

The average gradient over the entire river lengths is almost 9 feet per mile. The elevation of the rivers at the lower boundaries of the study segments is 25 feet resulting in an average gradient of 11 feet per mile in the study segments. Only a .2 foot per mile gradient occurs between the lower study segment boundaries and the rivers' mouths. Current is moderate throughout the study lengths exceeding four miles per hour.

The valley floors are largely covered with a mixed spruce-hardwood forest. This forest extends up the rivers approximately 3/4 of their lengths. The upper reaches of the rivers as well as the adjacent hills and ridges are covered by alpine tundra.

The Andreafsky and the East Fork are nonglacial rivers with extremely clear waters. The watershed is generally stable and sediment load in the water is minimal. Active streambank erosion contributes some sediment during periods of high water. The bottom is generally sandy to gravelly in character. No major rapids or falls exist along the rivers.

In the upper reaches, the rivers average 10-15 yards wide with depths of 1 to 2 feet. At the lower study boundaries both rivers are nearly 150 yards wide. The width of the Andreafsky at its confluence with the Yukon is over 400 yards. Depths of over 10 feet are common in the lower reaches, although shallow riffles exist near the lower study boundaries.

No stream flow characteristics have been measured, but maximum discharge of the river is most often reached after break-up in late May or early June resulting from snow melt and spring rains. High water levels also occur occasionally during July or August after extended summer rains. Water temperatures range from near 32° F. during winter to between 50-55° F. in July. Ice beings forming in late October and by mid-winter thicknesses of 4 feet or more are common.

Water Quality

No water qualities studies have been done on the Andreafsky or the East Fork . However, there are presently no known sources of sewage or chemical pollution in the drainage (except the village of St. Marys at the rivers' mouths below

the study segments) that could significantly degrade water quality. Thus, water is believed to be of the highest quality and could be used for drinking purposes.

It has been reported that in some Alaskan rivers having large salmon runs, water quality is diminished somewhat during peak periods of spawning salmon when the numerous dead salmon are decomposing in the water. Although these rivers have large salmon runs, the low concentrations of dead fish in any one area and the relatively large volumes of water in the rivers are believed to minimize this effect.

Low temperature conditions have been reported to be conducive to prolongation of the life of pathogenic bacteria. Although present low use of the river area appears to pose no health problems, indiscriminate disposal of wastes by larger numbers of river users could lead to health risks in the future.

Land Use

Existing

The entire study segments flow through an extremely primitive environment showing little evidence of man. No year-round habitation, farming, lumbering, grazing, mining, or similar land uses are known to exist along the study lengths. Furthermore, no signs of such activities in the past are evident along the rivers.

Hunting and trapping are the primary uses of the study segments. This use is very light and is principally associated with the subsistence life styles of a few Native persons residing in the village of St. Marys and possibly neighboring villages along the Yukon. Most of the hunting and trapping takes place during the fall and winter months. At this time the commercial and subsistence salmon catching activities are over on the Yukon River, and access into the study segment is available by snowmobile and dog sled.

Salmon harvesting (other than sport fishing) is not permitted under State regulations in the Andreafsky and East Fork.

Fur harvesting has diminished appreciably since 1969 in the region. Changing local economies and declining fur markets have reduced the relative importance of trapping in the area.

Potential

Areas of the Yukon Delta region as well as the Seward Peninsula area to the north were once used as grazing areas for reindeer in the early 1900's. The herds grew extremely large, but due to range limitations and the lack of comprehensive herding practices, the population experienced a "crash" in the early 1940's. Reindeer grazing was discontinued, and the few animals remaining which were not slaughtered integrated with caribou herds in adjacent regions.

Several villages in the lower Yukon region including St. Marys have proposed to reintroduce reindeer into the region at some future time. Specific plans have not been developed for this future use and herding areas and numbers of animals have not been identified. Vegetation on the slopes and ridges adjacent the Andreafsky and East Fork is suitable for reindeer grazing and use of areas adjacent the study lengths may be proposed by Native groups in the future. However, this potential use would be limited by the amount of winter range available in the region; this amount comprises a small fraction of the total regional area. Virtually none of the study river areas would be suitable for winter grazing.

No dams, channel improvements, water diversions, or other resource projects have taken place or are proposed on the Andreafsky or the East Fork.

Land Ownership

The entire study river drainages are owned by the Federal government and are presently managed by the Bureau of Land Management.

There are applications filed for four Native Allotments adjacent the Andreafsky study length and for three Allotments adjacent the East Fork. Each application is for a parcel of land not exceeding 120 acres. These applications are pursuant to the Native Allotment Act of 1906 and are based on historic subsistence uses of these lands.

No mining claims or mineral leases are known to exist in the rivers areas.

The upper 20 miles of the main stem flow through unreserved public domain lands. These lands are open to appropriations under the public land laws and the U.S. mining and mineral leasing laws. The downstream 80 miles of the study segment have been withdrawn from all forms of appropriation including the mining and mineral leasing laws, under Section 17 (d)(2) of the Alaska Native Claims Settlement Act (ANCSA, P.L. 92-203). The upper 40 miles of the East Fork flows through unreserved public domain lands. The remaining 55 miles of the study segment has been withdrawn under Section 17 (d)(2) of ANCSA (see Figure ___, Land Status). All these lands are being studied by the BSF&W and will be proposed for inclusion in a Yukon Delta Wildlife Refuge.

The lower 25 miles and 30 miles of the Andreafsky and the East Fork respectively, flow through lands withdrawn under the terms of ANCSA for potential Native selections. Native selections are not, as yet, completed in the area, and the river segment within this potential selection are not a part of the wild and scenic river study area.

If portions of the Andreafsky or its East Fork are determined to be navigable (see following section), the ownership of the stream bed on such portions would be retained by the State of Alaska.

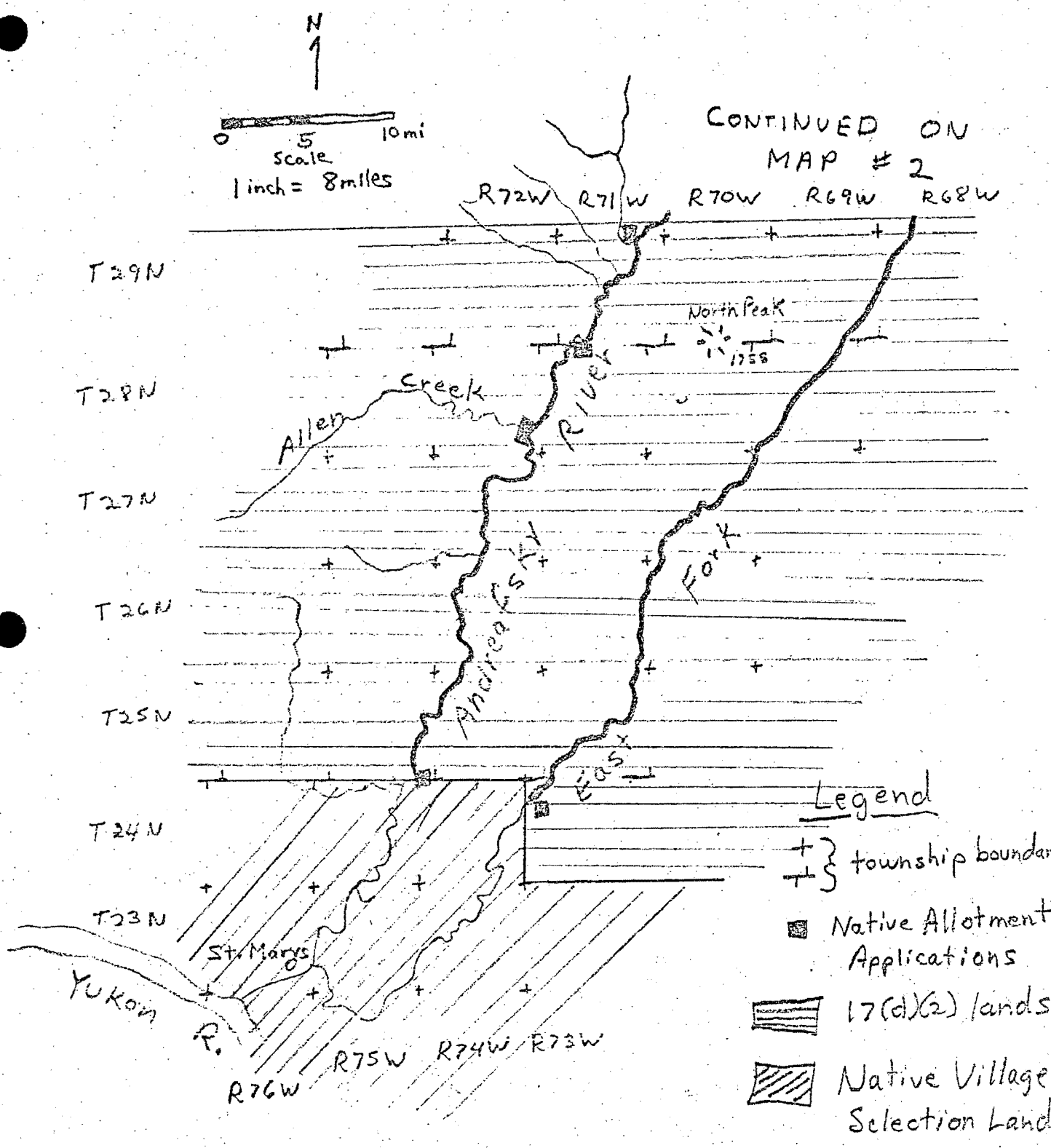


Figure 3

Land Status: Andreafsky River, Alaska

Map #1

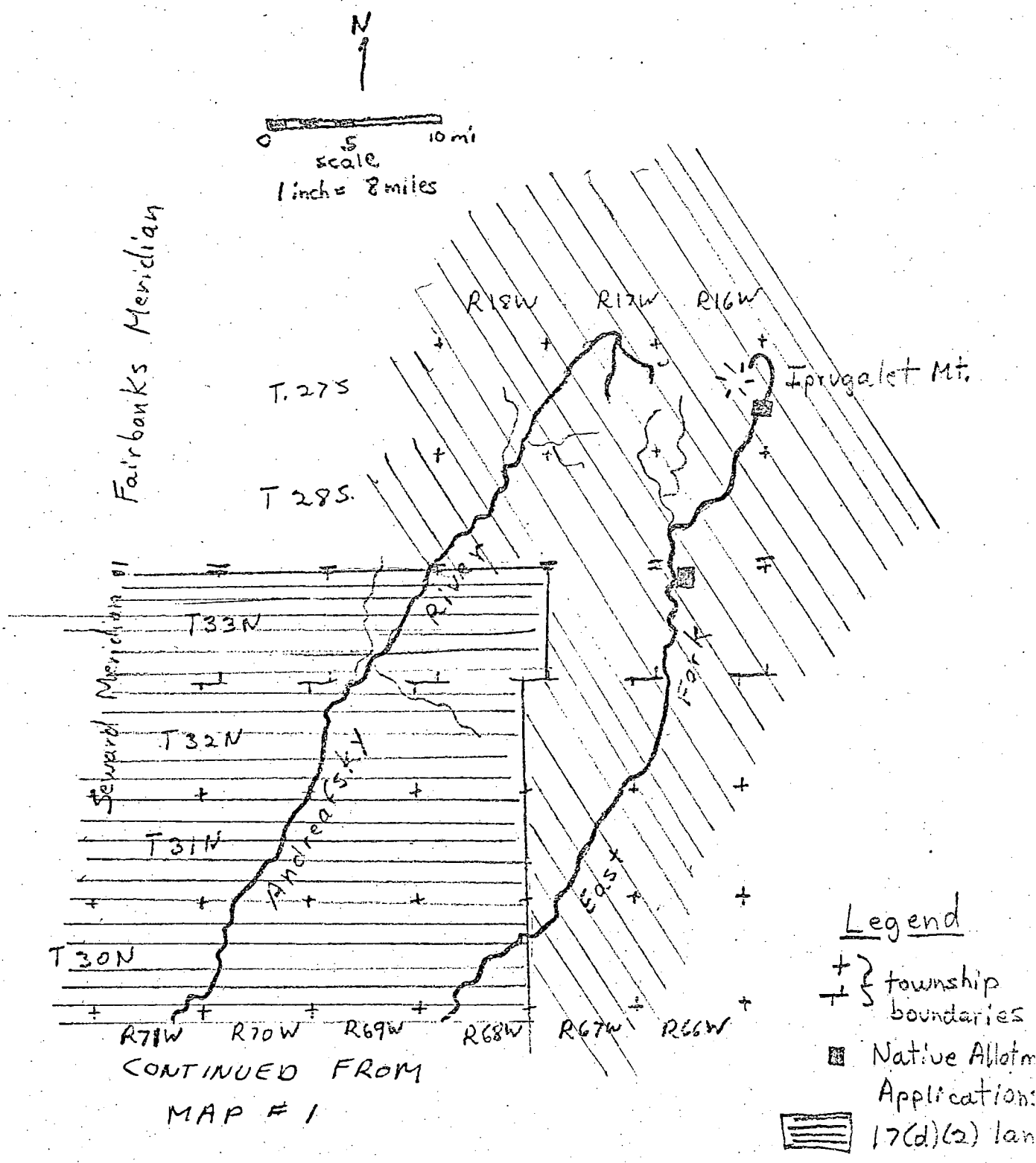


Figure 3
Land Status: Andreafsky River, Alaska
Map #2

Under the Alaska Statehood Act, the state owns the river bottom of all "navigable" streams and rivers. The question of which streams are "navigable" has not yet been determined in Alaska. However, under criteria being developed by the State of Alaska to determine streambed ownership, these rivers would appear to be "navigable" much of their lengths.

It is most unlikely that the rivers have been used as "navigable" waterways in terms of trade or the movement of goods. Shallow riffles in the study segments prohibit upstream navigation by motorboats. No production activities or markets for goods exists in the study segments.

Access

Existing

There is no road access to or near any point of the rivers. The nearest segment of the state highway net lies over 400 miles to the east.

Primary access to the study segments is by aircraft and small boat. Although there are no developed airstrips, gravel bars provide natural landing strips for small planes at many locations along the rivers. In the middle and lower sections of the rivers floatplanes can land on the river in several locations.

Access upriver from the Yukon and St. Marys is possible by motorboats for about 25-30 miles with normal water levels. Thus, the extreme lower reaches of the study segments (5 miles) are accessible by motorboats. Occasional shallow riffles prevent further upstream access.

Access during the winter by snowmachine, ATV's or dog sleds is possible.

The village of St. Marys located approximately 25 miles below the study segments is served by daily commercial air transportation from Anchorage and Bethel, Alaska. St. Marys is also linked with other villages along the lower Yukon River by a winter trail.

Potential

The Alaska State Department of Highways is currently studying and locating potential routes for future extensions of the state highway system. One such extension would follow the Yukon River, linking the villages of the Delta area with the Fairbanks-Anchorage region. This route would cross the Andreafsky near St. Marys below the study segments (see Figure ___). The road is labeled a "supplemental route" (as distinct from a "trunk route"). No feasibility studies have been done for such a road, and it is considered a long-range development by the State Department of Highways.

A similar "supplemental route" is proposed from the Yukon Delta north to Unalakleet. This route approaches the extreme headwaters of the Andreasfsky to within 3 miles but is not located within the drainage.

Soils

The severe winters, short growing and decaying season and low temperatures of the Andreafsky and East Fork river areas result in extremely thin and fragile soils. The soils are generally formed from deep deposits of fine alluvial

or eolian silts. The surface layers usually are characterized by undecomposed organic materials which are acidic and low in nutrients. The organic materials at the soil surface acts both as a sponge and an insulating blanket. Sub-surface horizons are frequently wet and cold. These layers are largely underlain by permafrost which may extend to depths of over 100 feet. Permafrost is generally lacking immediately adjacent the rivers and on favorable south-facing slopes.

When the organic layers are destroyed, the thawed surface layer may reach a depth of several feet during one summer. This thawing process can result in serious soil destruction and terrain damage. Such damage is extremely slow to heal due to slow growth of vegetation and soil building processes.

The fine alluvial or eolian materials on which the soils are formed are conducive to rapid erosion when unprotected by vegetative cover. Streambanks may be cut or rapidly altered during periods of high water.

With respect to agriculture, the soils are generally infertile, particularly in the tundra areas. The harsh climate further excludes the potential for economic crop production.

Vegetation/Timber

Major vegetation types identified for the river areas include closed spurce-hardwood forest and alpine tundra (Alaska Trees and Shrubs, U.S. Department of Agriculture, Forest Service, Handbook No. 410.).

Similar to Interior Alaska, fire plays an important part in plant communities and forest succession in these river areas.

Although less frequent than in the Interior, fires are common in the region. No evidence of recent fires exists in the river areas, but many present vegetative patterns can be traced to historic burns.

Slope and aspect, presence or absence of permafrost, flooding and new channel cutting in the Andreasfsky and the East Fork areas also influence vegetative types and patterns. Ravines, shaded and unshaded slopes, wind exposed areas, recently exposed soils, natural levees, backwater areas, gravel bars, ox-bows, floodplains and other features are all associated with specific plant communities.

The closed spruce-hardwood forest covers the valley floor and up tributary drainages along the lower 2/3 of the river segments. The dominant tree of this forest is white spruce, but other tree types include paper birch, quaking aspen, balsam poplar, and black spruce. Common shrubs associated with these trees include several varieties of berries, willows, alders and roses. Treeline extends generally from 500-1000 feet in elevation.

The best stands of white spruce are found on the warm, dry, south-facing hillsides and adjacent the river where drainage is good and permafrost lacking. Some of the larger spruce may average 15-20 inches in diameter. Aspen are found on south-facing slopes. The aspen mature in 60-80 years and are eventually replaced by white spruce, except in excessively dry sites. Paper birch is common on east and west facing slopes and occasionally on north slopes and flat

areas. Balsam poplar are sparsely located in the river floodplain and may exceed 20 inches in diameter. On north-facing slopes and in poorly drained lowlands open black spruce occasionally break the closed forest. These trees are slow growing and seldom exceed 8 inches in diameter. The black spruce trees are widely separated by thick moss mats and hummocks of sphagnum mosses, sedges and grasses.

Some of the white spruce, paper birch, and balsam poplar may be considered of commercial size. However, the extremely small stands of such trees and the remoteness of the area preclude any economic marketing of these trees.

Approximately the upper 30 miles of each river segment and the valley slopes over much of the river segments are covered by alpine tundra. Herbaceous and shrubby low mat plants are interspersed between bare rocks and rubble. The most important plants are the low heath shrubs, especially cassiopes and mountain heaths. They are most abundant where snow accumulates in the winter and lingers into late spring. Also associated with this alpine tundra are a variety of berries, resin and dwarf arctic birch and several low-growing willows.

Geologic and Mineral Resources

The Andreafsky River and its East Fork drain a southwestern segment of the Nulato Hills composed of thick sediments deposited in the Yukon-Kuskokwim geosyncline in the Creataceous time. The rivers flow generally parallel to the strike of

the bedded rocks which have been intensly folded and cut by faulting in at least two prominent directions. The sediments, based on surface information, are mainly siltstones and fine-grained sandstones of relatively low permeability.

The entire region has been defined as the Yukon-Koyukuk Creataceous Province which has been considered a possible area of petroleum bearing formations ("Geology of Possible Petroleum Provinces in Alaska", U.S. Geological Survey Bulletin No. 1094, 1959). However, the low permeability of the local sediments coupled with the degree of deformation suggest that petroleum deposits in the main stem area are remote. A 5,000 square mile tract within the Yukon-Koyukuk Cretaceous Province has been identified as having the greatest potential for petroleum deposits in the province. Much of the East Fork study segment is included in this immense area which stretches from north of Unalakleet to Pilot Point on the Yukon River (Memoir 15, Volume I "Future Petroleum Provinces of the United State--Their Geology and Potential." American Association of Petroleum Geologists, 1971.)

No exploratory wells have been drilled and no oil and gas leases have been let in the river areas.

The river areas are located far outside of the nearest metallagenic province recently defined by the USGS. The only noted intrusives in the watershed occur between the rivers in their upper reaches. Sediments near the contacts of these

large felsic sills or dikes in the upper drainage exhibit little or no metamorphism, and iron-stained or hydrothermally altered zones have not been reported. The potential for mineral deposits appears very low in the river areas.

No past or present mining operations exist in the river areas, and there are no known mining claims near the study segments.

Several invertebrate fossils (clams and snails) and plant fragments have been found in cut banks along the Andreafsky below the study segment. From a scientific as well as a recreational standpoint the potential for "fossil hunting" appears great along the study segment.

Wildlife and Fishery Resources

Wildlife

In contrast to other areas of the Yukon Delta region, the Andreafsky river area supports abundant populations of big game animals. Moose, black bear, grizzly bear, caribou, and wolves are all present. (Alaska's Wildlife and Habitat, Alaska Department of Fish and Game 1973). The caribou herd of perhaps 5,000 animals which migrates between the Yukon and Norton Sound is believed to consist of some animals descended from interbreeding reindeer which were dispersed after the "crash" in the early 1940's. These animals are recognized by their unusual (for caribou) markings. Part

of this herd periodically crosses the Andreafsky drainage in their migrations.

Fur-bearing animals common to the river areas include wolves (also a big game animal), wolverine, lynx, beaver, marten, mink, weasel, fox and others.

