

UNITED STATES GOVERNMENT

Memorandum

Clay Hardy

1205

TO : Assistant Director Eastman

DATE: JUN 1 1973

FROM : Alaska Task Force Leader

SUBJECT: Unalakleet 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 4, 1973.

Jules V. Tileston
Jules V. Tileston

2 enclosures

cc: WASO/Fred Strack



IV.

DESCRIPTION AND ANALYSIS

River Setting

The Unalakleet River is a clearwater, free-flowing intermediate sized river flowing southwesterly until it enters the east side of Norton Sound, an arm of the Bering Sea. The 90 mile long river rises in the Kaltag Mountains which stand in the center of the Nulato Hills. The Kaltag Mountains and the Unalakleet's headwaters lie approximately 180 miles east southeast of Nome, Alaska. The Nulato Hills are generally a series of even-crested northeast trending ridges, 1000'-2000' high with rounded summits and gentle slopes. The highest ridges reach elevations of 4000', however, the Kaltag's paralleling the Unalakleet River stand a maximum of 2800'.

From its headwaters downstream for 15 miles the river is small while flowing through a narrow valley averaging 1-2 miles in width. The valley walls support spruce and paper birch with moist tundra crowning the ridges; the valley floor is muskeg and supports spindly black spruce. The river remains small for the next 10 miles then begins to widen the following 10 miles to Old Woman River, while the valley is 4-5 miles wide for the entire distance. Vegetation remains almost unchanged excepting the muskeg covered area becomes larger in the wider valley. The middle 35 miles of the river lie in

2

a 5-8 mile wide muskeg covered valley dotted with 1/2 mile long lakes. The river is extremely meandering and continues to widen. Some black spruce and willows grow along its edge. Bluffs on the river's north side rise 200' in height and characterize its last 20 miles. Valley width and vegetation remain unchanged. The river continues to meander and widen then divides into several channels before emptying through one mouth into Norton Sound at the village of Unalakleet.

Stream Flow

There are no stream gaging stations along the river. However, observations by villagers at Unalakleet and government personnel working in the area indicates that maximum stream flow occurs in late May and early June as a result of spring breakup and snow melt. Rain induced highwater can be expected but not predicted, a few times each summer. Such rain storm caused high water rises rapidly, but the river's water level returns to normal within a few days. Low flows begin in September and October, with the river freezing over in November and December. Although the river is narrow in its upper reach, it widens to approximately 200' along its middle reach and up to 500' along its lower reach.

Water Quality

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

There has been some sampling done of surface water in the region. This limited sampling indicates that the overall chemical

quality of the surface water is acceptable for most purposes. Surface-water samples generally have contained less than 200 mg/liter dissolved-solids content and most have been of the calcium bicarbonate type. Water in coastal areas is generally higher in sodium and chloride contents during the summer than is water sampled farther from the coast. Streams, like the Unalakleet River, in the western part of the region contain more sulfate relative to chloride than is common in most of Alaska. On the basis of 32 samples of surface water, the annual temperature ranges from 32 degrees F. to 61 degrees F. Such low temperature conditions of water elsewhere has been reported to be conducive to prolongations of the life of pathogenic bacteria.

Land Use

Existing land use within the two mile river corridor includes subsistence hunting, fishing, and trapping. Commercial salmon fishing is an important river use, with such activity concentrated along the lower river and at the river's mouth. Sport fishing and hunting are also existing uses of the land. There are no agriculture lands or commercial timber areas along the river. There are no mining claims located in the river corridor. The river corridor lies in a possible petroleum province. There are no known gold mining districts or coal reserves in the river corridor or the immediate area around the river.

There are four cabins located along the river within its lower ten miles. All four are within the Unalakleet village withdrawal lands. The only other cabin along the river is located at Old Woman River near Old Woman Mountain and is appropriately named Old Woman Cabin.

The Kaltag Trail parallels the river mostly along the south side and usually staying within one mile of its shoreline for 3/4 of the river length. The Kaltag Trail is a section of the historic Iditarod Trail which runs from Nome to Anchorage, Alaska. The Iditarod Trail was the site for a sled dog race during March of 1973.

There is an existing reindeer range which includes the lower Unalakleet River as well as the general area along the eastern Norton Sound coast inward a few miles. Herd size is believed to be around 15,000 animals.