The lower sections of the study segments have been identified as waterfowl nesting and moulting areas. A variety of ducks are present during the summer months:

Rare and Endangered Species

The following wildlife species associated with the Andreafsky and East Fork are listed in the Department of the Interior's 1968 "Red Book of Rare and Endangered Species":

Timber wolf (Canius lupus lycon)--endangered (only in conterminous 48 states)

Grizzly bear (Ursus arctos) - endangered (only in conterminous 48 states)

Wolverine (Gulo tuscus)--status undetermined

Canada lynx (Lynx candensis)--status undetermined

Bristle-thighed Curlew (Numenius tahitiensis)--status undetermined

The Andreafsky drainage is believed to be extremely important as a nesting area for the Bristle-thighed curlew. The Nulato Hills (which includes the Andreafsky and its East Fork) to the north of the Yukon River is the only

known nesting location for this bird in the world. It migrates to islands in the South Pacific after the summer nesting season.

Closely related to the endangered Eskimo curlew, little is known about the bristle-thighed curlew population. Although proposed for consideration as a rare or endangered species, more information is needed to officially determine its status.

Fishery

The Andreafsky and its East Fork are two of the most important salmon spawning rivers in the entire Yukon drainage. Four species of salmon spawn at different times in the river: king (chinook), chum (dog), pink, and silver (coho). In addition, large populations of Arctic char, grayling, northern pike, and whitefish are found in the rivers.

Based on aerial surveys made by the Alaska Deparmtnet of Fish and Game over the past 12 years, the Andreafsky (including the East Fork) is one of the top three king salmon spawning rivers in the entire Yukon drainage in terms of numbers of fish in the river during spawning seasons. It is also one of the top chum salmon spawning rivers (see Table ___, escapement counts).

Commercial salmon fishing is the single most important sector of the cash economy in the lower Yukon River area. The king salmon, because of its great size (up to 80#, mean weight

24#) and good taste is the most important species in this commercial fishing. However, chum salmon (mean weight 7#) also form a significant part of the annual catch. In the summer of 1972, estimated mean prices paid to fishermen for king salmon were nearly $6.00 per fish, for chum salmon 74¢ per fish. For the Yukon River district, commercial fishing accounted for over 1 million dollars in income to fishermen and in wages paid to fishermen in 1972. The wholesale value of the total pack was over 2 million dollars. Tax revenues to the state on the Yukon river catch exceeded $40,000.

Most of the Yukon River district King salmon catch is taken in the Delta region below the Andreafsky mouth (except for sport, fishing is not permitted in tributary rivers). Thus, the spawning ground of the Andreafsky and the East Fork are critical to the continued harvesting of king salmon in the Delta area (see Table __, salmon harvesting statistics). Peak spawning takes place between the middle of July and the middle of August.

In addition to commercial fishing the harvesting of salmon is the most important activity in the subsistence lifestyle of local Natives. Although king salmon are important in subsistence catches, chum salmon are by far the leading fish taken in terms of numbers. The king and chum spawning grounds of the study segments are extremely important in maintaining a continued yield for local subsistence salmon fishing.

Table ___. Aerial survey of salmon escapement counts, August 1, 1971 (one-day) 1/

	Kings	Chums
Andreafsky	1,285	71,745
East Fork	1,904	90,095
Total	3,188	169,840

1/ Source: Alaska Department of Fish and Game, Division of Commercial Fisheries, Annual Management Report, 1971.

Table ___. Commercial and Subsistence Salmon Catches in the Yukon River District, 1971 1/

Commercial	Kings	Chums	Total
Below Adreafsky	98,216	41,476	139,692
total Yukon	110,507	289,684	400,191
Subsistence			
Below Andreafsky	5,923	36,088 2/	42,011
total Yukon	24,755	200,568 2/	225,323

1/ Source: Alaska Department of Fish and Game, Divison of Commercial Fisheries, Annual Management Report, 1971.

2/ May include some pink and silver salmon

Local sport fishing in the Andreafsky and the East Fork (primarily for Arctic Char) is considered excellent. Most of this use takes place near the village of St. Marys below the study segments.

Historical and Archeological Resources

Most of the human activity in the region historically has centered around the Yukon River. Prior to Russian explorations in the 1830's and 40's, Eskimo groups hunted, fished and trapped along the Yukon. Their settlements include many of the sites on which today's villages are located. At the time the Russians came into the Delta region, a village (they named Andreafsky) was located at the mouth of the river near the present village of St. Marys.

Although early as well as recent Native people traveled, hunted, and trapped along the study segments, no historical or archeological evidence of these activities has been reported. No Russian or later U.S. expeditions are known to have traveled into the study segments. Some Native people have been known to follow the river valleys in crossing from the Yukon to Norton Sound in the winter, although no trail, as such, exists.

Recreation

Resources

The lack of man's presence and the pristine environment of the Andreafsky and East Fork rivers make these superlative areas for primitive recreational pursuits. Opportunities for hiking, river floating, nature study, wildlife photography,

primitive camping, fishing, hunting and similar activities are exceptional.

The slopes and ridges surrounding the river are well suited for hiking. The absence of thick vegetation and large tussocks makes walking pleasant and the views from these vantage points are exceptional.

The rivers themselves are beautiful floating streams, especially for family or novice canoeists or kayakers. Currents are moderate making paddling optional; waters are extremely clear; few obstacles are present (Class I and II water throughout, see Appendix A-International Rating System); scenery is varied and interesting throughout; fishing is excellent; campsites and firewood are plentiful.

The presence of big game in the area and the potential for seeing bristle-thighed curlew further enhances the recreational potential through nature study and photographic activities.

Existing use

Very little recreational use currently takes place in the Andreasfsky river area. Fewer than 50 visits are estimated to occur annually in the river areas for strictly recreational uses. Most of this use is for sport hunting (moose and bear) and some fishing. More use is believed to occur for subsistence hunting than for sport hunting.

Future use

Because of the remoteness of this area and the lack of access, recreational uses are not expected to change significantly in the near future. Some increase can be expected for hunting and fishing, but this increase in use will be minimal in terms of absolute numbers.

In recent years more remote areas of Alaska have been frequented by aircraft and off-road vehicles in increasing numbers. As the frontier is pushed further and further from population centers, modern-day explorers travel further and further into the "bush". It can be expected that the Andreafsky and East Fork river areas will be subject to increased numbers of aircraft landings and off-road vehicles penetrations in future years.

Should a road ever be constructed across the main stem near its mouth, much more recreation use can be expected. Similarly, a road near the headwaters would also stimulate use in the river areas. However, the construction of these roads, if justified by future needs, is probably 50-100 years away.

Limitations to Recreation

Higher levels of recreational use are primarily limited by access. Presently aircraft and motorboat are the only practical methods of access to the river areas. Although landing sites for floatplanes exist in the middle and lower reahces, access into the headwater areas is limited to small

aircraft on wheels. Consequently, only rafts or foldboats could be brought into the upper reaches (assuming helicopters would not be available to the public). Motorboats are generally able to reach only the extreme lower reaches of the study segments due to occasional shallow riffles.

Other limitations are due to the harsh sub-arctic climate. A "summer" season from mid-June through September allows only a brief period of time for most recreational uses. Freezing temperatures can occur in all months except possibly July. Water temperatures remain cool all summer, prohibiting any prolonged body contact. Winters are extremely severe with cold temperatures (down to -40° and lower) and deep snows (45-60 inches) limiting winter sports use.

Because of permafrost soils, much standing water is present in the area. These waters give rise to hordes of mosquitoes and flies which at times can seriously limit recreational use because of the great intensity of the winged attack.

Future recreational activities are also limited by the natural conditions. Off-road vehicle uses may be limited by soil conditions in times of no snow cover. Disruption of the thin soil can cause surface damages which may persist for long periods of time. Most surface damages occur during summer thaw periods.

Potential limitations to recreation include the users themselves. It is quite possible that larger numbers of recreationists in the river area would degrade or destroy the pristine environment and the primitive experience of the users. The most outstanding recreational value of the river areas could be lost through overuse. Unregulated increases in sport hunting could also detract from the wildlife values of the river. Local populations of game could be altered and the "visibility" of animals could be affected by increased hunting pressures.

RU

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Assistant Director Eastman

DATE: May 8, 1973

FROM : Leader, Alaska Task Force

SUBJECT: Aniakchak Wild River Report, Alaska

Enclosed are two copies of the subject report. The original and maps are being forwarded under separate cover to Fred Strack. A copy of the report has been provided NWRO and the BLM, BSF&W, NPS and FS planning teams in Anchorage. Copies of Chapters III Regional Setting and IV Description and Analysis will be provided the study team members participating in the field study (e.g., concerned Federal, State and Native groups).

The enclosed report reflects the preliminary views of the State Division of Geology and is subject to field confirmation. That agency is participating in the field examination and has made arrangements to expedite chemical analysis of water and rock samples for mineral character by the University of Alaska, Fairbanks.

We emphasize that conclusions and recommendations are based upon 1 hour in the Caldera and one overflight on October 31, 1972. Field examination is scheduled for mid July at which time this report will be finalized.

Photographs will be submitted under separate cover. Appendices will follow as field studies are concluded.

Jules V. Tileston

ANIAKCHAK RIVER, ALASKA

A Wild and Scenic River Analysis

THIS REPORT WAS PREPARED PURSUANT TO PUBLIC LAW 90-542, THE WILD AND SCENIC RIVERS ACT. PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THE REPORT IS TO PROVIDE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF OUTDOOR RECREATION, THE SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AGENCIES.

PRELIMINARY

May 1, 1973

Bureau of Outdoor Recreatio
Alaska Task Force

PRELIMINARY DRAFT---
NOT FOR PUBLIC DISTRIBUTION OR PUBLIC USE
---SUBJECT TO REVISION

TABLE OF CONTENTS

APPENDICIES

Appendix A	Summary Characteristics of 40 Alaskan Rivers Identified by the Bureau of Outdoor Recreation as having High Potential for Inclusion in the National Wild and Scenic Rivers System
Appendix B	International Difficulty Rating Scale of Canoeable Waters

I. INTRODUCTION

This report evaluates the free-flowing character of the Aniakchak River, Alaska, as a basis for determining whether the river qualifies for inclusion in the National Wild and Scenic Rivers System and if so whether the river and its immediate environment should be included as a Federally administered component.

Within the next few years a major redistribution of the total land ownership patterns in Alaska will take place. These in turn will largely determine forseeable uses and availability of public resources. On June 30, 1972, approximately 96.7 percent of Alaska's total acreage was owned by the Federal government. Selection by Natives under the provisions of the Alaska Native Land Claims Settlement Act will transfer 40 million acres (11.3 percent of the total land area) into private ownership. Combined with the 103 million acres made available to the State under the provisions of the Alaska Statehood Act, a total of 40.7 percent will move from Federal ownership.

Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act, P.L. 90-542 was approved on October 2, 1968. As stated by the Congress of the United States in that Act:

"It is hereby declared to be the policy of the United States that certain selected rivers of the Nation, which with their immediate environments possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes."

To implement this policy, Congress: established the National Wild and Scenic Rivers System; designated all or portions of eight rivers having a total of approximately 800 miles of free-flowing stream as initial components, and; designated 27 other rivers having a total of approximately 3,750 miles of free-flowing stream for study as potential additions to the system. None of these are in Alaska.

The task of preserving and administering free-flwoing streams is not one that can or should be undertaken solely by the Federal government. Therefore, the 1968 Wild and Scenic Rivers Act directs the various Federal departments to encourage and assist states, political subdivisions and private interests, including nonprofit organizations, in the establishment of wild, scenic and recreational river areas.

For this reason two methods of preserving select free-flowing streams were authorized by the Wild and Scenic Rivers Act: Act of Congress where Federal administration was appropriate, or; State legislation and the approval of the Secretary of the Interior where State or local groups would administer the area.

Free-flowing rivers within existing or proposed national forest, parks, wildlife refuges or other Federal land management units cannot be added to the national system without enactment of Federal legislation.

Alaska Native Claims Settlement Act

The Alaska Native Claims Settlement Act (ANCSA), P.L. 92-203 was approved on December 18, 1971. In that Act the Congress declared that:

> "There is an immediate need for a fair and just settlement of all claims by Natives and Native groups of Alaska...the settlement should be accomplished rapidly...with maximum participation by Natives..."

To implement this settlement ANCSA directed that up to 120 million acres or one-third of the total land area of Alaska be made available for potential Native selection. The amount withdrawn for this purpose is approximately three times the 40 million acres which can be selected by Natives, and once the Natives have selected their land, the remainder will be made available for selection by the State under the Alaska Statehood Act or managed by the Bureau of Land Management under the Public Land Laws.

Section 17 (d)(2) further directed the Secretary of the Interior to:

> "...withdraw from all forms of appropriation under the public land laws, including the mining and mineral leasing laws, and from selection under the Alaska Statehood Act, and from selection by Regional Corporations...up to, but not to exceed 80 million acres of unreserved public lands in the State of Alaska...which the Secretary deems are suitable for addition to or creation as units of the National Park, Forest, Wildlife Refuge, and National Wild and Scenic Rivers Systems..."

The Aniakchak River, Alaska and its principla tributaries has been withdrawn under this provision of ANCSA.

Background

It is probable that all Alaskan rivers meet the minimum criteria established by the Congress for inclusion in the National Wild and Scenic Rivers System. Therefore, the first task was to determine the types of Alaskan rivers which whould be considered for inclusion in the system and to identify those having the highest potential for inclusion. Federal and State agencies, conservation groups and other knowledgeable about Alaska recommended that some 166 Alaskan river totaling more than 15,000 miles be considered. Through screening and reconnaissance, 40 rivers with more than 3,400 miles were identified by the Bureau of Outdoor Recreation as having high potential value (see Figure 4, page 25). These rivers including the Aniakchak River, were selected without regard to existing or potential ownership by Federal, State or Native groups.

Aniakchak Crater is a Registered Natural History Land Mark, but prior to the initial studies undertaken as part of the Alaska Native Claims Settlement Act scant consideration had been given to the river itself.

In March, 1972, the Secretary of the Interior withdrew the entire Aniakchak River basin as part of a larger withdrawal surrounding the Aniakchak caldera as a potential addition to a national conservation system as a Federal managed resource area.

Conduct of the Study

The study of the Aniakchak River, Alaska, as a potential unit of the National Wild and Scenic Rivers System was a cooperative effort under the leadership of the Bureau of Outdoor Recreation. On May 16, 1972, the Bureau created a task force to evaluate free-flowing rivers throughout Alaska and on May 31, 1972, established a temporary task force office in Anchorage, Alaska.

Evaluations and recommendations made by the Bureau of Outdoor Recreation have been coordinated with various Federal, State, Native and private groups. The final recommendations, however, are those of the Bureau of Outdoor Recreation.

Agencies invited to participate in field examinations, provide factual data and to review preliminary drafts included:

Alaska Natives

Bristol Bay Native Corporation

Konag, Inc.

State of Alaska

Coordinated through the Governor's Office

Department of Agriculture

Forest Service

Department of the Army

Corps of Army Engineers

Department of the Interior

Alaska Power Administration

Bureau of Indian Affairs

Bureau of Land Management

Bureau of Mines

Bureau of Sport Fisheries & Wildlife

Geological Survey

National Park Service

Department of Transportation

Federal Aviation Agency

Federal Highway Administration

Office of the President

Environmental Protection Agency

Joint Federal-State Land Use Planning Commission

Land Use Planning Team

Comments received from these agencies and groups are reflected in this report.

Comments and views presented at hearings held by the Joint Federal-State Land Use Planning Commission in April and May 1973 throughout Alaska and at selected cities in the conterminous 48 states are reflected.

Field investigations were conducted by air, raft and foot during 1972 and 1973.

II. SUMMARY OF FINDINGS AND RECOMMENDATIONS

Findings

This study shows that the Aniakchak River, Alaska, and its principal tributaries possess values which qualify it for inclusion in the National Wild and Scenic River System. The Aniakchak River and its immediate environment fulfills the requirements of the Wild and Scenic Rivers Act, and meets the supplemental criteria established jointly by the Secretary of the Interior and the Secretary of Agriculture, as published in Guidelines for Evaluating Wild, Scenic and Recreational River Areas Proposed for Inclusion in the National Wild and Scenic Rivers System Under Section 2, Public Law 90-542, February 1970.

The Aniakchak River is a small, clearwater river flowing from the Aleutian Range to the Pacific Ocean. Rising in a volcanic caldera, the river is outstandingly remarkable in its combination of:

- Overall primitive character, high scenic, fishery, wildlife and scientific values.
- Excellent opportunities for rafting, hiking and other trail uses, camping, fishing and hunting as well as outstanding features for photography, nature and geology study and interpretation.

It has also been found that:

- The range and quality of existing and potential outdoor recreation opportunities that is not duplicated by other Alaskan free-flowing river areas having high potential for inclusion in the National Wild and Scenic Rivers System.
- There is a continuing overall Federal interest in the long-term management of public resources in the Aniakchak River area.
- There are no known mineral values.
- There are no commercial timber values
- There are no hydroelectric power potentials, however there may be potential for geotherman production of electrical energy.

Recommendations

To preserve the free-flowing character of Aniakchak River Alaska, its principal tributaries and their immediate environments for the benefit and enjoyment of present and future generations of Americans, it is recommended that:

- Approximately the entire 27 miles of free-flowing stream in the basin together with an area not to exceed 60,000 acres be added to the National Wild and Scenic Rivers System by the Congress should the river and its immediate environment not be added to

the national park system as part of the proposed Aniakchak Caldera National Recreational Monument.

- Administration of the river and its immediate environment be by the National Park Service
- The entire river area including the inside of the Caldera be classified as a wild river area and that, subject to existing valid rights, public minerals be withdrawn from location and entry under the U.S. mining laws and mineral leasing laws.
- Within one year from the date the river area is included in the National Wild and Scenic Rivers System, detailed boundaries and management and development plans be prepared by the National Park Service and that those be consistent with the findings and concepts presented in this report.

III. REGIONAL SETTING

Landscape

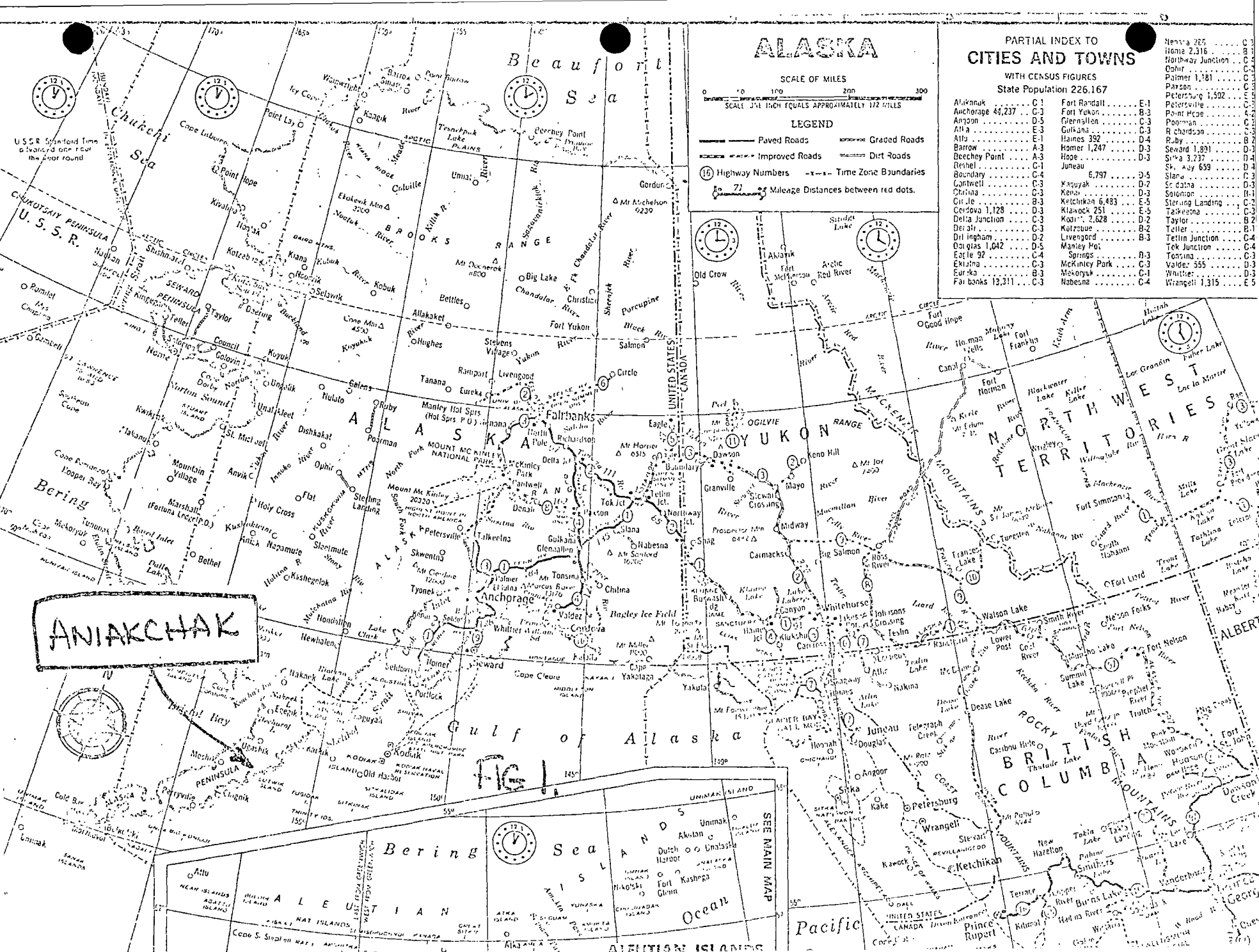
The Aniakchak River is located in the center of the Alaskan Peninsula (Figure 1) approximately 420 airline miles southwest from Anchorage, Alaska area (population 124,542)[1/] and 250 airline miles southwest from Kodiak City (population 3,798).[1/]

The Alaska Peninsula extends southwestward from the mainland of Alaska for 550 miles before terminating at the northern end of the Aleutian chain. In this distance the Peninsula narrows from a width of 110 miles at its base to about 30 miles at its tip. In the Aniakchak area the Peninsula is about 45 miles wide.