Water Resource Developments

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

The only known water resource study of the Unalakleet River was accomplished by the Corps of Engineers. The Corps prepared a report dated November 1, 1972 and entitled "Unalakleet Flood Control and Navigation--Unalakleet, Alaska." They found that a serious erosion problem existed at the river's mouth and that a flood problem existed at the village. It was also learned

that navigational improvements would be helpful at the river's mouth. Improvements to aid flood control, erosion control, and navigation were found not economically justified at that time.

Land Ownership

There are 25 pending applications, by Natives under the 1906 Native Allotment Act, within the Sec. 17 (d)(2) (ANCSA) withdrawn lands along the Unalakleet River. Final adjudication of these applications has not been made by the Bureau of Land Management.

The Unalakleet River, at its mouth, flows through the the Unalakleet village withdrawal lands. The river beings in regional deficiency withdrawal lands and flows approximately for six miles before entering lands withdrawn under Sec. 17 (D)(2) of ANCSA.

The remainder of the river corridor remains in Federal ownership under the administration of the Bureau of Land Management.

The initial land withdrawal proposed for the Unalakleet River area by the Secretary of the Interior in March, 1972 under the provisions of ANCSA recognized that these public lands had high value as "public interest" lands, as required by Sec. 17 (d)(1) of that act.

Based upon preliminary recommendations of the Bureau of Outdoor Recreation and other Federal agencies in July, 1972 the Secretary of the Interior's final withdrawal in September withdrew:

"all lands within the protracted survey sections which are wholly or in part within 1 mile of the mean high water mark of the river's bank and all islands . . ."

under the provisions of Sec. 17 (d)(2) of ANCSA as having high potential for inclusion in the National Wild and Scenic Rivers System. This withdrawal encompassed approximately 60 miles of free-flowing river together with an estimated 51,000 acres of land comprising the immediate river environment.

The remainder of the Unalakleet River area was retained in the initial Section 17 (d)(1) "public interest" withdrawal made initially in March 1972.

The Kaltag Trail, a section of the Iditarod Trail, lies within the withdrawn river corridor for the entire distance that it parallels the river. Apparently no official land withdrawal has ever been made specifically to preserve the Kaltag Trail as an entity for any particular use or uses.

Water Rights, Navigability, and Riverbed Ownership

Under the Alaska Statehood Act the State of Alaska owns the streambed of all "navigable" waters of the state. Under preliminary criteria developed by the State it would appear that the Unalakleet River may be considered "navigable" from

its mouth upstream to Tenmile River, a tributary located approximately two-thirds distance upstream on the Unalakleet River.

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 river and in small motorized watercraft upstream as far as Old Woman River.

The Unalakleet River is not the U.S. Army Corps of Engineers list of approved navigable waterways.

Access

Existing

Present access to the river is limited, with aircraft serving as the main means. There is a good airstrip located near the river's mouth at the village of Unalakleet; no other airstrips are located to afford access to the river. Smaller ocean going vessels provide access to the river's mouth. Most of these vessels bring supplies, during the ice free months, to the people of the village of Unalakleet. Riverboats are known to navigate up the Unalakleet River to around the confluence of Old Woman River, approximately the river's half way point. After freeze-up, access to the river is also provided by snowmobile.

Potential

The Alaska Highway net, as proposed by the Alaska Department of Highways in January 1973, shows a proposed road paralleling the Unalakleet River. This proposed road would traverse the river near its source, then parallel the river on its north side, and recrosses the river near the village.

Geology and Soils

The hills through which the river flows are mostly composed of tightly folded sandstone, conglomerate, and shale of Cretaceous age. The folds trend northeast. The rocks are cut by northeast and north trending faults. One is a major fault, the Kaltag Fault, along which the Unalakleet River flows. A few mountains are underlain by post-Cretaceous intrusive and volcanic rocks.

The river corridor and its surrounding environs are probably underlain by permafrost.

Vegetation

Wet tundra is the predominant vegetative type around the mouth of the river and for the first few miles upstream. Wet tundra is usually found in such areas as here where there are many shallow lakes, little topographic relief, standing water in summer, and permafrost close to the surface of the ground. This tundra type consists primarily of a sedge and cottongrass mat. The few woody plants occur in the driest spots and typically include bog-rosemary, birches, willows, bog cranberry, bog blueberry and mountain cranberry.