The Aleutian Range caps the spine of the Alaska Peninsula. These mountains are characterized by rounded east-trending ridges of 1,000 to 4,000 feet in elevation. Above the Range at regular intervals of 5 to 58 miles are 21 volcanoes with elevations to 8,500 feet. Of these volcanoes 11 are classified as active volcanoes, 1 inactive, 4 active calderas and 5 inactive calderas. Aniakchak Crater, which comprises the headwaters of the Aniakchak River is classified as an active caldera.[2/]

1/ 1970 Population Census, U.S. Department of Commerce

2/ U.S.G.S. Professional Paper #482. Physiographic Divisions of Alaska. 1965


ALASKA
SCALE OF MILES
0 50 100 200 300
SCALE: ONE INCH EQUALS APPROXIMATELY 172 MILES
LEGEND
Paved Roads
Graded Roads
Improved Roads
Dirt Roads
(16) Highway Numbers
Time Zone Boundaries
Mileage Distances between red dots.
PARTIAL INDEX TO
CITIES AND TOWNS
WITH CENSUS FIGURES
State Population 226,167
Akiakuak C-1
Anchorage 48,237 C-3
Angoon D-5
Atka E-3
Attu E-1
Barrow A-3
Beechey Point A-3
Bethel C-1
Boundary C-4
Cantwell C-3
Chitina C-3
Circle B-3
Cordova 1,128 D-3
Delta Junction C-3
Denali C-3
Dillingham D-2
Douglas 1,042 D-5
Eagle 92 C-4
Eklutna C-3
Eureka B-3
Fairbanks 13,311 C-3
Fort Randall E-1
Fort Yukon B-3
Glennallen C-3
Gulkana C-3
Haines 392 D-4
Homer 1,247 D-3
Hope D-3
Juneau 6,797 D-5
Kaguyak D-7
Kenai D-3
Ketchikan 6,483 E-5
Klawock 251 E-5
Kodiak 2,628 D-2
Kotzebue B-2
Livengood B-3
Manley Hot Springs B-3
McKinley Park C-3
Mekoryuk C-1
Nabesna C-4
Nenana 225 C-3
Nome 2,316 B-1
Northway Junction C-5
Ophir C-3
Palmer 1,181 C-3
Paxson C-3
Petersburg 1,502 E-5
Petersville C-3
Point Hope A-2
Poorman C-2
Richardson C-3
Ruby B-2
Seward 1,891 D-3
Sitka 3,237 D-4
Skagway 659 D-4
Slana C-3
Sourdough D-3
Solomon B-1
Sterling Landing C-2
Talkeetna C-3
Taylor B-2
Teller B-1
Tetlin Junction C-4
Tok Junction C-4
Tonsina C-3
Valdez 555 D-3
Whittier D-3
Wrangell 1,315 E-5
Beaufort Sea
Chukchi Sea
Bering Sea
Gulf of Alaska
Pacific Ocean
U.S.S.R.
CHUKOTSKIY PENIMSULA
SEWARD PENINSULA
BROOKS RANGE
ALASKA RANGE
MOUNT MC KINLEY NATIONAL PARK
OGILVIE MOUNTAINS
MACKENZIE MOUNTAINS
ROCKY MOUNTAINS
YUKON TERRITORY
NORTHWEST TERRITORIES
BRITISH COLUMBIA
ALBERTA
UNITED STATES
CANADA
Fairbanks
Anchorage
Whitehorse
Juneau
Ketchikan
Petersburg
Wrangell
Sitka
Kodiak
Nome
Bering Bay
Bagley Ice Field
ALEUTIAN ISLANDS
SEE MAIN MAP
ANIAKCHAK
FIG. 1

The Alaska Peninsula separates the Pacific Ocean on the southeast from Bristol Bay and the Bering Sea on the northwest. The Pacific Ocean side, where the Aniakchak River is located, is characterized by steep alder and willow covered valleys with short, swift rivers. In consrast rivers on the Bering Sea drainage are longer and become braided as they cross a broad, gently rolling tundra flatland dotted with lakes.

The Alaska Peninsula is described as "...a land of superlatives: the biggest most spectacular, most violent and most productive piece of wildland in Alaska."[1/]

Catalysmic events are major factors in shaping the topography as well as the distribution and density of plant and animal communities. In recent history three events are prominent: 1912 when Mount Katmai exploded with world wide repercussions, 1931 when Aniakchak Caldera erupted and 1964 when an earthquake caused tidal wave swept inland.

The climate is Maritime. Since the Alaska Peninsula is comparitively small body of land between two large bodies of water the climate is best described as fierce--wet, cool and windy. Summers are short and moderately warm while winters are marked by heavy snowstorms and

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1/ Alaska's Wildlife Habitat. Alaska Dept. Fish and Game January 1973.

and high winds. Annual temperature extremes range from 80° F. to -35° F. Cloud cover and fog are common during the summer. Winds in excess of 80 to 100 miles per hour are also common. Precipitation varies significantly throughout the peninsula ranging from more than 60" to 30" annualy. Rainfal, however, tends to be characterized by a fine mist with amounts in excess of 2" on an one day rare. Severe icing during the winter is periodically destructive to wildlife and plant life. Snow disappears from the lowlands by early July and by mid July has largely disappeared from southern slopes.

The Alaska Peninsula was extensively glaciated by valley glaciers and glaciers are present on the higher mountains of the Aleutian Range. Permafrost is almost totally absent.

Vegetation is primarily wind swept tundra with willows and alders along streams and protected hillsides. At the upper end of the Peninsula white and black spurce-birch forests predominate. These thin to the southwest with aspen replacing spruce and even aspen disappears just south of Port Moller.

Population and Economy

Population

The population in Alaska in 1970 was 302,173 of which 51.6 percent was rural and 48.4 percent urban. Between

1960 and 1970 the population of Alaska increased 32.8 percent while the people residing in urban areas increased 10.5 percent.

Population projections used in the Alaska Statewid Comprehensive Outdoor Recreation Plan (1970) estimates the total State population will be 331,000 by 1975 and 565,000 by 2000.

The Alaska Peninsula is situated in two Census Divisions--Bristol Bay and Aleutian Island (Figure 2). Although the Aniakchak River Basin is located in its entirety in the Bristol Bay Division it is believed that census data for the Aleutian Island Division more correctly reflects the Aniakchak situation.

In 1970 there were 8,057 residents in the Aleutian Island Census Division--a 34.0 percent increase above 1960. There are only four communities in close proximity of the Aniakchak River basin on the Peninsula with a combined population of 334 in 1970. The overall population of these four village areas remained relatively stable between 1960 and 1970. In addition, 9,409 people resided in the nearby Kodiak Census Division (3,052 of these were on the Kodiak Naval Reservation(Table 1).

Economy

Alaska's economy can be separated into two distinct parts: cash (where dollars earned purchase goods and

Fig 2 CENSUS DIVISIONS, ANIAKCHAK

Census Division Subdivisions/Boroughs, Reservations, and Places

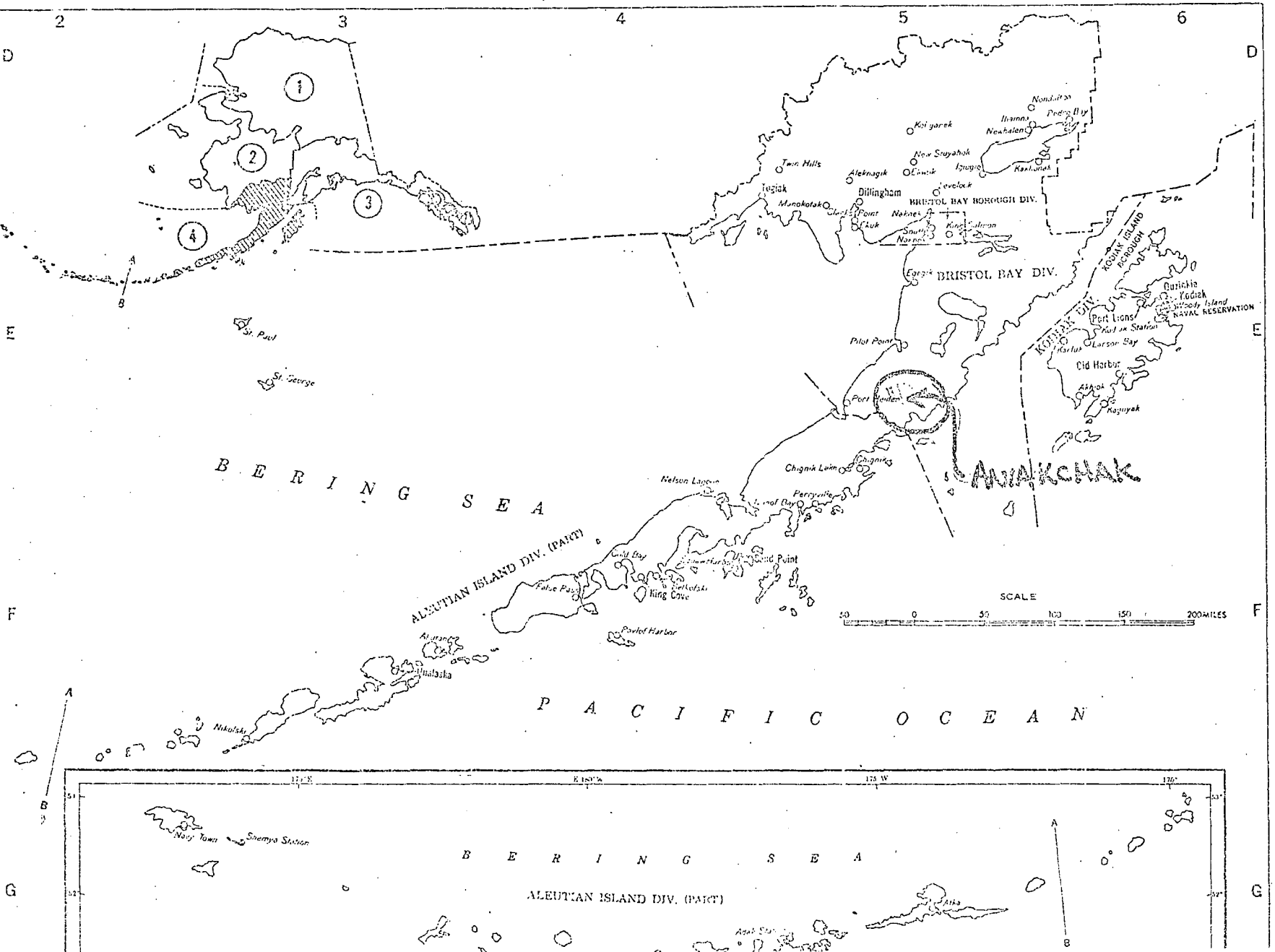

Table 1. 1960 and 1970 Populations of Villages in Close Proximity to Aniakchak River Basin, Alaska 1/

	1970	1960	Percent Change
Aleutian Island Census Division	8,057	6,011	34.0
Chignik	83	99	-16.2
Chignik Land	117	107	9.3
Bristol Bay Census Division	1,147	NA	NA
Pilot Point	68	61	11.5
Port Heiden	66	74	-10.3
Subtotals (villages)	334	341	- 2.7

1/ Source: 1970 Census of Population--Number of Inhabitants, Alaska.

services) and subsistence (where work is related to direct procurement of food and shelter).

Important elements of the Statewide economy include government, minerals, forestry and tourism. Of these minerals (primarily oil and gas) and tourism have shown the greatest growth and appear to have the greatest potential for future growth.

Growth in the mineral industry other than oil and gas has been fairly slow in recent years. The low rate of growth is related to several factors: low base metal prices, high investment costs, difficult access and uncertainty of future land ownership. These inhibitors are further compounded by the subarctic climate.

Tourism in its broadest sense shows the greatest primise for statewide expansion. The Alaska Survey and Report, 1970-1971, Vol. 2, states:

> "Of all parts of the Alaskan economy, tourism can most rapidly provide jobs to the widest spectrum of educational and age levels. It can also, with advertising and investment, direct economic growth to depressed areas of the state."

Between 1964 and 1971 tourism in Alaska increased from 59,200 visitors who spent $18.2 million, to 130,000 visitors and $50 million. In 1972 there were slightly more than 161,000 tourists and a preliminary estimate of 190,000 in 1973. Expenditures by tourists were distributed as follows: 30 percent lodging, 20 percent each restaurants and transportation, and 10 percent each food stores, merchandise and other services.

Information developed by the University of Alaska indicates that of the $50 million generated by tourism in 1971, 64 percent ($29.8 million) were attributable to visits to the four units of the National Park System in Alaska.

During 1971, the latest year for which complete figures are available, tourism accounted for 3,700 employed persons with total wages of $22.9 million.

The same factors for investment cost, transportation, resource ownership and climate that inhibit mineral development also depress outdoor recreation growth.

Sport fishing and hunting are also significant contributors to the Alaskan economy. Information developed by the Alaska Department of Fish and Game indicates that sport fishing in Alaska contributed approximately $22 million in 1972.

More than half of all Alaskan families had incomes over $12,000 in 1970. There are however, striking differneces, in family income between families residing in cities and those living in rural areas. Approximately 45 percent of the rural families had incomes of less than $5,000 in 1970. There are similar imbalances in family incomes between white and non-white families.

A simple comparison of personal income as a factor of well being in Alaska is misleading. When the Alaskan dollar is deflated by 25 percent to compensate for the unusual high cost-of-living, per capita and family incomes are placed in better perspective. This high cost-of-living words particular hardship upon rural Alaskan families where incomes are low and prices often 100 to 200 percent higher than in urban areas.

Within the Aleutian Island Census Division unemployment in 1970 was 15.0 percent. Median family income was $8,553 with 8.1 percent earning less than the poverty level. Most wage employment is seasonal with greatest opportunities during the short summers.

Local residents are largely dependant upon the extraction of natural resources--fisheries, canning factories and general manufacturing (20.8 percent for the Aleutian Island Census Division). As in most of Alaska, government is a major employer with public administration, schools and government accounting for 36 percent of the wage earners in the Aleutian Island Census Division.

For that portion of the region lying on the Pacific Ocean side of the Peninsula, it is probable that tourism has the only significant economic growth potential.

Subsistence

Subsistence is defined as a life style where work is directly related to obtaining food and shelter from the land. Included are subsistence activities where the person must secure his food by hunting and fishing or else go hungry, and the pursuit of food as either a matter of choice or as supplemental activity.

Recent changes in life style have increased the shift from a subsistence economy to cash. The advent of the snowmobile may represent the largest factor in this shift as cash must be obtained to purchase fuel for the snowmobile may represent the largest factor in this shift as cash must be obtained to purchase fuel for the snowmobile whereas dogs to pull sleds could be fed fish. New

housing with more space to heat and the switch from wood to oil burning heaters also requires cash as do water, sewer and electricity.

The major importance of the Aniakchak River in the overall aspect of subsistence activities in the region is unknown.

Transportation

Access if difficult throughout the region and except on the Alaska Marine Highway System largely confined to commercial, chartered or private aircraft.

Daily commercial air service between Anchorage and Kodiak and King Salmon and bi-weekly service to Port Heiden. There is no commercial ship passenger service to the area other than to Kodiak where there is regular service between Anchorage and Seward via the Alaska Marine Highway System.

Recreation

The Alaska Statewide Comprehensive Outdoor Recreation Plan makes no reference to the Anaikcahk River basin.

There are no state Park areas and none are planned.

Existing Federal recreation areas in the general vicinity of the river basin (Figure 3) include Izembec National Wildlife Range (415,000 acres), Kodiak National Wildlife Refuge (1.8 million acres) and Katmai National Monument (2.8 million acres).

ALASKA

SCALE OF MILES

0 50 100 200 300

SCALE: ONE INCH EQUALS APPROXIMATELY 172 MILES

LEGEND

- Paved Roads
- Graded Roads
- Improved Roads
- Dirt Roads
- (16) Highway Numbers
- Time Zone Boundaries
- 71 Mileage Distances between red dots.

PARTIAL INDEX TO CITIES AND TOWNS

WITH CENSUS FIGURES

State Population 226,167

Alakanuk	C-1	Fort Randall	E-1
Anchorage 44,237	C-3	Fort Yukon	E-3
Angoon	D-5	Glennallen	C-3
Atka	E-3	Gulkana	C-3
Attu	E-1	Haines 392	D-4
Barrow	A-3	Homer 1,247	D-3
Beechey Point	A-3	Hope	D-3
Bethel	C-1	Juneau 6,797	D-5
Boundary	C-4	Kaguyak	D-7
Cantwell	C-3	Kenai	D-3
Chitina	C-3	Ketchikan 6,483	E-6
Circle	B-3	Klawock 251	E-5
Cordova 1,128	D-3	Kodiak 2,628	D-2
Delta Junction	C-3	Kotzebue	B-2
Denali	C-3	Livengood	B-3
Dillingham	D-2	Manley Hot Springs	B-3
Douglas 1,042	D-5	McKinley Park	C-3
Eagle 92	C-4	Mekoryuk	C-1
Eklutna	C-3	Nabesna	C-4
Eureka	B-3		
Fairbanks 13,311	C-3		

U.S.S.R. Standard Time advanced one hour the year round.

ANIAKCHAK RIVER

CHUGACH NF

KODIAK NWR

IZEMBEK NWR RANGE

SEE MAIN MAP

SEE INSET

The Alaska Statewide Comprehensive Outdoor Recreation Plan indicates a

> "...major need for trail development, particularly in view of the high cost of other means of access. Trail related activities (including canoeing) also constitute by far the most popular form of recreation in the State, and a strong system of trails would provide not only trail recreation (such as hiking and horseback riding) but also badly needed access to remote areas for other recreational pursuits (such as camping, fishing and hunting)."

Projected total annula outdoor recreation demand for the State as a whole (table 2) indicates an increase of between 235 and 516 percent for selected activities between 1967 and 1980. Of these, trail related outdoor recreation activities are the most popular. By 1985

Table 2. Forecast of Total Annual Demand for Selected Outdoor Recreation Activities, Alaska, 1970, 1975 and 1985

Activity	Percent increase over 1967 in participation days		
	1970	1975	1985
Trail related	129	147	249
Sightseeing	146	175	385
Driving and pleasure	136	162	335
Picnicking	132	162	235
Fishing	134	169	343
Camping	156	197	516
Hunting	130	149	254

Source: Alaska Statewide Comprehensive Outdoor Recreation Plan, 1970, Vol. 1, p. 20.

trail-related activites -- a form of outdoor recreation in which 85 percent of residents and non-residents participate -- will increase by 249 percent. The State further anticipates that trail-related activities will maintain its top ranking as the most popular activity.

Because the region is so remote and it is anticipated that access will not be substantially improved, the impact on State or local recreation needs will be slight. However, in terms of national importance, the recreation opportunities associated with the river basin are significant. This stems from the truly unique character of the river as one flowing from a volcano.

The Aniakchak River has been identified by the Bureau of Outdoor Recreation as one of the 40 Alaskan rivers (figure 4) having high potential for inclusion in the National Wild and Scenic Rivers System. Of these 40 select Alaskan free-flowing rivers, none are located on the Alaskan Peninsula. Appendix A summarizes the difference in these 40 Alaskan rivers.