Closed spruce/hardwood forest becomes the predominant vegetative type upstream of the wet tundra and remains such except for the upper ten miles of the river. White spruce are found on the warm, dry, south-facing hillsides where drainage is good and permafrost is lacking. Shrubs such as rose, alder, and willow are associated with the white spruce. Some low areas lying immediately adjacent to the river are bogs locally called "muskeg" and contain moss, sedges, and some slow growing black spruce. After wildfire occurs the succession of plants can include willow shrubs, then quaking aspen, paper birch, and balsom poplar.

The river flows, from its source for approximately the first ten miles, through Alpine tundra. Alpine tundra consists of herbaceous and shrubby low mat plants interspersed between bare rocks and rubble.

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, and cause the loss of valuable timber and grazing land for domesticated animals. Lichens, the main food of the reindeer and caribou herds, requires 15-40 years to reestablish. It takes 80 to 100 years to grow a 10 inch white spruce.

Wildlife and Fishery

Wildlife

Wildlife found along the Unalakleet River include the large

mammals: moose, caribou, grizzly and black bear, wolves, and wolverine. The moose concentrates in the winter along the river from its mouth upstream to just above the confluence of Old Woman River. The grizzly bear concentrates along the river, from Old Woman River upstream for approximately 25 miles, when the salmon are running. The other large mammals are generally present throughout the area surrounding the river.

The Unalakleet River valley, from the river's mouth to within approximately 15 miles of its source, is a present nesting and molting area for waterfowl with ducks being the most common. Greater scaup and pintails are the most common ducks found. Small populations of emperor geese, white-fronted geese, and black brant are present.

Rare and Endangered Species

No species of vertebrates listed in the rare and endangered species list for Alaska of the U.S. Fish and Wildlife Service is known to be present along the Unalakleet River or its immediate surroundings.

Fishery

The Unalakleet River supports a historical subsistence fishery, a recent commercial fishery, and a sport fishery. The intensity is considered to be medium subsistence, heavy commercial, and light sport fishing.

All species of salmon live in the river, however, pinks, Kings and chums are the more abundant. The King salmon spawning area extends approximately 40 miles upstream from the river's

mouth. Besides all species of salmon, the river contains large populations of Arctic char, grayling and humpback whitefish.

According to the Alaska Department of Fish and Game, excellent sport fishing for King, chum, and pink salmon occurs mid-June to mid-July. There is good grayling and Arctic char fishing throughout the summer and silver salmon during the month of August.

The Alaska Department of Fish and Game has noted that major commercial fishing areas are located in Norton Sound near the Unalakleet River mouth. The five species of salmon remain as the principle fish commercially caught with the annual catch in recent years averaging 2,500 Kings; 5,000 silver; 15,000 pink; and 24,000 chum salmon.

History and Archeology

The Eskimo of the Norton Sound and Kotzebue Sound area are all culturally similar. The major ethnic groups are linguistically of the northern Eskimo dialect which is Inupik, except for the Unaligmiut who are primarily Yupic or southern Eskimo speakers. The people of Unalakleet are primarily Unaligmiut people.

The historic village of Unalaklik lies at the mouth of the Unalaklit River (Unalakleet) and is the present day village of Unalakleet.

A historic trail, the Kaltag Trail, parallels the Unalakleet River along the south side for approximately three-quarters of its length. The trail was a dogsled trail which was used to get inland to the Yukon River area. It is a section of the

historic Iditarod Trail. Both are actively used by residents and was the scene in March, 1973 of a dogsled race and a snowmobile race. The former from Anchorage to Nome and the latter from Nenana to Nome.

Archeological values relating to the Eskimo culture in terms of sites are unknown but are believed to exist along the river.

Recreation

Resources

The Unalakleet River and its immediate surroundings offer a variety of resources including open space, scenery, wildlife, fisheries, recreation, and history. The river is a clearwater, free-flowing stream that is a highly boatable one lying in a natural, primitive setting. There is frequent commercial air service to Unalakleet village at the river's mouth making the river fairly accessible. The river is navigable from the river mouth upstream to approximately Old Woman River, by small motorized riverboat.

Existing uses

Present recreational use consist mainly of sport fishing for King, pink, chum, and silver salmon, and for Arctic char and grayling. Some sport hunting occurs with hunters mainly after grizzly bear, wolves, moose and caribou. The river is canoeable.

13

Water level would determine the particular daily navigability of the river for both riverboat and canoe. The river falls in Class I of the International Whitewater Scale (Appendix A).