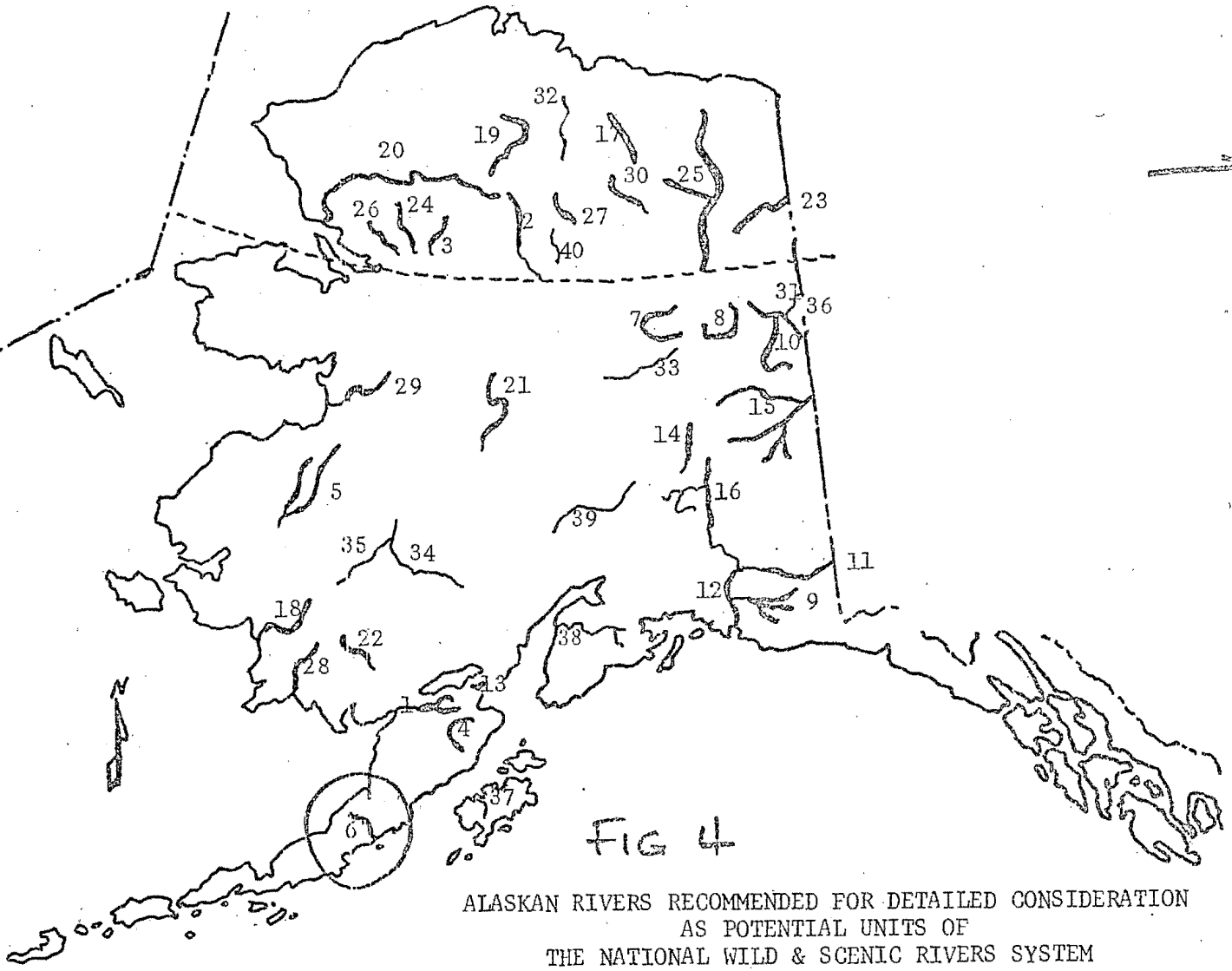

FIG 4

ALASKAN RIVERS RECOMMENDED FOR DETAILED CONSIDERATION
AS POTENTIAL UNITS OF
THE NATIONAL WILD & SCENIC RIVERS SYSTEM

* All or substantial portions classified under 17(d)(2) of ANCSA.
\# Detailed studies have been initiated on segments shown in heavy line. Other rivers could be studied upon request by land manager.

*# 1. ALAGNAK
*# 2. ALATNA
*# 3. AMBLER
4. AMERICAN CREEK
5. ANDREAFSKY (2 FORKS)
*# 6. ANIAKCHAK
*# 7. BEAVER CREEK
*# 8. BIRCH CREEK
*# 9. BREMNER
*# 10. CHARLEY
*# 11. CHITINA
*# 12. COPPER
*# 13. COPPER (ILIAMNA)
14. DELTA
*# 15. FORTYMILE (SYSTEM)
16. GULKANA
*# 17. IVISHAK
18. KANEKTOK
*# 19. KILLIK
*# 20. NOATAK
*# 21. NOWITNA
*# 22. NUYAKUK
*# 23. PORCUPINE
24. SALMON
*# 25. SHEENJEK-KONESS
26. SQUIRREL
*# 27. TINAYGUK
*# 28. TOGIAK
*# 29. UNALAKLEET
*# 30. WIND
*# 31. YUKON

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32. ANAKTUVUK
33. CHATANIKA
34. HOHOLITNA
35. HOLITNA
36. KANDIK
37. KARLUK
38. KENAI-RUSSIAN, SWANSON - SWAN LK
39. SUSITNA
40. WILD

IV. DESCRIPTION AND ANALYSIS

River and Riverscape

The Aniakchak River is the largest river on the Alaska peninsula flowing into the Pacific Ocean. Being 27 miles long from its origin in the active caldera[1/] of Aniakchak Crater to its union with Aniakchak Bay and the Pacific Ocean, the Aniakchak River is small in size when compared to most Alaskan rivers. However, in keeping with the Alaskan magic and abundance of natural splendor, the Aniakchak River is without equal.

Rising in the 2 1/2-mile long turquoise Surprise Lake, nestled along the northeast wall of the caldera, the Aniakchak River has a keyhole-shaped drainage area of approximately 168 square miles.

Principal tributaries to the Aniakchak River are the 9-mile long North Fork Aniakchak River, 8-mile long Hidden Creek, 7-mile long Albert Johnson Creek, and 4-mile long Mystery Creek (Fig. 5). Tributaries are small and often hidden from the river traveler. Side streams often terminate in a waterfall cascading down the dark volcanic bluffs encasing the middle sections of the Aniakchak River.

The river can be divided into three distinctive parts: caldera, canyon, and valley.

1/A broad crater-like basin of a volcano, formed by explosion or by collapse of the cone.

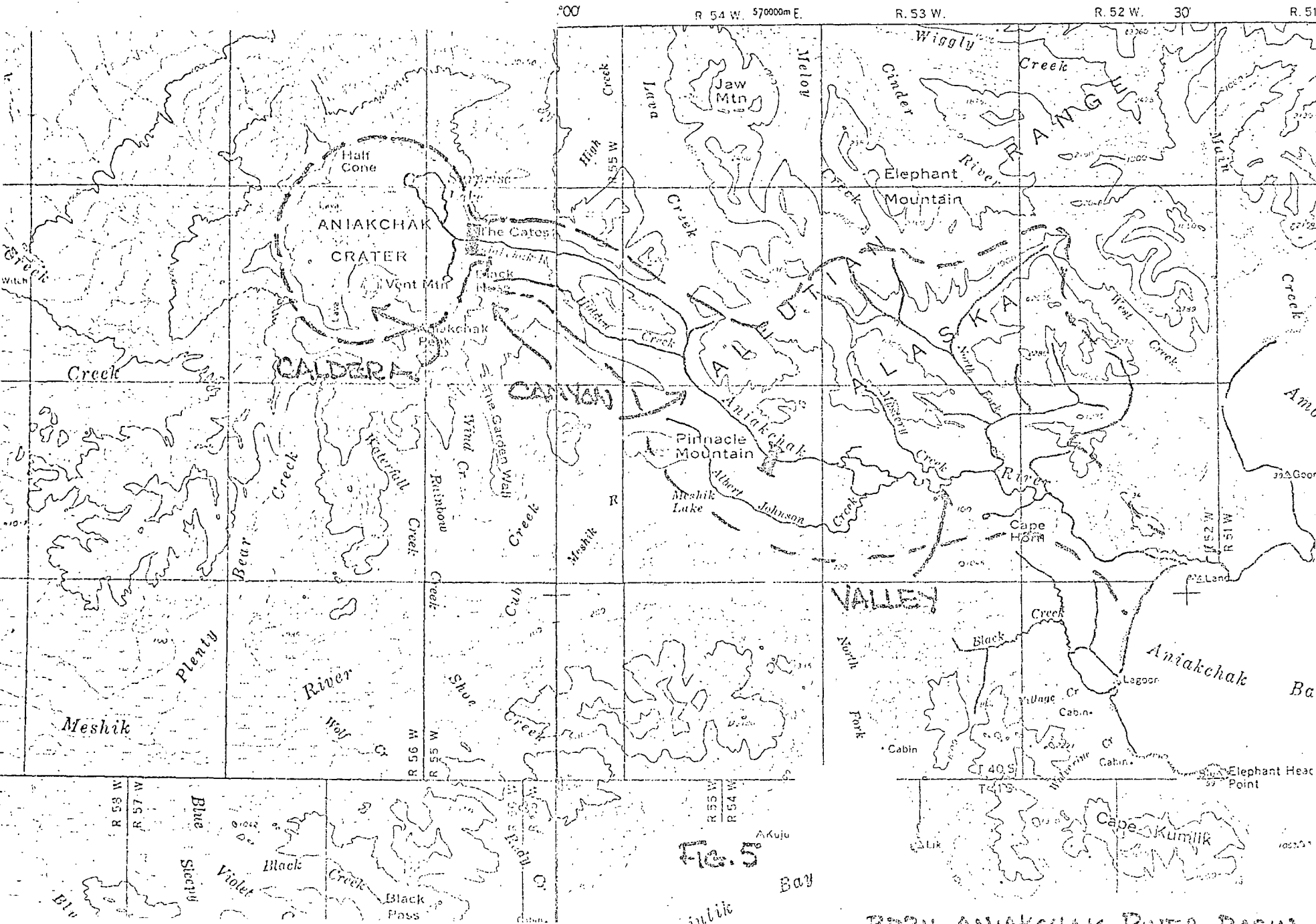
R. 54 W.
570000m E.
R. 53 W.
R. 52 W.
30'
Half Cone
ANIAKCHAK
CRATER
Vent Mtn
The Gates
Black Hills
Aniakchak Peak
CALDERA
CANYON
Jaw Mtn
Elephant Mountain
Pinnacle Mountain
Meshik Lake
Cape Horn
VALLEY
Lagoon
Village Cr
Cabin
Elephant Head Point
Cape Kumlik
Aniakchak
Meshik
Plenty
River
Bear Creek
Waterfall Creek
Rainbow Creek
Wind Cr
The Garden Wall
Cub Cr
Shue Creek
Wolf Cr
Melay
Cinder River
Wiggly Creek
Lava Creek
High Creek
Albert Johnson Creek
Missouri Creek
North Fork
Black Creek
Sleepy Blue
Violet Cr
Black Creek
Black Pass
Akuju Bay
R 59 W
R 57 W
R 56 W
R 55 W
R 54 W
T 40 S

FIG. 5

Caldera

Vividly described as a "World inside a Mountain"[1/] Aniakchak Caldera is one of the nation's great scenic and scientific wonders. Volcanic features -- dark angular rocks, lava flows and a general scarcity of vegetation set an awesome backdrop for the river's headwaters. Aniakchak Crater is a registered Natural History Landmark.

Roughly circular, Aniakchak Caldera has a rim circumference of approximately 20 miles, a maximum diameter of 6 3/4 miles and a minimum diameter of 5 3/4 miles. The floor of the crater encompasses approximately 30 square miles. The rim of the crater is skewed to the northwest with its highest point, Aniakchak Peak, 4,400 feet in elevation and the lowest 2,500 feet. The inner walls of the caldera are well preserved, rising steeply -- in places nearly verticle -- 1,200 to 3,000 feet above the floor of the volcano. Three features dominate the caldera -- Vent Mountain, Surprise Lake and "The Gates."

Vent Mountain is a volcano within a volcano. Also symmetrical in form, Vent Mountain is a cinder cone with a base circumference of 5 miles and an elevation of 3,350 feet. At its summit Vent Mountain has a circumference of 1 1/2 miles and a circular vent 400 feet deep.

Two and one-half miles to the north of the rim of Vent Mountain and 2,295 feet lower is Surprise Lake.

1/Father Bernard R. Hubbard. A World Within a Mountain, Aniakchak, the New Volcano Wonderland of the Alaska Peninsula is Explored. National Geographic. 60(3), pp. 319-45. Sept. 1931.

Flanked on the north and east by the steep talus slopes of the 1,200-foot high caldera wall the lake has a shoreline of 6 miles. A 1-mile wide lava flow and two +300 foot high lava cones flank the southwestern edge of the lake. Here are found a series of soda iron bicarbonate springs which feed the lake. The lake appears to be the result of a natural dam formed by volcanic deposits eroding from the caldera walls. Unlike Crater Lake in Oregon, Surprise Lake is shallow.

Almost 100 feet wide and four to six feet deep the Aniakchak River surges from Surprise Lake and heads east toward "The Gates" where it exits from the caldera. "The Gates" are magnificent verticle walls of uniform horizontal strata of banded grey sedimentary rock while the east rim of the crater has been breached by part of a large rift.1/ About 500 feet wide at the bottom and less than 2,000 feet at the top the sheer walls of "The Gates" tower more than 2,000 feet above the river. The south bank of the river is passable for foot travel and provides the primary entrance and exit to the crater floor from the Pacific Ocean.

Canyon

The canyon portion of the Aniakchak River includes the 10 miles between "The Gates" and Sec. 14, T. 39 S., R. 54 W. where the river then breaks into a broad valley.

1/Walter R. Smith. 1923-24. U.S.G.S. Prof. Paper No.132.

Two north-trending open valleys join the north side of the upper and middle portions of the canyon section of the Aniakchak River. These two valleys form an easy pass between the Bering Sea and Pacific Ocean and head on the divide which is in places less than one-half mile north of the Aniakchak River proper. Except for these two valleys the Aniakchak River is in a narrow valley flanked by gently rounded hills. In this section the river drops rather uniformly at a rate of about 100 feet per mile (from an elevation of 1,055 feet at Surprise Lake to 175 feet above sea level). There are no major falls but there are numerous rapids in the III-IV class on the International Difficulty Rating (Appendix B).

The river is generally entrenched into dark volcanic rock. Several impressive waterfalls on the left bank announce the presence of tributary streams. Hidden Creek, which enters the river from the right in this section flows under ash and cinder for much of its length.

Valley

The lower 17 miles of the Aniakchak River flows through a broad valley up to three miles wide. Here enter Albert Johnson Creek from the right and the North Fork Aniakchak River from the north. Current is swift, but rapids are gone. Average gradient is almost 9 feet per mile. The river is from 150-200 feet wide and is slightly

meandered. A long barrier bar separates most of the tidal portion of the river from Aniakchak Bay.

Stream Flow

There are no stream guaging stations and no records to indicate the magnitude of seasonal fluctuations in the Aniakchak River.

It is expected that the Aniakchak River and its tributaries would be typical of other rivers flowing from the Aleutian Range to the Pacific Ocean. Highest flows coincide with snow melt until early July. After that, volume decreases with fluctuations related to rainfall until freezeup in November.

Stream velocity is very swift and is estimated to be up to 10 m.p.h. in the canyon section where gradients are greatest. Early reports note that the river is too swift to wade and that rocks are constantly being moved along the streambed.

Tributary streams tumble swiftly down -- and through -- the slopes of Aniakchak Caldera and adjacent hills. These carry a high sediment load which is deposited as soon as velocities slow on less steep areas. Accordingly, streams are highly meandered and in the case of the North Fork Aniakchak River the mouth is braided into several streamlets that belie the size of its drainage area.

Water Quality

There are no water quality data. However, it is assumed that overall water quality is excellent.

There is no evidence of floating debris, undesirable aquatic life or other objectionable substances.

There are no dwellings.

Although water is abundant and of good quality there may be objectionable odors and taste in late July because of the large number of decaying salmon.

Of special interest is the water from the soda iron bicarbonate springs at Surprise Lake. The temperature of the crystal clear spring water is about 72 degrees F. and is reputed to be of excellent taste. Lining the edges and the spring bottom is a red fibrous deposit which does not appear to affect the taste of the water.

Land Use

Except for a primitive hunting camp composed of a tent frame and a crude airstrip near the mouth of Albert Johnson Creek, there is no significant evidence of human uses of the land and resources of the Aniakchak River basin.

In 1922[1/] the only structures reported in the Aniakchak River basin were two trappers cabins -- one on the north side of the mouth at Aniakchak Bay and one on the south side of the river below Albert Johnson Creek. Remains of

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1/Walter R. Smith. U.S.G.S. Prof. Paper No. 132. 1923-24.

the former cabin are indicated on the 1963 edition of the 1:63,360 scale topographic mapping of the area. The location of the latter is not shown.

Smith[1/] made note of the fact that in checking with residents of Chignik and local trappers " . . . all of whom knew nothing about the crater."

Water Resource Developments

There are none and none are proposed.

Land Ownership

There are no patented lands in the Aniakchak River basin. All of the land is administered by the Bureau of Land Management.

An application for 80 acres of land on the south shore of Surprise Lake near the outlet has been filed under the 1906 Native Allotment Act. Final adjudication of this application has not been made by the Bureau of Land Management.

All of the Aniakchak River basin was withdrawn by the Secreatary of the Interior in March 1972 under the provisions of Sec. 17(d)(2) as a potential addition to a national conservation system. The March withdrawal was finalized by the Secretary without change in the basin in September 1972.

Water Rights, Navigability and Riverbed Ownership

There are no adjudicated water rights.

1/ Ibid

Under the Alaska Statehood Act the State of Alaska owns the streambeds of all "navigable" waters of the State. No determination has been made on the "navigability" of the Aniakchak River. However, under preliminary criteria developed by the State it would appear that the entire Aniakchak River might be considered "navigable."

Smith[1/] indicated that the Aniakchak River was " . . . navigable by small boat to the meanders below Mystery Creek . . . "

Surprise Lake is used as a landing area for planes equipped to land on water which would indicate it might be considered "navigable" by the State.

Access

Access to the river is by air or by boat.

As noted above, the lake is used as a landing site and there is a crude strip cleared in the volcanic cinders near the mouth of Albert Johnson Creek. Float planes can land at the mouth with no difficulty.

Access by boat is difficult because of the distance from existing harbors and the generally exposed nature of Aniakchak Bay.

Foot access along the river is reported to be good upstream from Albert Johnson Creek.

There are no known plans to provide highway access. There are good potential surface access routes from Port Heiden.

1/Ibid.

Geology

Aniakchak Caldera dominates the geologic history of the river basin and is responsible for the distinctive features of the river itself.

When discovered in August 1922, Aniakchak "Crater" filled in the last gap of regularly spaced volcanoes marking the spine of the Aleutian Range.

Whether the caldera -- one of the oldest in the Aleutian Range -- was caused by explosive forces, subsidence or a combination of the two is not known. However, when the slope of the outer flanks of the volcano are used to reconstruct its form it appears probable that the cone reached an elevation of 6,000 feet (approximately 1,600 feet higher than the present rim). This means that an estimated 15 cubic miles of earth would be needed to reconstruct the entire cone.

The southeastern wall of Aniakchak Caldera consists of sedimentary sandstones with approximately 1,200 feet of volcanic materials piled on top.

Aniakchak Caldera is built largely from Quaternary volcanic ash and lava flows. At "The Gates" and nearby hills the underlying bedrock are fine-grained arkosic sandstones and dark-gray siltstones of the Naknek formation and tan to yellow-brown sandstones of the Staniukovich formation.

Once out of the caldera the river flows through the canyon section over Quaternary volcanic deposits flanked by protruding hills of the Naknek and Staniukovich formations.

In the valley section the river continues to flow across Quaternary deposits flanked by volcanic and igneous intrusions.

At the mouth nine well developed beach terraces represent different levels of the Pacific Ocean during the Ice Age.

As with all of the Aleutian Range, glaciation has played a prominate role in shaping the present day topography. Great glaciers are believed to have scoured the soft cinder-built slopes of Aniakchak Caldera. In the valley immediately south of the "The Gates" a well developed terminal moraine occurs at an altitude of 1,800 feet and a medial moraine 150 to 300 feet high extends up the valley for about a mile. The river valley of the Aniakchak is believed to have been glaciated by a large valley glacier. But because the basic bedrock is unconsolidated, easily eroded volcanic material, it is difficult to reconstruct the glacial history of the river basin.

Several small wall glaciers are reported inside the walls of the caldera and an ice cap is also reported to occupy the bottom of the vent in Vent Mountain.

When discovered and described in 1922, Aniakchak was considered an inactive volcano. Early descriptions of the caldera and its surrounding area indicate an abundance of wildlife and vegetation within the caldera.[1/] Then on May 1, 1931, the idea that Aniakchak was inactive was revised. At noon on May 1, a giant explosion shot ash and smoke in an incandescent, mushroom-shaped cloud 20,000 feet into the sky. Eruptions of cinders and gas continued for the next 11 days, subsided for a while and culminated in a second major explosion on May 30. At Chignik, 60 miles to the south, one pound of dust per hour was deposited during peak periods of activity and a total of 1/4 inch of dust was reported more than 150 miles away.[2/]

Mineral Potential

There are no known mineral deposits in the Aniakchak River drainage.

An extensive oil field is reported to be located on the Bering Sea side of Aniakchak Caldera and a few oil and gas leases for that area overlap into "The Gates" area. The Alaska Division of Oil and Gas indicates the petroleum potential of the Aniakchak River basin is limited on the basis of poor porousity and permeability of the underlying sedimentary formations.

1/Bernard R. Hubbard. A World Inside a Mountain . . . . National Geographic. 60(3), pp. 319-45. Sept. 1931.

2/Bernard R. Hubbard. Aniakchak Explodes. The Amer. Press. 1943.

The nearest indications of gold, silver, lead and zinc are 40 miles to the north. None have been reported in the Aniakchak River basin.

The caldera has been identified as having prospective value for geothermal generation of electricity.[1/] Although no studies of Aniakchak Caldera have been conducted it is noted that geothermal reservoirs generally occur in volcanoes and caldera of geologic age similar to the Aniakchak Caldera.

Climate

Climate on the Alaska Peninsula can best be described as fierce -- wet, cool, cloudy and windy. There are no weather data for the Aniakchak River basin. Early explorers however, suggest that the Aniakchak area may have more favorable weather than the Aleutian Range to the north and south.

During 1925 field season of 91 days, Knappen[2/] noted that there were 33 days of rain, 16 days partly stormy and 42 days that were fair. He further noted that it was occasionally necessary for men moving along exposed ridges to crawl on hands and knees because of the " . . . impossibility of standing upright in the terrific wind."

Vegetation

Principal vegetation is windswept tundra comprised of

1/1971. U.S.G.S. Circ. No. 647.

2/U.S.G.S. Bull. No. 797-F, p. 172, 173.

grasses, flowering plants and mosses with alders and willows along the lower stream courses.

Alders are usually not found above an elevation of 600 to 800 feet above sea level and are often shaped by wind into dense, prostrate masses. Willows are small and bush-like.

Grasses are abundant and luxuriant, reaching heights of from 3 to 6 feet. At an elevation of approximately 800 feet grasses are started to be replaced by alpine tundra.

The specific plant communities present or the plant species of the Aniakchak River basin is imperfectly known. However, it is expected that two major communities are present: shrub thickets and alpine tundra. Because of its location near the midpoint of the Alaska Peninsula it is expected that there would be overlaps of several plant species not commonly found together. Knappen[1/] makes note that flowering plants are abundant, especially on the drier sites, and that at "many places one may collect 75 different species in half an hour."

The natural vegetation is extremely important in stabilizing the unconsolidated volcanic soils and in retarding surface runoff.

Blueberries, bearberries and mountain-cranberries are abundant.

1/Geology and Mineral Resources of the Aniakchak District, Alaska. U.S.G.S. Bull. No. 797-F, p. 168. 1929.

Wildlife and Fishery

Wildlife

The Alaska Peninsula is noted for its abundance of wildlife and the Aniakchak River basin is no exception.

Brown bear are found throughout the basin with two areas identified as key habitat areas: the caldera and lower river areas. The caldera provides denning habitat while the lower river area including most of Albert Johnson, Hidden and Mystery Creeks, and the North Fork Aniakchak River are intensive spring use areas.[1/] During the salmon runs bear can be expected along the entire river area.

In addition to the "extremely critical"[1/] intensive spring habitat area, brown bears are dependent upon the availability of the high protein diet provided by the salmon in the Aniakchak River. Summer berry crops -- lowbush cranberry, highbush cranberries, elderberries, and blueberries which begin to ripen in August are also important.

Barren ground caribou and wolf are found throughout. No key habitat areas for either animal has been identified in the Aniakchak River basin.

Moose are found throughout the river basin but are more concentrated in the lower reaches. The entire valley section including the lower portions of Albert Johnson,

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1/ 1973. Alaska's Wildlife and Habitat. Alaska Dept. of Fish and Game.

Mystery Creek and North Fork Aniakchak River are key moose habitat areas for the entire year.

Probably the most abundant mammal is the "parky" ground squirrel.

Sea otters are common in the high density habitat of Aniakchak Bay. In addition to sea otters, harbor seal and sea lions can be expected in the bay.

The Pacific Ocean side of the Aleutian Range is on a major waterfowl migration route. Greater scoup, mallard, pintail, green-winged teal, shoveler, black brant, emperor geese, crackling Canada geese and Aleutian geese will be found during the spring and fall. Aniakchak Bay, together with other nearby Pacific Ocean bays are major wintering areas for waterfowl and sea birds.

Ptarmigan are commonly found in the inland areas. Bald eagles and sea birds are common throughout, but are especially concentrated along the river during the salmon run.

Rare and Endangered Species

The following wildlife species associated with the Aniakchak River basin are listed in the Department of the Interior's 1966 "Red Book of Rare and Endangered Species":

Timber wolf (*Canis lupus lycon*) - Endangered
In conterminous United States

Brown/Grizzly bear (*Urus Arctos*) - Endangered
In conterminous United States

Wolverine (Gulo luscus) - Status undetermined

There are no good data on bird fauna in the Aniakchak area but it appears unlikely that rare or endangered species are present.

Fishery

The Aniakchak River is one of the two rivers on the Pacific Ocean side of the Aleutian Range with a good run of red salmon. Pink salmon and Dolly Varden are present. Early explorers report that the soda springs in Surprise Lake make salmon spawned in the Aniakchak River drainage distinctive.

There are no known commercial salmon fishermen operating in Aniakchak Bay or River or at Surprise Lake.

Sport fishing is of unknown quality.

History and Archeology

History

The Aniakchak River basin is remarkable in its lack of history.

Studies of historic and present native population centers summarized in 1968[1/] indicate no historic native occupancy. However, the Alaska State Heritage Resources Survey indicates an Eskimo village was located at an unknown site along the shores of Aniakchak Bay.

1/Alaska Natives and the Land. Field Committee for Development Planning in Alaska.

Archeology

There are no known archeological sites. But when considering the mobility of prehistoric man and the fact that the Aniakchak River valley affords good access to one of the few low divides separating the Pacific Ocean from the Bering Sea, it is probable that there are archeologic sites along the lower river area and bay.

Sceintific

Of great interest and scientific value are the abundance and variety of plants and animals which have pioneered the interior of Aniakchak Caldera since its last eruption on May 20, 1931. At that time 20 to 30 feet of new ash covered the floor of caldera completely denuding the area, destroying the wildlife and filling Surprise Lake and Aniakchak Bay with floating volcanic debris.

Father Bernard R. Hubbard and other early explorers were awed with the magesty of the caldera and enthusiastically described its luxuriant plant filled bowl teaming with wildlife. Salmon, brown bear, ptarmigan, grouse, foxes, eagles, bosun birds, ducks and eagles were noted as abundant.

Today, 42 years after the cataclysmic devastation, many of these animals and plants are again living inside the caldera. To a lesser extent plant and animal communities in the entire Aniakchak River basin were adversely

affected. All have high scientific value as well as high potential value for interpretation to recreationists visiting the river area.

The nine well developed beach lines along Aniakchak have similar scientific and recreation values.

Recreation

Existing Uses

Existing recreation uses in the Aniakchak River basin are confined to sport hunting for moose and brown bear. The extent, if any, of sport fishing is unknown.

Probably no more than 10 to 15 people a year now visit the area.

Future Uses

Future recreational uses are expected to be associated with rafting, nature study, photography, hiking and sport hunting and fishing.

Overall, it is expected that direct use of the river will be light -- not exceeding a thousand people annually by the year 2000. A much greater number of people, however, are expected to visit the caldera.

Limitations

Limitations to existing and future recreation use are the great distance from population centers, difficult and high cost of access and adverse weather.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The conclusion of this study is that the Aniakchak River together with its major tributaries and their immediate environments possess values which quality it for inclusion in the National Wild and Scenic Rivers System.

Careful review of available information together with on-site inspection shows that:

- It is a clear, free-flowing river without impoundment and no straightening, rip-rapping or other modifications of the waterway.
- The river is long enough to provide a meaningful outdoor recreation experience.
- There is a sufficient volume of high quality water during normal years to permit full enjoyment of the outdoor recreation potentials of the Aniakchak River.
- There is no evidence of man's activities and the area is very pleasing to the eye.
- The Aniakchak River and its principal tributaries and their immediate environments possess an outstandingly remarkable combination of scenic, recreational, geologic, fish and wildlife, scientific, ecologic and other similar values.

- The Aniakchak River, its principal tributaries and their immediate environments are capable of being managed to protect both people and the resource; have significant values which can be interpreted to the public, and will support a high quality outdoor recreation experience at the desired level of use.
- The existing and potential values of the free-flowing river and its principal tributaries and their immediate environments are not similar to those offered by any other Alaskan river.
- There is a continuing Federal interest in the short and long range management of the public resources of the Aniakchak River, its principal tributaries and their immediate environments.
- There are no hydroelectric power potentials; however, there may be value for geothermal generating electricity.
- There are no known mineral values.

Recommendations

It is recommended that:

- The entire 27-mile long Aniakchak River together with Surprise Lake, Albert Johnson, Hidden and Mystery Creeks and North Fork Aniakchak River and their immediate environments be added to the National Wild and Scenic Rivers System by the

Congress should this area not be added to the National Park System as part of a larger area under study by the National Park System.

- If included in the National Wild and Scenic Rivers System the lateral boundaries would not exceed 70,000 acres -- 20,000 acres comprising the entire interior headwater drainage inside the caldera and 50,000 acres comprising the river's immediate environment outside the caldera.
- The National Park Service, in cooperation with the State of Alaska, have overall administrative responsibility for the recommended Aniakchak River, Alaska, component of the National Wild and Scenic Rivers System.
- Within one year from the date of the Act including the Aniakchak River, and its principal tributaries in the National Wild and Scenic Rivers System, the National Park Service in cooperation with the State and users shall establish detailed boundaries, and prepare a plan for necessary developments in connection with the administration in accordance with the classifications and concepts set forth in this report.
- A regular system of monitoring recreational use and its effects on the river's environment be established to insure long-term maintenance of the existing character.

- Subject to existing valid rights, the minerals in Federal lands within the "wild river area" be withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws including in both cases, amendments thereto.

Classification

The Wild and Scenic Rivers Act requires that rivers in the National Wild and Scenic Rivers System be classified as "wild," "scenic" or "recreational" river areas. It is recommended that the entire proposed Aniakchak River, Alaska, component contain one of the three classes defined in that Act -- wild. Sec. 2(b) of the Wild and Scenic Rivers Act defines this as follows:

> 2(b)(1) "Wild river areas - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America."

VI. CONCEPTUAL RIVER PLAN

The Wild and Scenic Rivers Act, Sec. 10(a) states that:

> "Each component of the National Wild and Scenic Rivers System shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based upon the special attributes of the area."

Accordingly, this conceptual river plan is designed to establish a framework which can be followed by the Federal agency in developing detailed boundaries and plans for development and management of the Aniakchak River basin recommended for inclusion in the National Wild and Scenic Rivers System. Such detailed plans would be completed within one year from the date the river is added to the national system.

The primary objectives of the conceptual river plan for the Aniakchak River, Alaska, its principal tributaries and their immediate environments are to:

- Preserve the river in a free-flowing condition.
- Protect water quality.
- Preserve and make available the geology and natural history of the river area.
- Provide for present and future generations a high

quality outdoor recrreation experience in a primitive setting.

Appropriate Boundaries

Within one year after inclusion of the Aniakchak River in the national system the National Park Service will determine definite terminal boundaries for Albert Johnson, Hidden and Mystery Creeks and North Fork Aniakchak River as well as lateral boundaries. The rationale used for determining appropriate boundaries are drawn upon concepts developed on a number of recent studies concerning Federal, State and local riverway proposals in the conterminous United States and studies of other Alaskan rivers being considered for potential inclusion in the National Wild and Scenic Rivers System. These stress the essential concept that the river and its immediate environment should be considered as a unit with primary emphasis upon the quality of the experience and overall impressions of the recreationist using the river or the adjacent riverbank. In Alaska a feeling of "spaciousness" dependent upon both isolation and independence is a very important aspect of the overall existing and potential recreation experience along free-flowing rivers.

Selection of detailed lateral boundaries should be made in consultation with existing and potential resource users on the basis of five interdependent guidelines.

1. Maintenance of a felling of "spaciousness" consistent with the type and extent of recreational uses and of other resources involved.

2. The primary Visual Corridor or view from the river or riverbank.

3. Type and extent of recreational use intended for a given river area (camp area, trail and canoe, canoe, trail, etc.)

4. Key wildlife and habitat areas shown in the publication, Alaska's Wildlife and Habitat, Jan. 1973, by the Alaska Department of Fish and Game.

5. Important archeological, natural history or geological sites.

It is expected that in almost all cases the lateral boundaries would be within two miles of the river's edge and in some cases considerably less. Available information suggests that application of the above lateral boundary guidelines would not exceed 70,000 acres.

Acquisition Policies and Land Use Controls

Private Lands

All of the river and its immediate environment is in public ownership with the Bureau of Land Management managing public lands. The State of Alaska would, under the Alaska Statehood Act, own those portions of the riverbed and Surprise Lake determined to be "navigable."

An 80-acre tract inside the caldera on the shores of Surprise Lake is pending transfer to private ownership under a native application filed under the 1906 Native Allotment Act. Should the application be approved it is recommended that this land either be acquired or that a

scenic easement be purchased to assure that future uses are compatible with the unique values of the lake and caldera.

Management Policies

The management objectives for the Aniakchak Wild River would be to enhance and protect those values which caused it to be added to the National Wild and Scenic Rivers System for present and future public enjoyment and benefit.

Off-Road-Vehicles

Available information suggests that there is high potential for environmental change of the thin soil cover and vegetation by off-road motorized vehicular travel. The National Park Service in consultation with user groups should give special consideration to the development of regulations governing the use of off-road vehicles for recreational, subsistence and mining activities.

Hunting, Fishing and Trapping

Hunting, fishing and trapping would continue to be managed by the State of Alaska. The management plan for the Aniakchak River, however, should consider whether zones such as the caldera should be designated, or periods when hunting should be restricted because of public safety, administration or public use and enjoyment of the river area.

Litter

Special efforts be made to restrict litter and pollution by stressing "bring-back-what-you-take." If this does not prove effective consideration should be given to

banning cans, bottles or other nonburnable food and drink containers except at designated developed access points.

Cooperative Management

Consideration be given to entering into cooperative agreements with adjacent landowners for coordinated management and development of the river corridor and adjacent lands.

Recreation Development

The recommended conceptual recreational development plan is based upon the primary objectives of: maintaining the existing environment in as natural a condition as possible, preventing pollution and providing appropriate recreation facilities for thepublic use and enjoyment of the river.

The National Park Service, withon one year of the date of inclusion in the national system would prepare a detailed development plan for the Aniakchak Wild River area. The conceptual development plan emphasizes a high quality outdoor recreation experience while protecting valuable geologic, fish and wildlife resources.

The degree to which the immediate environment is maintained and the type of recreation facilities would depend upon the classification of the river area.

"Wild river areas" being the most primitive, inaccessible and unchanged will be developed and managed to

preserve and enhance its primitive qualities. Major public use areas such as large campgrounds, interpretative centers or administrative headquarters normally would be located outside the river area. Simple comfort and convenience facilities such as shelters and toilets may be provided as necessary to protect popular sites and provide an enjoyable experience. Facilities would be of a design and location to harmonize with its surroundings.1/

A public use area would be developed inside the caldera at Surprise Lake and at Aniakchak Bay. These would consist of simple camping areas, sanitation facilities and interpretative information. Simple provisions for safe aircraft landings and take-off from Surprise Lake and Aniakchak Bay would be provided.

There is possibility for a foot trail between the caldera and Aniakchak Bay.

Riverside campsites are limited. Accordingly, development will concentrate public use in those selected sites capable of withstanding camping use without causing damage to the immediate natural environment.

1/1970. Guidelines for Evaluating Wild, Scenic and Recreational River Areas . . . , U.S.D.I.

VII. ECONOMIC EFFECTS OF INCLUSION IN THE NATIONAL WILD AND SCENIC RIVERS SYSTEM

The Aniakchak River and its immediate environment is richly endowed with a wide variety of natural resources. The impact of the proposed program on potential uses of these resources is difficult to evaluate as future uses are largely dependent upon the cost of transportation.

Recreation

Increasing population pressure and desire for more recreation lands and opportunities, recreational uses in the immediate environment of the Aniakchak River can be expected to increase with or without inclusion of the river in the National Wild and Scenic Rivers System. However, inclusion in the national system together with development of outdoor recreation facilities as recommended herein will stimulate the long-range rate of increased use. Inclusion of the Anaikchak River would assure that the increased use was orderly and within the limits of the resource base to sustain a high quality, primitive outdoor recreation experience for both present and future users. This is not expected or occur without implementation of a coordinated, overall management and development of the recreation resources of the Aniakchak River and its immedaite environment.

The conceptual recration and development plan contemplates that public facilities would be adequate to accommodate at least 1,000 river visitors exclusive of hunting and fishing by the year 2000. These estimates are based upon four primary assumptions: (1) The Aniakchak River is added to the National Wild and Scenic Rivers System; and (2) public facilities are provided by the administering agency and supplemental private enterprises.

Estimates for potential public outdoor recreation of the Aniakchak River basin are based upon data for Katmai National Monument and information developed by the Alaska Travel Division.

Between 1956 and 1972 visitation increased from 500 to 12,600 people, while data by the Alaska Travel Division showed that 5 percent of all people visiting Alaska visited the Katmai-Kodiak area.[1/] Since a major investment in travel and time has been expended by people visiting Katmai National Monument or Kodiak Island it is reasonable to assume that the Aniakchak River protected and developed as a component of a national conservation system would also attract a significant proportion of visitors to both Katmai and Kodiak by the year 2000.

Recreation use related to hunting and fishing would be in addition to the above. Estimates for future public

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1/Alaska Travel Division, in Copper River Highway draft EIS, March 8, 1973. Alaska Dept. of Highways.

opportunities for hunting and fishing in the river corridor are not available.

Economic impacts resulting from public recreational opportunities made available as a direct result of the inclusion of the Aniakchak River in the National Wild and Scenic Rivers System are difficult to identify.

Impacts at the National level are considered to be of an intangible nature.

Impacts on the local and state economics would result from three sources: construction of facilities annual operation and maintenance, and returns from associated investments such as lodges, raft liveries, guiding and related services.

At the present time there are no base data to compare the economic impact of public recreation in the Aniakchak River area since present use is small and users purchase supplies and equipment before arriving at the Aniakchak River. When comparing the river to similar opportunities at free-flowing river areas elsewhere it appears that impacts to the local and state economics could be substantial as indicated in Table 3 .

TABLE 3 . Comparison of Recreation Expenditures at Selected Free-Flowing River Areas Comparable to the Aniakchak River, Alaska

Area[1/]	Cost per trip[2/]	Daily Cost per person
Canoe/Kayak (family)		
Eel River, Ca.	$280[3/]	$13.33[4/]
Klamath River, Ca.	320[3/]	26.66[5/]
Canoe/Kayak (individual)		
Chilikadroitna/Mulchatna, Ak.	485[7/]	53.89
	375	75.00
Kenai area, Ak.	365	20.27
Salmon, Middle Fork, Ida.[6/]	285	47.50
Snake River, Wyo.	135	13.20
Hiking (individual)		
Wrangell Mtns., Ak.	$330	$19.41

1/Source: 1973 Sierra Club outings.

2/Excludes all transportation and related costs of food and lodging while in transit to and from home and river area.

3/Two adults, 1 child, ea.

4/Additional child $60 for entire trip.

5/Additional child $80 for entire trip.

6/Alaska Wilderness Trips, Inc. Eagle River, Ak. 1973 schedule.

7/Unit of the National Wild and Scenic Rivers System or related river conservation program.

It is important to remember that these expenditures are for the duration of the specific trip only and that transportation costs to and from the area are excluded. Also in Alaska these would be adjusted upwards significantly because of the higher overall costs and for specialized transportation requirements for chartered air access into the river area.

Non-Recreation

Impacts on non-recreational uses of the immediate environment of the Aniakchak River as a unit of the National Wild and Scenic Rivers System are expected to be minimal.

There are no known mineral values within the wild river area where, except for any existing valid claims, mining would be foreclosed.

There are no commercial timber values, potential hydroelectric projects or other water or land resource programs proposed for the Aniakchak River basin that would be adversely affected by inclusion in the National Wild and Scenic Rivers System.

Hunting, fishing and trapping for subsistence or sport purposes in the Aniakchak River or its immediate environment would continue to be managed by the State of Alaska with or without wild river designation. It is believed that both subsistence and sport uses of game

and fur animals and fish would be enhanced since the primary objective would be to preserve the existing river area in a natural condition. This should strongly favor preservation of key wildlife habitat areas within the river corridor which in turn affects the number, kind and quality of the fish and wildlife available for human use.

VIII. ALTERNATIVES

There are several major alternatives to the recommended inclusion of the Aniakchak River, Alaska, its principal tributaries and their immediate environments in the National Wild and Scenic Rivers System. These include no action, state or local action, different boundaries, different classifications, and inclusion in another national conservation system.

No Action

The alternative of no action was considered and discarded on the basis that:

(1) There is good probability that the existing high quality environment would be adversely affected through increased and unplanned human use of the immediate river environment.

(2) Development of public resources for short-term gain could cause significant impacts on the existing environment which now provide for sport and subsistence use of fur and game animals.

(3) Important aspects of natural and geologic history would be lost.

(4) It is probable that existing public lands in the river corridor would be selected by native groups and become unavailable for public use.

(5) The only practicable method of assuring future availability of the recreation, geologic, scientific, and fish and wildlife values for the benefit and enjoyment of future generations is to devise a formal plan which provides for careful and thorough review of human and environmental consequences in advance of implementation.

State or Local Action

A major principle established with enactment of the Wild and Scenic Rivers Act is that protection and management of free-flowing river areas is a task that cannot be undertaken solely by the Federal government. At the same time it is recognized that a narrow corridor adjoining a river area cannot be managed without considering human and resource programs taking place on adjacent areas. It is realized that the State of Alaska will be actively involved in the management of the public resources of the Aniakchak River and its immediate environment -- for example, fish and wildlife resources.

Substantial portions of the streambed and all of Surprise Lake may be in State ownership if determined to be "navigable" in accord with the Alaska Statehood Act. However, all of the immediate environment would remain in Federal ownership or probably be selected by native groups.

The alternative of state or local action was discarded on the basis that there are no known state or local plans to exclusively manage all or most of the public resources of either the adjoining areas or the Aniakchak River and its immediate environment.

Different Boundaries

Several options on boundaries were evaluated. These are summarized below:

(1) The possibility of deleting all the caldera except those lands within one mile of Surprise Lake was rejected because the caldera is the single most important aspect of the Aniakchak drainage in terms of existing and potential public values.

(2) The possibility of deleting tributary areas was discarded because of key wildlife habitat areas identified by the Alaska Department of Fish and Game.