Considerable winter use has been made recently of the previously mentioned Kaltag Trail. Both dogsleds and snowmobiles have used the trail as a recreation area.

Potential uses

The Unalakleet River and its immediate surroundings offer good quality, as well as a variety of outdoor recreation opportunities. Potential recreation uses would include family canoeing and motorized boating, hiking, nature study, sightseeing, waterfowl bird watching.

Limitations

The major limitations to recreation are the harsh and long winters which allow a relatively short "summer" recreation season. The extreme cold during the winter may somewhat limit winter recreation activities.

Some recreational activities such as All Terrain Vehicle uses may be limited by soil conditions. Surface damage can occur which may persist for long periods of time. Most surface damage 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.

14

Potential limitations to recreation include the users themselves. It is 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 Unalakleet 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, historic 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 river, from its headwaters to approximately the confluence of the Chirokey River, meets the qualifications for inclusion

in the National Wild and Scenic Rivers System as a wild river.

- ⑦ The Department of Highways, State of Alaska, has proposed a highway which would traverse the river near its source then parallel the river on its north side and finally recross the river near the village .
- ⑧ 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.
- ⑨ 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.
- ⑩ The Natives have traditionally used the river for subsistence fishing.

Recommendations

It is recommended that:

- ⑪ The Unalakleet 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

- ④ Approximately 60 miles of the river from T 14 S, R 3 W, to approximately the confluence of the Chirokey River be classified and managed as a wild river together with approximately 52,000 acres comprising its immediate surroundings.
- ④ The Bureau of Land Management 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.
- ④ The river be managed by the Bureau of Land Management
- ④ Before the proposed highway crossing and paralleling the river is built, major consideration be given to alternative means of transportation; and that the following impacts of the highway be ascertained and considered: 1) air and water quality 2) noise levels 3) human population distribution and use of the land and water 4) fishery
- ④ 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.
- ④ 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.

- Provisions be made by the Bureau of Land Management 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 local inhabitants.

2 MILE WIDE
CORRIDOR WITHDRAWN
UNDER 17(d)(2)
THROUGH AREA
WITHDRAWN UNDER
17(d)(1)

North River

North Fork Unalakleet River

PENDING
APPLNS. FOR
1906 NATIVE ALLOT.

VILLAGE
WITHDRAWAL
Unalakleet

UNALAKLEET

South River

NORTON
SOUND

Chioskey River

Old Woman River

Tennile Creek

area recommended
for inclusion

R.3.W.

+
REGIONAL T.14
DEFICIENCY
+

Kaltag Trail

NORTH
↑

SCALE
0 5 10
MILES

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

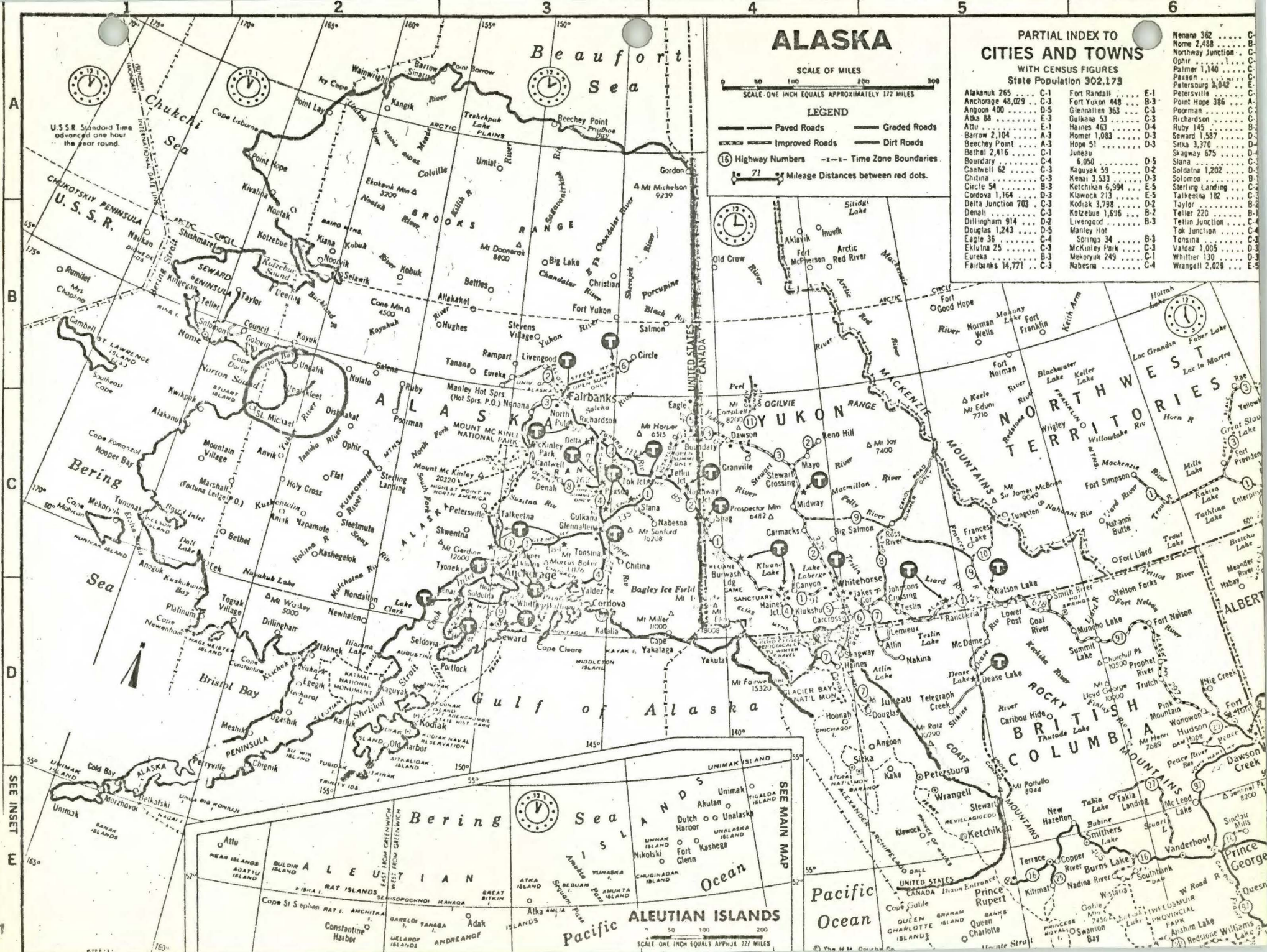
Smooth Water

- 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

SCALE OF MILES
0 50 100 150 200 250 300
SCALE ONE INCH EQUALS APPROXIMATELY 172 MILES

LEGEND

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

PARTIAL INDEX TO CITIES AND TOWNS

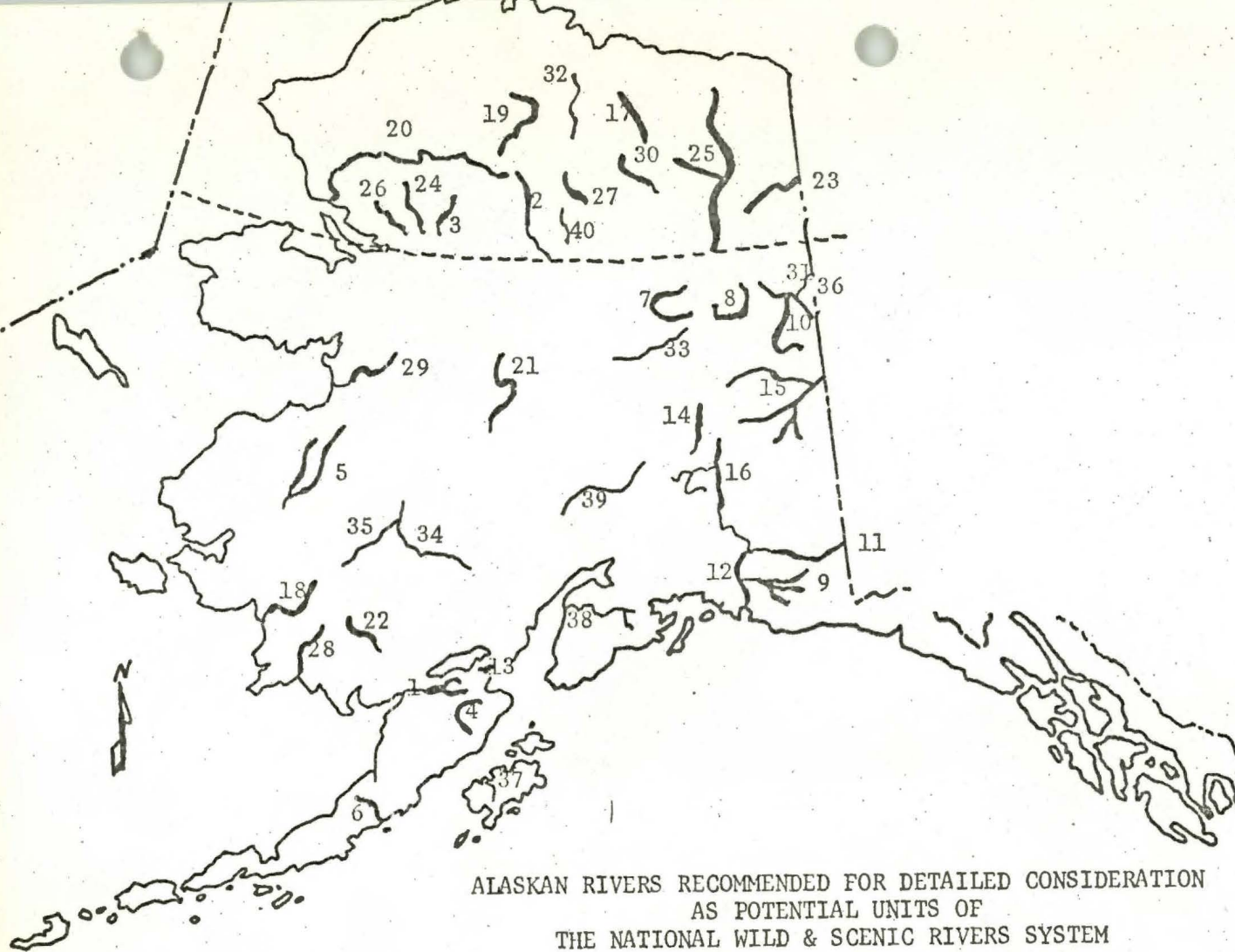
WITH CENSUS FIGURES
State Population 302,179

Alakanuk 265	C-1	Fort Randall	E-1	Nenana 362	C
Anchorage 48,029	C-3	Fort Yukon 448	B-3	Nome 2,458	B
Aniak 400	D-3	Glennallen 363	C-3	Northway Junction	C
Arba 88	C-3	Gulkana 533	C-3	Ophir 1,140	C
Attu	E-1	Haines 463	D-4	Palmer 1,140	C
Barrow 2,104	A-1	Homer 1,083	D-3	Petersburg 3,042	C
Beechey Point	A-3	Hope 51	D-3	Petersville	C
Bethel 2,416	C-1	Juneau	D-5	Point Hope 396	A
Boundary	C-4	6,050	D-5	Poorman	C
Canwell 62	C-3	Kaguyak 59	D-2	Richardson	B