Different Classifications

The "Guidelines" adopted by the Departments of Agriculture and the Interior place " . . . primary emphasis upon the quality of the experience and overall impressions of the recreationist using the river or the adjacent riverbank . . . " Accordingly, strong consideration was given to the possibility of classifying all of the area as scenic river areas as defined in Sec. 2(b) of the Wild and Scenic Rivers Act.

As both scenic and recreational river area classifications provide for increasing evidence of man's activity it was determined that wild river designation best provided for the long-range benefit and enjoyment of the distinctive resource values of the Aniakchak River basin.

Inclusion in Another National Conservation System

There is high potential that the entire Aniakchak River basin would be included in a larger unit of the national park system as part of the Aniakchak Caldera National Recreational Monument. Should this be approved by the Congress it is recommended that specific legislation to include the river and its immediate environment in the National Wild and Scenic Rivers System not be pursued. This is recommended on the basis that management of the Aniakchak River as a unit of the national park system is fully consistent with the primary objectives established by the National Wild and Scenic Rivers System. Further, Congress in authorizing the establishment of the proposed Aniakchak Caldera National Recreational Monument would provide specific guidelines as to the best long-term public combination of resource uses for the benefit and enjoyment of present and future generations of Americans.

BEAVER CREEK, ALASKA

A Wild and Scenic River Analysis

Discussion Draft

THIS REPORT WAS PREPARED PURSUANT TO PUBLIC LAW 90-542, THE WILD AND SCENIC RIVERS ACT. PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THE REPORT IS TO PROVIDE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF OUTDOOR RECREATION, THE SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AGENCIES.

PRELIMINARY

Bureau of Outdoor Recreation
Alaska Task Force
December 28, 1972

PRELIMINARY DRAFT---
NOT FOR PUBLIC DISTRIBUTION OR PUBLIC USE
---SUBJECT TO REVISION

PRELIMINARY

DEC 28 1972

BOR/ATF

Foreword

The following report is a discussion draft outlining initial findings and recommendations regarding Beaver Creek as a potential addition to the National Wild and Scenic Rivers System. This report is based on both an aerial and field reconnaissance of the Beaver Creek area, on an office review of available information, and on comments and materials provided by task force members. The concepts and recommendations contained in this draft do not necessarily reflect the views of all study participants.

Because of time limitations and the absence of pertinent information, several sections are missing from this draft and will be supplied prior to the completion of the final report. These include: a general description of the resources and economies of the state and region; the relationship of Beaver Creek to other potential wild and scenic rivers in the state; water quality information; water rights and ownership of the river bottom; development costs; and projected recreation use.

In addition, several sections have had to be superficially treated because of limited information available. These include: specific physical characteristics of the river; historical, cultural, and archeological resources; and economic effects of inclusion in the national system. These sections will be expanded as additional information becomes available.

Two Federal agencies have expressed an interest in the management of the Beaver Creek corridor: the Bureau of Land Management and the Bureau of Sport Fisheries and Wilflife. Management objectives, directions, and proposed development included in this report reflect only the views of BLM. Management views have not yet been supplied by BSF&W. When such plans are available, they will be incorporated into the final report.

The management plan described is to be viewed strictly as a conceptual plan. It is intended only as a guide or framework in which normal management latitude could be taken on specific site locations, uses, etc. As such, the type and locations of recreational uses and development detailed herein could be altered at a later date should Birch Creek be added to the national system.

Summary of Findings and Recommendations

1. Beaver Creek has been found to possess outstandingly remarkable scenic and recreational values.
2. It is recommended that Beaver Creek from 1 mile above the Bear Creek-Champion Creek confluence to approximately 15 miles downstream from the Victoria Creek confluence be included in the National Wild and Scenic Rivers System.

3. It is recommended that the entire segment be classified as "wild" and that a corridor averaging approximately 2 miles from either side of the river be included.

4. It is recommended that the entire corridor be administered by the Federal government. The alternative management plans of BLM and BSF&W will be presented in the final report.

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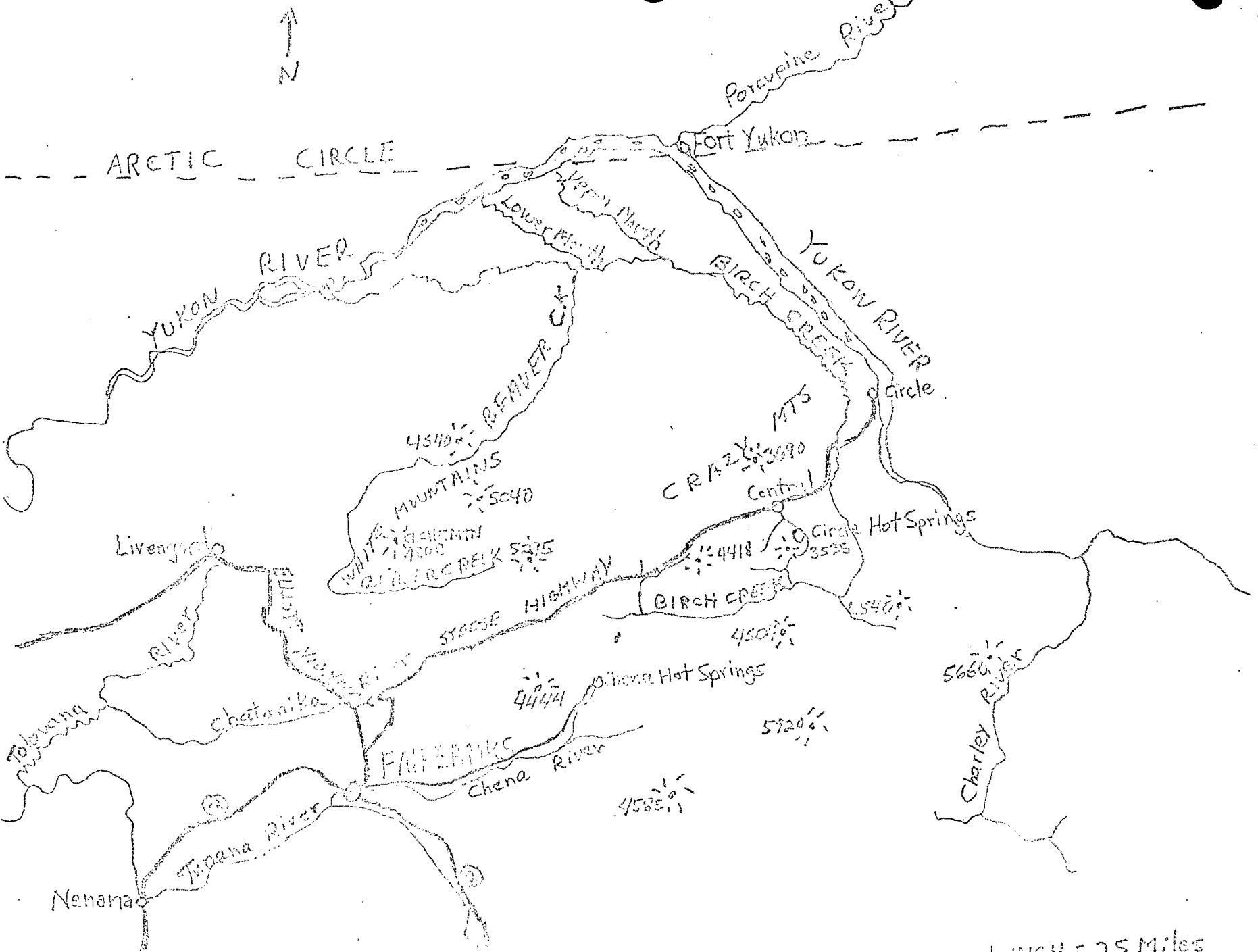

1 INCH = 25 Miles

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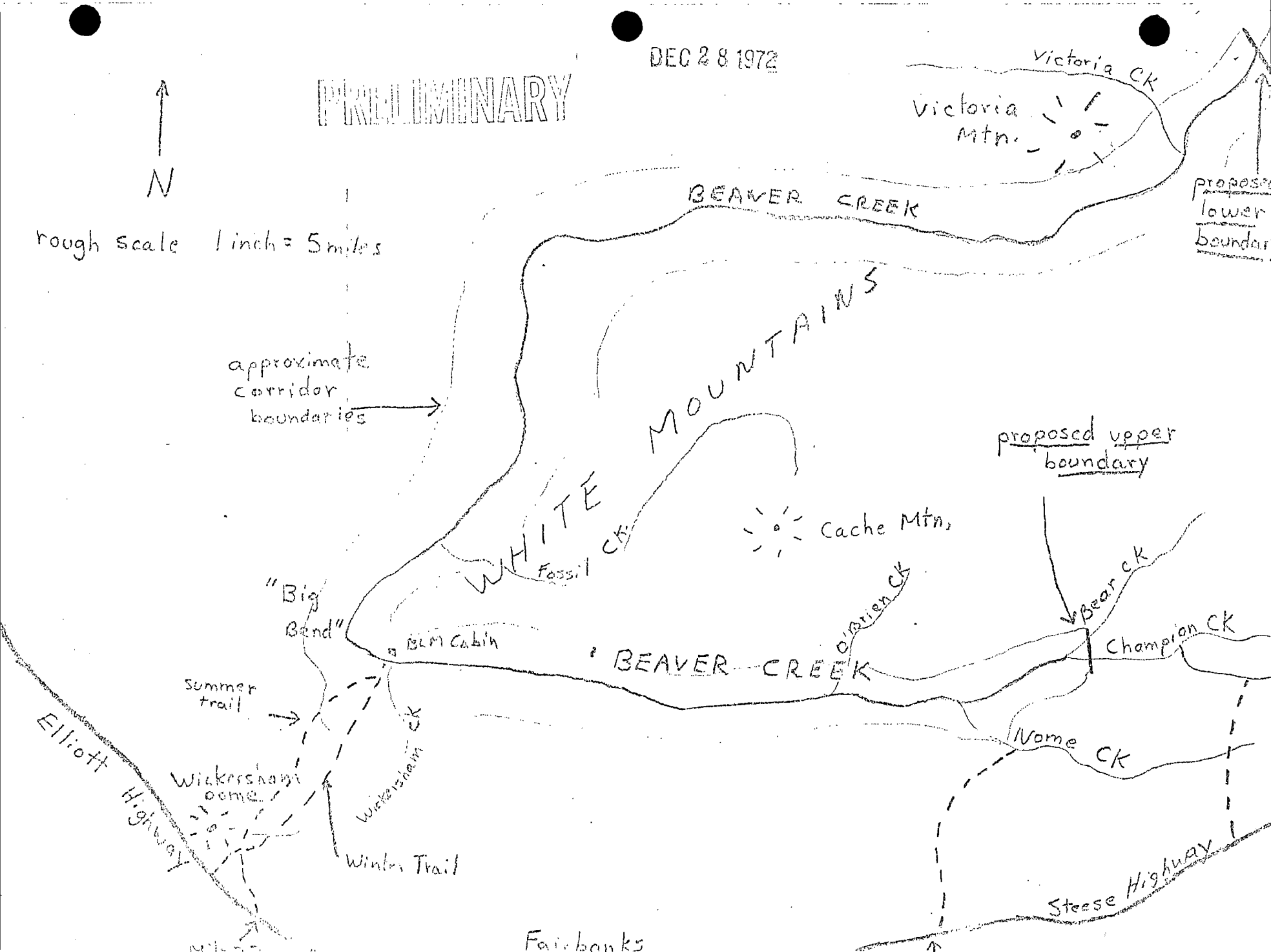
PRELIMINARY



Beaver Creek

Background Information

After several years of initial study, the entire White Mountain region, including the upper Beaver Creek drainage, was proposed by BLM for classification for multiple-use management. A notice of this proposed classification was published in the Federal Register on May 9, 1970, withdrawing these lands from appropriation as Homesteads, Trade & Manufacturing Sites, Headquarters, Homesites, and Native Allotments.

In the planning process that followed, BLM analyzed the resources and developed a management framework plan for the entire region, including upper Beaver Creek. Recommendations from this planning process have not as yet been made public and the land withdrawal notice lapsed on _____.

The Alaska Native Claims Settlement Act (ANCSA) was passed on December 18, 1971, and threw open the whole question of land status and land planning for the Beaver Creek area as well as the entire State. In March of 1972 the Secretary of Interior withdrew the upper Beaver Creek area as "public interest" lands under section 17(d)(1) of ANCSA.

Under the terms of ANCSA, certain lands were to be studied as potential additions to four national systems:

Parks, Wildlife Refuges, Forests, and Wild and Scenic Rivers. On July 26, 1972, after preliminary investigations, the Bureau of Outdoor Recreation recommended the upper Beaver Creek as one of 35 Alaskan rivers for detailed consideration as a potential unit of the National Wild and Scenic Rivers System.

On September 15, 1972, the Secretary of Interior withdrew a two-mile corridor along the upper Beaver Creek under section 17(d)(2) of ANCSA. No land within this corridor can be appropriated under the public land laws pending a formal recommendation from the Secretary of Interior to Congress. Such a recommendation for inclusion in the National Wild and Scenic Rivers System must be forthcoming by December 18, 1973. If Congress does not act on the Secretary's recommendation within five years the (d)(2) withdrawal will terminate.

BEAVER CREEK

Description and Evaluation of Study Segment

Physical characteristics and setting

Bear Creek and Champion Creek converge to form Beaver Creek approximately 50 miles northeast of Fairbanks, Alaska. Over 300 river miles downstream, Beaver Creek flows into the Yukon River at a point 100 miles north of Fairbanks and 20 miles south of the Arctic Circle. The segment under study is approximately 135 miles long, running from the Bear Creek-Champion Creek confluence to about 15 miles beyond the Victoria Creek confluence (T. 7 N., R. E. to T. 12 N., R. 6 E., Circle Quadrangle).

The broad Beaver Creek valley winds through the heart of the White Mountains. The beautiful limestone peaks of these mountains form an almost continuous backdrop to the river setting. Relief is generally great with some ridges rising over 1000 feet from the adjacent river valley. Mountain elevations average between 3000-4000 feet in the area. The study segment drops at an average rate of 8 feet per mile from 1700 foot elevation in the headwaters to 650 feet in the lower study reach (see Appendix A - Gradient Profile).

The mountains, ridges, and low hills surrounding the river are left behind in the lower 15 miles of the study segment. Here, Beaver Creek flows into the expansive

interior "flats" of the Yukon River valley. The moderately swift current of the upper reaches diminishes noticeably. The gentle meanders of the upstream reaches become more distended, and more smaller channels and backwaters are present.

The study corridor is largely covered with a mixed birch-spruce forest. Aspen groves are common on the hillsides. Along the river banks small stands of large white spruce and balsam poplar flourish. The forest is broken in many cases by black spruce tundra lands which often indicate areas underlain by permafrost (see Appendix B - Vegetation Profile).

Beaver Creek is a nonglacial river with very clear waters. The transparent waters of the upper reaches turn slightly brownish due to presence of organic matter from adjacent bogs and sloughs and from active bank erosion in the low reaches. The bottom is generally gravelly to stoney in character with stretches of exposed bedrock.

In the upper reaches, the river averages 20-25 yards wide with depths of 2 to 4 feet. In the lower portions the river widens to 30-50 yards with depths averaging 6-10 feet. Fifteen foot pools are not uncommon, however.

Maximum discharge of the river is reached after spring breakup in May resulting from snow melt and spring rains. Normal flows occur during the summer and extreme lows occur during the winter. Water temperatures range from near 32° F. during winter to around 60° F. in July. Ice begins forming in October and by mid-winter thicknesses of 4 feet or more are common.

Water quality

No water quality studies have been done on Beaver Creek. However, the water throughout the study segment is readily used without chemical treatment by recreationists for drinking purposes. There are presently no known sources of sewage or chemical pollution in the drainage that could significantly degrade water quality.

Low temperature conditions have been reported to be conducive to prolongation of the life of pathogenic bacteria. Although present low use of the river area appears to pose no health problems, indiscriminate disposal of wastes by larger numbers of recreationists or river users could lead to health risks in the future.

The river carries a relatively small amount of suspended sediment. However, placer mining has taken place in the upper Nome Creek drainage up through recent years. It is not known what effect this mining has had or does have on Beaver Creek. Placer mining activities have often degraded

PRELIMINARY

water quality because waste waters from hydraulic stripping and from sluicing or washing of placer deposits typically are returned to a stream without any attempt to control solids in the waste effluent.

One of the reasons for the general lack of control of waste solids in effluents from placer mining operations in Alaskan river basins is a statutory clause, and recently a statutory definition, in the state laws which in effect have exempted all placer mining and gravel washing operations from compliance with a discharge permit system. New legislation at the Federal level, specially the Water Pollution Control Act Amendments of 1972, will effect a Federal permit system that will be applied to the placer mining industry throughout Alaska. These changes may not be implemented, however, until 1973 or 1974, because the Alaska Statutes and the Alaska Water Quality Standards enabling control of placer mining operations will need to be amended by legislative process.

Existing land use

Virtually the entire study segment flows through a "wilderness" environment. Land uses are restricted almost entirely to recreational activities including hunting, fishing, trapping, canoeing, hiking, nature study, photography, cross-country skiing, and snowmobiling. A public use cabin is maintained by BLM for recreationists at the confluence of the Wickersham Creek.

At least three guiding operations are based along the study segment which cater to moose and Dall sheep hunters. Small cabins at three locations along the river serve as base camps for these activities. One other site has been claimed for commercial purposes (guiding) but it is not known what development has taken place on the site. Some commercial trapping may also be taking place along the river.

No year-round habitation, farming, lumbering, grazing, mining, or similar activities are known to exist in the study corridor. Furthermore, no historical signs of these activities are evident along the river other than several abandoned trappers cabins.

Land uses in the areas adjacent the study area are similar. Gold placer mining has taken place in the Nome Creek drainage, but current activity along this tributary is minimal. No other active mining is known to exist in the area.

No dams or channel improvements are being proposed or planned for this river segment. The proposed Rampart Dam on the Yukon River would have a maximum pool elevation of 660 feet which would inundate Beaver Creek upstream 5 miles from the lower study boundary. Under P. L. 3520, dated January 5, 1965, land was withdrawn for this reservoir; the boundary of this withdrawal lies approximately 10 miles upstream of the study boundary. In the 1971

Report on the Rampart Canyon Project, the District Engineer, Corps of Engineers, recommended that "a project for hydroelectric power generation at the Rampart Canyon site, Yukon River, Alaska, not be undertaken at this time."

The Bureau of Reclamation has considered and, because of high per kilowatt-hour cost, reported unfavorably on the Wickersham Project on Beaver Creek, lying about 45 miles north of Fairbanks.

Both the Corps of Engineers and the Alaska Power Administration have expressed an interest in participating in any wild and scenic river studies which involve water resource projects such as Rampart Dam. Thus, this study is being closely coordinated with these agencies.

Land ownership

Virtually the entire study segment flows through lands owned by the Federal government and managed by the Bureau of Land Management. A two-mile corridor - one mile on either side of the mean high water level - has been withdrawn from all forms of appropriation under section 17(d)(2) of the Alaska Native Claims Settlement Act (ANCSA, P. L. 92-203) along the entire 135 mile study segment.

The only known exceptions to Federal ownership and control are the following:

(1) An 80-acre Trade and Manufacturing (T&M) site at the O'Brien Creek confluence filed in March 1969.

(2) An 80 acre Native Allotment at the "Big Bend" filed in September 1971.

(3) A 63 acre T&M site 5 miles downstream from the "Big Bend" patented January 1966.

(4) A 5 acre small tract lease at the Fossil Creek confluence applied for October 1958.

(5) An 18 acre T&M site at the Victoria Creek confluence filed March 1969.

There may be both active and inactive mining claims along the study segment in the Nome Creek area but their exact locations are not known.

The area completely surrounding the river corridor is in Federal ownership and managed by BLM.

Existing access

There is no existing road access to the study corridor. The Steese Highway (Alaska State Highway No. 6) from Fairbanks to Circle passes within about 15 miles to the south of the upper reaches of the river. The Elliott Highway (State Highway No. 2) from Fairbanks to Livengood approaches the study corridor to within 12 miles to the west of the middle section.

There are two primitive trails from the Steese Highway to placer mining operations in the headwater tributary of Nome Creek. One leaves the Steese at Mile 42, running north for about 10 miles and intersecting Nome Creek

approximately 4 miles upstream from Beaver Creek. This trail is reported to be passable only by four-wheel drive vehicles or ATV's. It is reported that such vehicles have proceeded from this trail to Beaver Creek. The other trail leaves the Steese Highway from Mile 55 and runs north for about 10 miles, intersecting the headwaters of Nome Creek and Champion Creek. The trail comes to within 10 miles of Beaver Creek. It is reported to be accessible only by four-wheel drive vehicles and ATV's. Both trails can be utilized by snow machines in winter.

Two trails leave the Elliott Highway at Mile 22 and converge at the river near Wickersham Creek about 5 miles upstream from the "Big Bend." One of these trails is the Beaver Creek winter trail which follows the old Fairbanks-to-Wiseman sled route and is used for snowmobiling and cross-country skiing. The other trail was built and is maintained by BLM for summer hiking use. This trail follows the ridges just west of the winter trail. A public use cabin is also maintained by BLM in the area where these trails intersect the river.

Other possible means of access to the river include ATV use over open country, jet boat travel from the Yukon River, and by aircraft. ATV's have limitations as a recreational and transportational use which are discussed in a later section. Only one case of a jet boat traveling the 175 mile stretch upstream from the Yukon to the study segment is known. At least three gravel bars have been

crudely leveled for small plane landings in the study section - two of these are in private control, the other is near the BLM public use cabin. Many additional natural landing sites exist along the river for both wheeled and float equipped small planes.