Chitina	B-3	Kenai 3,533	D-2	Ruby 145	B
Circle 54	B-3	Ketchikan 6,994	E-5	Seward 1,587	D
Cordova 1,164	D-3	Klawock 213	E-5	Sitka 3,370	D
Delta Junction 703	C-3	Kodiak 3,798	D-2	Skagway 675	D
Denali	C-3	Kotzebue 1,636	B-2	Silna	C
Dillingham 914	D-2	Livengood	B-3	Solothna 1,202	D
Douglas 1,243	C-4	Manley Hot	D-5	Solomon	B
Eagle 36	C-4	Springs 34	B-3	Sterling Landing	C
Elkton 25	C-3	McKenley Park	C-1	Talkeetna 182	C
Eureka	C-3	Mekoryuk 249	C-1	Taylor	B
Fairbanks 14,771	C-3	Nabesna	C-4	Teller 220	B
				Tellin Junction	C
				Tok Junction	C
				Townsend	C
				Valdez 1,005	C
				Whittier 130	D
				Wrangell 2,029	E

SEE INSET

SEE MAIN MAP

SCALE ONE INCH EQUALS APPROX 227 MILES



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. ANIAKCHIAK
- *# 7. BEAVER CREEK
- *# 8. BIRCH CREEK
- *# 9. BREMNER
- *# 10. CHARLEY
- *# 11. CHITINA
- *# 12. COPPER
- *# 13. COPPER (ILIAMNA)
- # 14. DELTA
- *# 15. FORTY MILE (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