Water rights and ownership of river bottom

To be supplied at a later date.

Recreational resources and opportunities

The entire Beaver Creek study segment and adjacent White Mountain area is a roadless, undeveloped,

The magnificent scenery, swift clear waters, excellent fishing, plentiful game and other wildlife, and pristine environment found along Beaver Creek constitute some of the exceptional recreational resources. These resources most appropriately lend themselves to the following recreational activities: float boating (canoeing, kayaking, rafting), hunting, fishing, hiking, nature study, primitive camping, photography, rock hounding, cross-country skiing, snowshoeing, dog sledding, ice-fishing, and snowmobiling (with possible controls).

While not having road access, the river area is relatively close to the large population center of Fairbanks. The river is within reach from two highways by foot or snow machine and is readily accessible by air. While

allowing some recreational use, access is sufficiently difficult to protect the resources from man's heavy hand and to maintain the river environment in a totally natural state.

For novice or intermediate canoeists or floaters the river offers outstanding water. There exists no rapids or other obstacles and virtually the entire reach would be classified as Class I (see Appendix C - International Difficult Rating). Yet, the current is swift enough to make paddling optional. There is generally sufficient water levels the entire segment to avoid bottom scrapping. Camp sites, ~~and~~ firewood are plentiful.

The beautiful limestone peaks of the White Mountains form an almost continuous backdrop to the river setting. At many points, hills and peaks rise several hundred feet directly from the river. At other times, the mountains could be observed from a distancerising above low hills and ridges adjacent the river. The continually changing topography is largely covered by a mixed white spruce-birch forest broken periodically by black spruce-tundra lands. The vegetation provides a colorful patchwork of high visual quality for recreationists. The aesthetics are further intensified by multicolored rock outcroppings and cliffs where the river has carved through bedrock.

PRELIMINARY

Moose, bear, wolves, and Dall sheep are present along or adjacent the river segment and provide big game hunting and wildlife study opportunities. Caribou are also occasionally in the area. Grayling fishing is excellent throughout the segment and northern pike are found in the lower reaches. A short section of the river just below the "Big Bend" remains ice free the year-round due to warm water springs. This is a popular spot for winter fishing.

The river is presently receiving significant winter recreational use. The trail from the Elliott Highway to Beaver Creek is used by snowmobilers and cross-country skiiers who travel and fish along the river. The BLM cabin located where the trail comes out on the river is used by the public for overnight stays and as a warm-up shelter.

Hiking opportunities are superior to most areas in Alaska due to the topography. Ridges and low hills extend for many miles in and adjacent the study segment. These ridgetop hilltops are generally dry, relatively smooth, and without thick vegetation making hiking much more pleasant than that commonly experienced in other areas of soggy, hummocky tundra or jungle-like forest.

PRELIMINARY

Of additional interest to the recreationist are several old trapping cabins along the reach. These log cabins with sod roofs still contain many tools and implements used decades ago. Fossils have also been found in the vicinity of Fossil Creek.

With the exception of the BLM trail and cabin, no public recreational development is located in or near the study area. At least three private guiding operations utilize the river area for base camps for big game hunting. An additional site has been applied for to presumably use in a guiding business.

Historical resources and values

Because Beaver Creek itself offered no bonanzas for early gold prospectors, historical evidence of man's presence in the area is largely confined to the search for furs. Trapping reached its heyday in Alaska in the 1920's and it was probably during this time that the area was first used by non-Native trappers. Several old trapping cabins still stand along the river and have been used through recent times. Old tools and implements can be found around these sites. These structures and implements superbly illustrate "life in the Alaskan bush."

The old dog sled route from Fairbanks to the boom town of Wiseman in the Brooks Range is reported to have followed Beaver Creek from the Wickersham Creek confluence through

the lower end of the study segment. Evidence of this historic trail can be observed along the river.

The archeological resources and values of the study area are not known.

Geological and mineral resources and values

The White Mountains lie at the apex of the two great structural trends present in Alaska. To the west, the structures are predominately northeast-southwest, while to the south, alignment is to the northwest-southeast. Because these two trends intersect in the area the geology and resulting structures are much more complicated than normal. The formations as a result have been closely folded and faulted with metamorphism and igneous activity changing the original characteristics and structures to where they are often unrecognizable. The area has undergone sedimentary deposition, diastrophism, metamorphism, igneous intrusions and volcanic action. The White Mountains are remnants of Upper Paleozoic limestone which has been folded and faulted and now forms prominent ridges with bedding planes being near vertical. In the study area there are isolated remnants of extrusive and intrusive volcanic rocks present. Serpentine (asbestos) deposits have been found along the Tintina fault zone which crosses the study segment in the Moose Creek vicinity.

Limestone and schist formations contribute significantly to the aesthetics of the river area. Numerous rock outcroppings along the river and on the adjacent hillsides are a colorful addition to the visual collage surrounding Beaver Creek.

The only fossil area known to exist in the White Mountain region occurs in the Fossil Creek vicinity. Coral and clam fossils have been found along this tributary which enters Beaver Creek about 10 miles downstream of the "Big Bend."

Placer gold deposits have been located and recovered in headwater tributaries. The extent of gold actually occurring in the study area is not known but believed to be in quantities too small for economical mining at the present time. ?

It is reported that some quantities of saleable minerals, building stone and cement (limestone), are found in the study area.

Fish and wildlife resources and values

Grayling are found in great numbers in the entire 135 mile segment. Northern pike are common in the lower sections. Whitefish have also been reported.

Big game species common in the river area include moose, black bear, Dall sheep, and wolves. Caribou are periodically present, and grizzly bear are sparsely

distributed residents. The mountain areas immediately adjacent the middle and lower study reaches have been identified as important habitat areas for Dall sheep. These represent some of the few remaining areas inhabited by Dall sheep in interior Alaska outside of the Brooks Range and the Alaska Range.

Many furbearers are common including lynx, beaver, marten, fox, wolverine, and others. Game birds include ptarmigan, grouse, ducks, and geese.

Several species of eagles, hawks, and owls are residents of the river area. Although the rare peregrine falcon has not been observed in this area, several potential nesting cliffs exist along the river.

Limitations to recreation

Most of the limitations to recreation in the study area are related to the natural elements. The harsh arctic climate allows a relatively short season for "summer" recreational uses, June through August. Freezing temperatures have been recorded in all months but July. Water temperatures remain cool all summer, prohibiting any prolonged body contact. Winters are extremely severe with cold temperatures (up to -60° and deep snows (50-60") limiting winter sports use.

Only 5 to 6 inches of rain fall during the summer months resulting in periodic low water levels. Conversely, a summer storm can quickly raise the river by a foot or more. Canoeing and fishing can be adversely affected by these water level changes. Low water levels are probably more limiting for boating uses than high water as exposed rocks and logs can present serious navigational problems. Fishing, on the other hand, tends to be better in lower flows than in high levels.

The lack of precipitation also results in periodic fire dangers. Camp fires pose a real threat to dry forests, and hence, it is possible that fires or river use might be limited during times of high fire risk.

Although precipitation is low, much standing water is present in the area. These waters give rise to hordes of mosquitoes and flies which at times can seriously limit recreational use because of the great intensity of the winged attack.

Recreational use is also limited by access which in turn is limited by the natural environment. There is no road access to the study segment. Hence, the putting in and taking out of float boats must be accompanied by aircraft. Similarly, most hunting and fishing is a fly-in proposition. The only trail access to the river is at Wickersham Creek.

Construction of roads or trails is severely limited by the soil and topography of the area. Valley floors are very susceptible to marshiness and/or flooding. Much of the slope areas are steep and very subject to solifluction. Bedrock is generally at a very shallow depth. A large portion of the study area is underlain by permafrost which because of shallow overlying soils is quite incompatible with surface disturbance. The soil limitations are generally difficult to overcome and construction and ecological costs may be excessive.

Development of facilities for more intensive recreation such as campgrounds, picnic areas, playgrounds, etc., is also greatly limited by soil and topographic conditions. These limitations are generally very difficult to overcome without considerable expense and possible ecological damage.

Similarly, some recreational activities such as cross-country vehicle uses may be limited by soil conditions. Disruption of the thin soil can cause surface damages which may persist for long periods of time. Most surface damages occur during summer thaw periods. At present these erosion areas have exerted minor watershed effects. As human activities increase, however, accelerated surveillance and regulation of vehicles (particularly on permafrost soils) may be necessary to minimize watershed damages and protect aesthetic values.

Potential limitations to recreation include the users themselves. It is quite possible that large numbers of recreationists in the river area would degrade or destroy the pristine environment and the primitive experience of the user. The most outstanding value of the river area could be lost through overuse.

Another potential limitation to the "wilderness" recreational opportunities now offered in the river corridor might be the future development of placer mining along the river or in the tributaries. Placer mining activities that degrade water quality and modify stream characteristics include stripping and sluicing of overburden by hydraulic means, stream diversions, and sluicing of gold-bearing deposits in stream valleys. Waste waters from hydraulic stripping and from sluicing or washing of placer deposits typically are returned to a stream without any attempt to control solids in the waste effluent.

Apart from their water pollution aspects, the placer mining activities in Alaska can result in a land restoration problem that seemingly cannot be resolved by present regulations or laws. Present placer mining operations often leave unsightly tailing piles in their wake. Almost always such piles consist of rocks and miscellaneous mineral soils that do not support vegetation even 50 years after they have been formed. Thus, the placer mining

industry has in the past and continues to leave aesthetically displeasing scars in many stream and river valleys. The mining of saleable materials such as building stone and lime could cause similar effects.

The effects on recreation in the study segment by the future construction of Rampart Dam are not fully known. Such activities as hiking, canoeing, and winter sports probably would be affected minimally. However, game and fish populations, vegetation, and even climate could be altered significantly, thus affecting hunting, fishing, nature study, and the like.

There is very limited potential for commercial (other than guiding operations) or residential development, lumbering, grazing, and agriculture in the study segment. However, these activities could seriously degrade the aesthetic values of the land and water, and hence, decrease the "wilderness" recreational experience now present. These activities could also be detrimental to fish and wildlife resources, thereby limiting such recreational uses as hunting, fishing, trapping and nature study.

Evaluation and recommendations

Beaver Creek meets the criteria for inclusion in the National Wild and Scenic Rivers System in that:

- The river is free-flowing
- The river and its immediate environment possess outstandingly remarkable values
- There is sufficient volume of water to permit full enjoyment of these values
- The river is of sufficient length to provide a meaningful high quality recreational experience
- Water quality is good
- The river and its immediate environment are capable of being managed to protect and interpret special values and protect the user

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The study segment is a pristine waterway through a virtually untouched "wilderness" environment. For 135 miles no mark of man can be seen from along the river with the exception of several cabins. Some of these cabins are

being used for guiding operations. Scenic, recreational, geologic, and fish and wildlife values combine to make this river area outstandingly remarkable. Specific resources of unique character include the limestone ridges and peaks of the White Mountains, the excellent canoeing potential of the river, the abundance of big game animals including an interior Dall sheep herd, the area's complex geologic history, the presence of fossils, and warm water springs, to name a few.

The study segment of Beaver Creek qualifies as a potential addition to the National Wild and Scenic Rivers System, and it is recommended that Congress include it in the national system. It is further recommended that this river segment be managed wholly by the Federal government. Virtually all lands within and adjacent the study corridor are owned and administered by the Federal government.

There is no road access to the river, and trail access only at one point. There is presently no permanent, year-round habitation or development along the river. Present land uses are limited to primitive recreational pursuits. Water quality is presumed to at least meet criteria for primary body contact. For these reasons it is recommended that the Beaver Creek study segment be classified as a "wild" river.

Boundaries of the study segment would be from the confluence of Bear and Champion Creeks in T. 7 N., R. 4 E. to the eastern boundary of T. 12 N., R. 6 E. (Circle Quadrangle). The lower boundary roughly marks the river's exit from the White Mountain area onto the Yukon "flats." Because of low relief, diminished river current, homogenous vegetation patterns, and repetitious scenery, recreational and aesthetic values do not appear to be outstanding beyond the lower study boundary. Thus, it is felt that the lower segment of Beaver Creek does not warrant inclusion.

The river corridor would average 2 miles on either side of the river. To insure a buffer from possible noise and water pollution and to protect fossil areas, a narrow corridor would extend up to 4 miles upstream from the confluences of Bear Creek, Champion Creek, Nome Creek, and Fossil Creek. Generally, ridgetop to ridgetop, and line of site criteria will be used to set precise boundaries along the river corridor.

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Conceptual Management Plan

Two agencies have expressed an interest in the management of Beaver Creek as a potential addition to the National Wild and Scenic Rivers System: The Bureau of Sport Fisheries and Wildlife and the Bureau of Land Management.

The area surrounding and including Beaver Creek will be included by BSF&W in their Yukon "flats" Wildlife Refuge proposal. This agency's proposed management goals and directions in regard to Beaver Creek has been requested but as yet has not been received. This information will be incorporated into the Beaver Creek report when it becomes available.

The present administrator of the Beaver Creek area is the Bureau of Land Management. The following objectives, directions, and proposed development represent the conceptual management plan for Beaver Creek under the continued administration of BLM.

Management objectives

It is proposed that the river segment be classified as "wild" and be managed with the following objectives:

(1) Preservation of the river and its environs in a natural, wild state, essentially unaltered by man.

DEC 28

(2) Provision of a quality "wilderness" recreational experience with primary emphasis on river-oriented activities.

(3) Protection of rare and endangered species habitat.

Management direction

1. Lands

No valid existing rights to lands located within the proposed boundary would be condemned, denied, or infringed upon. All land uses presently taking place under valid existing rights would be allowed to continue.

Should lands presently owned or controlled under valid existing rights be offered for sale by willing sellers, the Secretary of Interior would reserve the right of first refusal to such lands or such rights. Valid rights would be purchased in fee, where appropriate.

Subject to valid existing rights, all lands would be withdrawn in the river corridor from future disposal under the public land laws.

2. Transportation/Vehicles/Utilities

No new roads would be proposed with the exception of a short access road from the Steese Highway to the river in the upper river area. Any roads crossing or paralleling this segment would significantly degrade the values of the river corridor and defeat management objectives. Minimum trail development is recommended with no trails paralleling the river.

Off-road vehicle use along the river would be limited to winter travel only. With adequate snow conditions snow machines would be permitted throughout the corridor. Before overuse and damage to the river environment occurs at some later time, snow machine use would be confined to designated trails or areas within the river corridor. During times of no or inadequate snow cover, no off-road vehicles would be permitted in the river corridor in order to protect the fragile soils and vegetation and to protect the inaccessible, primitive nature of the river area.

Airstrips would not be developed along the river. Landings and take-offs would be permitted, where possible, from Victoria Creek downstream to the proposed lower boundary, from Wickersham Creek to Fossil Creek, and from Nome Creek to the upper boundary. It is felt these designated areas would provide sufficient access while protecting the river environment from growing aircraft traffic and encroachment on the "wilderness" values of the river.

The use of boat motors would not be permitted along the river. No bridges, utility, or cable crossings would be constructed or permitted in the river corridor.

3. Minerals

All valid existing mining or mineral rights in the river corridor would be fully respected, and any

activities permitted by such rights would be allowed.

Following a determination of validity, the following terms of the National Wild and Scenic Rivers System would apply to certain existing rights: All prospecting, mining operations, and other activities on mining claims that have not been perfected or on leases shall be subject to regulations which would provide safeguards against pollution of the river and unnecessary impairment of the scenery within the river boundaries. Also, subject to valid existing rights, the perfection of, or issuance of a patent to any mining claim shall confer a right or title only to the mineral deposits and such rights only to the use of the surface and surface resources as are reasonably required to carrying on prospecting or mining operations and are consistent with any regulations prescribed by the Secretary.

The Federal government would reserve the right of first refusal should valid mining rights be offered for sale. Should a willing seller exist, valid mining or mineral rights would be purchased where appropriate.

Subject to valid existing rights, all lands within the river corridor would be withdrawn from future disposition under the U.S. mining and mineral leasing laws.

PRELIMINARY DEC 28 1

To be included in Minerals section

Any valid mining claim initiated prior to September 15, 1972, under the general mining laws shall be protected in his possessory rights, if all requirements of the general mining laws are complied with for a period of five years from the date of enactment of Federal legislation designating the river as a component of the National Wild and Scenic Rivers System. If at that time all requirements of the general mining laws are complied with, the mining claim applicant may proceed to patent. At the end of the proposed period all claims not patented would be voided and the minerals withdrawn from location and entry.

4. Timber

Commercial timber harvesting or free-use wood cutting would not be compatible with management objectives in the river corridor and would not be permitted. Wood gathering by recreationists would be limited to dead or downed timber throughout the river segment.

5. Livestock forage

The river corridor would not be open to commercial livestock grazing. It is felt the limited forage potential of the area could not sustain an economical number of animals without substantial degradation to the natural, primitive environment now existing. Permits for small numbers of animals used for recreational purposes may be granted in specific areas where forage conditions are determined to be adequate.

6. Watershed/Soils

The management direction for the entire segment would be to maintain and restore the condition of the soil and water to its natural state. In most cases this would take the form of letting the natural processes presently occurring in the watershed proceed unimpeded by man's action. No stream bed or bank alterations by man would be allowed.

An effort to stabilize or revegetate large eroded areas caused by natural or man-made activities would be

made when erosion threatens the water quality and aesthetics of the river corridor. This work would be accomplished without motorized vehicles and appropriate native plants would be used.

The river manager would cooperate with appropriate Federal and State agencies to prevent pollution of Beaver Creek and its tributaries. This would involve protection from surface dumping of garbage and other contamination, waste water and sewage pollutants, sedimentation and wastes from mining operations, ground water contamination, and others.

7. Wildlife/Fisheries

Fishing and hunting of game animals would be fully allowed within the entire segment under applicable state Fed regulations. Management of game and fish would be handled in cooperation with appropriate state agencies.

The protection of rare or endangered species would be emphasized. In some cases this might include minor habitat manipulation for such species. Habitat manipulation for other species would not be practiced.

8. Recreation

In order to preserve a "wilderness" recreational experience in this "wild" segment, the development of access and recreational facilities would be strictly limited. A minimum of facilities would be provided only at access

points. Visitor information and safety signing would occur only at access points. No facilities, signing, removal of water hazards, etc., would be provided or done along the "wild" river proper. The "wild" river environment could only tolerate a relatively small amount of recreational use. Use in the river corridor would not be allowed to reach a level at which the environment was degraded and the "wilderness" experience was lost. The problems of sewage, litter, fires, and even firewood would grow increasingly acute as the number of recreationists increase. Thus, it would be necessary to limit the number of recreationists on or along the river at any one time.

Throughout the corridor, historic cabins and sites would be stabilized and protected for user appreciation.

9. Protection/Fires

Because of the remoteness of this river area and the lack of roads, recreationists who become hurt, lost, or stranded could be in real danger. Therefore, periodic trips down the river would be made in the interest of user safety. These safety checks would also be utilized to lood for potential hazards such as log jams, rapids, channel changes, etc. No attempt would be made to remove such natural obstacles, but rather they would be identified on informational signs at the access points. In addition, policing of

the area against littering, unlawful motor vehicle use, and other illegal activities would be accomplished.

The area would be under special fire prevention and suppression controls. A strong initial attack on small fires in the area would be made to prevent widespread burns in the river corridor. However, fires in the river corridor would be fought with only nonmechanized equipment. Vehicular fire-fighting techniques in these fragile areas have resulted in more overall damage to the environment than from fires themselves in past experience. Large burns would be revegetated with native plants to prevent erosion.

10. Adjacent lands

Adjacent lands owned by the Federal government would be managed to protect the Birch Creek Corridor from any adverse land-use practices. High water quality in the tributary drainages would be maintained and background views protected.

Recreation Development

An access road would be built from the Steese Highway to the river in the vicinity of Nome Creek. A parking area, sanitation facilities, public information, and overnight facilities would be provided at this location. In addition to providing passenger car access to Beaver Creek, this development is designed to provide access to

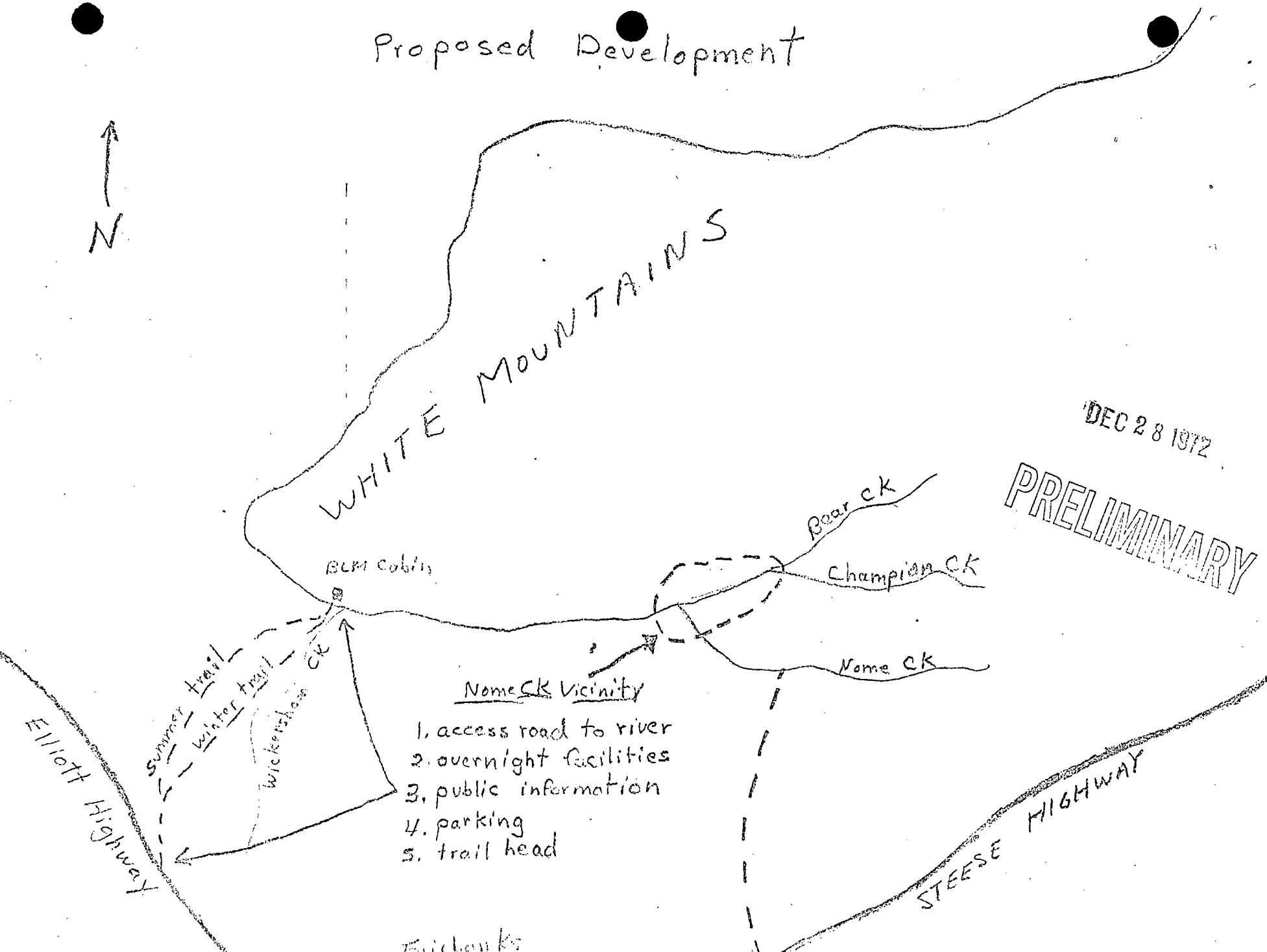
the White Mountains lying north of the river corridor. Thus, these facilities would serve as a trail head location for across-river use as much as down-river use. Although canoes could be "put-in" at this point, no road accessible take-out point would be available and aircraft would have to be utilized at some downstream location.

Both the summer trail and the winter trail in the Wickersham Creek area would continue to be maintained. Sanitation facilities and public information would be provided at the beginning of these trails from the Elliott Highway and at the public use cabin on the river.

Management and Development Costs

To be supplied later. No development proposed for five five fiscal years.

Proposed Development



Economic Effects of Inclusion in the National System

Potential uses of the river area that would be created or enhanced

Present uses are almost exclusively recreational in nature and numbers of users are quite small. Fewer than 5 parties canoed down Beaver Creek during the 1972 summer season. It is estimated that less than 100 other visits occurred duing this season for hunting, fishing and other recreational pursuits. Inclusion of the Beaver Creek segment in the National Wild and Scenic Rivers System would undoubtedly result in a significant increase in recreational use in the designated corridor.

The provision of an access road, the signing of the area, and the national significance of the river would, in essence, advertise its recreational values and attract users. No estimates have been made but it is safe to assume that use would approach the resource capabilities of the river area by the year 2000. In addition to the provision of an outstanding recreational experience for additional users, economic benefits would accrue from this increased use. Users of the river area would require gas, food, lodging, etc., from local merchants. This money would be respent several times in the region aiding the general economy.

Increased river use could also stimulate new businesses. Guiding services, canoe rentals, shuttle services between

put-in and take-out points, and other recreational services could all be established. These new revenues would similarly be respent in the region. Property and sales tax revenues would also result from this commercial development.

The building of an access road and parking area, and overnight facilities would also result in some short-term employment and local economic benefits. Management of the river area would also require additional manpower.

There would also be intangible benefits including the study segment in the national system. However, the benefits of such things as preservation of a primitive environment, provision of a "wilderness" recreational experience, protection of rare and endangered species, and other such values are extremely difficult, if not impossible, to put into economic terms.

Potential non-recreational uses which would be curtailed or eliminated

Subject to valid existing rights, all lands within the river corridor would be withdrawn from appropriation under the public land laws. Thus,homesteads, trade and manufacturing sites, headquarter sites, mining claims, and other new claims to land rights would not be permitted. Grazing and mineral leases would not be offered, and timber harvesting permits would not be issued.

Because of the region's arctic climate, the potential for agricultural development in this region is extremely small. Agriculture values presently add little to the economy of the region or state. There is no recorded commercial agriculture production in the Beaver Creek area. Thus, it is doubtful if any economic benefits would be foregone by including the river corridor in the national system.

Although the demand for residential land will increase in the state in coming years, most of this demand will center around the larger cities. In the Beaver Creek region most of this demand will occur around Fairbanks. Because the Beaver Creek corridor is inaccessible by road from Fairbanks, residential land uses foregone would be minimal.

Similarly, demands for industrial and commercial land will occur mainly in the Fairbanks area. The economic benefits foregone by land withdrawal in the remote Beaver Creek corridor are considered minimal. However, some commercial uses such as guiding operations might be affected. Although guiding operations presently exist along the river, any future demand for sites (T&M) would have to be met outside the corridor.

Total production and value for metal mining has decreased in the last ten years to where it now occupies

an insignificant position in the region's economy. Revival of gold mining to the extent the area knew in the past is not likely. The remaining active mining near Beaver Creek exists outside the corridor in tributary drainages. Gold in amounts large enough to be economically mined has not been identified within the corridor and virtually no evidence of historical mining exists along the river. Significant deposits of other metals in the river corridor has not been demonstrated. Thus, economic benefits from mining precluded by this proposal would be marginal.

Some of the ridges included within the river corridor may contain marketable amounts of limestone and building stones. Subject to valid existing rights, the mining or these resources would not be permitted. The presence of these materials is by no means limited to the river corridor and more accessible deposits of these materials have been identified. The removal of the relatively narrow river corridor from the mining of cement and building stones is not expected to significantly limit any future development of this industry. Similarly, the amount of asbestos that may be located (none has to date) within the river corridor is far overshadowed by amounts already identified in other areas of the region.

Although trees of potential commercial value exist along the river, they are generally located in very small stands and patches. No timber has been taken out of the river corridor, and the potential for commercial development for external markets does not appear large. The external demand for wood products is being filled mainly from commercial forests in other parts of the State. Local wood needs are in part being met by harvesting in the Chena River drainage located closer to Fairbanks.

Domestic livestock grazing presently contributes little to the region or state economy. Because of the harsh climate and sparse suitable forage, the potential for future commercial grazing in the region and along the river is small. Thus, economic benefits foregone would be minimal. There will exist some future demand for grazing areas for limited numbers of horses utilized in guiding operations. Permits for such use could be granted in suitable areas within the corridor and economic benefits arising from this use would not be foregone.

No water resource projects have been proposed within the study corridor. The Rampart Dam project boundaries extent a short distance into the river corridor. This project would not be curtailed on the basis of this wild and scenic river designation.

Summary

The overall comparison of potential land uses enhanced or precluded by including Beaver Creek in the national system favors those enhanced from an economical standpoint. By far, the most important resource of the river corridor is its recreational values. The economic benefits resulting from identification and development of this resource appear to outweigh those which might accrue from such other land uses as lumbering, mining, farming, etc. No proposed road and water resource projects would be curtailed by inclusion in the national system.

Appendix A

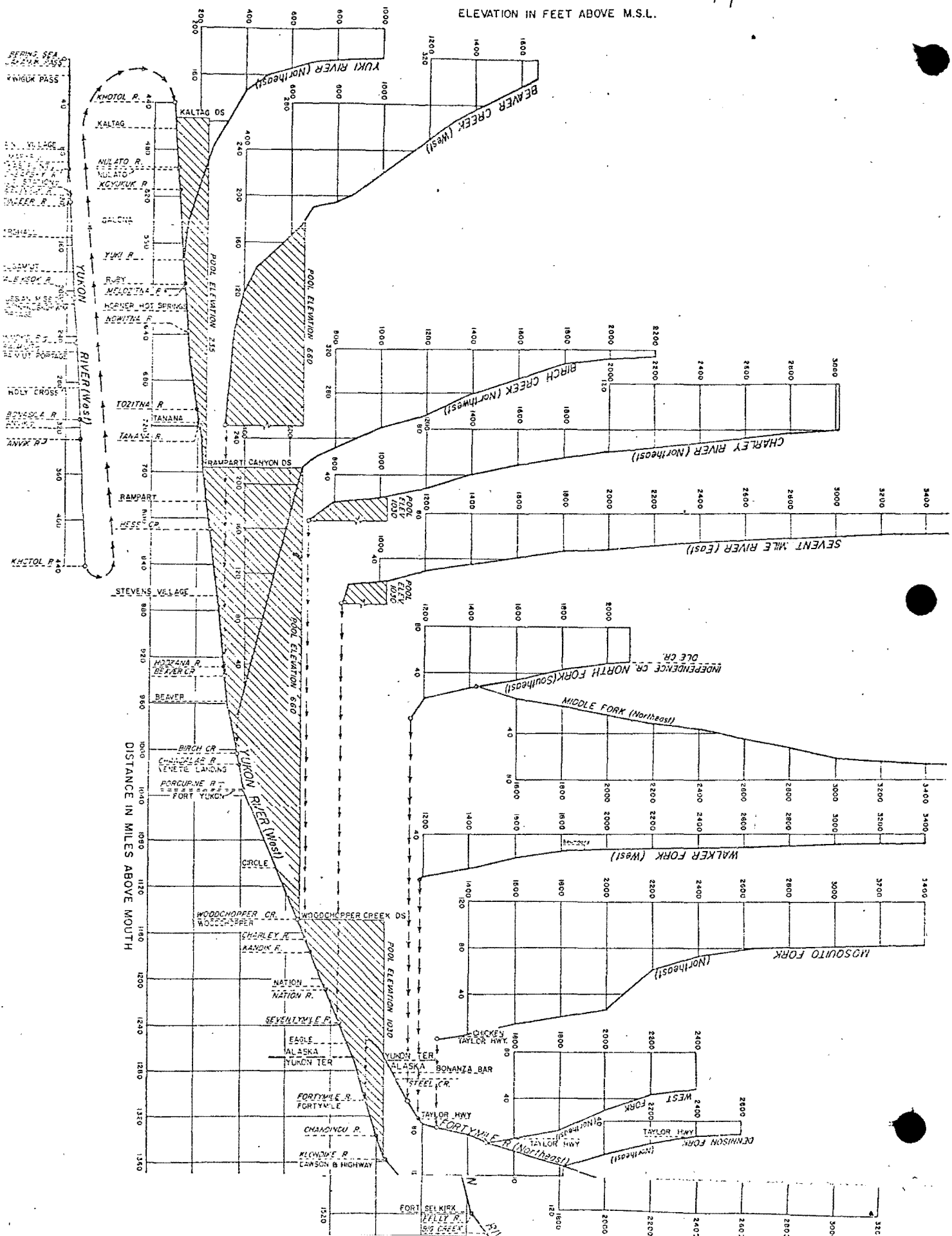
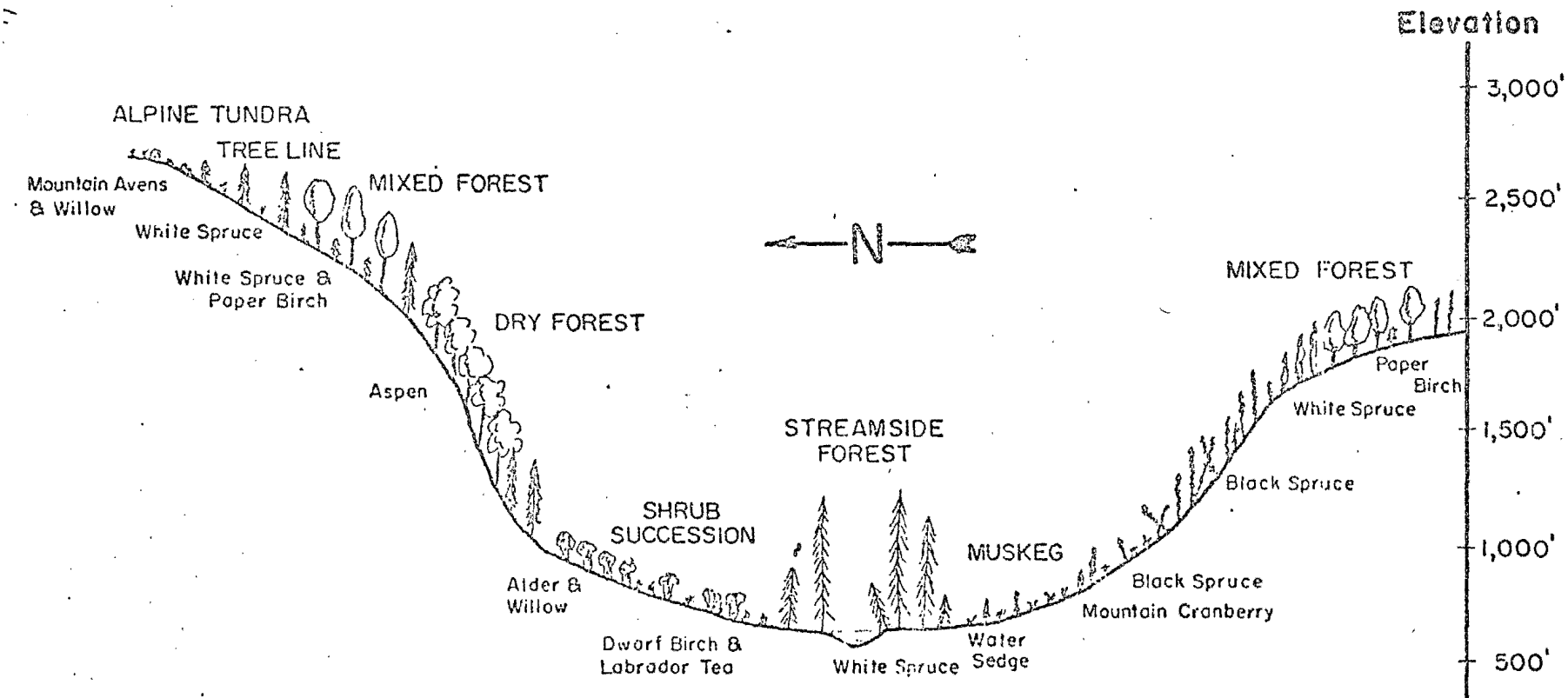

ELEVATION IN FEET ABOVE M.S.L.
DISTANCE IN MILES ABOVE MOUTH
YUKON RIVER (West)
YUKI RIVER (Northeast)
BEAVER CREEK (West)
BIRCH CREEK (Northwest)
CHARLEY RIVER (Northeast)
SEVENT MILE RIVER (East)
INDEPENDENCE CR. NORTH FORK (Southeast)
OLE CR.
MIDDLE FORK (Northeast)
WALKER FORK (West)
MOSQUITO FORK (Northeast)
WEST FORK
DENNISON FORK (Northeast)
FORTYMILE R. (Northeast)
POOL ELEVATION 215
POOL ELEVATION 660
POOL ELEVATION 1030
BERING SEA
KWIGUK PASS
KHOTOL R.
KALTAG DS
KALTAG
NULATO R.
NULATO
KOYUKUK R.
GALENA
YUKI R.
RUBY
MELOZITNA R.
HOPPER HOT SPRINGS
NOWITNA R.
HOLY CROSS
TOZITNA R.
TANANA
TANANA R.
RAMPARTI CANYON DS
RAMPART
HESS CR.
STEVENS VILLAGE
HOZZANA R.
BEAVER CR.
BEAVER
BIRCH CR.
CHANDALAR R.
VENETIE LANDING
PORCUPINE R.
FORT YUKON
CIRCLE
WOODCHOPPER CR.
WOODCHOPPER
WOODCHOPPER CREEK DS
CHARLEY R.
KANDIK R.
NATION
NATION R.
SEVENTYMILE R.
EAGLE
ALASKA
YUKON TER
YUKON TER
ALASKA
BONANZA BAR
STEEL CR.
FORTYMILE R.
FORTYMILE
TAYLOR HWY
CHANDINDU R.
KLONDIKE R.
DAWSON B HIGHWAY
CHICKEN
TAYLOR HWY.
FORT SELKIRK
PELLY R.
SIXTY MILE CREEK

FIG. 1 DIAGRAM OF VEGETATION TYPES ALONG A TOPOGRAPHIC GRADIENT IN THE WHITE MOUNTAINS PLANNING UNIT



VII. If You Spill

1. BE AWARE OF YOUR RESPONSIBILITY TO ASSIST YOUR PARTNER.
2. HOLD ON TO YOUR BOAT, it has much floatation and is easy for rescuers to spot. Get to upstream end so boat cannot crush you on rocks. Follow rescuers' instructions.
3. LEAVE YOUR BOAT IF THIS IMPROVES YOUR SAFETY; your personal safety must come first. If rescue is not imminent and water is numbing cold or worse rapids follow, then strike for the nearest shore.
4. STAY ON THE UPSTREAM END OF YOUR BOAT; otherwise you risk being pinned against obstacles, or, in waves, may swallow water.
5. BE CALM, but don't be complacent.

III. If Others Spill

1. GO AFTER THE BOATER; rescue his boat only if this can be done safely.

MOOTH AND WHITE WATER RATING SCALE:

nternational Difficulty Rating of canoeable waters, to be used in connection ith Personal Ratings on page 12.

ating	Water Characteristics
mooth Water	
A	Pools, Lakes, Rivers with velocity under 2 miles per hour.
B	Rivers, velocity 2-4 mph.
C	Rivers, velocity above 4 mph (max. back-paddling speed) may have some sharp bends and/or obstructions.
hite Water	
I	Easy — Sand-banks, bends without difficulty, occasional small rapids with waves regular and low. Correct course easy to find but care is needed with minor obstacles like pebble banks, fallen trees, etc. especially on narrow rivers. River speed less than hard back-paddling speed.
II	Medium — Fairly frequent but unobstructed rapids, usually with regular waves easy eddies and easy bends. Course generally easy to recognize. River speeds occasionally exceeding hard back-paddling speed.
III	Difficult — Maneuvering in rapids necessary. Small falls, large regular waves covering boat, numerous rapids. Main current may swing under bushes, branches or overhangs. Course not always easily recognizable. Current speed usually less than fast forward paddling speed.
IV	Very Difficult — Long extended stretches of rapids, high irregular waves with boulders directly in current. Difficult broken water, eddies, and abrupt bends. Course often difficult to recognize and inspection from the bank frequently necessary. Swift current. Rough water experience indispensable.
V	Exceedingly Difficult — Long rocky rapids with difficult and completely irregular broken water which must be run head on. Very fast eddies, abrupt bends and vigorous cross currents. Difficult landings increase hazard. Frequent inspections necessary. *Extensive* experience necessary.
VI	Limit of Navigability — All previously-mentioned difficulties increased to the limit. Only negotiable at favorable water levels. *Cannot be attempted without risk of life.*

As a general guide, the paddler should match his own abilities to the following scale in order to determine his capability for handling any scheduled trip (see page 8 for river difficulty classifications):

NOVICE (N) — Should be familiar with the elementary flat-water strokes as taught in the basic Red Cross or CCA canoeing courses. The Novice should also expect to encounter the difficulties described under Class I whitewater unless the trip is specifically described as Smooth Water. Exceptions to the paddling knowledge requirement may be made with the approval of the trip leader when the purpose of the trip itself is instruction.

INTERMEDIATE (I) — Should have a good "feel" for the performance of his boat and himself as a unit. Eddy-turns, leans, braces, and self rescue techniques have been added to his basic skills. Although a decked boat is not a necessity, actual river experience is required to the extent described in Class II whitewater. Hazards equivalent to Class III whitewater may be encountered upon occasion.

ADVANCED (A) — Several years experience with an organized group and eskimo roll ability are recommended. Whitewater difficulty will range from Class III to IV. Decking is recommended and often required (check trip leader).

EXPERT (E) — A cool head and a quick paddle along with extensive "Advanced" trip experience are required. A decked boat and a highly reliable eskimo roll are mandatory.

One further word. Non-paddlers are usually welcome on trips of *any* rating — they can be an invaluable aid in running a shuttle. If you would like to see interesting whitewater, watch shooting the rapids, and get in some breathtaking photography from the shore, then give the trip leader a call and tell him your story.

Leader's Responsibilities

Leaders who are unable to fulfill their trip commitments should obtain a substitute leader and notify a Cruise Chairman as early as possible.

Month before trip:

Determine purpose of trip — training__ cruising__ exploration__ other _____
Determine put-in point _____
Determine take-out point _____
Determine rendezvous point, time _____
Select alternate trip _____
Obtain guidebook and map of area (see page 39) _____
Determine camping arrangements _____
List meals to be eaten on river _____
List expected difficulty _____ decking? _____ wet suit? _____

Week before trip:

Maintain roster of persons signed up for trip with name, address, phone, type of boat, partner, experience, and any physical limitations.

Refuse to accept any applicant who does not satisfy your trip's ability standards.

If necessary, limit the number of boats.

Review the AWA Safety Code